

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

### 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:** Bert Rapp, Ventura River County Water District

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?*

#### OPTION 1. "Run 4b to ground"

- a. *Determine if the BRDA silt disposal piles will raise 100-year water surface elevations and increase the risk of flood damage to the Ventura River County Water District (VRCWD) facilities.*
- b. *Determine if the silt disposal piles will be permeable or impermeable.*
- c. *Extend the upstream BRDA pile to join it with the east bank of the river to prevent diversions of flood flows on to VRCWD facilities.*
- d. *If the dam removal or silt disposal damages the aquifer by reducing percolation or degrades water quality how will the VRCWD be made whole?*

#### OPTION 2. "Hybrid Option"

- a. *For portion 2c, notching and metering the natural transport of sediments: An analysis needs to be done to estimate safe magnitude of the notch so that flooding and/or water quality problems are not caused downstream.*

#### OPTION 3. "Phased notching and phased natural transport"

- a. *Natural transport could overwhelm the flood capacity of the Ventura River and possibly contaminate ground water quality.*

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

#### OPTION 1. "Run 4b to ground"

- a. *If the silt piles are impermeable, then the Ventura River Upper Aquifer will be covered with the equivalent of 77 acres of parking lot. This will reduce the VRCWD's potential available water by about 77 acre feet per year causing the District to purchase more water from Casitas Municipal Water District at a potential additional cost of \$400 per*

acre foot or up to \$31,000 per year. The data gap is to determine how this cost and increased allocation of water from Casitas will be resolved.

- b. *If the piles are permeable, then determine if the water percolating through the piles could pollute the aquifer with contaminants in excess of the allowed Maximum contaminant levels (MCL's). If the percolating water would cause violations of the MCL's then the plans need to be revised to show an impermeable barrier under the disposal piles.*
- c. *Prepare an updated hydraulic analysis of the 100-year flow to determine the impact of the currently proposed silt disposal locations.*

#### OPTION 2&3

- a. *A protocol needs to be developed to define acceptable aggradation in the river invert and water quality degradations that would establish the rate of notching of the dam.*
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. *Determine the permeability of the BRDA & MODA silt piles and their potential for contaminating ground water quality.*
  2. *If the silt piles are impermeable then determine how the \$31,000 annual cost increase to VRCWD will be addressed and how VRCWD can receive a 77 AF increase in water allocation from Casitas.*
  3. *Prepare an updated hydraulic analysis of the 100-year flow to determine the impact of the currently proposed BRDA & MODA silt disposal locations.*
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.
1. *Determine the permeability of the BRDA & MODA silt piles and their potential for contaminating ground water quality.*
    - a. *Collect representative sediment samples from the lake.*
    - b. *Dewater the sediment using the anticipated coagulants*
    - c. *Construct a sand filter with a drain pipe and place the sediment on top of the filter and measure the percolation rate of water through the sediment.*
    - d. *Utilize rain water or water with similar characteristics for the percolation test.*
    - e. *Test percolated water for compliance with drinking water Maximum Contaminant Levels MCL's.*
    - f. *If sample exceeds MCL's then do a mass balance analysis to determine if drinking water supplies will be endangered.*

2. *Updated hydraulic analysis of the 100-year flow to determine the impact of the currently proposed BRDA & MODA silt disposal locations.*
  - a. *Run before and after hydraulic models of the Ventura River from 1-mile downstream to 1-mile upstream of the disposal sites.*
  - b. *Prepare a map showing the before and after water surfaces.*
  
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?

*After these data gaps from the group are answered then stop studying and go to work removing the dam.*