MBK ENGINEERS

Water Resources • Flood Control • Water Rights

MEMORANDUM

January 18, 2023

TO: Reclamation District No. 2028

FROM: Nathan Hershey

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

Described below are the engineering items to be discussed at your January 18, 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.

Subventions 2022-23 – The District submitted an application for participation in the Program in the amount of $541,000. $12 million was approved by the Central Valley Flood Protection Board for the Program for FY 2022-23.

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

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.

Bids were opened for the north and south levee rehabilitation project (BN-19-1-SP) on January 13, 2023. We are evaluating bids and will report results to the District at the meeting.

Five Year Plan – Work on the Five-Year Plan is currently in progress. DWR has extended the expiration date of the funding agreements to March 31, 2023. We are working to address DWR's comments and finalize the Plan.

SB 88 – Work under Phase 4 of the measurement experiment is complete. All phase 4 meters have been installed and have been certified by MBK Engineers. Data is now being collected at 38 sites across all four islands.

Of all 25 meters installed, only one (Holland Tract Siphon No. 1) was unable to be properly programmed and connected to the Wildeye telemetry system. MBK is still investigating this issue with the flow meter manufacturer (McCrometer).

Flow meters for the remaining siphons will be installed over the next two years. MBK is obtaining quotes for the equipment required at the approximately 50 remaining sites. In addition, MBK is identifying any sites that need to be tested for asbestos or tar coating. MBK and MWD will work with Bovee Environmental Management to test sites that are suspected to contain asbestos or a tar coating on the pipe exterior. Any sites that test positive for these hazardous materials will be abated by W.C. Maloney prior to any flow meter installation.

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.

Reclamation District No. 2028 Bacon Island

Issue Tracking Summary

1/16/2023

IssueID	Priority	Report Date	Reporter	Location	Issue Type	Description	Action	Field Notes
6	Medium	10/21/2016	Ralph Heringer	Station 275 @ Pump Station	Broken Equipment	Trash racks in need of maintenance/repair	Investigate	TBD
36	Low	2/24/2017	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
43	Medium	4/4/2017	Brian Janowiak	Station 92-93	Seepage	Seepage existing at toe of slope, running across county road		
73	Medium	10/21/2016	Ralph Heringer	Station 465 @ Pump Station	Broken Equipment	Trash racks in need of maintenance/repair	Investigate	TBD
84	Medium	4/4/2019	RussRyan	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	
95	Medium	12/12/2019	AndyReece	siphon north of Mel's	RodentActivity	possible beaver den under tree south of siphon	Investigate	
100	Medium	9/17/2020	NateHershey	Station 102	Sloughing	Waterside slope is sloughing. Starting to encroach into the county road.	Repair	
101	Medium	9/17/2020	NateHershey	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	

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101.1	Medium	1/8/2021	NateHershey	Station 704	Erosion	Site is in future Special Projects work area. Recommend monitoring and repairing during levee rehabilitation project.		
102	Medium	5/5/2021	DaveForkel	Sta 107+19	Erosion	Erosion at toe of levee at siphon discharge.	Repair	Dino and Son to fill erosion site
103	Medium	5/5/2021	DaveForkel	Sta 175+15	Erosion	Erosion at toe of levee at siphon discharge.	Repair	Dino and Son to fill erosion site
104	Low	5/5/2021	DaveForkel	Junior's House	Sloughing	Rock placed at waterside of new fill settling.	Monitor	
105	Medium	8/20/2021	NateHershey	Station 694	Sinkhole	Three voids discovered near utilities and in the existing toe berm. Recommend collapsing and compacting when feasible.	Repair	
106	Medium	11/4/2021	DaveForkel	Sta 170+00	Seepage	Seepage at toe of levee.	Monitor	
107	Medium	12/15/2022	DaveForkel	Sta 704+00	Erosion	Levee experienced minor waterside erosion during last weeks storm.	Repair	

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108	Medium	1/10/2023	MichaelNishimura	waterside hinge or	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	1/10/2023	MichaelNishimura	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	1/10/2023	MichaelNishimura	43+50 to 43+00	Sloughing,RodentActivity	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	

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1/16/2023

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111	Medium	1/10/2023	MichaelNishimura	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	1/10/2023	MichaelNishimura	to 103+25 watersid	Erosion	45' of erosion on waterside slope. Appears that erosion is caused from surface runoff. Erosion is starting to Undercut road.	Monitor	
113	Medium	1/10/2023	MichaelNishimura	to 204+25 watersid	Sloughing,Erosion	Erosion and sloughing 75' on waterside slope. Scarping mid slope. Likely caused by oversteepened slope and surface run off.	Monitor	
114	Medium	1/10/2023	MichaelNishimura	to 666+90 watersid	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	

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115	Medium	1/10/2023	MichaelNishimura	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	1/10/2023	MichaelNishimura	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	1/10/2023	MichaelNishimura	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	