Matilija Dam Removal, Sediment Transport, and Robles Diversion Mitigation Project
Design Oversight Group Meeting Notes
May 28, 2014 9:00 am to 4:00 pm

Saticoy Operations Yard
11251 Riverbank, Building B, Saticoy, CA

Participants

See Attachment 1: Sign-in Sheets

Meeting Notes - AM

1. Introductions: Peter S., Sam J., and Paul J. provided an overview of the meeting purpose, background and history of the project process including Fine Sediment Study Group, and where the project is today.
2. Funding: Sam J. discussed the funding status of the project. SCC has contributed approximately $9M to the project thus far. There have been no new bonds approved by voters recently, so SCC funding is tight. The next bond measure expected on the ballot will be less than previous years. Working to get funding into the Corps' budget, but WRRDA 2014 only had four new constructions starts.
3. Corps' Authorized Project: If possible, the DOG would like to move forward with a project that falls under the Corps' authorization. However, initial screening should consider creative solutions that may not fall under the authorization. It is too early to say whether the authorization is an issue and how much of an impact changes would have. The team is mindful of the issue, but is not constraining the process for now. There may be ways to characterize the project so that it falls under the authorization.
4. Consultant Team Introduction: Seth G. provided an overview of the consultant team, team member backgrounds and experience, team structure and key leads, and an overview of the current scope of work.
5. Hydrology: Derek B. provided an overview of the watershed, available hydrology data and a summary of data synthesis and trends. Key trends include:
   - Peak flow on the Ventura River is approximately 3 times the average daily flow
   - Peak flow on Matilija Creek is approximately 1.75 times the average daily flow
   - Average daily flows on the Ventura River are approximately 3 times the average daily flows in Matilija Creek
   - Flows above average daily flow of 5,000 cfs (peak flow of about 14,000 cfs) on the Ventura River are needed for significant sediment transport, which is approximately a 4-year return period
6. Sediment: Derek B. provided an overview of available data on the reservoir sediment volumes and gradation, discussed the presence of organic material and methane in the reservoir sediments, and reviewed watershed geology and estimates of watershed sediment yield. Key trends include:
   - Estimated accumulated sediment volume of 6.8 MCY (as of 2005) with 19% gravel, 35 % sand, and 46% silt and clay
   - Estimated approximately 7.9 MCY accumulated sediment volume (as of 2014)
   - Watershed generates a sediment load of approximately 90-98% silt and clay. Given the relatively uniform rate of reservoir infilling over the last several decades despite progressive reduction in reservoir volume, this requires that the reservoir trapping efficiency for silt and clay is probably pretty low
   - Estimate Matilija Creek generates on average approximately 400,000 tonnes of sediment/year
   - Large events could result in 1-5 MCY of transported sediment in Matilija Creek, which for a large (multi-decadal) storm is of nearly equivalent magnitude to the sediment presently stored behind the dam

Question: How much effect would a notch have on stopping accumulation of sediment?
Discussion: It would have no effect on fines, because most fines are already passing the dam. To stop coarse sediment deposition, the notch would probably need to extend approximately ½ the height of the dam. An Interim notch could potentially trap a layer of fines under the coarse sediment that would move down towards the notch. The purpose of the interim notch is not just for sediment; it is also intended to remove non-native fish habitat (impoundment) and improve downstream water quality (DO and temperature). Assume that after storm events, the notch would result in several days of high turbidity.

7. Background Review and Concepts Matrix: Seth G. provided an overview of the task objectives, materials that were reviewed by the consultant team during the background review, the concepts matrix, including quick discussion of previous and new concepts, and next steps.

Meeting Notes - PM

8. Concept Matrix: Seth G. presented the previous and new concepts summarized in the concepts matrix, with emphasis on concepts developed by the Fine Sediment Study Group and new concepts developed by the consultant team. Key discussion points include:
   - FSSG 1 – Optimize Alternative 4b: the purpose would be to phase the slurry operation because there may not be space for all the sediment at the BRDA sites. Would want to slurry some sediment, wait for it to erode from the site then slurry more sediment. Optimization would involve designing the storage areas to allow more frequent mobilization of sediment from BRDA, remove heavy armoring.
   - FSSG 2 – Hybrid Option: FSSG 1 and FSSG 2 should be combined together. They are both part of a "hybrid" alternative. Remove the notching component.
   - FSSG 4 – Matilija Canyon Restoration: This includes upstream temporary disposal/storage of sediment. FSSG 4 is also part of the "hybrid", so combine with FSSG 1 and FSSG 2. Consultant team should try to use the specific disposal areas in the authorized project, then expand out if need additional space. The USA alternative ignored the authorized sites. Want to avoid environmentally sensitive areas; the upstream disposal areas in the authorized project have already been analyzed for environmental impacts. We don't need to move all fine sediment to the upstream disposal sites; some material can be left on the margins of the reservoir.
   - Elwah Dam Removal: used a hoe-ram on a barge to remove the top (thinner) portion of the dam. For lower (thicker) portions of the dam, put a drill rig on the dam to drill holes for blasting material. Did the blasting during flow events.
   - New 01 – Slurry to Ocean: May not be able to accomplish slurrying all fine sediment in one season. Previous considerations that were problematic: alignment of pipeline and access road, pumps and energy costs, containment of salt water, maintaining lines and pumps for multiple seasons, difficulty maintaining pipes and pumps for abrasive sediment and salt water, potential need for multiple pipelines because one would often be out of service for maintenance. Summer beach impacts make this a non-starter. High turbidity in the ocean is expected during winter storm events, but not during summer months (bad for beach goers and habitat). Remove New 01.
   - New 02 – Single Phase Removal with High Flow Bypass and Containment Berm: Include high flow bypass into NF Matilija Creek as an option, in order to provide clean water to Robles prior to large sediment mobilization storm. Make sure to analyze a range of events in case all sediment doesn't get eroded or doesn't make it all the way downstream.
   - New 03 – Uncontrolled Orifice with New Diversion: This alternative would only benefit one water user (Casitas). The logistics of doing a blast on short notice may not be feasible. Possibly, this alternative would be cheaper and easier to permit and contract. There may be difficulties in acquiring ROW for diversion alignment downstream of the dam.
   - New 04 – Gated Orifice: Two 12-ft gates would be needed to allow 3,000 cfs through in an open channel flow condition. USBR looked at this for Elwah, but found it more expensive than progressive notching.

- Leave dam in place: This would not meet the project goals. This is a non-starter for the County.
- Climate Change: Would be better to deal with long-term water supply and climate change by improving Lake Casitas. Not within the scope of this project.
- Double Barrel Bypass: reserve for a mitigation measure.
- BRDA site: keep downstream slurry as an option for screening, but ok if it is screened out.
- Upstream trucking of sediment: Will need to analyze this in order to remove sediment to access the dam for dam removal anyway, so keep as an option. Could look into centrifuge dewatering of dredge slurry before placing in trucks for transport.
- New 05 – Progressive Gated Notching: Progressive notching could be problematic because of the length of time and the ability to get a permit for such a long time frame. Consider combining progressive notching with an orifice.
- Ojai Wastewater District water: Previously looked into using this water for slurry water, but this would dewater the lower 3 miles of the river in dry years and potentially cause harm to fish.
- Groundwater: For water supply, the project will eventually need to consider the effects on groundwater from fine sediment. Penetration of fines into the water table should not be too far; it is mostly surface deposition and then washes out.
- Final list of initial options for screening:

ID	Previous ID	Description	Fine Sediment	Casitas – Fine Sediment Issues
NA	No Action	-	-	-
IO-01	New-02	Single-phase dam removal with temp. sediment containment structure immediately downstream of the dam	Natural Transport: Single Storm	Minimize and mitigate impacts
IO-02	New-03	Uncontrolled large orifice	Natural Transport: Multiple Storm	Upstream clean water diversion
IO-03	New-04	Gated large orifice with timed fines release during large storms	Natural Transport: Multiple Phases	Minimize and mitigate impacts
IO-04	New-05/ FSSG-3	Gated notch(es) with timed fines release during large storms	Natural Transport: Multiple Phases	Minimize and mitigate impacts
IO-05	FSSG-4	Excavate and temporarily place enough fines upstream to establish channel	Remove U'Stream: Fines to Upstream	Minimize and mitigate impacts
IO-06	FSSG-2	Slurry to d'stream; phased notching to sluice fines; upstream temp. disposal	Combo: D'stream + natural transport	Minimize and mitigate impacts

9. Screening Criteria: Seth G. presented potential criteria categories for the screening. Key discussion points include:
   - Both water supply and environmental impacts are related to the suspended sediment load, so just use duration of relatively "high" suspended sediment concentrations, or something similar.
   - Specific environmental impacts are too involved for screening.
   - Water supply is covered under the Task 3 analyses, so remove from screening.
   - Use cost and duration as criteria for the screening.

Action Items:

- Consultant team to develop ½ page narrative and sketch of each of the 6 alternatives for screening.
- Consultant to proceed with initial screening, using 6 identified alternatives, and cost and construction duration screening criteria

ATTACHMENT 1 – Meeting Sign In Sheets

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SOY Conference Room

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Matilija Dam ERP Technical Advisory Committee Meeting - May 28, 2014
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Mike Hollebrands	~2:30 pm		