



Meeting Summary

Madera Canal Capacity Restoration Feasibility Study

Wednesday, May 27, 2015

Attendees

Stakeholders

Douglas Welch, Madera Chowchilla Water and Power Authority (MCWPA)/ Chowchilla Water District CWD
Thomas Greci, Madera Irrigation District (MID)
Dina Nolan, MID
Brandon Tomlinson, CWD

Staff/Consultants

Erika Kegel, Bureau of Reclamation
Traci Michel, Bureau of Reclamation
Rebecca Victorine, Bureau of Reclamation
Gustavo Arboleda, WRE
Al Candlish, WRE
Sam Magill, Kearns & West

ACTION ITEMS AND AGREEMENTS

1. Consultant staff will update the Alternatives Analysis report to indicate general proposed areas only for new recharge ponds in alternative MID-3.
2. Consultant staff will discuss the Road 13 recharge pond in greater detail with CWD and incorporate additional information into the Alternatives Analysis report.
3. MID requested that alternatives MID-1 and MID-2 move forward for final feasibility study analysis. MID-1 should include analysis of the dam replacement option only.
4. CWD requested that the feasibility study analysis include screen replacements at the Ash Bypass and La Branza locations only, as well as all identified SCADA improvements.
5. Bureau of Reclamation will circulate the draft Alternatives Analysis Report to MID/CWD as soon as possible. MID/CWD staff will respond with edits/comments on analysis assumptions and outcomes within 2 weeks.

MEETING SUMMARY

Madera Canal Capacity Restoration Feasibility Study (Study) staff and consultants met with staff from the Madera Irrigation District (MID) and Chowchilla Water District (CWD) to discuss the draft alternatives analysis for the Study and select projects in each district to move forward into a full feasibility study.

Overview of Alternatives Analysis

Bureau of Reclamation staff and consultants provided an overview of the alternatives analysis process. Off-canal improvements appear to provide the greatest benefits. Four alternatives were selected from each district for analysis.

Review Alternatives Analysis Evaluation Criteria

Four criteria were selected to analyze each alternative: completeness, effectiveness, efficiency, and acceptability. Each alternative was ranked as high, medium, or low in relation to each criterion. The alternatives (by district) included:

MID-1: Retrofit or rebuild the dam at Madera Lake

- Option 1: install 1600' seepage wall. Although the cost is lower than rebuilding the entire dam, long-term O&M costs could be substantial. Estimated cost: \$5 million for construction, or \$115/acre-foot of yield.
- Option 2: Rebuild dam: Although this is a more comprehensive retrofit, it would require less long-term O&M. Estimated cost: \$7.5 million, or \$168/acre-foot.
- Environmental considerations for both alternatives include temporary impacts, §404 permitting, NEPA, and potential impacts to birds.
- Both options would increase lake capacity from 2,600 acre feet to 4,350 acre feet. Based on the model analysis, even in dry years, the lake would be full for most of the year. This doubles the amount of groundwater recharge from the lake.

Discussion:

- Ms. Michel asked if the recharge amount changes depending on the option. Mr. Arboleda responded that it is the same for both.

MID-2: Fresno River Diversion

- Option 1: Install a pump station near the existing siphon. Pump station for analysis has a 50 cubic feet/second (cfs) capacity. Water goes through a 30 inch pipe into the existing canal. The uppermost section of the canal would be lined with concrete. A trash rack is installed at the pump station and *possibly* at the pipe outlet. Estimated cost: \$5 million or \$11/acre-foot.
- Option 2: Gravity flow diversion through a new/rehabilitated canal from the Fresno River to the canal. A trash rack is installed at the canal entrance. Estimated cost: \$3.9 million or \$9/acre-foot.
- Both options would require some type of diversion structure to force water into the canal/pump station. Option 1 includes a 10' sump and 30' diversion wall; option 2 is unspecified at this time.
- Option 1 has minimal environmental considerations due to the small footprint and low/no expected State Historic Preservation Office (SHPO) requirements, but higher O&M costs. Option 2 requires land acquisition and may have substantial SHPO requirements due to cultural artifacts in the area, but lower O&M costs.
- Both options would allow the diversion of 24,000 acre-feet of Fresno River water in a wet year, 23,000 acre-feet in a normal year, and 5,400 acre-feet in a dry year.

Discussion:

- Mr. Greci asked if the pump station option includes anything about fixing the existing siphon. Mr. Arboleda acknowledged that it does not. The siphon may, however, be utilized as an alternative to the diversion wall.
- Mr. Greci and Ms. Nolan confirmed MID will not need a new diversion permit from the State Water Resources Control Board, since both options only result in “rediversion” of a pre-1914 water right. But would require a petition to add a point of diversion to their existing water right and/or to the Bureau of Reclamation’s Fresno River water right.
- Ms. Victorine confirmed that no streambed alteration permit will be required since the Study results in an entirely federally-funded action.
- Ms. Nolan noted that flows of 82,000 acre-feet from Hensley Lake to the Fresno River as assumed in the analysis for a “wet” water year seem high, and suggested using the San Joaquin Index to define water year type.
- Ms. Victorine noted that the SHPO consultation could impact project schedule.
- Mr. Arboleda confirmed that costs for Option 2 include property acquisition along the length of the new canal. Both options include new easements for power lines.
- Mr. Greci noted that without some type of diversion barrier, the gravity fed option wouldn’t work. Mr. Arboleda agreed.
- MID noted that the assumed cost for land acquisition (\$19,000 per acre) seemed appropriate, given the location and use of the sites analyzed.

MID-3: New regulating Basin

- WRE looked at 5 possible sites for a new regulating basin near Highway 99. Three sites were identified for further analysis ranging from 65-85 acre-feet. Cost is \$4.8M or \$90/acre-foot, and represents a low benefit for the investment.
- The analysis includes costs for pumps, weirs, and land acquisition, and assumes the pumps will run 4 hours per day for 180 days.
- The limited footprint creates minimal environmental impacts.

Discussion:

- MID noted that the assumed cost for land acquisition (\$19,000 per acre) is probably low, given the location of the sites analyzed.
- MID requested that the report be revised to only include general areas (rather than specific sites) for the conceptual sites (**action item #1**).

MID-4: Rehabilitation of Existing Pipelines

- This represents the most expensive alternative. MID has over 138 miles of pipes, with almost half in heavily populated areas. 36- to 54-inch diameter pipes are the most prevalent.

Discussion:

- Mr. Greci noted that this option includes a 50 year planning horizon; the other alternatives are predicated on a 30 year planning horizon. If costs are adjusted for the shorter time period, they are even higher.

CWD Alternatives

- Installation of new screens, trash racks, SCADA stations, and software upgrades divided into four distinct alternatives for the purposes of analysis only. Given the funding available, all screens, stations, and related system upgrades are estimated to cost \$4 million or \$21/acre-foot.
- Yield from CWD alternatives was estimated at 10 percent of water deliveries, or about 9,500 acre-feet per year.
- Projected life of the upgrades is 20 years given the type of equipment analyzed for installation.
- Few if any environmental considerations exist since the improvements are primarily within the existing footprint of the system.
- The analysis *did* consider the cost of a new pond at Road 13 but construction of the pond was not included as an alternative due to its high cost.

Discussion:

- Mr. Welch noted that there may be some confusion about the work required for the new Road 13 pond. Work funded under the Study would only include bank improvements (not excavation). Consultants will follow up with CWD to discuss the pond in greater detail prior to feasibility study analysis (**action item #2**).
- Mr. Welch added that SCADA stations must include sensor, software, and server improvements to handle the additional bandwidth requirements.

Final Alternatives Selection

Mr. Arboleda commented that the Study team would like to move forward with 2-3 alternatives for full feasibility analysis. The following discussion was recorded:

- Mr. Welch agreed that the overall funding split between MID and CWD should be 60(MID)/40(CWD).
- Mr. Greci asked that MID-1 and MID-2 move forward for analysis (**action item #3**). For MID-1, the Bureau of Reclamation should look at rebuilding the dam only. For MID-2, the district will need to review the information in the Alternatives Analysis report to determine the appropriate option; MID may opt for carrying both MID-2 options forward.
- Mr. Welch asked the Bureau of Reclamation to move forward with analysis of screens at Ash Bypass and La Branza only in addition to all SCADA improvements (including new stations and system upgrades). This frees up \$1 million in funds for potential use on the pond/recharge basin (**action item #4**).
- The Bureau of Reclamation will circulate the draft Alternatives Analysis report to MID/CWD as soon as possible. Meeting participants will review the report to confirm its assumptions and analyses within 2 weeks of transmittal (**action item #5**).
- Ms. Nolan asked if benefit calculation is based solely on yield. Mr. Arboleda responded that there are other factors such as flow timing and operational constraints. Ms. Nolan added that there are non-quantifiable benefits as well such as environmental considerations, community partnerships, etc. Mr. Candlish stated that the Bureau of Reclamation is required to select the NED unless they seek a secretarial exception: benefits must be associated with cost whenever possible. The NED does not affect the proposed 60/40 funding split. Ultimately, it will be up

to Bureau of Reclamation staff in coordination with the Settling Parties to approve the final project.

- Ms. Kegel noted that if there are additional elements that could be funded by a state or federal drought grant, benefits and project scope could be expanded through a cost-share agreement.
- Ms. Michel asked if the decision to move forward with the alternatives for feasibility study identified above must be submitted to the MID and CWD boards of directors. MID confirmed that updates will be provided to the Board, but no formal approval is needed.