



# STAFF REPORT

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**Meeting Type:** Board of Directors  
**Title:** Nicasio Spillway Modifications Amendment No. 2 to Professional Services Agreement MA 6335 with Black and Veatch (**Amendment Staff Report**)  
**From:** Alex Anaya, Director of Engineering  
**Through:** Ben Horenstein, General Manager  
**Meeting Date:** March 4, 2025

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**TYPE OF ITEM:**        X        Action                    Information

**RECOMMENDATION:** Authorize the General Manager to execute Amendment No. 2 to Professional Services Agreement MA-6335 with Black and Veatch to expand the scope of services in support of the Nicasio Spillway Modifications Project in an amount not to exceed \$1,750,000 for a new contract not to exceed amount of \$3,994,669

**SUMMARY:** This proposed second amendment for increased scope of services in support of the Nicasio Spillway Modification project is critical to completing the engineering design analysis identified as this project has been progressing. Additional engineering analysis includes wind and wave run up analysis, developing and executing a detailed geotechnical work plan to determine seismic stability of the dam, engineering services during the project bidding phase and engineering services during construction. The nature of this project is unique relative to the size of the design support necessary due to the inherent complexities of working on a dam and the additional technical work that is needed for the spillway modification design required by the California Department of Water Resources Division of Safety of Dams (DSOD). These additional services in the amount of \$1,750,000 will increase the previously approved contract amount of \$2,244,669 to a new not to exceed amount of \$3,994,669.

**DISCUSSION:** At the April 30, 2024 Board of Directors Meeting, in order to expeditiously explore the Nicasio spillway raise and analyze three other spillways, the Board directed staff to spin-off the Spillway Modifications projects that were identified through the ongoing Local Storage project work into a separate, focused effort.

While individual spillway modifications cannot satisfy the ultimate goal of providing substantial additional local storage on their own, modifications to the District's spillways could provide additional storage and could likely be constructed relatively quickly. It is estimated that the installation of gates on the Nicasio spillway may provide upwards of 3,000 acre-feet of additional storage, at a reasonable cost, making this project quite attractive relative to other water supply enhancement alternatives.

Following the request of the Board, staff issued request for proposal in support of the spillway project and the Board of Directors approved contract MA 6335 with the Black and Veatch (Consultant) at the July 2, 2024 Board of Directors Meeting. The original Spillway Modifications Alternatives Selection and Design contract was for the evaluation of alternatives for spillway modifications at four of the District's dams: Alpine, Peters (Kent), Seeger (Nicasio), and Soulajule. The original scope of services were broken out into several distinct tasks. Task 0 included coordination of regular progress meetings, coordination with staff for Board presentation and quality assurance/quality control of deliverables. Task 1 involved gathering data including record drawings, historical rainfall data, and DSOD inspection reports that are required as part of the modification design analysis. Task 2 was necessary to evaluate upstream and downstream hydrologic and hydraulic impacts, identify the 100 year storm event and flooding impacts. Task 3 focused on the development of spillway modification options for each of the four dams with a focus on Seeger Dam since the spillway at Seeger was originally designed for future modifications. Task 4 was to begin spillway modification design on Seeger dam spillway. Task 5 is focused on spillway modification designs at Soulajule, Kent and Alpine. Task 6 was required to help staff with DSOD coordination through the design review process including design submittal review through 100% approved plans. Task 7 was included have the Consultant look for federal and state grant funding opportunities that the project may be eligible for and to identify application requirements, deadlines and assistance to submit applications for consideration. The Board approved the original contract for \$1,944,669 with a \$300,000 contingency for a total authorized amount of \$2,244,669 at the July 2, 2024 Board meeting.

As the Consultant began a more in depth evaluation of the Nicasio Spillway project and discussions with DSOD, it was evident that a significant amount of additional technical engineering work would be necessary for the design. Additional technical work included calculating the reservoir drawdown rate at Nicasio, which is necessary to properly evaluate the emergency draw down timeframe of the various spillway modifications alternatives being considered. This is an important requirement to the DSOD design review process of any modification option. The Consultant had to develop updated seismic ground motion parameters based on DSOD protocols for Seeger Dam. Seismic design parameters have changed substantially since the dam was originally constructed in 1960 and is also a requirement by DSOD for any new dam construction or dam modifications. A slope stability analysis and review is also needed at Seeger Dam to identify how the dam material properties would react to the increased water storage, rapid drawdown and seismic events under the selected modification option. The Consultant began this evaluation by reviewing the existing dam geotechnical report. In order to address these data gaps and continue progressing with the project, staff executed a no cost change to the original contract to provide the drawdown analysis that was added to Task 2 and added additional scope by creating Task 8 to include ground motion study and stability analysis as well as reprioritized other tasks under Amendment No. 1 to contract MA 6335 on December 23, 2024.

As the Consultant team continued to develop new information and continued with the design, they identified the need to complete a wave and wind run up analysis that will be required to be completed on the selected modification alternative to ensure that the new reservoir capacity will not cause the dam crest to overtop with wind action acting on the surface of the reservoir. There will also be the need for an operations and maintenance plan on the selected spillway modification alternative and the Consultant will develop this as well. This additional work and expansion of scope will be included in Task 2 identified in the table below. The Consultant also identified the need to evaluate upstream road culverts to determine if these culverts have sufficient capacity for the proposed increased storage at Nicasio as well as including additional modifications necessary to the existing Nicasio gate house which

include electrical and mechanical improvements, local and remote SCADA control and generator connections for backup power. This additional work and expansion of scope will be included in Task 4 identified in the table below.

Following additional DSOD discussions and as the Consultant worked on the drawdown evaluation, seismic ground motion and stability analysis the Consultant identified that the existing geotechnical information that the District has on Seeger dam was missing soils information necessary to classify Zone 2 of the upstream dam embankment at Seeger dam. The soil classification is required to evaluate how the various spillway modifications would change the seismic and stability characteristics of Seeger dam. In order to obtain this information it will be necessary to conduct geotechnical soil borings of the upstream dam embankment to obtain this material necessary for soils classification. This type of geotechnical exploration on dams is very technical in nature, which involves developing a detailed work plan for DSOD approval, bringing onboard a geotechnical firms that specialized in drilling into dams and extracting the soil core samples necessary for the soil classification of the Zone 2 embankment and sealing the boreholes once complete. This additional work and expansion of scope will be included in Task 8 identified in the table below.

Staff identified that the District will need assistance through the bidding process to address technical questions from bidders, pre-bid meetings with bidders, possible addenda, and technical evaluation of the bid result. In addition, staff will require technical engineering support services during construction, which will include addressing contractor requests for information, submittal review, design questions or changes during construction, and preparation of record drawings post-construction. This will require to expand the tasks with the Consultant to include a new Task 9 as identified in the table below.

**Budget:**

*Professional Services Agreement: \$1,944,669*

*Contingency (15%): \$300,000*

*Total Budget: \$2,244,669 (Previously Authorized on July 2, 2024)*

Amendment No. 2: \$1,750,000

New Contract Total Amount: \$3,994,669

Budget Category: A1A05

**ENVIRONMENTAL REVIEW:** Not Applicable, as this design work will be preliminary to any project approval and associated environmental review and analysis, and construction bidding will not proceed until the environmental analysis required pursuant to the California Environmental Quality Act is completed.

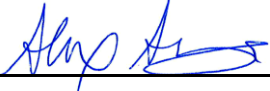
**FISCAL IMPACT:** The Spillway Modifications Alternatives Selection and Design is funded in the Fiscal Year 2024/2025 Adopted Capital Budget and will be budgeted for in the upcoming two year budget cycle as well as being identified in the five year Capital Improvement Plan.

Additional Task Description	Budget
Task 2 – Hydrologic and Hydraulic Analyses: Providing additional flood analysis in support of CEQA and permitting activities as well as performing wind-wave run-up analysis of the preferred spillway modification alternative to determine maximum	\$200,000

wave height and developing an operations and maintenance plan of the preferred alternative.	
<b>Task 4</b> – Spillway Modification Design – Seeger (Nicasio) Dam: This will include additional engineering services required to evaluate road culvert relocation and sizing needs, modifications to existing Nicasio gate house for electrical and mechanical upgrades, backup electrical power system and any other facility improvements required from the Condition Assessment.	\$200,000
<b>Task 8</b> – Seeger Dam Additional Studies: Develop a detailed geotechnical exploration work plan for DSOD review and approval, hire geotechnical subcontractor and testing laboratory firm to conduct soil borings on dam, complete engineering design analysis including stability, seismic, and liquefaction that will be incorporated as part of the preferred alternative design package for DSOD approval.	\$1,050,000
<b>Task 9</b> – Seeger Dam Bid and Construction Phase Services: This will include services through the bidding process to address technical questions from bidders, addendums and evaluation of bid results. This will also include engineering services during construction to address technical RFI's, submittals review and design questions during construction.	\$300,000
<b>Amendment No. 2 Agreement Total</b>	<b>\$1,750,000</b>
<b>New Total Authorized Amount</b>	<b>\$3,994,669</b>

Staff is recommending that the Board authorize the General Manager to execute Amendment No. 2 to Agreement MA 6335 professional services agreement with Black and Veatch to expand the scope of services in support of the Nicasio Spillway Modifications Project in an amount not to exceed \$1,750,000 for a new contract not to exceed amount of \$3,994,669.

**ATTACHMENT(S):** None.

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Engineering	 <hr/> <b>Alex Anaya</b> <b>Engineering Director</b>	 <hr/> <b>Ben Horenstein</b> <b>General Manager</b>