

**RECLAMATION DISTRICT NO. 1601
TWITCHELL ISLAND
BOARD OF TRUSTEES MEETING
TUESDAY, JANUARY 21, 2025
9:00 AM
ENGINEER'S REPORT**

I. LEVEE DISTRESS AT LEVEE STATION 60+00 ALONG THREE MILE SLOUGH

- A. Review Settlement Monitoring.

EXHIBIT A: Settlement Monitoring summary as of 12/31/24.

II. PROJECT FUNDING AGREEMENT TW – 24 - 1.0 SP – PHASE I – SETBACK LEVEE SAN JOAQUIN RIVER

- A. Review follow up 12/20/24 REVISED Scope of Work submittal to DWR related to DWR's 12/5/2024 comments on our original Scope of Work submitted on 8/24/2024.

EXHIBIT B: 12/20/24 REVISED Scope of Work submittal to DWR.

- B. Generally, review project progress.

III. DISTRICT PUMP STATION SOLAR ARRAY

- A. The Sacramento County Building Permit has been acquired. These have been approved, but the permit card has not been issued. Worked with Daniel this week to satisfy the Counties' need for Fire Department acknowledgment, special inspection acknowledgment and verification, and contractor acknowledgement. All items are submitted, and we expect the card to be issued this week.
- B. Awaiting approval on electrical plan updates in response to Sacramento County review.
- C. Construction
- a) Site work has resumed as of Monday 1/13/25.
 1. Clearing and grubbing completed at the south half and along the eastern boundary of the solar array pad.
 - a. The NW corner of the pad continues to be a concern as clearing and grubbing efforts exposed a larger footprint of unstable areas than originally identified.

2. Trenching and pipe installation started.

b) Scope Changes

1. Subgrade Stabilization at Solar Array

- a. Initial funds approved to supply and place 100 tons of 12-inch minus quarry stone over geogrid.
- b. This initial plan did not stabilize the site so changed to an additional 900 tons of 12-inch minus quarry stone over geogrid.
- c. Seek authority of the Board of Trustees to have Chairman Sgarrella sign change order for said additional work undertaken for stabilization of the site.
- d. Change Order in the amount of \$120,000 needed to expand subgrade stabilization efforts to add geogrid and 12-inch minus rock to stabilize an area measuring 120-feet x 90-feet.

***EXHIBIT C: Change Order No 2 Array Grade
Stabilization and Drainage Ditch Crossing
and Work Change Directive.***

2. Duct bank alignment within DWR easement projected through the drainage ditch running parallel to the levee. Extra work was needed at this area to widen the ditch crossing to allow the duct bank to be installed within the easement and across culvert crossing fill in lieu of ditch.

- a. Extended culvert 20' and widened crossing by 15 feet at this area.
- b. Seek authority of the Board of Trustees to have Chairman Sgarrella sign change order for said additional work undertaken for extending the culvert and widening the crossing at this site.
- c. Change Order in the amount of \$10,000 needed to expand ditch crossing which will not only serve the Solar Project but also serve as a widened area for maintenance of the Districts terminal drainage pump station sump.

***EXHIBIT D: Change Order No 2 Array Grade
Stabilization and Drainage Ditch Crossing
and Work Change Directive.***

c) Forecast Schedule:

1. Anticipating the solar array pad to be completed by early next week. (pending changes)
2. Pile alignment survey mid next week.
3. Pile installation starts by Friday 1/24/25.

IV. DWR SYSTEMWIDE MULTI-BENEFIT PROJECT FUNDING SCOPE OF WORK

- A. This Public entity Agreement (PEA) has been approved by DWR. Initial design expected to start in February.

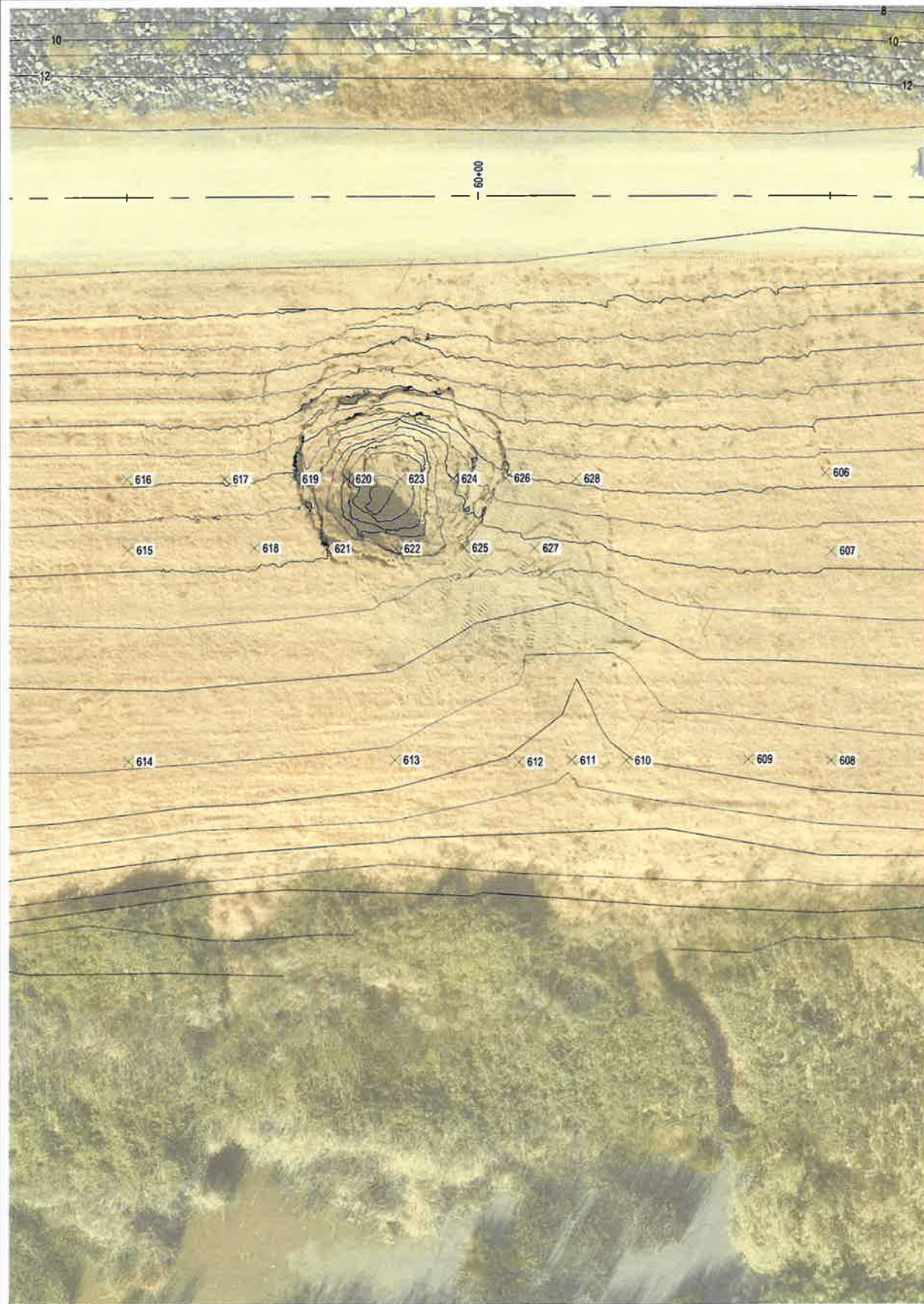
V. USACE PERIODIC INSPECTION REPORT OF THREE MILE SLOUGH LEVEE

- A. Review the Informational Briefing Summary and attachments from the Central Valley Flood Protection Board (CVFPB) for the Twitchell Island Levee System by the U S Army Corps of Engineers (USACE). The District levees continue to remain active yet there are several items noted that can be improved upon including vegetation control and remodel of their siphon diversion pipes.

EXHIBIT E: CVFPB Informational Briefing dated January 24, 2024.

EXHIBIT A

FILE SPEC: P:\1110_Twitchel_Island\1090_Sinkhole_Sta_60+00\08_Civil\400_Plan\020_CAD\Exhibits\Exh_Monitoring Points.dwg
 PLOT DATE: Jan 06, 2025 - 11:36am



POINT NO.	INCREMENTAL ELEVATION CHANGE (FEET)								TOTAL ELEVATION CHANGE (FEET)
	11/12/2024	11/20/2024	11/26/2024	12/9/2024	12/17/2024	12/23/2024	12/31/2024		
606		(0.01)	0.01	(0.01)	0.01	(0.01)	0.00		(0.01)
607		0.00	0.00	(0.01)	0.01	(0.01)	0.00		(0.01)
608		(0.01)	0.00	(0.01)	0.00	0.00	(0.01)		(0.03)
609		(0.01)	0.00	(0.01)	0.00	(0.01)	0.00		(0.03)
610		(0.02)	0.00	(0.03)	0.00	(0.02)	(0.01)		(0.08)
611		(0.01)	0.00	(0.04)	(0.01)	(0.01)	(0.02)		(0.09)
612		(0.01)	(0.01)	(0.04)	0.01	(0.02)	(0.02)		(0.09)
613		(0.01)	0.00	(0.02)	0.00	(0.01)	(0.01)		(0.05)
614		(0.01)	0.00	(0.01)	0.00	(0.01)	0.00		(0.03)
615		(0.01)	0.02	(0.01)	0.01	(0.02)	0.00		(0.01)
616		0.00	0.00	(0.01)	0.02	(0.02)	0.01		0.00
617		0.00	0.00	(0.01)	0.01	(0.01)	(0.01)		(0.02)
618		0.00	0.00	(0.01)	0.00	(0.01)	0.00		(0.02)
619		(0.01)	0.00	(0.01)	0.00	(0.01)	0.00		(0.03)
620		(0.02)	(0.01)	(0.02)	0.01	(0.02)	0.00		(0.06)
621		(0.01)	(0.01)	(0.02)	0.01	(0.01)	(0.01)		(0.05)
622		(0.05)	(0.02)	(0.04)	0.00	(0.01)	(0.01)		(0.13)
623		(0.04)	(0.01)	(0.03)	0.00	(0.01)	(0.01)		(0.10)
624		(0.05)	(0.01)	(0.04)	0.00	(0.01)	(0.01)		(0.12)
625		(0.21)	(0.08)	(0.11)	(0.02)	(0.03)	(0.03)		(0.48)
626		(0.03)	(0.01)	(0.03)	(0.01)	(0.01)	(0.01)		(0.10)
627		(0.03)	(0.02)	(0.05)	(0.01)	(0.02)	(0.02)		(0.15)
628		(0.01)	(0.01)	(0.02)	0.00	(0.01)	(0.01)		(0.06)

NOTES:

1. MONITORING POINTS WERE SET AND INITIAL SURVEY WAS PERFORMED ON 11/12/2024.
2. THE INCREMENTAL ELEVATION CHANGE FOR EACH SURVEY DATE REPRESENTS THE VERTICAL DIFFERENCE SINCE THE PRIOR SURVEY.



KJELDSEN SINNOCK NEUDECK
 CIVIL ENGINEERS & LAND SURVEYORS
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 711 N. Pershing Avenue
 Stockton, CA 95203
 209-946-0268
 1550 Harbor Blvd., Suite 212
 West Sacramento, CA 95691
 916-403-5900

RECLAMATION DISTRICT NO. 1601
EMERGENCY SINKHOLE REPAIR AT STA 60+00
POST-CONSTRUCTION SETTLEMENT MONITORING
 SURVEY DATE: 12/31/2024

DRAWING SCALE
 1" = 10'
 ORIGINAL DRAWING SCALE
 0 1/2" 1"

EXHIBIT NO.
1
 PAGE NO.
1

EXHIBIT B

December 20, 2024

Saskia Donovan, P.E.
Delta Levees Special Flood Control Projects
715 P Street
Sacramento, CA 95814

Re: Reclamation District No. 1601 – Twitchell Island
Project Funding Agreement No. TW-24-1.0-SP
Responses to Scope of Work Comments

Dear Saskia,

On December 5, 2024, Reclamation District No. 1601 – Twitchell Island (District) received comments from the Delta Levees Special Flood Control Projects Program regarding the Scope of Work previously submitted on August 27, 2024. These comments were in addition to comments received directly from the California Department of Fish and Wildlife on October 31, 2024. On behalf of the District, Kjeldsen, Sinnock & Neudeck, Inc. (KSN) hereby submits these responses to both sets of comments.

The table below includes the reviewer (DWR or CDFW), the original comment, and the response to comment.

Comment ID	Reviewer	Comment	Response
1	CDFW	<u>Page 6, Section 2 Project Description, Figure 2-2-Project Phases</u> Please add cross section widths in the habitat areas for Phase 3, so that we can more clearly understand the scale.	Cross section width has been added to Figure 2-2. Also, refer to Appendix E for further details regarding the Phase 3 design.
2	CDFW	<u>Page 8, Section 2.2.2 Habitat Development, Phase 3-Channel Margin Habitat, Second Paragraph, Last Sentence "Planting will occur and be maintained for one year during the Habitat Establishment Period."</u> Based off of the PSP and PFA, CDFW is recommending a 1-year establishment period and 3 years of maintenance and monitoring for enhancement plantings. And we require the same 1-year establishment and 3 years of maintenance and monitoring for mitigation plantings. The sentence above should be changed to reflect this.	A new sentence describing the 3-year Performance Period that will be part of a separate PFA has been added to Section 2.2.2.



Comment ID	Reviewer	Comment	Response
3	CDFW	<p><u>Page 8, Section 2.2.2 Habitat Development, Phase 3-Channel Margin Habitat, Fourth Paragraph, Last sentence "Using the final Phase 2 design, a final biddable set of plans for Phase 3 will be prepared for formal bid solicitation"</u></p> <p>Typically, a SOW includes a complete project description which CDFW reviews and approves. Because this SOW does not include complete plans for Phases 2 and 3, those plans will need to be submitted to and reviewed and approved by CDFW prior to their finalization. Please include a statement to this affect within the SOW.</p>	<p>The project description in Section 2.2.2 has been updated to clarify the two habitat design options that will be constructed as part of Reach 6 as shown on the Phase 3 plans.</p> <p>A new sentence stating that plans will be reviewed and approved by CDFW has been added to Section 2.2.2.</p>
4	CDFW	<p><u>Page 9, Section 3.1 Environmental Compliance</u></p> <p>Additional language needs to be added providing avoidance and minimization measures for special status plants and wildlife species, including birds/raptors, that may be encountered within and near the project site.</p>	<p>A brief description of avoidance and minimization measures for special status plants and wildlife has been added as Section 3.3 with a reference to the EIR, MMRP, and permits for further details.</p> <p>The EIR, MMRP, and permits have been added as Appendices F-K.</p>
5	CDFW	<p><u>Page 9, Section 3.3 Habitat Impacts, First Paragraph "California Water Code §12314 specifies that no net loss of habitat shall occur. Any long-term and/or short-term and construction-related impacts resulting from the project have been mitigated."</u></p> <p>The PFA requires mitigation to be developed, or bank credits purchased, if impacts occur to any AB360 program recognized habitat types. There should be a statement in this paragraph, or other appropriate location within the SOW, about the CDFW programmatic requirements (3:1 for RF, 2:1 for SS, 1:1 for FM)</p>	<p>Language regarding the CDFW AB 360 mitigation requirements has been added to Section 3.4 (formerly Section 3.3).</p>
6	CDFW	<p><u>Page 9, Section 3.3 Habitat Impacts, Second Paragraph, Second Sentence "The U.S. Army Corps of Engineers (USACE) determined that the overall San Joaquin River Setback Levee impacted freshwater emergent wetland and willow scrub wetland."</u></p>	
6.a	CDFW	<p>Please give an acreage estimate for the amount of RF, SS, and FM habitats and linear foot estimate for SRA habitat to be planted. Please also give an estimate of how much of each habitat type may be impacted due to project activities and mitigation owed. This will help determine if there will be enough of each habitat type planted to offset impacts while still providing enhancement/net gain of habitat. A statement should also be included that final impact and mitigation amounts will be determined by CDFW upon completion of the project and retention release will be approved upon successful mitigation of the project's impacts to the satisfaction of CDFW.</p>	<p>The acreage estimates for new habitat planting and impacted habitat that are described in Sections 3.4 and 3.5 (formerly Sections 3.3 and 3.4) have been summarized in new tables.</p> <p>The project is mitigating for 100 percent of the impacted habitat so that 100 percent of the new habitat planting is considered a net benefit.</p> <p>Language regarding the CDFW AB 360 mitigation requirements has been added to Section 3.4 (formerly Section 3.3).</p>

Comment ID	Reviewer	Comment	Response
6.b	CDFW	In another paragraph in this section, there should be a statement about the District providing CDFW with a habitat enhancement and mitigation planting and monitoring plan (this can be combined if mitigation will be incorporated into an area adjacent to the enhancement plantings) and CDFW reviewing and approving the plan (s).	No part of the project will serve as mitigation. The project is mitigating for 100 percent of the impacted habitat so that 100 percent of the new habitat planting is considered a net benefit. Language regarding a monitoring and maintenance plan for the habitat enhancement has been added to Section 3.5 (formerly Section 3.4).
6.c	CDFW	As required by the PFA, there should also be a statement that CDFW requires a mitigation establishment period of 1-year and a 3-year maintenance and monitoring period, with quarterly and annual reporting, and that CDFW recommends the same establishment, maintenance and monitoring periods for the enhancement plantings.	No part of the project will serve as mitigation. The project is mitigating for 100 percent of the impacted habitat so that 100 percent of the new habitat planting is considered a net benefit. A new sentence describing the 3-year Performance Period that will be part of a separate PFA has been added to Section 2.2.2.
6.d	CDFW	Lastly, include a statement about success criteria and how the District will meet that criteria for mitigation and enhancement.	A statement regarding success criteria has been added to Section 3.5 (formerly Section 3.4).
7	CDFW	<u>Page 9, Section 3.4 Habitat Benefits, First Paragraph, Second Sentence "The current 60 percent Phase 3 design for Reach 6 includes the creation of 9.1 acres of new habitat consisting of tule marsh, dense willow scrub, upland scrub, and mixed riparian."</u> This sentence should include an estimated acreage for each programmatic habitat type that will be part of the enhancement.	The acreage estimates for new habitat planting have been summarized in a new table in Section 3.5 (formerly Section 3.4).
8	CDFW	<u>Page 12, Section 5, Table 5-1-Estimated Project Costs</u> Mitigation and enhancement maintenance and monitoring should be a budget item with funding allotted for the 3-year maintenance and monitoring.	Pursuant to the 2023 PSP, only the 1-year Establishment Period is funded with the current PFA, and the 3-year Performance Period will be funded through a separate PFA.
9	DWR	<i>A copy of the following documents is needed for formal review and approval:</i>	
9.a	DWR	Environmental Information Form	The environmental information form has been added as Appendix N.
9.b	DWR	AB 360 Program Special Projects Pre Project Information Form	The AB 360 Program Special Projects Pre Project Information Form has been added as Appendix O.
9.c	DWR	CEQA	The EIR and NOD have been added as Appendices F-J.
10	DWR	<i>The following SOW Sections and elements are needed for formal review and approval:</i>	
10.a	DWR	Borrow Material: This section should describe the borrow material, where it is coming from, if it will be tested, and for what it will be used.	A description of the borrow material has been added to Section 2.2.1.
10.b	DWR	Infrastructure Protection: This section should describe how or if the project will affect SMUD, PG&E, poles, pipelines, agreements, or if there are relocation activities planned.	A description of the planned relocation of existing PG&E poles has been added to Section 2.2.1.



Comment ID	Reviewer	Comment	Response
10.c	DWR	Permits Compliance and Monitoring Section: This section should outline how compliance will be achieved i.e., tracking, WEAP training, biological monitoring, cultural resources compliance and coordination with DWR's Tribal Liaison, avoidance and minimization measures, as well as coordination with regulatory agencies.	A brief description of permit compliance and monitoring has been added as Section 3.3 with a reference to the EIR, MMRP, and permits for further details. The EIR, MMRP, and permits have been added as Appendices F-K
10.d	DWR	Deliverables Section: This section should list the required deliverables i.e., AB 360 Post Project Retention Release Form, environmental documents which include CEQA and permits, labor compliance and documentation, Planting Plan and Irrigation Plan, plans/drawings and specifications, bidding and contract documents, Biological Surveys Reports, Monitoring Plan, Project Monitoring Reports, as built drawings and/or final reports, Project Completion Report, and coordination with non DLP DWR personnel for authorization to implement project elements.	A list of deliverables has been added as Section 4.3.
10.e	DWR	QA/QC Section.	A description of QA/QC has been added as Section 4.2.
10.f	DWR	Meeting with the Department and CDFW Section.	Language regarding pre-construction meetings with DWR and CDFW have been added to Section 4.1.
11	DWR	<u>Page 4, Section 2.2, Project Construction Phasing:</u> Please provide a map showing the material staging areas for construction of all three phases.	Construction materials will be delivered to the site and incorporated into the work. The materials will not be staged and/or double-handled.
12	DWR	<u>Pages 4 – 8, Section 2.2, Project Construction Phasing:</u> Please submit to DWR the final set of plans and specifications, once complete, for each of the three phases, as well as geotechnical studies/evaluations for the work to be performed.	Comment noted. The geotechnical reports for the project have been added as Appendices A-B.
13	DWR	<u>Page 7, Section 2.2.1, Flood Protection:</u> Include a brief description of the geometries of the toe berm and the new setback levee. Are they still consistent with the information given in Appendices A and B?	Further description of the toe berm and setback levee have been added to Section 2.2.1 with a reference to the plans in Appendices C-D for further details.
14	DWR	<u>Page 7, Section 2.2.1, Flood Protection, Phase 2 – Setback Levee:</u> Please provide some details on the reconstruction of existing utility crossings. Per Appendix A, there is only one siphon located in Reach 6. Are there any other existing utility crossings in Reach 6?	There is only a single siphon that will need to be reconstructed. A description has been added to Section 2.2.1.
15	DWR	<u>Page 8, Section 2.2.2, Habitat Development:</u> What plans are being developed i.e., grading, planting, restoration? Include a table that shows the estimates of habitat (Riparian Forest, Scrub Shrub, Shaded Riverine Aquatic, Freshwater Marsh) developed by the project.	A description of the plans has been clarified in Section 2.2.2. The acreage estimates for new habitat planting have been summarized in a new table in Section 3.5 (formerly Section 3.4).



Comment ID	Reviewer	Comment	Response
16	DWR	<u>Page 8, Section 2.2.2, Habitat Development:</u> The waterside of the levee will be modified based on five design options. Please list which options will be constructed in Reach 6 and the associated stationing. Are they still consistent with the information given in Appendix C?	The project description in Section 2.2.2 has been updated to clarify the two habitat design options that will be constructed as part of Reach 6 as shown on the Phase 3 plans.
17	DWR	<u>Page 8, Section 2.2.2, Habitat Development:</u> The remnant levee will be degraded and/or regraded. What portions, or approximately how many feet will be degraded?	100 percent.
18	DWR	<u>Page 8, Section 2.2.2, Habitat Development:</u> Planting will occur and be maintained for one year during the Habitat Establishment Period. Maintenance and monitoring require five years for mitigation, and three years for enhancement. Please clarify the number of years planned for monitoring and maintenance.	Pursuant to the 2023 PSP, a 1-year Establishment Period is funded with the current PFA, and the 3-year Performance Period will be funded through a separate PFA.
19	DWR	<u>Page 9, Section 3.1, Environmental Compliance:</u> Include the State Clearinghouse Number for the Environmental Impact Report. Has the Project changed from what was stated in the EIR? If so, are the changes substantial or do the changes result in new or substantial increases in the severity of previously identified effects?	The State Clearinghouse Number is identified on the Notice of Determination and has been added as Appendix J. The project has not changed.
20	DWR	<u>Page 9, Section 3.2, Permitting:</u> Please provide a list of all required permits and state whether they are complete or in progress. Also please submit to DWR all completed permits or provide a hyperlink link to the documents.	Section 3.2 literally includes a bulleted list of all the project permits and states that they have been completed. The permits have been added as Appendix K.
21	DWR	<u>Page 9, Section 3.3, Habitat Impacts:</u> Include a statement about AB 360 habitat and mitigation ratios for direct and indirect impacts. State whether the activities proposed under the PFA are anticipating impacts to existing habitat and describe how these impacts will be addressed. Include a table of estimated habitat impacts and mitigation.	Language regarding the CDFW AB 360 mitigation requirements has been added to Section 3.4 (formerly Section 3.3). The acreage estimates for impacted habitat that are described in Section 3.4 (formerly Section 3.3) have been summarized in a new table.
22	DWR	<u>Page 10, Section 3.3, Habitat Impacts:</u> "...the District will purchase 2.7 acres of credits at a USFWS-approved GGS habitat conservation bank and/or at a DWR- specific compensatory mitigation site on the east side of Twitchell Island at a ratio of 3:1..." Confirm that there are credits available for purchase at a USFWS and CDFW approved conservation bank. Also confirm that you are seeking a CDFW consistency determination or incidental take permit for GGS.	Additional research regarding the availability of credits will be performed upon approval of the SOW when this work is eligible for reimbursement under the PFA.
23	DWR	<u>Page 11, Section 4, Summary of Tasks:</u> "Develop and certify Delta Stewardship Council (DSC) consistency determination." Please ensure that no construction activities will occur prior to completion of the DSC consistency determination.	Comment noted.



Comment ID	Reviewer	Comment	Response
24	DWR	Include a statement regarding the District's plan to enter into a separate agreement to develop and implement a three-year monitoring and maintenance plan pursuant to this project, as mentioned on Page 13, Section 6.	A new sentence describing the 3-year Performance Period that will be part of a separate PFA has been added to Section 2.2.2.
25	DWR	<u>Page 11, Section 4, Summary of Tasks, and Appendix E – Project Schedule:</u> Please include an item for pre-construction meetings with DWR and CDFW.	The project schedule has been updated with pre-construction meeting activities prior to each of the phases of construction.
26	DWR	<u>Page 14, Section 6, and Appendix E – Project Schedule:</u> Please include the three-year monitoring and maintenance period in the schedule.	The 3-year Performance Period is not part of this PFA, and to add it to the project schedule would only needlessly shrink the activities that are relevant to the PFA.
27	DWR	<u>Appendix D – Project Cost Estimate Breakdown:</u> Please mention the estimated cost for the three-year monitoring and maintenance period.	The 3-year Performance Period is not part of this PFA and will be funded through a separate PFA at a subsequent date.
28	DWR	The project footprint encroaches on property owned by DWR that was purchased with State Water Project Funds. Therefore, this project will require additional DWR reviews, oversight of implementation, and environmental compliance assurances. It is the District's responsibility to coordinate with the appropriate DWR staff regarding associated project activities.	Comment noted.

Enclosed is the updated Scope of Work for your further review. Please let us know if you have any questions, need further clarification, or have any further comments. I can be reached at (209) 946-0268 or eamlaas@ksninc.com.

Sincerely,
KJELDSSEN, SINNOCK & NEUDECK, INC.

Erik Almaas, P.E.
Project Manager

w/enclosure

EXHIBIT C



Work Change Directive

PROJECT: RD 1601 Twitchell Island Pump Station Solar Array DATE: 01-15-2024

CONTRACTOR: Panelized Structures, Inc. PROJECT NO: 1110-0950

SUBJECT: Additional Grade Stabilization at Northwest corner of Array Pad WCD NO: 004

PURSUANT TO GENERAL CONDITION 4-5 OF THE CONTRACT DOCUMENTS, CONTRACTOR IS DIRECTED TO PROCEED PROMPTLY WITH THE FOLLOWING CHANGE(S):

Provide all labor, equipment, and materials necessary to provide and install 12-inch minus quarry stone over district provided geogrid to stabilize sub-grade for construction operations at the Northwest corner of the array pad as shown on the attached exhibit and as directed by the district.

Withdraw WCD 002 – Sub Grade Stabilization valued at \$13,000.00.

METHOD OF PAYMENT:

Unit price for material hauled and placed at \$112.70/Ton. Not to exceed \$90,160.00 (800 Ton).

ADJUSTMENT OF TIME:

The work is not associated with the critical path of construction. No Change in contract time associated with this Work Change Directive.

Issued by:

Sean Pritchard, CCM
Project Manager
Kjeldsen, Sinnock, & Neudeck, Inc.

Acknowledged by:

Tim Pfisterer
Project Manager
Panelized Structures, Inc.

CONTRACT CHANGE ORDER

Change Requested by:

Engineer

Contractor

CCO No. 2

REV. NO. 0

SUPPLEMENT NO. 0

PROJECT NAME: RD 1601 - Pump Station Solar Array	DATE: 1/16/2025
PROJECT NO.: 1110-0950	FEDERAL PROJECT NO.: n/a
TO: Panelized Structures, Inc.	
You are hereby directed to make the herein described changes from the plans and specification or do the following described work not included in the plans and specifications on this contract.	
NOTE: This change order is not effective until approved by Reclamation District 1601.	

CONSTRUCTION

CHANGE

DIRECTIVE NO.

DESCRIPTION

PAYMENT METHOD

ESTIMATED AMOUNT

TIME (Days)

DIRECTIVE NO.	DESCRIPTION	PAYMENT METHOD	ESTIMATED AMOUNT	TIME (Days)
2	Grade Stabilization	Lump Sum	\$13,000.00	0
3	Drainage Ditch Crossing	Force	\$12,000.00	0
4	Array pad stabilization	Unit Cost	\$77,160.00	0


TOTAL INCREASE CCO NO. 1 :

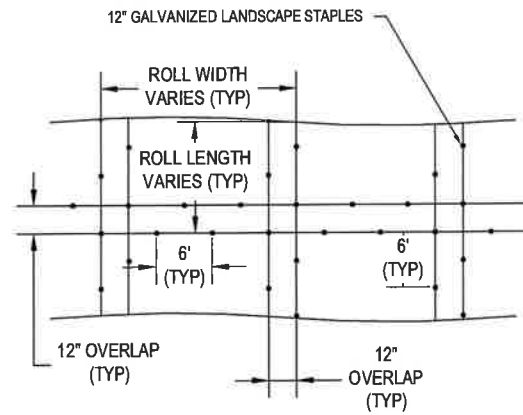
\$102,160.00

By reason of the above changes, a working day extension will be allowed of:

0 Days

We, the undersigned contractor, have given careful consideration to the change proposed and hereby agree, if this proposal is approved, that we will provide all equipment, furnish all materials, except as may otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefore the prices shown above.

(1) SUBMITTED: PROJECT MANAGER		
 SIGNATURE	SEAN PRITCHARD CONSTRUCTION MANAGER, KSN, INC. (PRINT NAME & TITLE)	1/16/2025 DATE
(2) ACCEPTED BY CONTRACTOR		
SIGNATURE	TIM PHISTERER PROJECT MANAGER, PS, INC. (PRINT NAME & TITLE)	DATE
(3) APPROVED: Reclamation District 1601		
SIGNATURE	BARRY SGARRELLA PRESIDENT, RD 1601 (PRINT NAME & TITLE)	DATE



- NOTES:
1. GEOTEXTILE FABRIC MAY ALSO BE INSTALLED USING A SEWING PROCEDURE.
 2. FABRIC OVERLAPS ARE NOT ACCOUNTED FOR IN THE CONTRACT QUANTITIES AND ARE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE.

1 GEOTEXTILE FABRIC INSTALLATION DETAIL
N.T.S.

1 PLACE (N) MIRAFI HP370 OR APPROVED EQUAL GEOTEXTILE FABRIC PER DETAIL UNDER 3/4" AB

PILE NUMBER	NORTHING	EASTING
1	1797726.2115	6661664.9900
2	1797726.2115	6661698.9900
3	1797726.2115	6661732.9900
4	1797726.2115	6661766.9900
5	1797661.1918	6661664.9900
6	1797661.1918	6661698.9900
7	1797661.1918	6661732.9900
8	1797661.1918	6661766.9900
9	1797596.1721	6661664.9900
10	1797596.1721	6661698.9900
11	1797596.1721	6661732.9900
12	1797596.1721	6661766.9900
13	1797531.1524	6661664.9900
14	1797531.1524	6661698.9900
15	1797531.1524	6661732.9900
16	1797531.1524	6661766.9900

SITE PREPARATION FOR SOLAR ARRAY INSTALLATION:

1. CLEARING AND GRUBBING: REMOVE ALL VEGETATION, ROOTS, AND DEBRIS FROM PROJECT AREA.
2. SUBGRADE MOISTURE CONDITIONING: MOISTURE CONDITION AND ADJUST SOIL MOISTURE LEVELS AS NECESSARY TO FACILITATE OPTIMAL COMPACTION CONDITIONS.
3. SUBGRADE COMPACTION: COMPACT THE SUBGRADE TO MINIMUM 86% RELATIVE COMPACTION.
4. ALL-WEATHER SURFACING: CONSTRUCT A 6-INCH THICK LAYER OF NEW 3/4-INCH CLASS 2 AGGREGATE BASE MATERIAL OVER ENTIRE PROJECT AREA. COMPACT TO MINIMUM 90% RELATIVE COMPACTION.

FILE SPEC: P:\1110_Twitchell_Island\0950_Pump_Station_Solar_Array\08_Civil\400_Plans\020_CAD_Sheets\C-102.dwg
PLOT DATE: Sep 17, 2024 - 1:31 pm



SUBMITTAL	
%	Date



NO.	DESCRIPTION	DATE	APPR.

DESIGN BY	JAM
DRAWN BY	DAV
CHECK BY	JAM
HORIZONTAL DATUM	CCS83, ZONE 2
VERTICAL DATUM	NAVD88

DRAWING SCALE	1" = 20'
ORIGINAL DRAWING SCALE	0 1/2" 1"



711 N Pershing Avenue
Stockton, CA 95203
209-946-0268
1550 Harbor Drive, Suite 212
West Sacramento, CA 95691
916-403-5900

RECLAMATION DISTRICT 1601
TWITCHELL ISLAND; SACRAMENTO COUNTY
1590 TWITCHELL ISLAND FERRY RD, RIO VISTA, CA 94571
**PUMP STATION SOLAR ARRAY
FOOTING DETAILED PLAN VIEW**

DATE
SEPT 2024
SHEET IDENTIFICATION
C-102
SHEET 05 OF 05
KSN PROJECT FILE NO.
1110 - 0950

EXHIBIT D

Work Change Directive

PROJECT: RD 1601 Twitchell Island Pump Station Solar Array DATE: 01-15-2024

CONTRACTOR: Panelized Structures, Inc. PROJECT NO: 1110-0950

SUBJECT: Culvert Extension WCD NO: 003

PURSUANT TO GENERAL CONDITION 4-5 OF THE CONTRACT DOCUMENTS, CONTRACTOR IS DIRECTED TO PROCEED PROMPTLY WITH THE FOLLOWING CHANGE(S):

Provide all labor, equipment, and materials necessary to:

- Provide and install 16" diameter x 20' x 3/8" wall welded steel pipe to extend existing pipe.
- Load and Move district provided fill material from source on district.
- Place and compact fill materials at crossing to increase width of crossing approximately 15'.

METHOD OF PAYMENT:

Extra Work at Force Account not to exceed \$12,000.00.

ADJUSTMENT OF TIME:

The work is not associated with the critical path of construction. No Change in contract time associated with this Work Change Directive.

Issued by:



Sean Pritchard, CCM
Project Manager
Kjeldsen, Sinnock, & Neudeck, Inc.

Acknowledged by:



Tim Pfisterer
Project Manager
Panelized Structures, Inc.

CONTRACT CHANGE ORDER

Change Requested by: Engineer Contractor

CCO No. 2

REV. NO. 0

SUPPLEMENT NO. 0

PROJECT NAME: RD 1601 - Pump Station Solar Array	DATE: 1/16/2025
PROJECT NO.: 1110-0950	FEDERAL PROJECT NO.: n/a
TO: Panelized Structures, Inc.	
You are hereby directed to make the herein described changes from the plans and specification or do the following described work not included in the plans and specifications on this contract.	
NOTE: This change order is not effective until approved by Reclamation District 1601.	

CONSTRUCTION
CHANGE
DIRECTIVE NO.

DESCRIPTION

PAYMENT METHOD

ESTIMATED AMOUNT

TIME (Days)

DIRECTIVE NO.	DESCRIPTION	PAYMENT METHOD	ESTIMATED AMOUNT	TIME (Days)
2	Grade Stabilization	Lump Sum	\$13,000.00	0
3	Drainage Ditch Crossing	Force	\$12,000.00	0
4	Array pad stabilization	Unit Cost	\$77,160.00	0

TOTAL INCREASE CCO NO. 1 : \$102,160.00

By reason of the above changes, a working day extension will be allowed of: 0 Days

We, the undersigned contractor, have given careful consideration to the change proposed and hereby agree, if this proposal is approved, that we will provide all equipment, furnish all materials, except as may otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefore the prices shown above.


(1) SUBMITTED: PROJECT MANAGER		
 SIGNATURE	SEAN PRITCHARD CONSTRUCTION MANAGER, KSN, INC. (PRINT NAME & TITLE)	1/16/2025 DATE
(2) ACCEPTED BY CONTRACTOR		
SIGNATURE	TIM PHISTERER PROJECT MANAGER, PS, INC. (PRINT NAME & TITLE)	DATE
(3) APPROVED: Reclamation District 1601		
SIGNATURE	BARRY SGARRELLA PRESIDENT, RD 1601 (PRINT NAME & TITLE)	DATE

EXHIBIT E

Central Valley Flood Protection Board Meeting
January 24, 2024

INFORMATIONAL BRIEFING

8B. Reclamation District (RD) 1601 - Twitchell Island Levee System
Presentation of United States Army Corps of Engineers Levee Inspection Results

BRIEFING SUMMARY

Background

The United States Army Corps of Engineers (USACE) performed an inspection in May 2024 (previously inspected in 2014) for Reclamation District (RD) 1601 - Twitchell Island levee system (National Levee Database (NLD) 5205000951).

This levee system consists of approximately 11.9 miles of levees maintained by RD 1601 - Twitchell Island, of which 2.4 miles are federal project levees covered by this inspection. The levee system is bounded on the north by Sevenmile Slough; on the south and east by the San Joaquin River; and on the west by Threemile Slough in Sacramento County, California (**Figure 1**). Central Valley Flood Protection Board (Board) staff received the final inspection report on November 8, 2024, and has provided an electronic copy of the report to RD 1601.

An electronic copy of the report can be retrieved at the following link:

<https://cadwr.box.com/s/40bwyfdoa3pyxnwxywq07qqopnjko8pe>

Inspection Findings

The levee system consists of three levee segments, one of which is federal. The system does not have an approved Letter of Intent (LOI); however, the system remains ACTIVE in the Public Law (PL) 84-99 Rehabilitation Program (RP) because it does not have any unacceptable observations expected to have a Negative Impact on Performance (NIOP). The inspection results are summarized in USACE's report card (**Figure 2**). Below is a summary of the unacceptable ratings for the federal levee segment. Where applicable, changes from the 2014 inspection results are noted.

The RD 1601 – Twitchell (TWIT) levee segment (NLD 5204000951) is 2.4 miles long and did not receive any unacceptable NIOP ratings.

This segment has improved since the 2014 inspection in flood preparedness and training, slope stability, erosion/bank caving, and depressions/rutting.

Staff's Analysis

The Twitchell Island levee system plays a role in protecting a portion of Sacramento County, including 25 buildings and agricultural lands, from flooding from the adjacent rivers and sloughs. There are no "critical structures" behind this levee; however, without this levee, over 100 people and property valued in millions of dollars, would be at an increased level of risk. (Information from the NLD)

USACE's inspection report identified a total of nine unacceptable observations. All the unacceptable observations were rated as unlikely to negatively impact performance during the next flood event. A Report Card Comparison showing the improvement between two inspections is shown in **Figure 3**. The nine unacceptable observations are summarized below and shown in **Figure 4**.

9 Unacceptable Observations:

- 3 – Vegetation Growth
- 4 – Encroachments
 - 2 – irrigation pipe facilities
 - 1 – piezometer
 - 1 – fallen tree
- 2 – Settlement areas

Description of Observations

Each of the three vegetation growth observations had vegetation inhibiting inspection. Two were on the landside and one was on the waterside.

Three irrigation pipes have no video inspection and no waterside closure. One pipe has an Automatic Board Order (ABO) permit without USACEs permission letter, one pipe is permitted, and the last pipe does not have a permit. The unacceptable piezometer riser is going to be removed by the RD. There is also an unacceptable fallen tree on the waterside.

Two settlement areas were identified. One was approximately 0.5 to 1.0 feet in depth and is approximately 150 feet in length. The other is approximately 0.5 to 1.0 feet in depth and is approximately 200 feet in depth.

Figure 1 - Vicinity Map

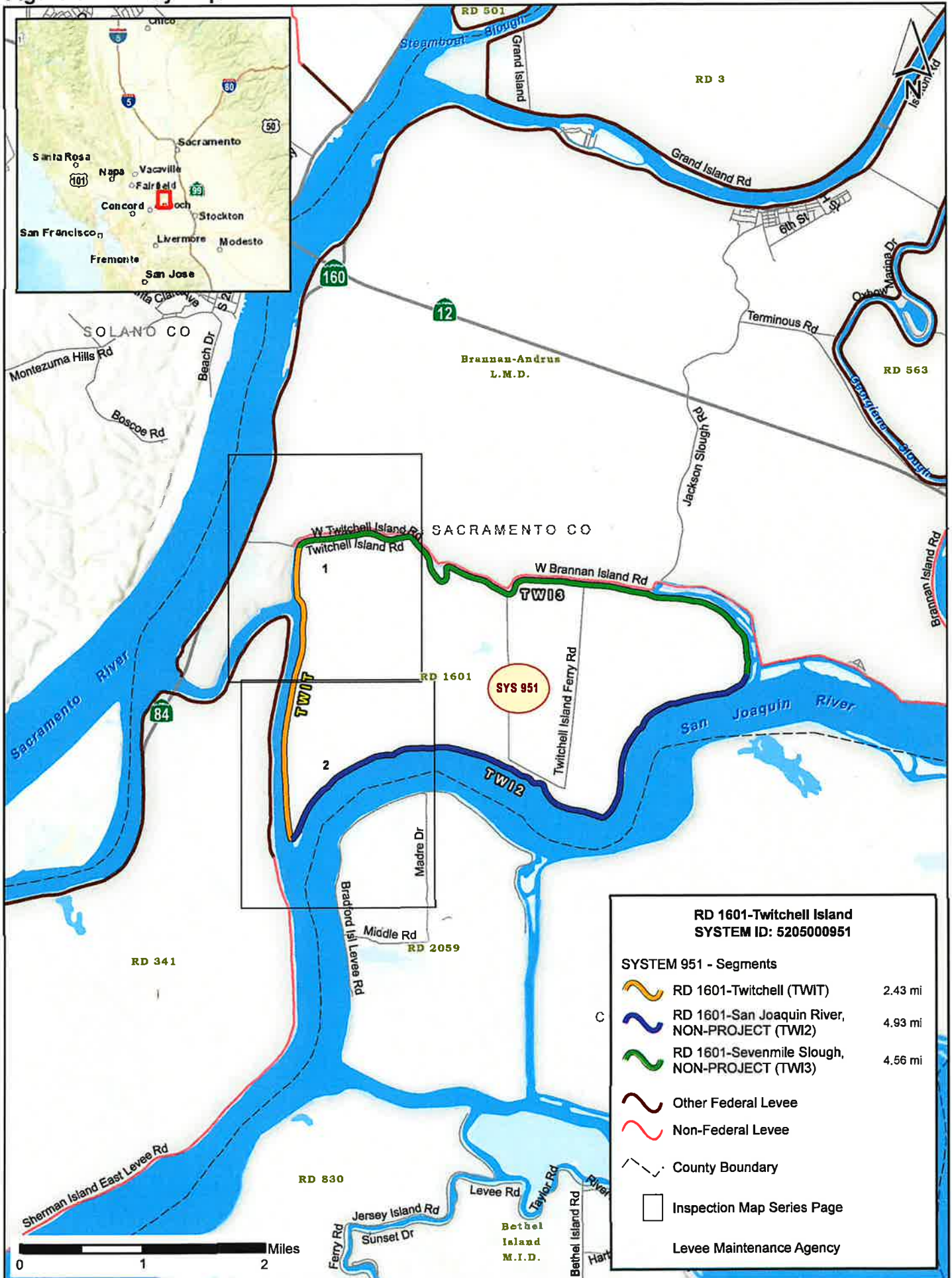


Figure 2 Final USACE Inspection Report Card. This system was inspected and remains ACTIVE in PL 84-99.

Levee System Report Card RD 1601 - Twitchell Island		RD 1601 - Twitchell (TWT)																		
General	Operations and Maintenance Manuals	A																		
	Emergency Supplies and Equipment	A																		
Levee - Items Affecting PL 84-99 RP Eligibility	Flood Preparedness and Training	A																		
	Encroachments	M*																		
	Closure Structures	NA																		
	Slope Stability	A																		
	Erosion/Bank Caving	A																		
	Animal Control	A																		
	Culverts/Discharge Pipes	NA																		
	Underseepage Relief Wells/Toe Drainage Systems	NA																		
	Vegetation Growth	M*																		
	Sod Cover	NA																		
Levee Embankments - Other Items Affecting PL 84-99 RP Eligibility	Settlement	M*																		
	Depressions/Rutting	A																		
	Cracking	A																		
	Riprap Revetments & Bank Protection	M																		
	Revetments other than Riprap	NA																		
	Seepage	A																		
Legend		A	Acceptable																	
		M	Minimally Acceptable																	
		U	Unacceptable																	
		NA	Not Applicable																	
		RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)																	
		M*	Includes observations rated "Unacceptable" but are not currently expected to have a negative impact on performance																	
		U	Includes observations rated "Unacceptable" that are expected to have a negative impact on performance (NIOP) / Inactive																	

Figure 3. Report Card Comparison.

RD 1601 - Twitchell Island Comparison from 2014 to 2024 USACE Inspection		RD 1601 - Twitchell (TWT)	
General	Operations and Maintenance Manuals	A	
	Emergency Supplies and Equipment	A	
Levee - Items Affecting PL 84-99 RP Eligibility	Flood Preparedness and Training	A	
	Encroachments	M*	
	Closure Structures	NA	
	Slope Stability	A	
	Erosion/Bank Caving	A	
	Animal Control	A	
	Culverts/Discharge Pipes	NA	
	Underseepage Relief Wells/Toe Drainage Systems	NA	
	Vegetation Growth	M*	
	Sod Cover	NA	
Levee Embankments - Other Items	Settlement	M*	
	Depressions/Rutting	A	
	Cracking	A	
	Riprap Revetments & Bank Protection	M	
	Revetments other than Riprap	NA	
	Seepage	A	

Legend

Improved

A Acceptable

M Minimally Acceptable

M* Includes Unacceptable not likely to prevent performance

U Unacceptable

NA Not Applicable



ID: 2024-10067

Photo 1: Vegetation Growth - Dense vegetation including grasses and weeds up to 3 feet tall along waterside slope. Inhibits inspection.



ID: 2024-0058 (2014-0068)

Photo 2: Settlement - Approximately 0.5- to 1-foot dip in levee crown elevation. Extends approximately 200-feet.



ID: 2024-10069

Photo 3: Encroachment - 2-inch diameter PVC pipe for piezometer well at landside hinge. PVC pipe extends 5-feet above ground.



ID: 2024-0009 (2014-0012)

Photo 4: Encroachment – Landside view of two metal siphon irrigation pipes crossing 2-feet under levee crown. No waterside closure.



CENTRAL VALLEY FLOOD PROTECTION BOARD

Figure 4 – Unacceptable Observation Exhibit

Source: USACE Final Inspection Report, 2024

Photos 1-4

Item 8B – RD 1601 - Twitchell Island Levee System

RD 1601 - TWITCHHELL ISLAND

Presentation to the CVFPB

Emily K. Greene
Inspection Section

Jeremiah Peek
CVFPB Water Resources Engineer
Deferred Encroachment Compliance Section

USACE | Sacramento District
December 13, 2024

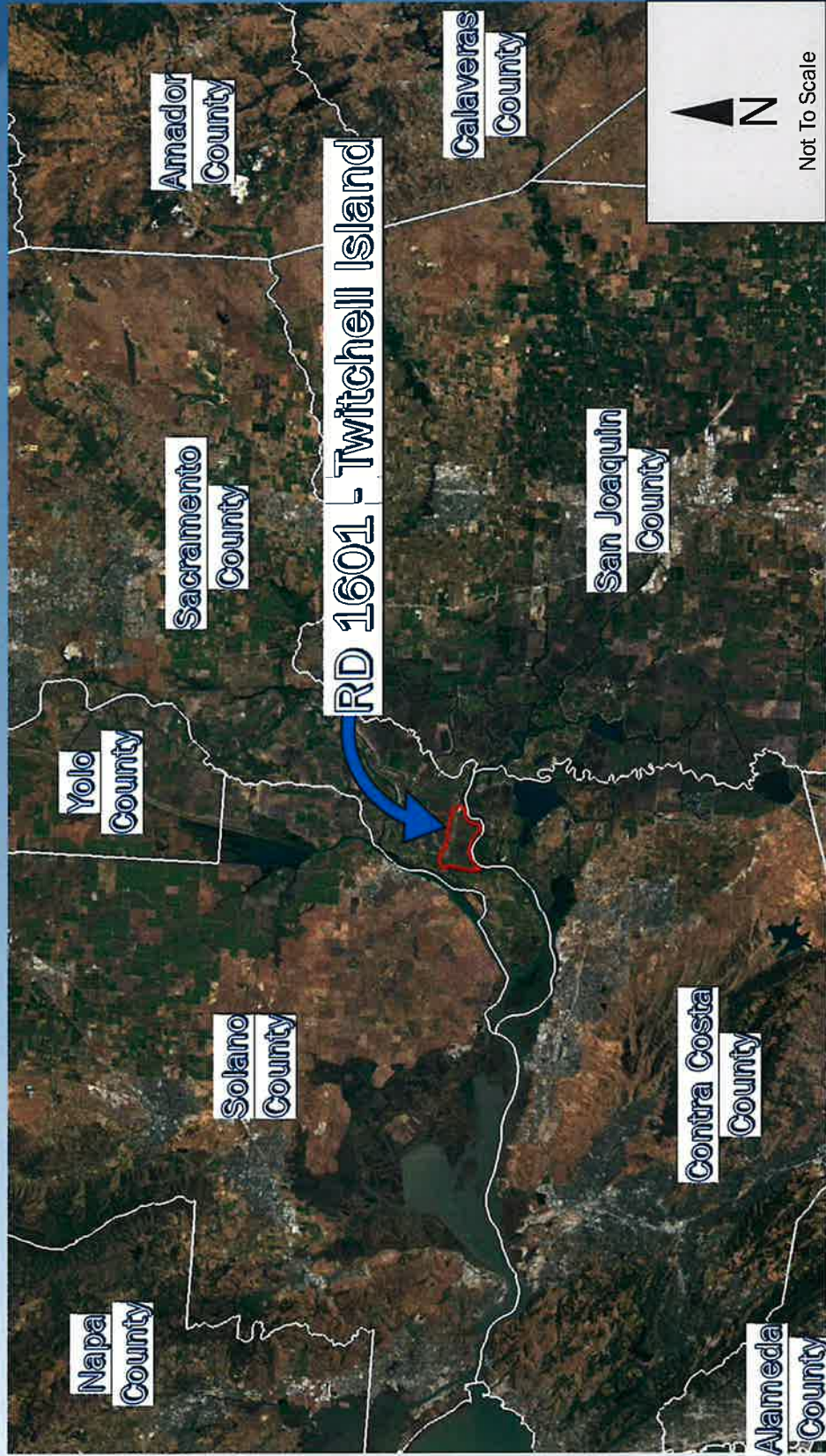


U.S. ARMY



US Army Corps
of Engineers







U.S. ARMY

SYSTEM MAP

Sacramento County, California

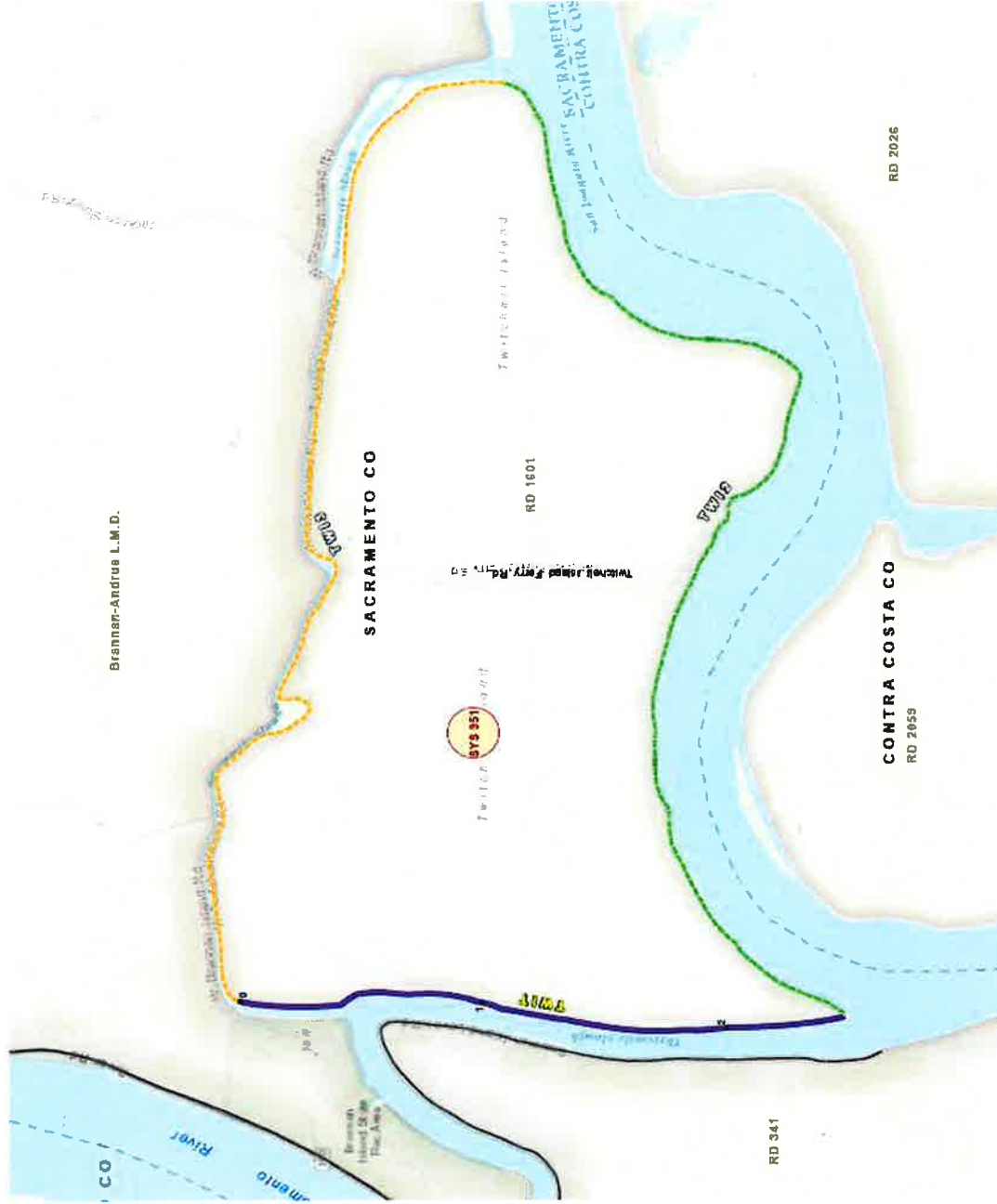
Map Legend

- NLD Segments - SYSTEM 951
- RD 1601 - Twitchell (TW1T) 2.426 mi
- RD 1601 - San Joaquin River, NONFED (TW12) 4.933 mi
- RD 1601 - Sevenmile Slough, NONFED (TW13) 4.561 mi

- Other Federal Levees
- Other Non-Federal Levees or Embankment
- Levee Agency
- Levee Mile*

*Mileage obtained from DWR levee inspection resources

Length Inspected: 2.42 Miles





1

RD 1601 - Twitchell



2

RD 1601 - Twitchell



3

RD 1601 - Twitchell



4

RD 1601 - Twitchell



RD 1601 - Twitchell Island Comparison from 2014 to 2024 USACE Inspection		RD 1601 - Twitchell (TWI)	
General	Operations and Maintenance Manuals	A	
	Emergency Supplies and Equipment	A	
Level - Items Affecting Eligibility PL 84-99 RP	Flood Preparedness and Training	A	
	Encroachments	M*	
	Closure Structures	NA	
	Slope Stability	A	
	Erosion/Bank Caving	A	
	Animal Control	A	
	Culverts/Discharge Pipes	NA	
	Underseepage Relief Wells/Toe Drainage Systems	NA	
	Vegetation Growth	M*	
	Sod Cover	NA	
Levee Embankments - Other Items	Settlement	M*	
	Depressions/Rutting	A	
	Cracking	A	
	Riprap Revetments & Bank Protection	M	
	Revetments other than Riprap	NA	
Seepage	A		

Legend

Improved

Acceptable

Minimally Acceptable

Includes Unacceptable not likely

to prevent performance

Unacceptable

Not Applicable

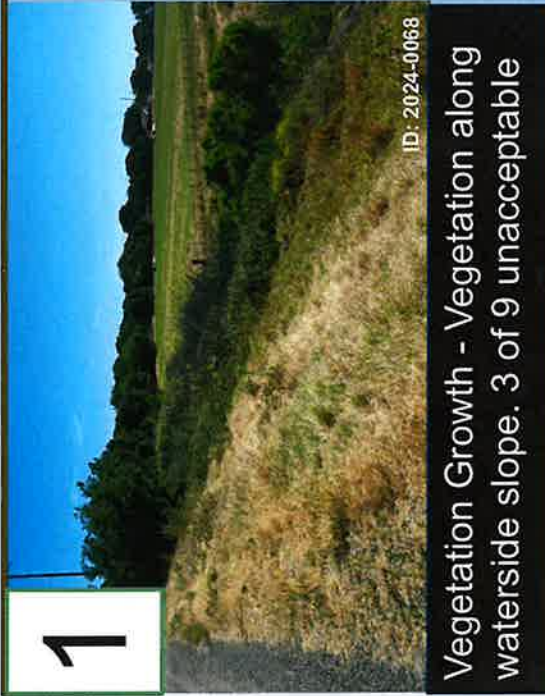
A

M

M*

U

NA





Thank you



Systems without Approved LOI (U-red & M-yellow)

Legend		
A	Acceptable	
M	Minimally Acceptable	
U	Unacceptable	
NA	Not Applicable	
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)	

*Includes Unacceptable conditions not likely to prevent performance in next flood event. Also includes Unacceptable conditions that have not been corrected within the established time frame (shown in pink within the inspection reports).

Likely prevents performance in next flood event / Inactive

Systems with Approved LOI (U-orange & U-purple)

Legend		
A	Acceptable	
M	Minimally Acceptable	
U	Unacceptable	
NA	Not Applicable	
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)	

Unacceptable observations not likely to prevent performance in next flood event.

Likely prevents performance in next flood event.