



Water Supply Roadmap Update

BOARD MEETING

October 10, 2023



Water Supply Roadmap Update: Overview

- Roadmap Goals, Milestones, Main Elements
- Early Action Projects
- Longer Term Projects
- Schedule and Funding Summary
- Next Steps

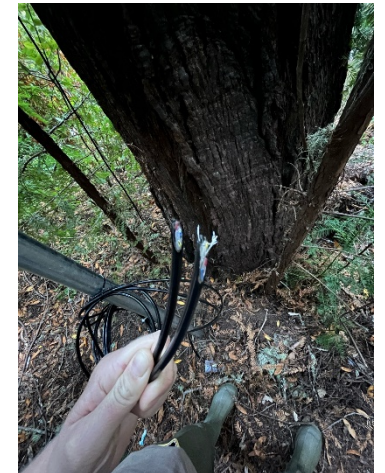
Early Actions: Stream Release Automation Project Elements

- Project goal is to more accurately meet our stream flow requirements
- The project will ultimately replace a manual monitoring process with automated control of release water
- To achieve this we will:
 - Capture USGS streamflow data to District's SCADA system
 - Install an additional stream gage near confluence with San Geronimo Creek
 - Develop control algorithm for release valve



Lagunitas Stream Gage Installation

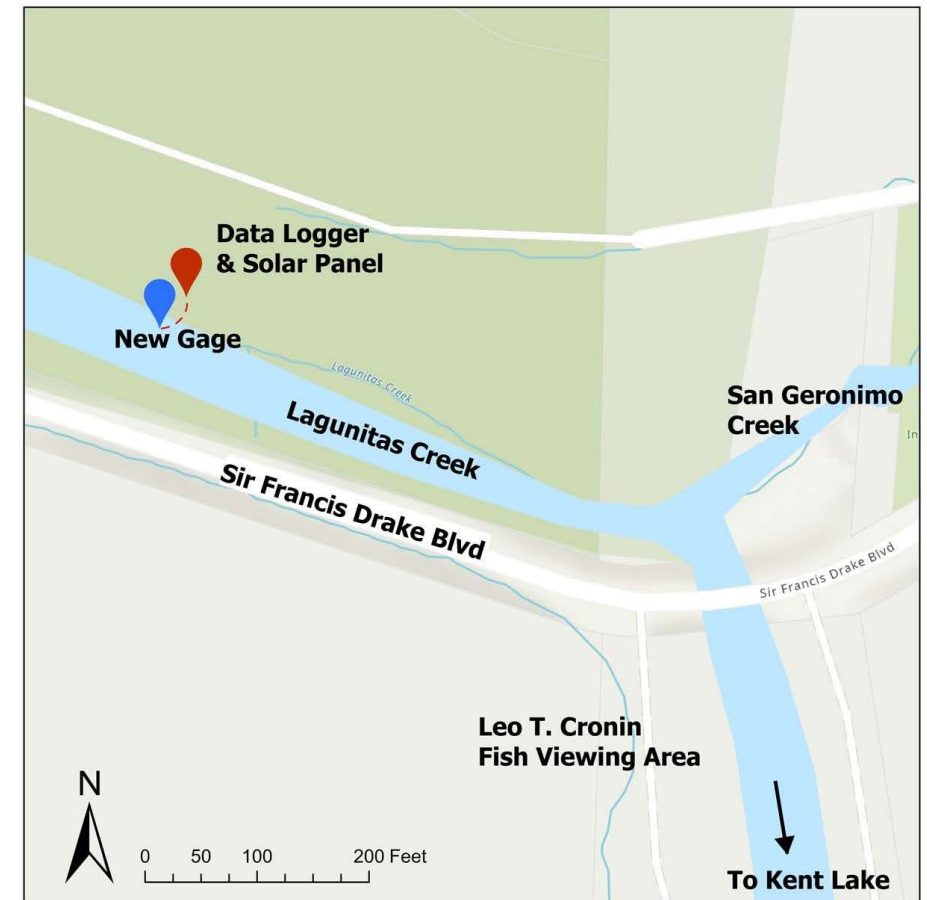
- New Lagunitas stream gage installed 9/29
 - Data logger box discovered stolen on 10/1
 - Pressure transducer and cables cut but not stolen
- District rangers working with CA State Parks to investigate theft
- Reinstall planned in next couple weeks (Oct 2023)
 - Larger and more secure container
 - Other security features
 - Increased ranger awareness



New Lagunitas Creek stream gage at Samuel P Taylor State Park

Project Schedule & Next Steps

- Install new stream gage by Fall 2023
 - ✓ Select site for stream gage installation (Jun)
 - ✓ Obtain permission from property owners (Aug)
 - ✓ Install equipment (Sep)
 - Reinstall equipment (Oct)
- USGS data connection to SCADA and valve control by late 2023
- Develop rating curve through water year 2024
- Project completion 2024/2025



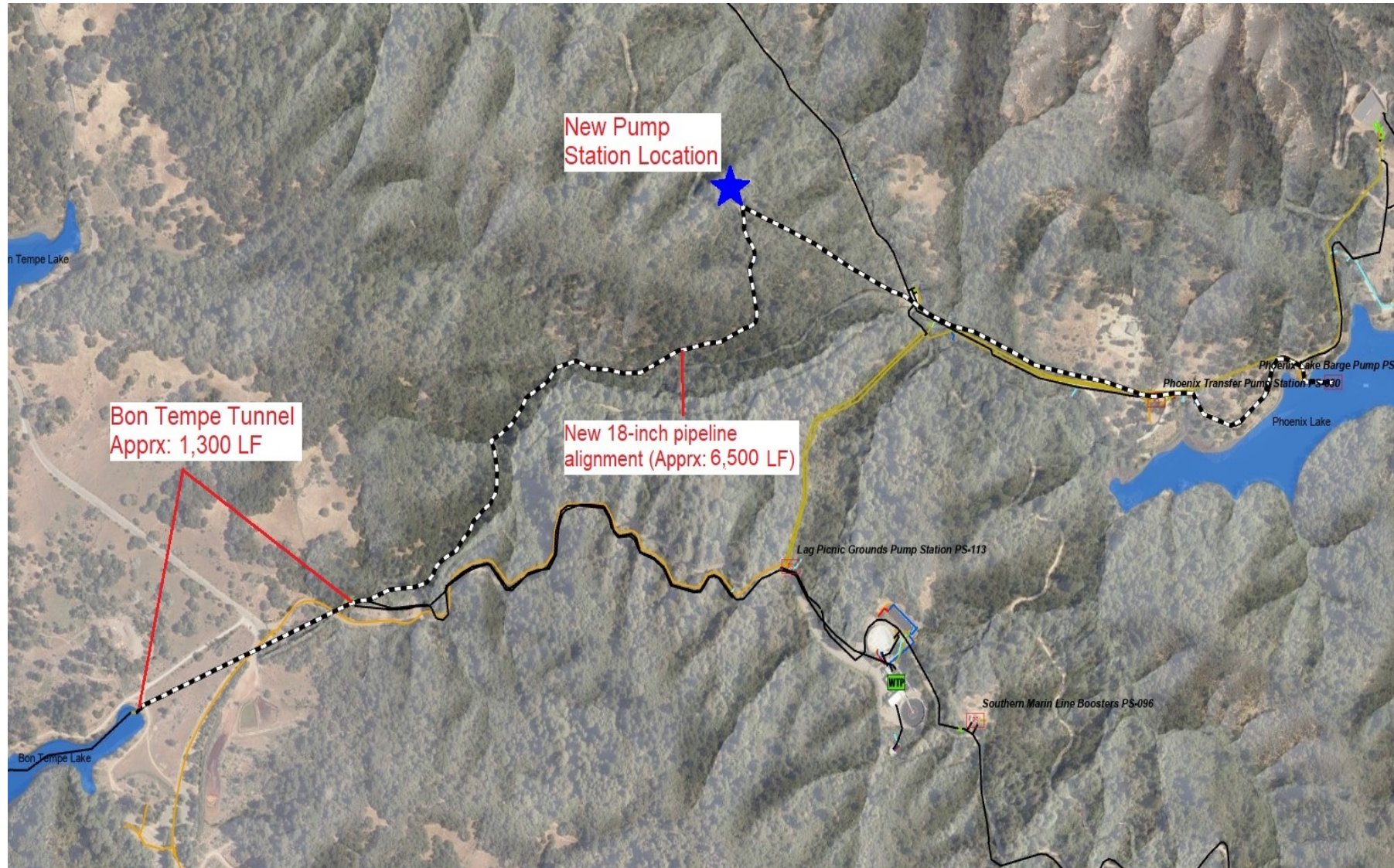
Site Map - New Lagunitas Creek stream gage at Samuel P Taylor State Park

Early Actions: Optimizing Supplemental Water

- Develop strategy for optimizing the purchase of supplemental water
- **Frugal** describes the approach to water purchases prior to 2020 - only purchase water over the take-or-pay quantity if storage was at very low levels
- **Cautious** describes the approach since 2020 - informed by recent experience in the drought, this current strategy maximizes water supply
- **Optimized** strategy seeks a balance between the *frugal* and *cautious* approach.
- Develop rules for the purchase of water that balance water supply risk and cost to the District by modelling system supply and demand over a wide range of conditions and over longer time period to understand tradeoffs
- Funding – FY 23/24 Water Supply budget
- Schedule – February 2024

Early Actions: Phoenix Lake to Bon Tempe Reservoir

Phoenix Lake to Bon Tempe Alignment



Phoenix – Bon Tempe Project Status

- Working with consultant to assist with preliminary engineering and feasibility
- Geotechnical contract in progress
 - Will provide opinion on potential impacts (e.g. landslide risk and erosion concerns) on dam and reservoir for proposed pumping
- CEQA contract in progress
 - Moving forward with IS/MND
 - Working with regulatory agencies on determining appropriate permits



Phoenix Dam

Bon Tempe Tunnel Entry



Phoenix – Bon Tempe Project Status

- Application submitted to PG&E for new service
- RFP for electrical engineer for pump station design
- Construction schedule dependent on CEQA and permit status, preliminary start date is August 2024
 - Two construction seasons due to spotted owls
- Funding Opportunity:
 - USBR Small Storage Program



Drone operation for condition assessment at Bon Tempe Tunnel

Early Actions: Electrification of Soulajule Pump Station

Soulajule Project Overview

- Improves operability and flexibility of storage facilities
- Would set up improved efficiency for long term operating model
- Technical alternatives analysis underway
 - PG&E Load Study
 - PG&E Sustainable Solutions Turnkey (SST) Analysis
 - Permanent Generator/Fuel cell/Solar options



Soulajule Dam & Pump Station

PG&E Distribution Planning Alternatives Analyses

- PG&E conducted load study to run one 800hp pump at 100% load at any time
- While preliminary results were positive, PG&E final results show that only a combined 800hp load can be run with a maximum of 330 amps at any given motor
- Staff looking into various alternatives to meet this requirement for electrical service and also revisiting alternative solutions for short term operating model

Summary & Next Steps

- Project schedule largely driven by PG&E
- Developing alternative solutions if line power infeasible
- RFP for discharge pipe design
- Funding opportunities:
 - WRDA
 - Other grants

Early Actions: Conservation

Water Efficiency

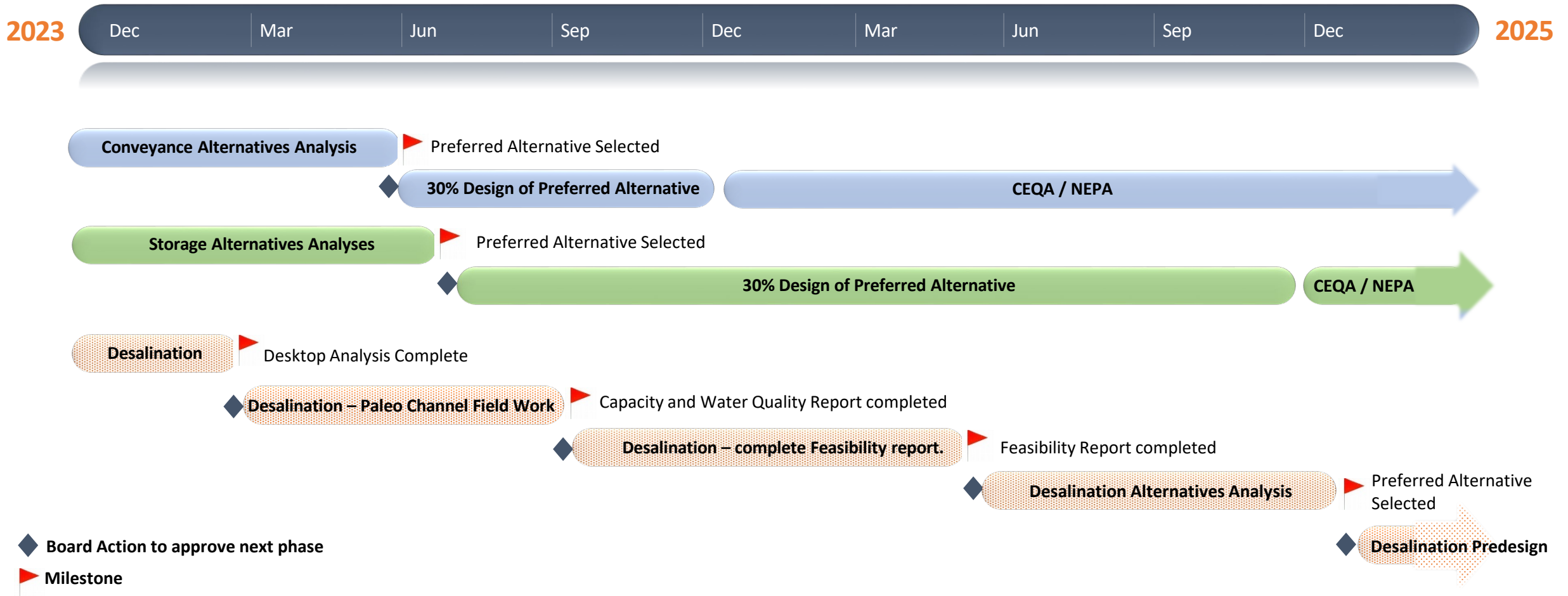
- Master Plan underway update November Comms and WE Committee
- Expand Graywater ordinance to provide options
- Sun-setting of toilet and washing machine incentives
- Innovative Non residential incentive program
- Educational programs – Master Gardener and school programs

Water Loss Reduction Program

- Current Status:
 - 2022 Real Loss: 19.65 gallons/ connection
- E-Source a solutions based data science firm with experience in Water Loss analysis and strategy
 - Evaluate existing water loss activities, processes and equipment
 - Consider what role technology can play in improving water loss for Marin Water:
 - Use of satellite imaging systems to permanent acoustic sensors
 - Provide a suite of water loss control best practices
 - Water Loss Team: Water Efficiency, Operations, Water Resources, Finance, Engineering Planning
 - Schedule: Completion early 2024

Longer Term Actions

Water Supply Roadmap: Schedule



Roadmap Grant Funding

- Water Resources Development Act (WRDA) - \$28M for water supply projects
 - Soulajule Pump Station Electrification is No. 1 new start project in SF Office work plan
- DWR Urban and Multi-benefit Drought Relief Grant \$2M
 - SWSA invoices have been sent for reimbursement

- Funding Applications:
 - DWR– Local Water Supply Projects \$53M:
 - Not funded in first round
 - USBR– Desalination \$200k :
 - Not funded and unlikely to reapply based on status of work
 - USBR– Local Storage Supply Enhancement \$600k:
 - Not funded in first round
 - USBR Applied Science Grant:
 - Currently in progress

Summary Table – Preliminary Funding Schedule

	\$[Millions]				
* Not a line item in budget	2024	2025	2026	2027	Total
Soulajule Electrification	\$0.5	\$3.5	\$3.2	-	\$7.2
Phoenix to Bon Tempe	\$0.5	\$1.7	\$2	\$1	\$5.2
Optimize SCWA*	\$0.3	-	-	-	\$0.3
Stream Flow Automation*	\$0.1	-	-	-	\$0.1
Water Loss*	\$0.1	-	-	-	\$0.1
Conservation	\$1.7	\$1.7	\$1.7	\$1.7	\$6.8
AMI	\$0	\$0	\$0	\$2.5	\$2.5
Petaluma Brackish Desal	\$0.25	\$1	\$0.5	-	\$1.75
Marin – Sonoma Options	\$0.5	\$1	\$2	\$1	\$4.5
Increase Storage	\$1	\$2	\$2	\$1	\$6
Total	\$4.95	\$10.9	\$11.4	\$7.2	\$34.45

Next Steps

- Continue implementation work on Early Action projects
- Begin Alternative Analysis work on Conveyance and Storage
- Desktop analysis for Petaluma River Desalination Feasibility
- Update on Recycled Water 10/20/23 Operations Committee
- Continue to track and pursue grants to support roadmap implementation
- Ongoing routine updates to board on progress and status of work