



STAFF REPORT

Meeting Type: Board of Directors
Title: Update on Water Supply Roadmap
From: Paul Sellier, Water Resources Director
Through: Ben Horenstein, General Manager
Meeting Date: January 7, 2025

PS
BH

TYPE OF ACTION: Action X Information Review and Refer

RECOMMENDATION: Receive an update on Water Supply Roadmap focused on criteria for evaluating longer-term water supply projects

SUMMARY: On February 2023, the Board selected the Integrated Roadmap for improved water supply resiliency (Roadmap). Since that time, staff has been implementing the early action projects while in parallel working to advance the longer term, more complex projects. The project team will review the short-listed Roadmap projects and describe the proposed evaluation criteria that will assist in differentiating the longer-term projects and help to identify a preferred project to move forward through the design, environmental review and permitting process. Staff will provide a presentation reviewing the projects and the proposed process leading to a preferred project.

DISCUSSION: The overarching goal of the Roadmap is to enhance the reliability, flexibility, and resiliency of the District’s water system to improve service to Marin Water customers. The Roadmap consists of five broad strategies for achieving this goal and developing a resilient water supply, including Water Efficiency, In-District Improvements, Sonoma-Marin Partnership, Local Storage Enlargement, and New Supply Development, which includes desalination and recycled water. Over the past year, staff has been reviewing available information and developing new information to thoroughly understand the longer-term projects included in the Roadmap. As the Roadmap projects were developed new, short-term projects, such as the Nicasio Spillway modification project, were identified and have been placed on a separate track from the longer-term Roadmap projects to ensure each can be developed at a faster pace. Near-term Roadmap projects identified in this category include:

- Water Efficiency,
- Nicasio Spillway Modifications,
- Soulajule Electrification & Connection to Nicasio Reservoir,
- Phoenix to Bon Tempe Reservoir Connection, and
- Stream Release automation.

Water Efficiency is both a short-term and long term initiative in the Roadmap and continues to be the District's first strategy in stretching the District's existing water supply. The District's award winning water efficiency program includes a wide range of incentive and educational programs to help District customers achieve their water savings goals. The Water Efficiency Master Plan is a user friendly document that lays out a thoughtful, adaptive approach to driving water savings. As part of driving water efficiency, the District is pursuing the implementation of Advanced Metering Infrastructure (AMI) with a goal of beginning the implementation in 2026 and completion in late 2029 early 2030. AMI will facilitate customers' understanding of how they use water and where additional savings may be possible.

Review of Roadmap Projects

Efforts to thoroughly understand and detail Roadmap alternatives have focused on the following categories of projects with the goal of selecting a preferred project for further focus in early 2025:

- Local Storage Improvements - The project team reviewed extensive existing information, gathered and developed new data to thoroughly review the portfolio of local storage alternatives presented in the Strategic Water Supply Assessment. Each site was reviewed for constructability, potential environmental impact, geotechnical issues, and ultimately overall viability. In April 2024, the project team reviewed 11 alternatives with the Board, narrowing down the shortlist to three options for further evaluation and also recommending Nicasio Spillway Modifications move forward as an independent project. The short-listed local storage projects are:
 - Upper Nicasio Dam – A new dam located at the North West end of Nicasio reservoir bordering the county Petaluma – Pt. Reyes Road that would provide 20,000 AF of new storage
 - Kent Dam raise - Increase the height of Kent Dam by 37 feet to provide additional storage of 20,000 AF
 - Soulajule Dam raise - Increase the height of Soulajule Dam by 39 feet to provide additional storage of 20,000 AF
- Sonoma-Marin Conveyance Alternatives: The project team developed a screening process to assist the board in narrowing 13 conveyance alternatives to a shortlist of three possible projects, that were presented to the Board in April 2024. Since April, the project team has continued to refine the three shortlisted alternatives in greater detail such that a preferred project alternative may be identified and proceed to design and environmental review.. The three shortlisted conveyance projects are:
 - Option 1 – (PETA-3): Pipeline from North Marin Aqueduct to Soulajule and Nicasio Reservoirs with the project developed in phases. The first phase of work would construct the pipeline from The San Marin Drive area to Nicasio reservoir and could supply up to 10-MGD or up to 5,000 AFY and with future phases of work the volume of water could be increased.
 - Option 2 – (PETA-4): Pipeline from North Marin Aqueduct along San Antonio Road to Soulajule and Nicasio Reservoirs. The initial project would likely run to Nicasio reservoir with connection to Soulajule in a later phase. The project could supply up to 12.4 MGD

or up to 6,000 AFY and with future phases of work the volume of water could be increased.

- Option 3 – (COTATI-3): Pipeline from Cotati Tanks to Soulajule and Nicasio Reservoir. Similarly to the PETA-4 alternative, the pipeline would likely be run to Nicasio in the first phase and could supply up to 9,500 AFY.
- Recycled Water: The Roadmap explores various alternatives to expand recycled water in the District’s service area through the expansion of traditional purple pipe projects, indirect potable reuse (IPR), as well as direct potable reuse (DPR). Traditional purple pipe projects deliver tertiary treated recycled water to customers for irrigation and toilet flushing. Indirect Potable Reuse (IPR) and Direct Potable Reuse (DPR) projects utilize highly treated wastewater, either conveying the treated water to a reservoir for detention, or directly into the distribution system for consumption. Staff will review a range of recycled water projects within the Roadmap framework.

Desalination: The District developed information on desalination across a range of capacities (5-MGD, 10-MGD and 15-MGD). Desalination takes San Pablo Bay water and treats the water to drinking water standards using reverse osmosis membranes. While desalination source water is reliable the complexity of the facility drives capital costs and energy requirements contribute to significant ongoing operational costs

Evaluation Criteria

For the purpose of evaluating different drought water supply projects and to aid in the selection of a preferred project. The proposed criteria developed by the project team are:

- Reliability and Sustainability: Projects that contribute to dry year supply and substantially improve reliability of the system, improving system response to disaster
- Flexibility and Resiliency: Consideration of operational flexibility and operational complexity; project improves resiliency of system; integrates and maximizes regional systems
- Schedule and Implementation: Timeframe for project implementation, considering regulatory complexity and constructability; does not preclude future projects
- Water Quality: How well does the project meet current and future drinking water quality standards; the water is of the same quality as existing water supplied by the District
- Environmental : How well does the project continue to meet the District’s commitment to environmental stewardship; Consider extent of environmental impacts during and post construction,
- Social Stewardship: Extent of disruption to existing land uses or other social impact
- Economic and Financial: Consideration of project lifecycle costs relative to water supply yield; Consider extent to which project uses existing infrastructure and may qualify and perform well for grant awards

During the presentation Staff will provide a discussion of the evaluation criteria as well as an example of how the criteria apply to project considerations. At the upcoming January 21st Board meeting, staff propose to incorporate any Board feedback on criteria and review the individual alternatives against the criteria. Staff plans to return to the board in February, having incorporated board discussion and guidance, with a recommendation for selection of a preferred project alternative to move into design and environmental review.

ENVIRONMENTAL REVIEW: Not applicable.

FISCAL IMPACT: None.

ATTACHMENT(S): None.