

San Joaquin Levee Evaluations Project (SJLE Project) (2013 MAP Study 13)

The SJLE Project is led by a DWR Team from the Division of Flood Management, Flood Projects Office. The project goal is to assist SJRRP in assessing flood risks and identify potential mitigation strategies to maintain acceptable flood risk management associated with actions of the SJRRP with respect to levee seepage and stability. The technical evaluations for this project are being performed by DWR Non-Urban Levee Evaluations Program technical staff and contractors.

Project Status

DWR has prioritized levee segments within the SJRRP study area for geotechnical evaluation based on flow rates and potential channel use for Restoration flows. DWR is currently performing phased geotechnical explorations of the highest priority levee segments located in Reach 2A, the Eastside Bypass between Sand Slough and Mariposa Bypass, and the lower portion of Reach 4A. The SJLE Project will be performing levee seepage and stability analyses using this exploration data. DWR Division of Integrated Regional Water Management/ South Central Region Office (DIRWM/SCRO) will use this information to assist the SJRRP in estimating then-existing channel capacities to inform Reclamation on the release of Restoration flows (as defined in the PEIS/R). Exploration of the remaining levee segments will be considered based on future Reclamation decisions regarding the Reach 2B and Reach 4B projects and funding availability.

Summary of the Data Collected

The first phase of explorations was completed in 2013 and the summary of the data is shown in the table below. All of the Cone Penetration Tests (CPT) and the majority of borings were performed on the levee crests. A small number of borings in Reach 2A were performed on the levee toe. Geophysical surveys were performed in early 2014 to supplement the exploration data and to guide a supplemental exploration phase to be conducted later this year. A geomorphology evaluation is also being conducted which is expected to be completed later this year. The combined explorations and the geophysical and geomorphology studies will be used in conducting levee seepage and stability analyses.

SJLE Geotechnical Field Explorations

Reach	Bank	CPT				Borings			
		#		Totals		#		Totals	
		Crest	Toe	#	footage	Crest	Toe	#	footage
Reach 2A - San Joaquin River	Left	18	0	18	720	4	4	8	201
Eastside Bypass Canal between Washington Road and Mariposa Bypass	Right	58	0	58	2560	12	0	12	525
	Left	59	0	59	2900	12	0	12	565
Reach 4A - San Joaquin River	Right	11	0	11	440	2	0	2	80
	Left	10	0	10	400	3	0	3	120
Totals		156	0	156	7020	33	4	37	1491

Summary of Results and Reports

In 2013, DWR completed a preliminary geotechnical analysis of several levee segments with low channel capacity along the Middle Eastside Bypass. The analyses were performed using geotechnical data collected during the first exploration phase. The results were documented in a technical memorandum in August of 2013. The results were incorporated into the 2013 Channel Capacity Technical Report where they confirmed adjustments to then-existing channel capacity in the Middle Eastside Bypass.

Separate data reports will be prepared for the geomorphology and geophysics studies and for the geotechnical explorations. A single geotechnical data report will be prepared after completion of the supplemental explorations. The current schedule for data reports is:

- Geophysics Data Report will be completed by July 2014
- Geomorphology studies will be completed by August 2014
- Geotechnical Data Report (GDR) will be completed by December 2014
- Geotechnical Overview Report (GOR) will be completed by April 2015

Levee seepage and stability analyses results will be documented in a Geotechnical Overview Report (GOR). The report will identify levee segments that do not meet USACE levee design criteria and will identify scoping-level remediation measures. The final work of this phase of the preliminary geotechnical work will be the Geotechnical Overview Report (GOR) which will be completed by April 2015. It will include recommendations for future geotechnical work.