MARIN WATER

Strategic Water Supply Assessment

COMMUNITY WORKSHOP #1

March 9, 2022

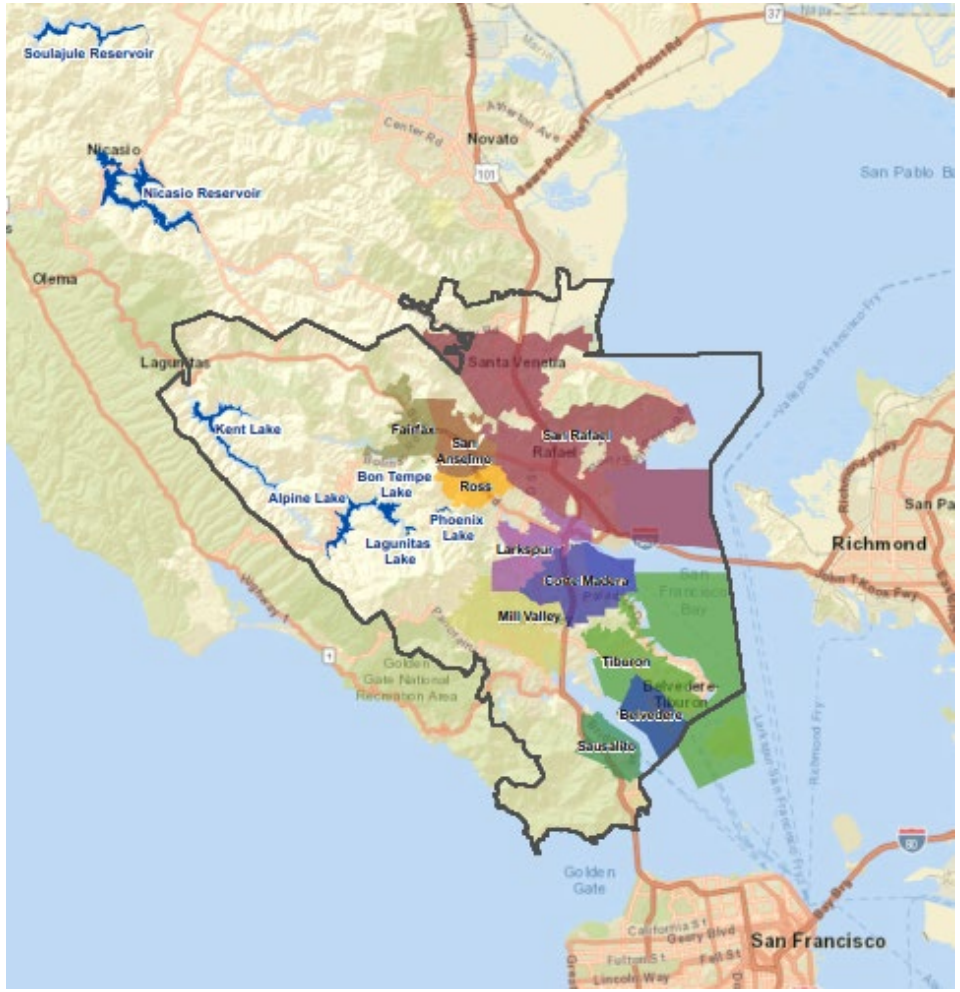
Workshop Agenda: Strategic Water Supply Assessment

- Background
- Project Overview
- Assessment & Process
- Public Engagement
- Q&A

Background

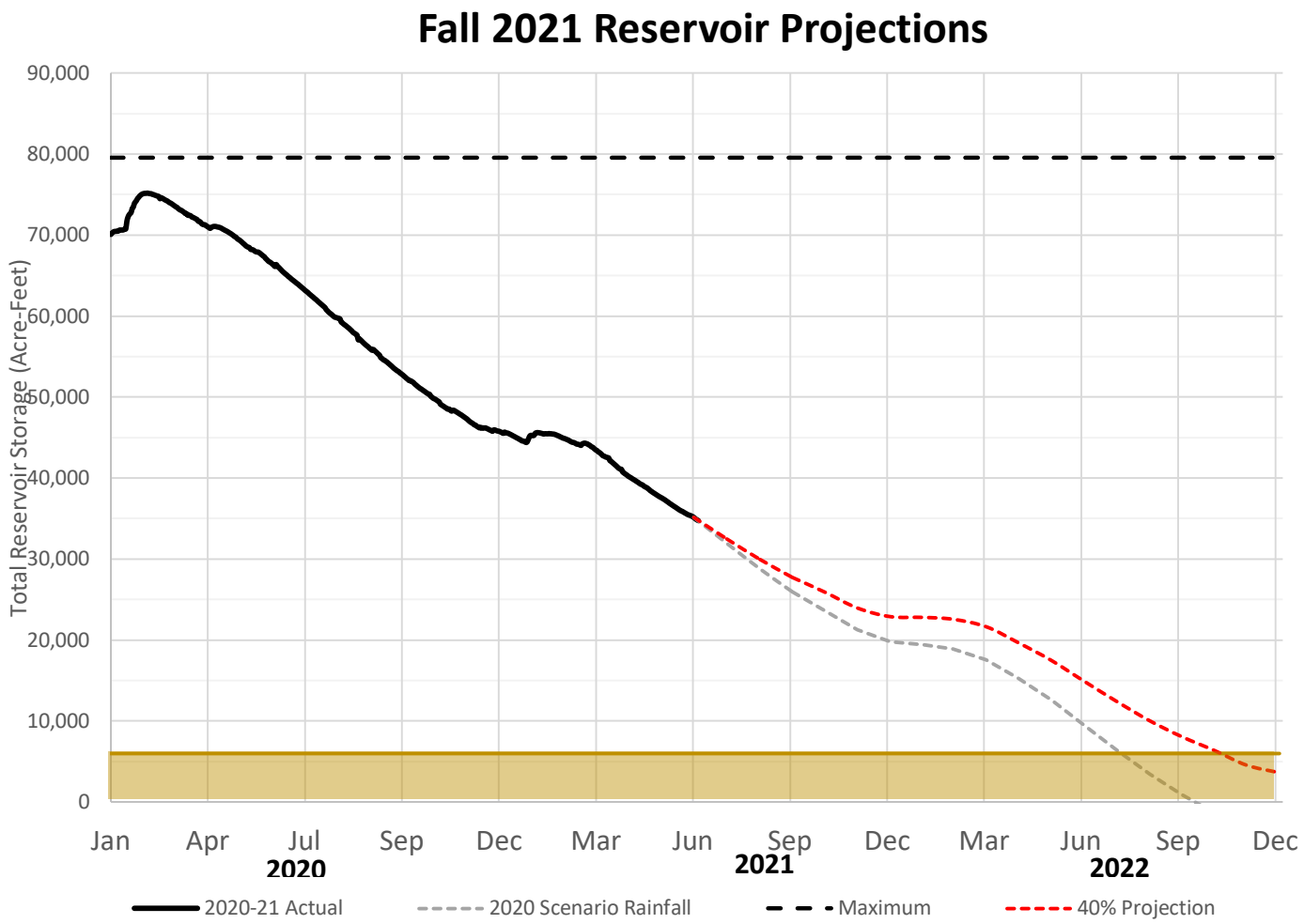
Background: Strategic Water Supply Assessment

- Marin Water has met demands during periods of extreme drought with a combination of rationing, conservation, and increased Sonoma Water supplies
- However, recent drought conditions that severely threatened water supply reliability have prompted MMWD to explore various water supply options to enhance resiliency for its customers



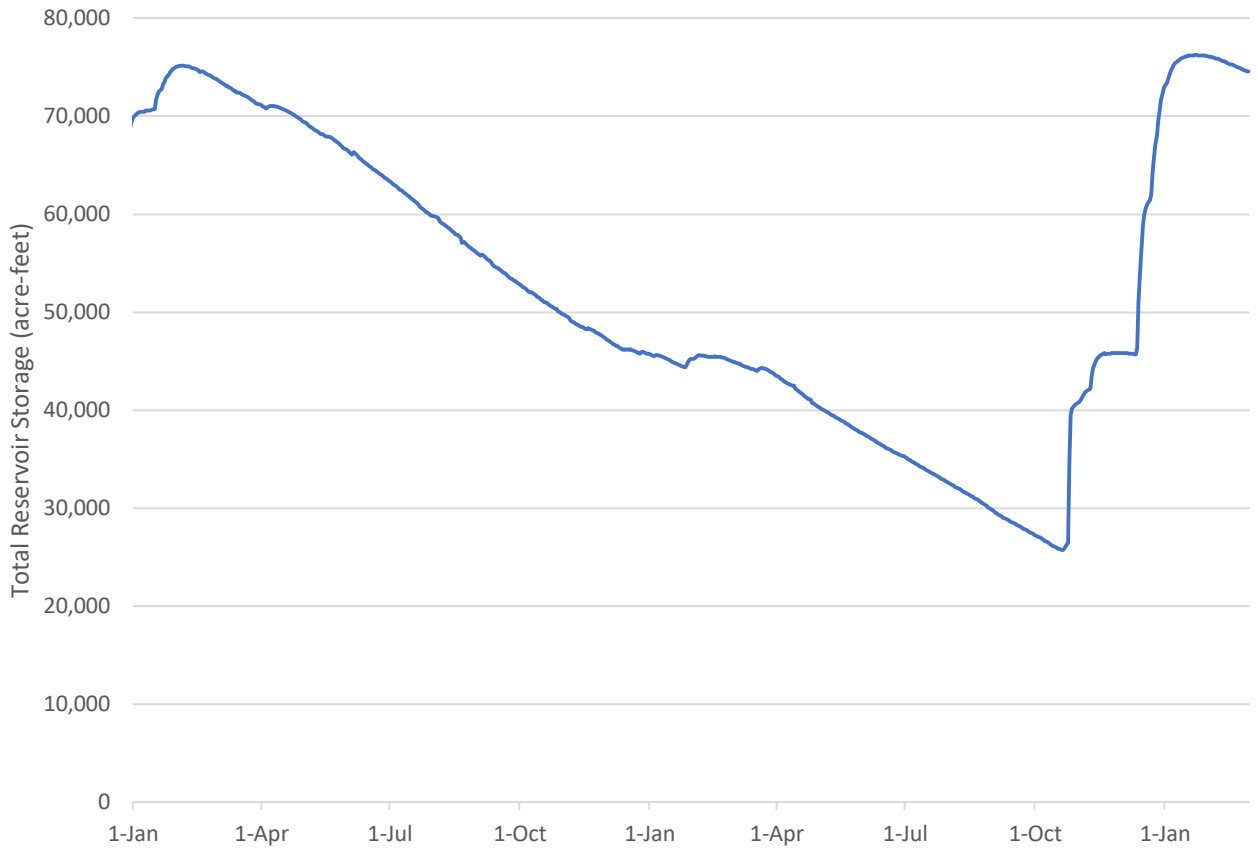
Background: Strategic Water Supply Assessment

- Severe drought conditions over the past two years
- Reservoir levels dropped historically low
- Planning for an emergency water supply



Background: Strategic Water Supply Assessment

- Exceedingly high rainfall totals in October & December
- Storage levels have improved drastically:
  - Storage levels 106% of historical average for February
  - Approximately 2 years supply in the reservoirs



Water Supply Assessment: A Roadmap

- Support District's near-term and long-term investments to enhance drought resiliency
- Roadmap laying out best opportunities to pursue and when
- Public engagement is central component of project

Project Overview

Water Supply Assessment: Project Overview

- Strategic Water Supply Assessment will be additive to past planning efforts and is designed to fill in the gaps on water supply alternatives
- Comparative analysis of water supply options available to MMWD and provide recommendations on a strategic water supply roadmap
- Respond to accelerated pace of climate change and greater hydrologic extremes than those that have occurred in the past

Water Supply Assessment: Project Overview

The Assessment will address the following questions:

1. What is the current risk to MMWD's water delivery reliability under recent and projected future droughts?

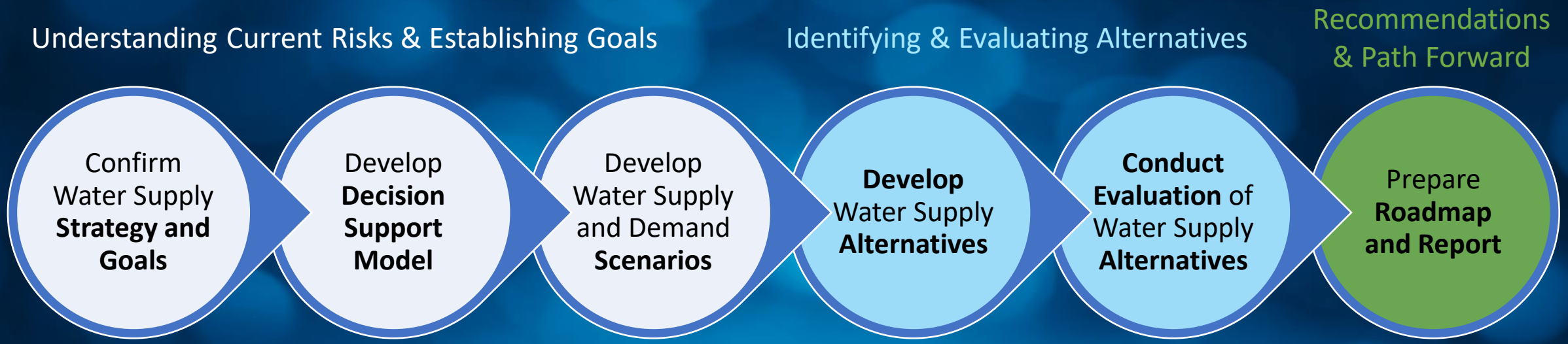
2. How much additional water supply is needed under different future hydrologic drought and demand scenarios?

3. What are the range of water supply alternatives that could increase resiliency of MMWD's system? And what are their strengths and weaknesses?

4. What recommendations can be developed to support MMWD's near-term investment in drought resiliency?

Process for Assessment

Key Project Scope Elements

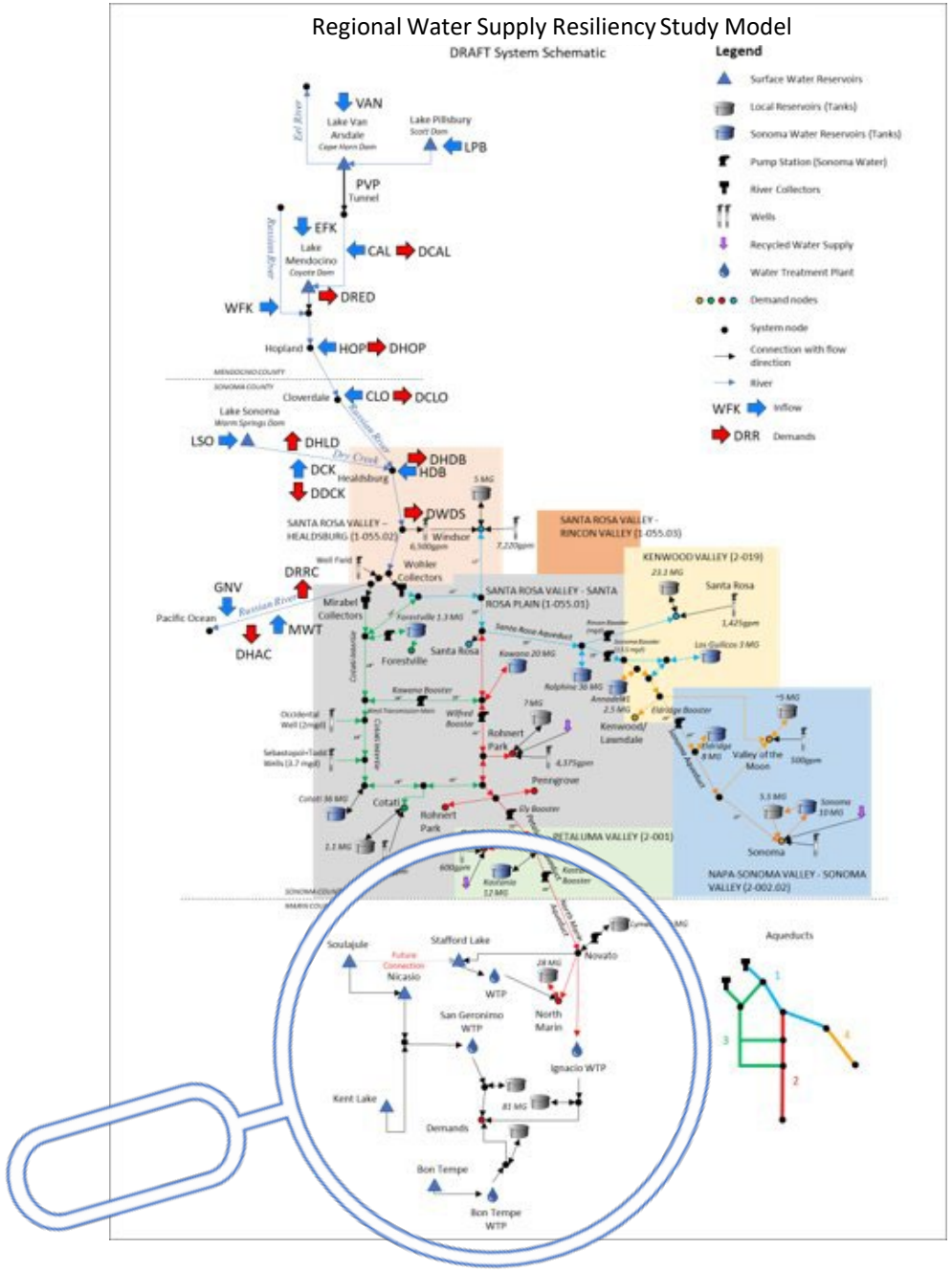


Confirming Water Supply Strategy and Goals

- Articulate the District's long-term water supply strategy and goals
- Identify specific goals and measures of performance
- Develop principles to guide the water supply assessment
- Support communicating the strategic assessment and recommendations

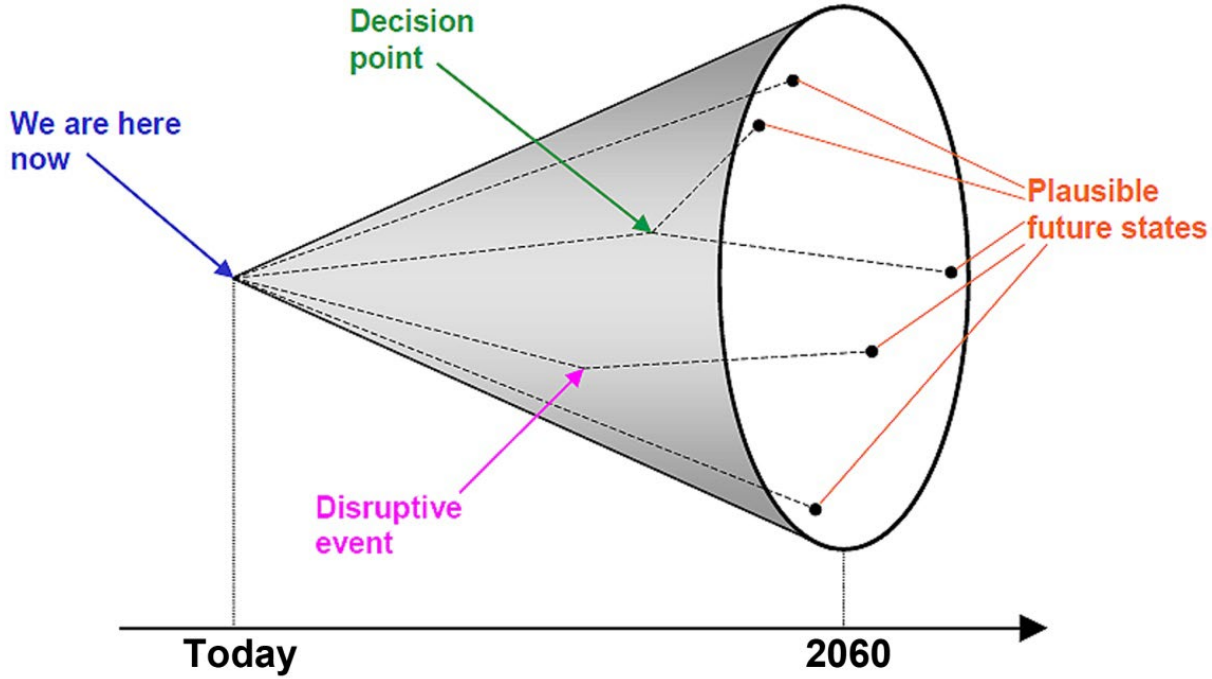
Decision Support Model

- Regional and local system model for evaluating water supply resiliency
  - System infrastructure, hydrology, demands, operations
- Updating decision support models
  - Sonoma Water and Marin Water models
- Adding detail necessary to support option evaluations
- Test system performance under various scenarios and water management alternatives
- Suggest system improvements to improve resiliency



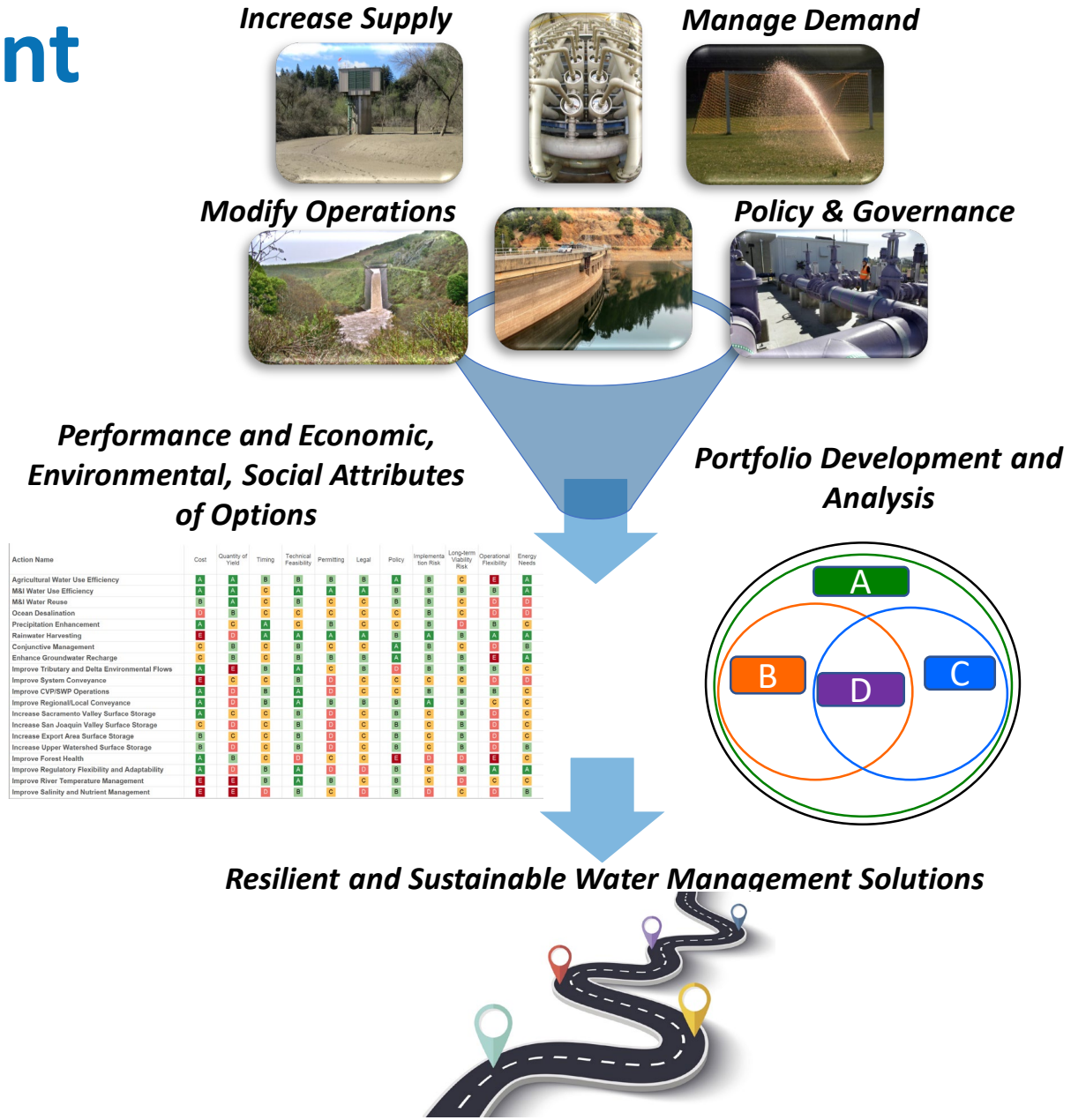
Water Supply and Demand Scenarios

- Recognizing that future is uncertain
  - Climate change
  - Drought variability
  - Demands
  - Policies and regulations
- Seeking robust solutions
- Scenarios allow us to explore plausible future conditions and identify promising solutions
  - Historical droughts
  - Climate projections
  - Paleo reconstructions
  - Stress tests



Water Supply Assessment Process

- Consider a broad range of water management alternatives
- Identify most promising alternatives
- Evaluate alternatives for performance and other economic, environmental, and social criteria
- Explore strategic combinations of alternatives
- Develop roadmap with specific project, pathways, and triggers to achieve resilient and sustainable solutions



Initial Water Management Strategies to Be Considered

- Baseline – Existing water supply system with planned improvements
- Water Shortage Contingency Plan Drought Conservation Scenario
- Water Purchases with Conveyance through East Bay Intertie
- Desalination in North Bay
- Sonoma Water Options
- Increase Local Surface Storage
- Expand Recycled Water

Schedule and Outreach Overview

March 9	Public Workshop #1
March-April	Strategy, model updates, scenarios
April-May	Water supply alternatives development
May/June	Public Workshop #2
June	Alternatives evaluation
July	Roadmap and report preparation
July/August	Public Workshop #3

Water Supply Options

Long Term Water Supply Options

Water Reuse

- Direct Potable Reuse
- Indirect Potable Reuse
- Expansion of Non-potable Reuse
- Environmental Releases
- Satellite/scalping plants
- Onsite reuse

Expansion of Local Storage

- Dredging/Excavation
- Raise Soulajule Dam
- Groundwater Banking

Interties

- East Bay
- North bay Aqueduct

Demand Management

- Water conservation
- Leak reductions
- Incentives
- Drought measures

Desalination

- Local/MMWD
- Regional
- Containerized

Sonoma Water

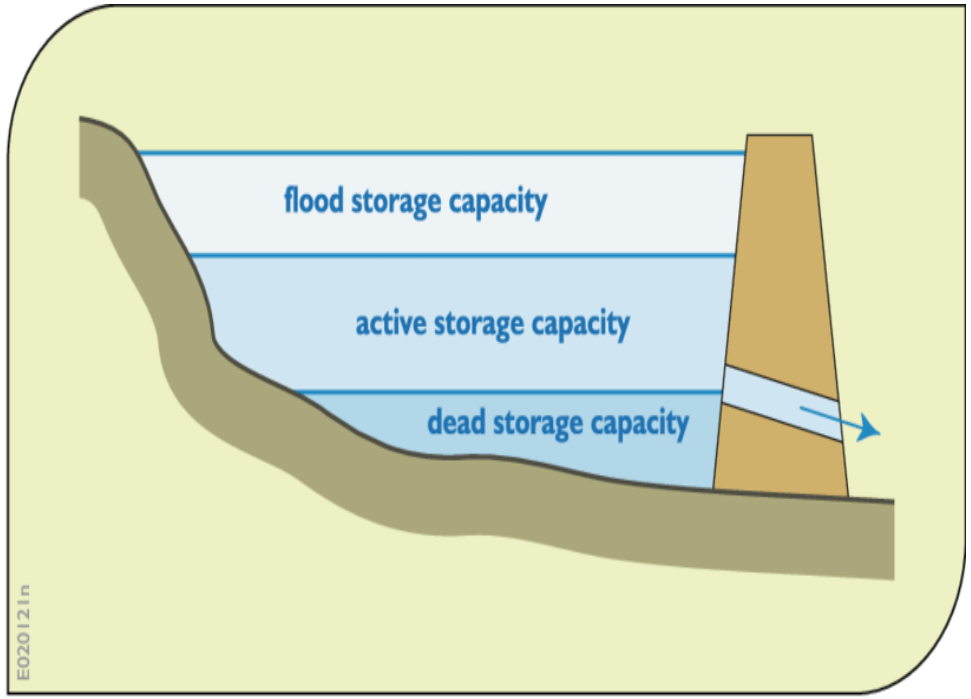
- Winter Water
- Groundwater
- Kastania Pump Station

Other

- Fog harvesting
- Shade balls
- Cloud seeding
- Watershed Management

Water Supply Assessment: Expand Local Storage

- Review availability of excess runoff in watersheds
- Regulatory/environmental approvals for the dredging or excavation work
- Requires new water rights

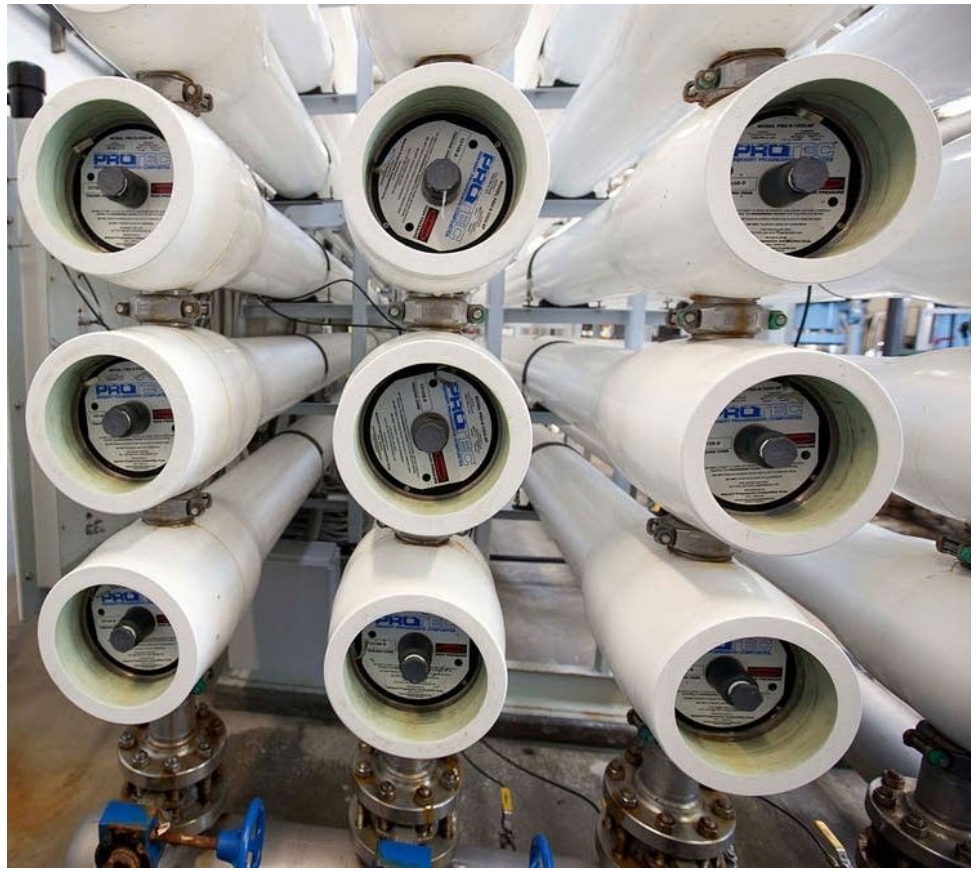


Water Supply Assessment: Sonoma Water Options

- Winter Water – stream flow above requirements as a result of precipitation events in the Russian river watershed. Evaluate dedicated conveyance to reservoir for storage.
- Groundwater well rehabilitation – increases available water in dry years
- Aquifer storage and recovery – utilizing wet year water supply to store underground and retrieve at during droughts

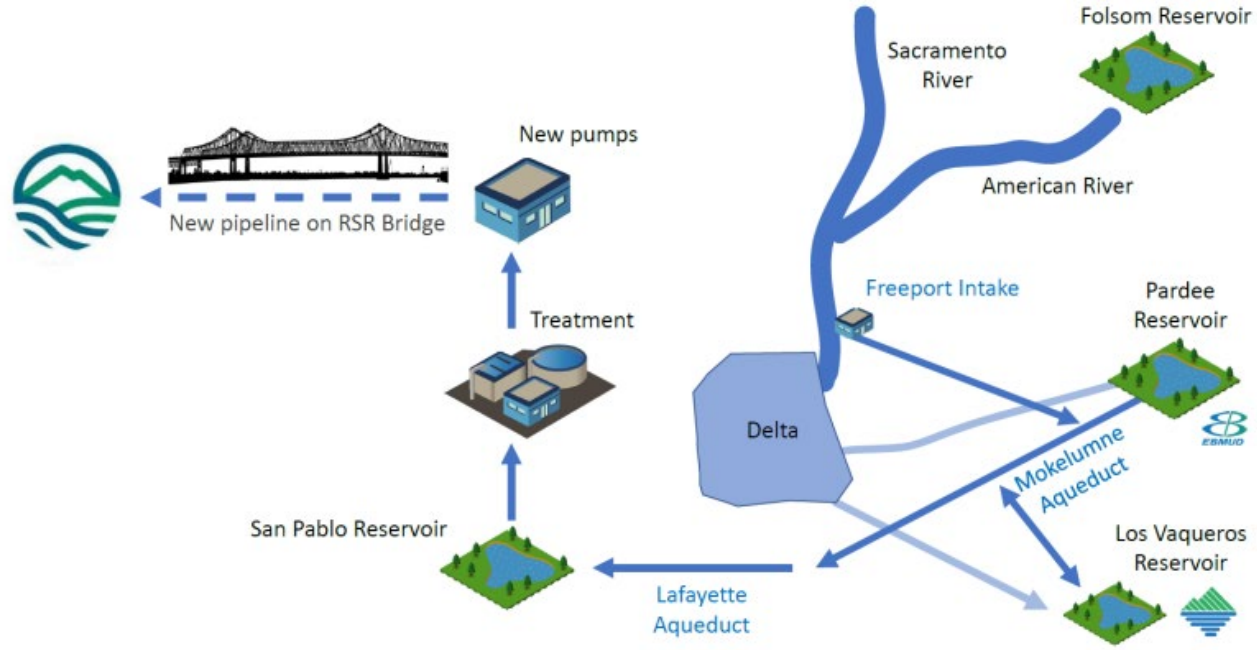
Water Supply Assessment: Desalination

- Regional East Bay Location – requires intertie, plant costs shared
- Regional North Bay Location – explore options for partnership with North bay water agencies
- Local desalination – Marin Water owned and operated



Water Supply Assessment: Interties

- Connect to East Bay or across North Bay aqueduct
- Construction of pipeline and pumping facilities
- Multiple complex agreements and regulations
- Wide array of stakeholders



Water Supply Assessment: Water Reuse Options

- Recycled Water – expansion of existing system (Peacock Gap in design)
- Indirect Potable Reuse (IPR) – highly treated water pumped through reservoir system (e.g. Kent Lake)
- Direct Potable reuse (DPR) – highly treated water directly to customers
- Environmental releases – highly treated water to watershed

Water Supply Assessment: Other

- Identify and evaluate alternate water supply technologies & innovative concepts:
  - Fog Capture
  - Cloud Seeding
  - Watershed Management – selective removal of certain types of vegetation to increase runoff

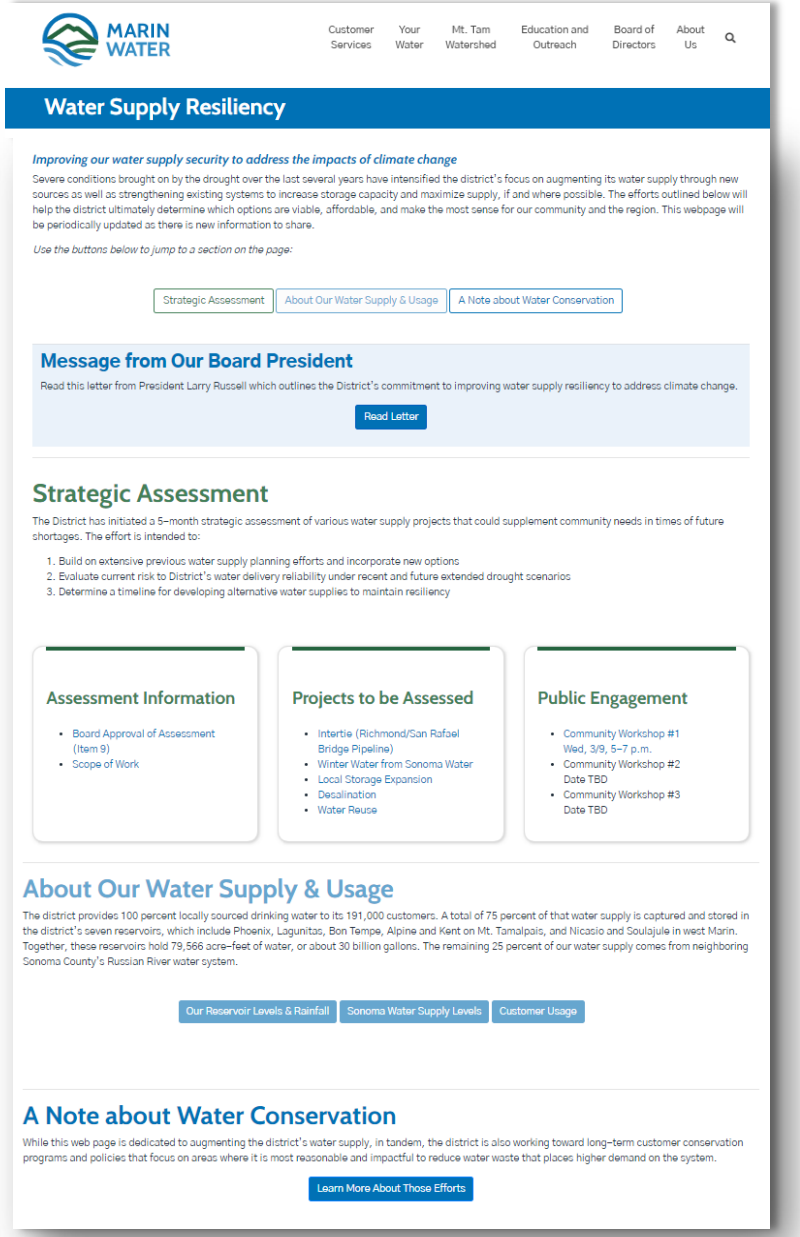
Water Supply Assessment: Demand Management

- Continue our long-term efforts in water use efficiency
- Enhanced programs and initiatives such as non-functional turf
- Leak Detection – Evaluate new technologies

Public Engagement & Next Steps

Public Engagement

- Project Information
  - marinwater.org/WaterSupplyResiliency
- Next Workshops
  - 2 more: May/June & July/August timeframe
- Marin Water e-News:
  - Sign up: marinwater.org/e-News
- Board Meetings
  - Receive meeting notifications: marinwater.org/get-notifications



Q & A