

**Matilija Dam Ecosystem Restoration Project
Fine Sediment Management Study Group**

DRAFT

Questionnaire for March 30 meeting

Please respond to the following questions, and circulate your responses to the Study Group members, and to Norma Camacho and Mary Selkirk, by COB, Friday, March 18, 2011.

Name & Affiliation: Blair Greimann, Bureau of Reclamation

Based on the consolidated flip-chart notes from the February 2 and 24 meetings:

1. Are there any other **major** constraints (or concerns by your organization) to the three major management options, *other than those listed on the notes?*

2. Are there any other **major** data gaps or information needs, *other than those listed on the notes?*

3. In your opinion, what are the **top three** data gaps or information needs that must be answered in order to develop a viable consensus solution to managing the fine sediments in Matilija Reservoir as part of the Matilija Dam removal project? *Please be as specific as possible and list them in descending order as you would prioritize them. (1= first choice, 2=second, 3= third).*
 1. A water quality study of Lake Casitas that uses existing data to quantify:
 - Current problems caused by nutrients in Lake Casitas to aquatic life and water treatment facilities. This would document historical data and events in the basin.
 - Current sediment and nutrient loads entering Lake Casitas from tributaries and from Robles Diversion
 - Impact of a defined amount of additional sediment entering Robles Diversion as the result of dam removal

 2. A cost and engineering analysis of slurring a portion (approximately 1/2 to 2/3) of the reservoir sediment to one or two BRDA sites. The remaining fine sediment would be left in place or placed on top of the coarser delta sediment without permanent stabilization. The goal of the study would be to reduce the project costs by reducing project footprint, reducing the handling of sediment, and/or using less expensive measures.

3. A notching study in which the notching duration is constrained by the time required to perform the slurry and fine sediment handling operation. For example, if it is decided that the slurry process will take 3 years to complete, the study would identify the amount of natural transport that could be accomplished in this time period.
4. In complete sentences---but in either bullet-item or paragraph format---please draft a **summary request for proposal/scope of work**, including expertise needed, to respond to the top data gaps or information needs that you have identified in Question 3 above.

Water Quality Study:

Task 1. Background study of existing data and previous study reports: Historical water quality data sources will be identified by contacting local agencies and contacts working on the Matilija Dam removal project. This may include nearby universities to determine if water quality modeling studies of Lake Casitas have been done previously.

Deliverable: A list of historical data bases and a list of references.

Task 2. Assess limitation of existing data and identify data needs for final design. Assess ability of data to support numerical modeling of the reservoir.

Task 3. Use existing data to develop best estimate of current sediment and nutrient loads in reservoir for a variety of potential year types. Roughly quantify the eutrophication level of Lake Casitas

Tasks 4. If there is sufficient data, develop numerical model that assesses the relative impact of an incremental increase in the sediment and nutrient loads as the result of dam removal. The additional nutrient and sediment loads would be supplied.

Task 5. Explain the risks to water quality and water treatment.

The water quality study would require an engineer with expertise in water quality modeling of natural lakes with particular background in nutrient loading to lakes.

Fine sediment handling

Task 1. Review existing engineering and cost analysis of slurry proposal to BRDA.

Task 2. Identify most expensive items in the analysis and revise plan to minimize costs.

Task 3. Develop plan to minimize cost of slurry alternative by reducing footprint of disposal sites, reducing the handling of the fine sediment, and/or reducing the volume of sediment moved to the slurry site.

Task 4. Develop plan for leaving fine sediment behind the dam with minimal handling and re-vegetation to minimize costs.

Task 5. Develop costs estimates for the proposal.

Notching Study

Task 1. Review existing sediment data.

Task 2. Using the results from the fine sediment handling study develop a notching scenario that maximizes the amount of sediment erosion during high flow and minimizes fine sediment impacts during the diversion periods of CMWD. Model should account for sediment already removed by slurry and that placed on the coarse delta deposits.

5. Looking forward, post Study Group: Do you have any other suggestions about *how* we should continue to develop solutions to the major data gaps on the fine sediments?