MBK ENGINEERS

Water Resources • Flood Control • Water Rights

MEMORANDUM

August 16, 2023

TO: Reclamation District No. 2028

FROM: Nathan Hershey

SUBJECT: **August 2023 Engineer's Report**

Described below are the engineering items to be discussed at your August 16, 2023 meeting.

Subventions 2021-22 – The District submitted an application for participation in the Program in the amount of $541,000. An additional $2 million was approved by the Central Valley Flood Protection Board, for a total of $12 million approved for the Program for FY 2021-22. A final claim was submitted in the amount of $275,410.71. Reimbursement was received in the amount of $193,304.00.

Subventions 2022-23 – The District submitted an application for participation in the Program in the amount of $541,000. A total of $12.5 million has been approved by the Central Valley Flood Protection Board for the Program for FY 2022-23.

Subventions 2023-24 – The District submitted an application for participation in the Program in the amount of $541,000. A total of $13 million has been approved by the Central Valley Flood Protection Board for the Program for FY 2023-24.

Annual Maintenance – Attached are the current maintenance items we are tracking.

FEMA – MBK continues to coordinate with FEMA and is in the process of compiling documentation supporting the claim. Once all documentation has been provided, FEMA will submit the project to their management for review.

Special Projects – The enhancement component of the Old River multi-benefit levee rehabilitation project (BN-15-1-SP) is in-progress. Maintenance activities will be on-going to promote plant health and longevity.

Teichert Construction has nearly completed fill placement on the north toe berm and has begun placing fill along the south toe berm. Construction along a 1,200 LF portion of the north toe berm was halted due to the presence of consolidation water. The geotechnical engineer recommended letting that area settle for 2-3 months before placing any additional fill. The contractor has stockpiled enough fill adjacent to the north borrow site to complete the north toe berm once the south toe berm is complete, likely in November. This will allow the contractor to pull the dewatering pumps in the north borrow site. Haul roads are being continuously maintained and watered to limit dust near the corn. Coordination with Stillwater and CDFW is ongoing to ensure environmental requirements are being met.

SB 88 – MBK has obtained the quotes for the equipment required at the 51 remaining sites. MWD is in the process of finalizing the purchase of the equipment this month. These flow meters will be installed over the next two years due to the number of sites and levee projects that begin in 2023. MBK created an installation

schedule that should not interfere with the levee projects. In addition, MBK will supervise the levee work at sites with existing measurement equipment to ensure no damage occurs to these devices.

MWD and the RDs are in compliance for calendar year 2023 under an approved extension of time. The extension was approved by the Delta Watermaster on January 13th, 2022 and will expire on January 1st, 2024. The extension of time included a Plan for Compliance which provides details regarding the methods to estimate diversions on siphons without flow meters and provides a measurement equipment installation schedule. MWD currently anticipates that installing all the flow meters will take five years. Therefore, MBK has provided cost estimates for flange magnetic meters with telemetry equipment installed on the water side of all active siphons.

Development of the Delta-wide ACP by the Delta Measurement Experiment Consortium to utilize Open ET for measuring and reporting diversions continues. Place of use polygons for each island have been completed and will be used in conjunction with Open ET to report on diversions. MBK and MWD continue to participate in the Consortium.

RD 2028 – Bacon Island

Issue Tracking Summary

August 11, 2023

Issue ID	Priority	Report Date	Reporter	Location	Issue Type	Description	Action	Field Notes
006	Medium	October 20, 2016 5:00 PM	Ralph Heringer	Station 275 @ Pump Station	Broken Equipment	Trash racks in need of maintenance/repair	Investigate	TBD
036	Low	February 23, 2017 5:00 PM	Nate Hershey	Station 712	Seepage	Seepage exiting at toe of slope near retaining wall structure.	Monitor	12/4/17 - Area dried up after winter; continue to monitor
043	Medium	April 3, 2017 5:00 PM	Brian Janowiak	Station 92-93	Seepage	Seepage existing at toe of slope, running across county road		
073	Medium	October 20, 2016 5:00 PM	Ralph Heringer	Station 465 @ Pump Station	Broken Equipment	Trash racks in need of maintenance/repair	Investigate	TBD
084	Medium	April 4, 2019 12:00 AM	Russ Ryan	95+00	Boil	Lower tide now and I think the roadway pothole (boil ??) needs repair at some point. I know it's a county road. We'll have to figure since once the (what I'm assuming) is a leak of repaired then the road will need to also be repaired.	Repair	
095	Medium	December 12, 2019 2:23 PM	Andy Reece	siphon north of Mel's	Rodent Activity	possible beaver den under tree south of siphon	Investigate	
100	Medium	September 17, 2020 4:32 PM	Nate Hershey	Station 102	Sloughing	Waterside slope is sloughing. Starting to encroach into the county road.	Repair	
101	Medium	September 17, 2020 4:25 PM	Nate Hershey	Station 704	Erosion	Field verified erosion site detected by drone footage. Site is approximately 100 feet long, adjacent to willows and vegetation is covering steep slopes.	Repair	
101.1		January 8, 2021 1:00 AM	Nate Hershey					Site is in future Special Projects work area. Recommend monitoring and repairing during levee rehabilitation project.
102	Medium	May 5, 2021 11:13 AM	Dave Forkel	Sta 107+19	Erosion	Erosion at toe of levee at siphon discharge.	Repair	Dino and Son to fill erosion site
103	Medium	May 5, 2021 11:22 AM	Dave Forkel	Sta 175+15	Erosion	Erosion at toe of levee at siphon discharge.	Repair	Dino and Son to fill erosion site
104	Low	May 5, 2021 11:23 AM	Dave Forkel	Junior's House	Sloughing	Rock placed at waterside of new fill settling.	Monitor	
105	Medium	August 20, 2021 3:23 PM	Nate Hershey	Station 694	Sinkhole	Three voids discovered near utilities and in the existing toe berm. Recommend	Repair	

						collapsing and compacting when feasible.		
106	Medium	November 4, 2021 4:43 PM	Dave Forkel	Sta 170+00	Seepage	Seepage at toe of levee.	Monitor	
107	Medium	December 15, 2022 4:44 PM	Dave Forkel	Sta 704+00	Erosion	Levee experienced minor waterside erosion during last weeks storm.	Repair	District forces to repair.
108	Medium	January 10, 2023 10:33 AM	Michael Nishimura	13+50 waterside hinge on road	Sinkhole, Other	6” diameter sink hole on ws road hinge. Probed for 5’ deep going towards the water. Identical size hole on landside road hinge just across crown, probed about 2.5’ into levee crest. The landside has multiple animal burrows 7” to 1’ diameter in size. Probed 5’ feet into levee towards levee center. Ground is very soft on landside slope and steep. Approximately 1.5:1 to 2:1 slope. There is a bulge at the lower landside toe. It appears either a low spot is ponding or potential seepage is occurring on the landside toe for approximately 150’ adjacent to rodent activity and sinkholes.	Repair	
109	Medium	January 10, 2023 11:02 AM	Michael Nishimura	13+50 landside toe	Seepage	Potential sheet flow Seepage at landside toe. Adjective to levee with several large rodent holes. Approximately 150-200’ total site length.	Monitor	
110	Medium	January 10, 2023 11:24 AM	Michael Nishimura	43+50 to 43+00	Rodent Activity, Sloughing	Sloughing on waterside slope. Top of slough is at the waterside hinge. Signs of rodent activity is observed on waterside slope. Length of slough is approximately 50’.	Monitor	
111	Medium	January 10, 2023 11:42 AM	Michael Nishimura	98+90 to	Erosion, Sloughing	Sloughing of ws slope. In the adjacent areas the slope is steep as well and it starts right at the water side hinge. This sloughing is occurring in a thick patch of ws slope and is still approximately in the same condition as it’s adjacent slopes. Grading could help further damage from surface runoff.	Monitor	
112	Medium	January 10, 2023 11:48 AM	Michael Nishimura	102+80 to 103+25 waterside slope	Erosion	45’ of erosion on waterside slope. Appears that erosion is caused from surface runoff.	Monitor	

						Erosion is starting to Undercut road.		
113	Medium	January 10, 2023 12:10 PM	Michael Nishimura	203+50 to 204+25 waterside slope	Erosion, Sloughing	Erosion and sloughing 75’ on waterside slope. Scarping mid slope. Likely caused by oversteepened slope and surface run off.	Monitor	
114	Medium	January 10, 2023 12:57 PM	Michael Nishimura	666+15 to 666+90 waterside slope	Erosion, Sloughing	Erosion on waterside slope. Top of erosion is at mid slope. Water side slope is approximately 8’ slope distance from waterside hinge to waters edge. 75’ length. Rodent holes observed on waterside hinge/slope	Monitor	
115	Medium	January 10, 2023 1:15 PM	Michael Nishimura	671+10 to 674+50	Erosion, Sloughing	Erosion and sloughing broken up sites within stations listed above. Gaps are approximately 10-20’ before erosion picks up again. Cracks and rodent holes observed on waterside hinge. Water side slope is very soft. (Approximately 275 feet total erosion is estimated to be within stationing provided above)	Monitor	
116	Medium	January 10, 2023 1:33 PM	Michael Nishimura	681+80 to 685+10	Erosion, Sloughing	Vertical erosion, sloughing and waterside hinge cracking. The majority of this section has a steepened waterside slope. Cracking is on the waterside hinge and the slope is sloughing into the water. Rodent holes observed on the ws hinge.	Monitor	
117	Medium	January 10, 2023 1:49 PM	Michael Nishimura	692+40	Erosion	Erosion washing out around eucalyptus tree. Top of erosion is a foot below waterside hinge. Scour are length is about 20’. Another erosion similar exist near the next tree about 40’ up station.	Monitor	
118	Medium	February 20, 2023 11:46 AM	Dave Forkel	Sta 695+00	Seepage	Seepage at toe of levee	Monitor	
119	Low	May 31, 2023 6:38 PM	Dave Forkel	Sta 756+00	Crack	Mel reported crack and sloughing of riprap just south of bridge.	Monitor	Not much obvious sloughing.