



Water Supply and Roadmap Update

BOARD MEETING

March 21, 2023

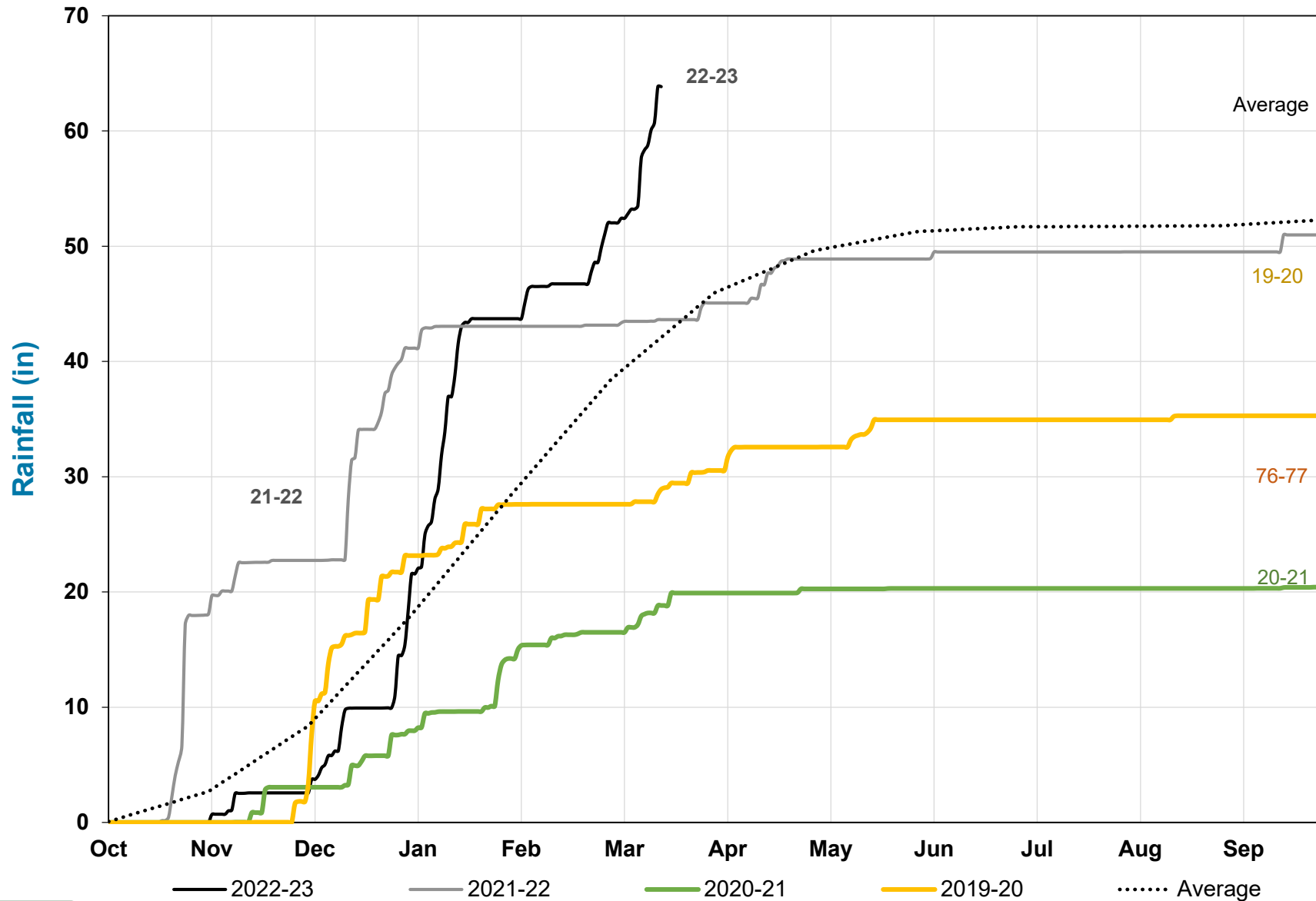


Water Supply and Roadmap Update: Overview

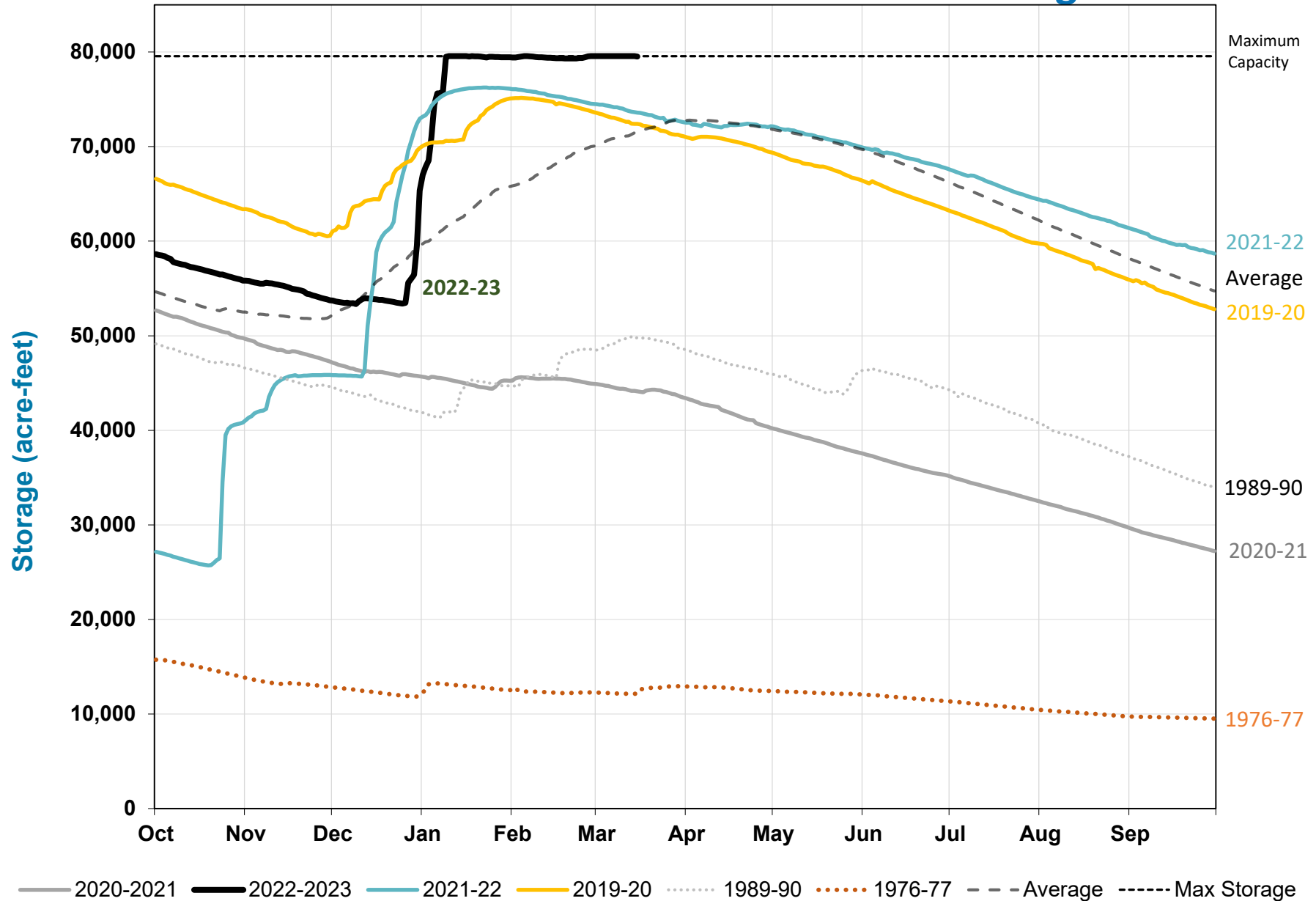
- Water Supply Conditions
- Water Supply Forecast
- Integrated Roadmap Update
- Next Steps

Cumulative Precipitation

Lake Lagunitas Rain Gauge

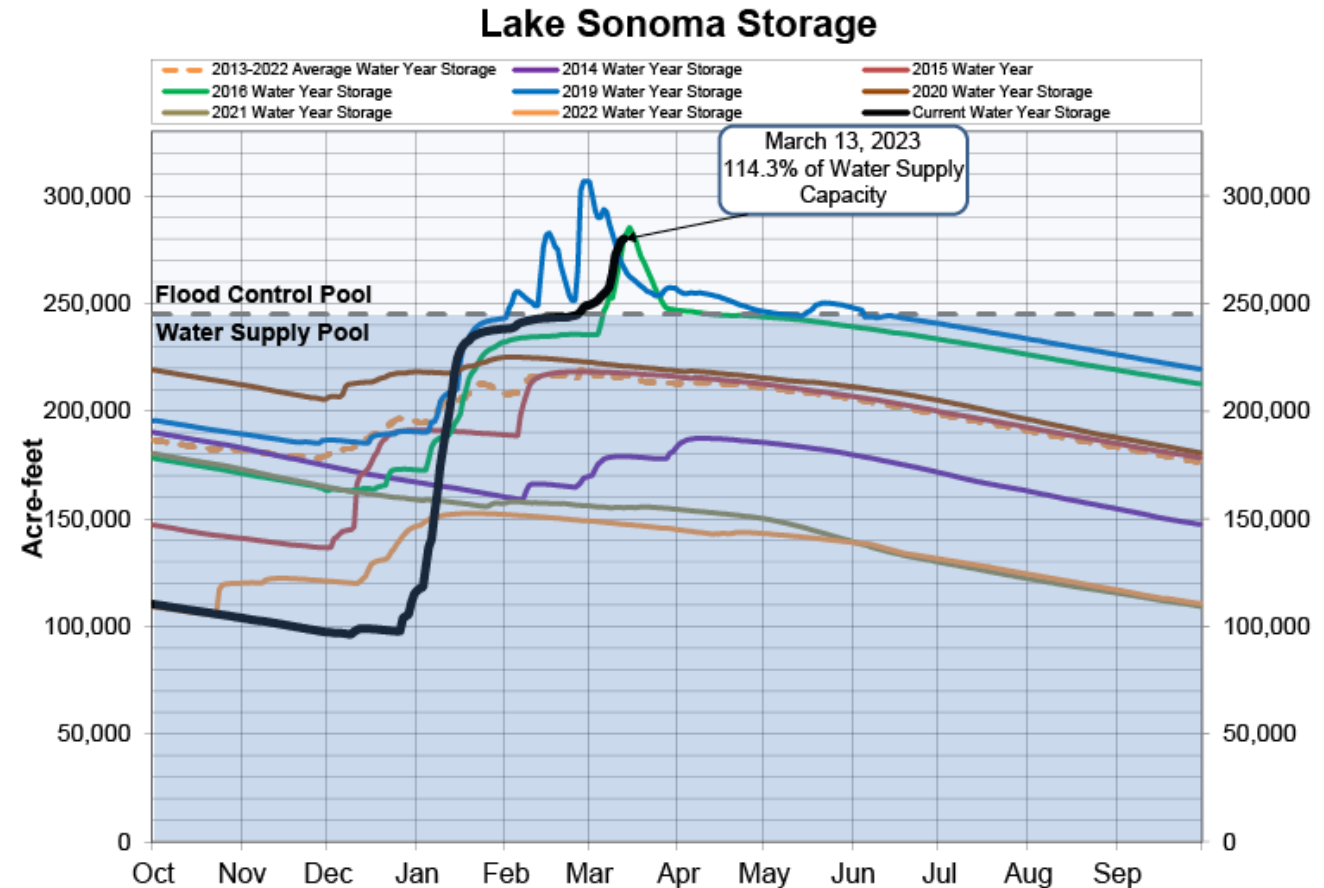


Current Water Year Total Reservoir Storage



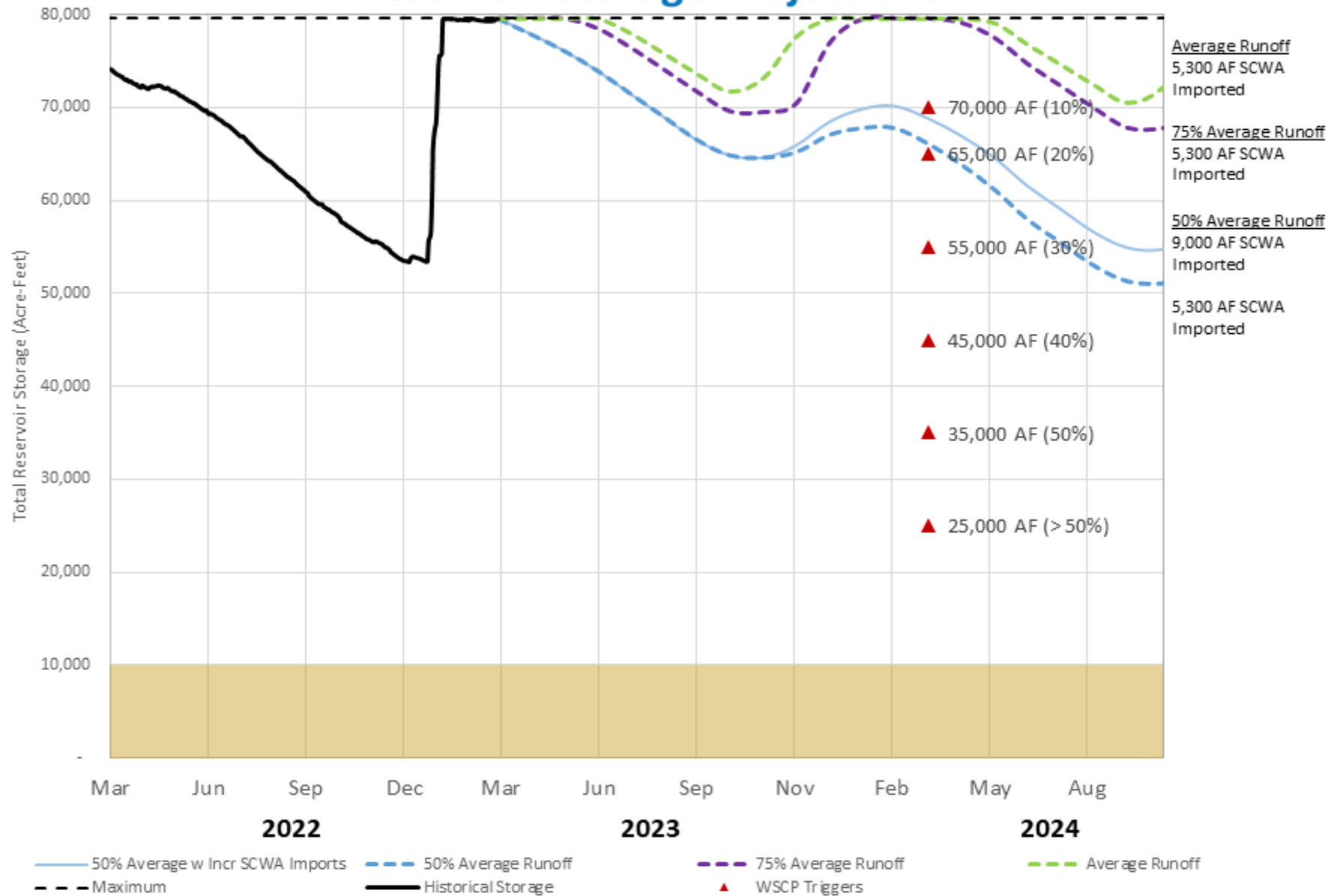
Water Supply and Roadmap Update: Water Supply Conditions

- Supplemental water this fiscal year = 2,900 AF
- Fiscal year Take or Pay minimum = 5,300 AF
- During reservoir spill reduce supplemental water
- Spill volume this year ~ 60TAF
- Increase supplemental water in last 3-4 months of fiscal year to achieve 5,300 AF



- Current storage 127% of average
- Average storage for this time of year ~220 TAF

Reservoir Storage Projections



Roadmap Update

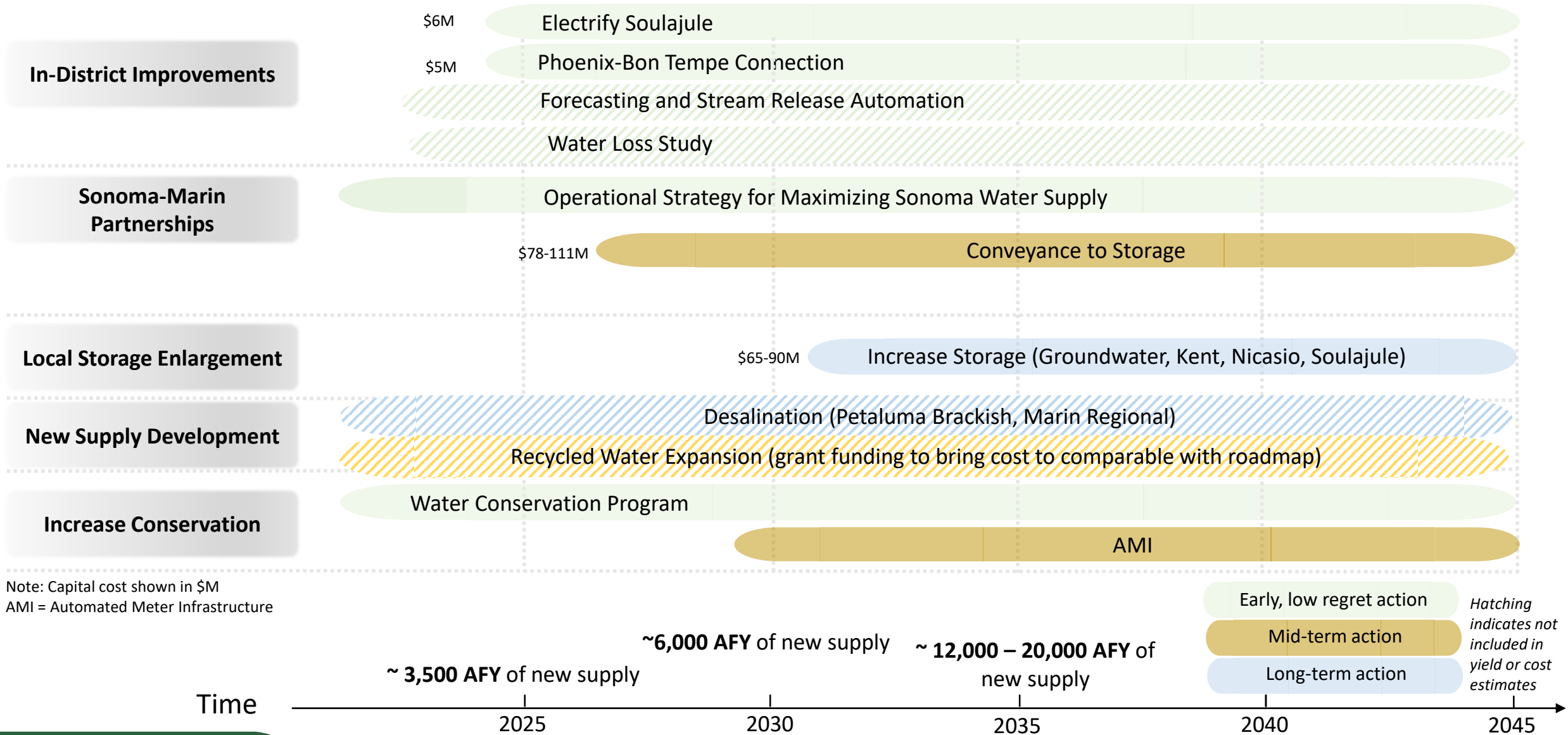
Water Supply Roadmap: Goals & Milestones

- Roadmap selection - **February 2023**
- Begin forming consulting teams to work on project selected from the roadmap - **March 2023**
- Begin “no-regrets” projects implementation - **March 2023:**
 - Conservation actions
 - Soulajule Electrification
 - Phoenix to Bon Tempe
- Develop detailed approach and schedule for individual projects and overall roadmap - **August 2023**

Main Elements of Integrated Strategy

- **Water Conservation and Flexible Drought Measures**
 - Expand long-term water conservation program
 - Continue implementation of Water Shortage Contingency Plan measures for drought conservation
 - AMI
 - Water Loss
- **Improve Operability and Flexibility of Storage Facilities**
 - Electrify pump station at Soulajule
 - Connect Phoenix Lake and Bon Tempe Reservoir
 - More strategic implementation of Temporary Urgency Change Permits
 - Stream release automation
- **Maximize Use of Sonoma Water Supplies**
 - Operational strategy to maximize supplemental water
 - Develop dedicated conveyance to storage
- **Increase Local Storage**
 - Develop an additional 20 KAF of storage (including smaller volume by raising spillways)
- **Develop New Local Supplies**
 - Petaluma brackish desalination
 - Expand recycled water distribution (with grant cost share)
- **Regional Water Bank**
 - Explore participation in regional groundwater bank

Roadmap for Integrated Strategy



Early Actions Update

- Soulajule Electrification ~\$6M / 420 AFY
 - Met with PG&E 3/15/21 to discuss options and develop schedule
 - PGE to conduct Large Load Study ~ \$75k
 - PGE to develop self generation options for comparison
 - Next meeting early April (TBD)
 - Funding strategy – Combine \$2M of WRDA with CIP (or potentially PGE 0% financing up to \$4M)

Early Actions Update

- Phoenix to Bon Tempe ~\$5M / 260 AFY
 - MOU with County of Marin to explore project funding / partnership
 - Investigating water rights to transfer Phoenix Lake water to Bon Tempe
 - CEQA work and Engineering design in process
 - Funding strategy – Explore flood control funding from County and combine with \$2M WRDA funding and CIP

Early Actions Update

- Develop strategy for maximizing supplemental water (Water cost / 2,000 AFY)
 - Current front loading strategy - maximum flow July ~ Nov, then continue or adjust flow based on local reservoir levels, Sonoma reservoir levels, & NOAA seasonal forecast
 - Goal – Identify what conditions (reservoir level, forecast, availability of water) are the best trigger for the purchase of additional water that minimizes local reservoir spills and maximizes reservoir storage level.
 - Dynamic modelling of system supply and demand over a wide range of conditions and over longer time period to understand tradeoffs that will lead to a selection of a strategy that most closely meets the goal.
 - Funding strategy – CIP funds for modelling effort, operating budget and reserves (for purchase of water above take or pay minimum).

Early Actions Update

- Stream Release automation – \$100k / ~1,000 AFY
 - Improve control using existing infrastructure to more closely match streamflow requirements – MMWD Controls group to capture USGS stream gage data and write control algorithm for release valve
 - Meet with consultant to understand if additional infrastructure (i.e. stream gage or other flow monitoring equipment) will improve control performance
 - Funding strategy – Operations budget & CIP
- Conservation
 - Ramping up incentive activities in time for summer
 - Evaluating impacts of soonest viable full AMI deployment
 - Developing Scope of work for Water Loss team
 - Funding strategy - Request for \$1M in earmark funding from EPA for ~2,200 AMI meters to replace meters in disadvantaged communities, \$2.5M AMI funding in CIP

Petaluma Brackish Desalination

- Develop a regional coalition to investigate feasibility
 - MOU With Petaluma & North Marin - May 2023
- Feasibility study to confirm a number of assumptions that were made in developing the project concept:
 - Confirm groundwater yield (pumping capacity)
 - Explore open intake as a viable backup to groundwater well intake
 - Confirm source water quality TDS and trace compounds
 - Develop finished water quality specification (establishes complexity of treatment & affects both CIP and O&M cost)
 - Review brine disposal options and identify gaps for studies to support brine disposal options
 - Develop revised feasibility, cost and schedule report
- Feasibility Schedule
 - Develop scope of work for feasibility – April/May 2023
 - Request For Proposals – June 2023
 - Begin Feasibility – August 2023
- Funding strategy – Request for \$200k in USBR grant funding with \$250k in match from Roadmap Implementation/pre-design funds

Marin Sonoma Option: Conveyance of Supplemental Water to Storage

- Construction of conveyance improvements between the SCWA system and Marin Water \$111M - \$150M / 4,000-6,000 AFY
- Pre-design work to further develop:
 - Understanding relative cost-benefits of dedicated conveyance to storage to allow selection between options
 - Determine optimum capacity/sizing of selected conveyance option
 - Hydraulic analysis for pump station sizing and siting, recommend pipeline alignment, ROW needs, permits, cost estimate and schedule
 - Design to support CEQA/NEPA
- Parallel task for staff to work with Sonoma and contractors to engage, inform and build support for this effort
- Schedule:
 - Develop scope of work ~April 2023
 - Request For Proposals ~May/June 2023
 - Begin pre-design ~August 2023
- Funding strategy – Roadmap Implementation/pre-design funding

Local Storage

- Develop an additional 20 TAF of storage (including potential smaller volume increases by raising spillways)
- Pre-Design work to:
 - Review hydrology, geotech and selection of reservoir (KENT/NICASIO/SOULAJULE) and scale of enlargement
 - Model and analyze stream flows and impacts/benefits to creek/fishery of various options
 - Discussion with State Water Resources Control Board, National Marine Fishery Service, CDFW and other resource agencies/stakeholders
 - Design to support CEQA/NEPA
- Schedule
 - Develop Scope of Work – April/May 2023
 - Request For Proposals – June/July 2023
 - Begin Feasibility – August 2023
- Funding strategy – Grant application to DWR for \$5M to offset cost of predesign work, additional potential for USBR WaterSmart grant, and Roadmap Implementation / Pre-design budget

Summary Table – Preliminary Funding Schedule

	\$[Millions]				
	2024	2025	2026	2027	Total
Soulajule Electrification	\$0.5	\$3.5	\$3.5	-	\$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

* Not a line item in budget

Next Steps

- Continue implementation of Early Action projects Soulajule electrification, Phoenix to BT, Stream release automation and water conservation
- Develop scopes of work and schedule for RFPs for Marin Sonoma Options and increasing storage
- Develop scope of work for Petaluma Brackish Desalination Feasibility
- Continue to track and pursue grants to support roadmap implementation