



SAN LUIS OBISPO COUNTY
DEPARTMENT OF PUBLIC WORKS

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January 7, 2009

Zone 3 Water Agencies

Subject: Lopez Reservoir Expansion – Spillway Raise Project Advisory Group Recommendations

Dear Agency Representatives:

The Zone 3 Technical Advisory Committee (TAC) and Zone 3 Advisory Committees (Z3AC) requested a summary letter be prepared and submitted to Zone 3 Agency representatives summarizing the conceptual proposal for expanding the reservoir. Please note that the TAC unanimously recommended that the Advisory Committee move forward with the next steps in investigating a spillway raise project which would result in providing added storage capacity in the existing Lopez Reservoir. A summary of the project follows.

Spillway Raise Project Summary: In response to requests by the Advisory Committees, District staff retained the services of URS Corporation to evaluate a spillway raise project, which would raise the level of the existing Lopez Dam spillway 3' to 5'. URS prepared a pre-planning assessment of this concept anticipating the installation of Obermeyer gates (See attached Exhibit A, Page 7 of the URS November 11, 2008 Report). The entire document is available at www.SLOCountyWater.org. You can access the report from the top menu (orange links) by navigating to: Water Resources -> Reports -> Lopez Reservoir Expansion Pre-Planning Assessment by URS dated November 11, 2008.

The URS' assessment addressed:

- Potential cost of such a project
- Schedule for project implementation
- Assessment of additional water storage and availability
- Discussion with State Division of Dam Safety regarding spillway raise issues

Assumptions for the project included the following:

1. Forty-two (4200) acre feet per year continued releases for groundwater recharge, environmental and agricultural needs
2. Forty-five hundred and thirty acre feet per year (4530) for continued agency deliveries
3. Determination of potential additional annual yield, i.e. excess water potentially available for agency distribution, was based upon the 36 year historic rainfall runoff history from 1969 to 2004

URS concluded the following:

1. A 3' spillway raise would result in a gross additional storage of 2,850 acre feet
2. Project costs are estimated between \$4.1M and \$4.6M dollars
3. Potential annual additional yield for a 3' spillway raise is estimated to range from 671 to 916 acre feet per year

- gross capacity increase "one time" project cost is \$1,600 per acre feet

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net "one time yield" costs are \$4,500 per acre foot (\$4.1M/916AF) to \$6,800 per acre foot (\$4.6M/671AF) based on the historic 36 year period.

The actual cost of water per acre foot per year over the life of the project will be reduced proportionally by the number of years the additional water would be available. For example, if the net "one time yield" cost for the added water is \$6,800 per acre feet, and water was available for 10 years at that amount, the actual cost of the water would be divided by 10 and the resultant water net cost would be \$685 per acre foot per year, not including inflation or other influencing factors.

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- "deliverable water" would have been available in 10 of the 19 years, from 1969 to 2004

4. A 4' raise would result in a potential additional annual yield of between 834 and 1,166 acre feet
5. A 5' levy raise would result in a potential additional annual yield of between 974 to 1,371 acre feet
6. Based on a maximum additional storage of 2,850 AF (3' spillway raise) spread over 11 dry years (1986-1996), the increase in potential safe yield is estimated to be 259 AFY.
7. Project is estimated to take 5 years from concept formulation through the end of construction

California Division of Dam Safety (CADOSD) advised the following based on a telephone conversation with URS staff:

1. No detailed review of the project would be provided without a formal project submittal to CADOSD

2. The project would need to maintain the original "pre-project" free board. The freeboard refers to the height of the top of the dam above the spillway.
3. Project would need to extend abutments, evaluate the overall stability and seismic retrofit which has been completed, internal drainage system, and provide no less than the current dam spillway free board capacity.

URS concluded there were no obvious fatal technical flaws as the above items have been conceptualized during the preparation of the cost of the project.

Additional Review Comments:

- a. The storage in Lopez Lake is currently 49,400 AF, so a 3' spillway raise would increase the storage by about 5.8%. An estimate of additional "safe" yield could be to multiply the current safe yield of 4,530 AFY by 5.8% which results in an additional yield of about 260 AF. This also roughly equals the additional yield of the 2850 AF distributed over 11 years.
- b. The cost of water per acre-foot per year can be based on a 50 year time frame. Over 50 years, the additional yield of 260 AFY would total 13,000 AF. Using a cost of \$4.6M to create the additional storage resulting from a 3' spillway raise, this would result in a cost of about \$350 per acre-foot (excluding inflation, etc).
- c. No water rights considerations were evaluated during this review. The proposed project would impound (i.e. "appropriate") additional water above the amount currently authorized in the State issued water rights permit. A determination needs to be made regarding the availability (or lack thereof) of additional rights to appropriate additional available water.

Technical Advisory Committee Recommendation

The Technical Advisory Committee unanimously recommended to the Zone 3 Advisory Committee that the project should proceed to the next step. The estimated schedule does not include Habitat Conservation Plan (HCP) coordination delays and/or HCP processing coordination. Estimated costs for the next step of the project include the following:

1. Preparation of a concept formulation/benefit assessment at an estimated cost of approximately \$70,000
2. Preparation of an alternatives assessment and engineering feasibility study, estimated cost \$160,000

Project Participation

Since this project is classified as a "Type 3" project under existing District/Agency contracts, agencies which support pursuing this project would need to provide funding for the project. Establishment of a lead agency to proceed with consultant selection and consultant contract administration is recommended.

HCP Impacts a Consideration

Agencies are cautioned that the formal initiation of this spillway raise project may affect the current habitat conservation plan which is being prepared for the Zone 3 Arroyo Grande Creek Channel. A strategy must be developed to address this issue in order to avoid conflict with and potential further delay of the HCP by the processing and consideration of a spillway raise project.

Agency Action Requested

The Zone 3 Advisory Agency considered the report and recommendations of the TAC on November 20, and requested this summary letter be provided to each agency so Agency representatives could obtain the recommendations of each agency and bring recommendations back to the Advisory Committee for future action.

District staff is available to provide additional information regarding these issues. Please contact me at 805-781-5267, or Doug Bird at 805-781-5116 for additional detail.

Sincerely,

DEAN BENEDIX, R. C. E.
Utility Division Manager

Attachment: Exhibit A Page 7 of the URS November 11, 2008 Report

c: City Council City of Arroyo Grande
City Council City of Grover Beach
City Council City of Pismo Beach
Oceano Community Services District Directors
CSA 12 & CSA 12 Water Customers
Glen Priddy, County of San Luis Obispo, Public Works
Jennifer Colvard, County of San Luis Obispo, Public Works
Zone 3 Technical Advisory Committee Members and distribution list

File: CF 210.11.01

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