



**Water Supply  
Roadmap – Proposed  
Shortlist for  
Conveyance**

**BOARD OF DIRECTORS**

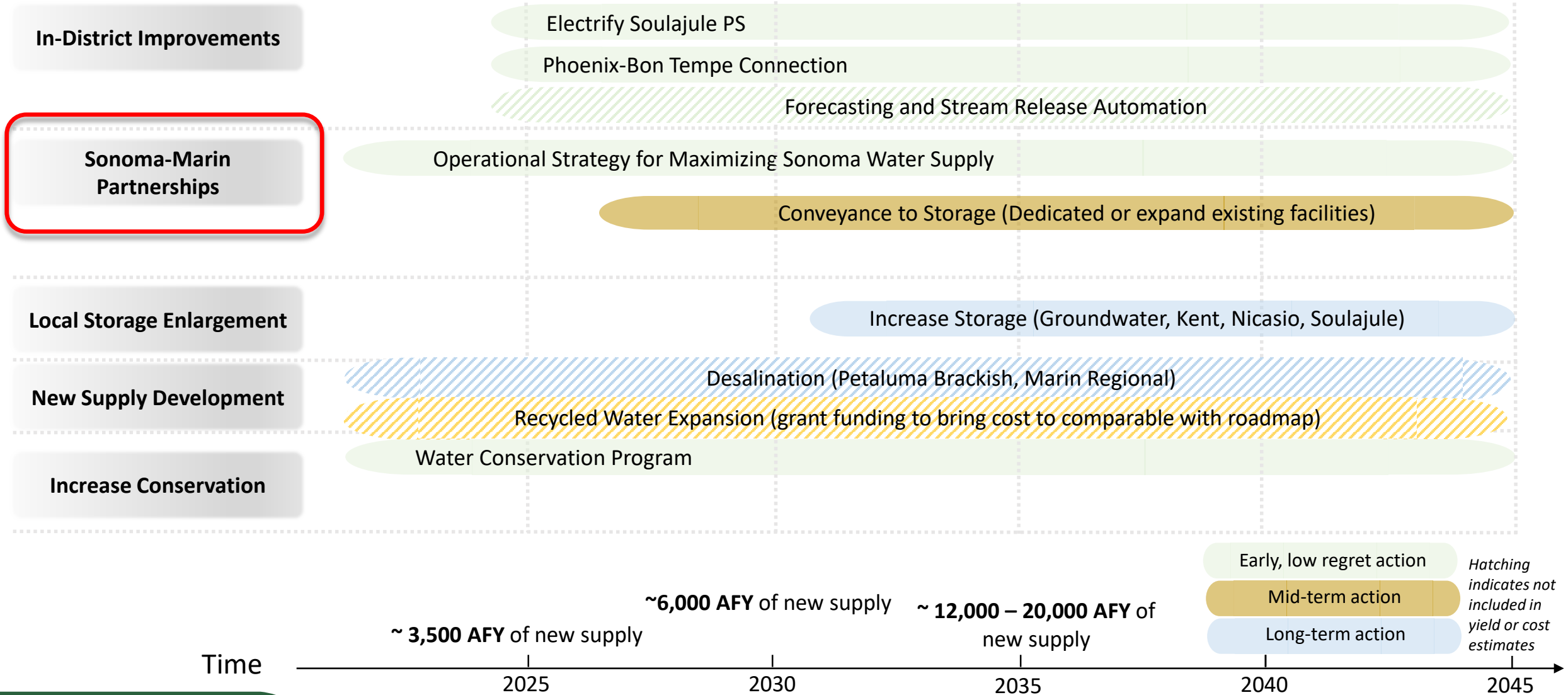
**April 2, 2024**



# Overview

- Conveyance in the Context of the Roadmap
- Project Goal and Criteria
- Summary of Conveyance alternatives
- Screening of alternatives
- Proposed Shortlist
- Phasing of projects
- Next Steps

# Roadmap for Integrated Strategy



# Integrated Approach Provides Flexibility

Time →

Conservation

Continue and enhance conservation program

In-District Improvements

Electrify Soulajule  
Phoenix-BT Connection  
Other CIP Projects over time

Optimize Operations

Develop Strategies  
Refine with Enhanced Forecasting  
Adjust operations as projects come online

Conveyance (example)

Planning/pre-design  
Design Phase 1  
Construct Phase 1  
Operate  
Design Phase 2  
Construct Phase 2  
Operate  
Design Phase 3  
Construct Phase 3

Storage (example)

Planning/pre-design  
Design Initial project  
Construct initial project  
Operate  
Design Larger project  
Construct Larger project  
Operate

○ Project milestone

● Decision point

# Project Goal and Evaluation Criteria

- *The goal of the Project is to enhance the reliability, flexibility and resiliency of the water system to improve service to Marin Water customers.*
- Proposed Evaluation Criteria are project characteristics that allow us to differentiate between project alternatives
- Typically alternatives are scored for each criterion and the highest scores represent the best alternatives

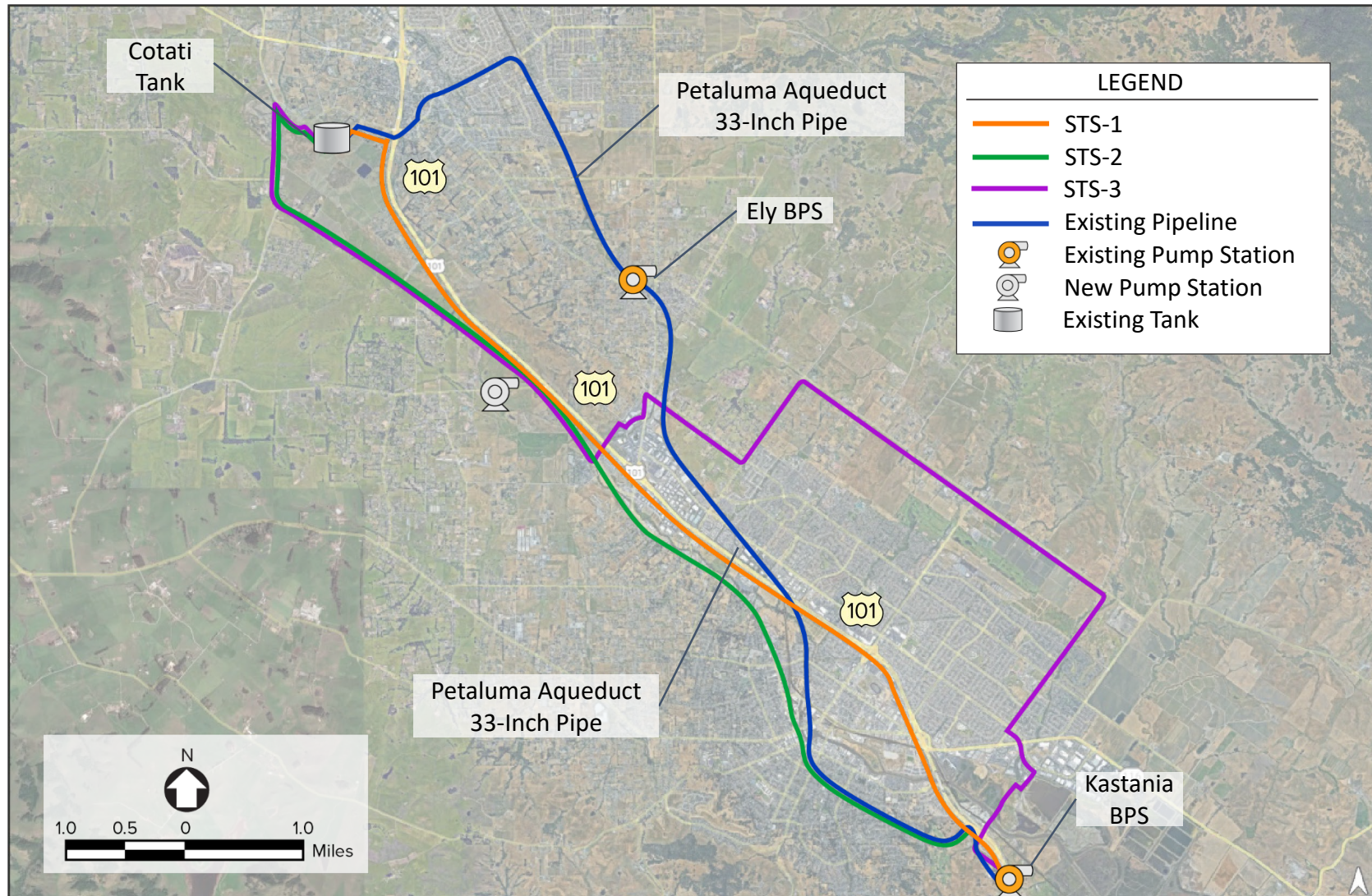
# Evaluation Criteria

- Water Reliability and Sustainability
- Flexibility and Resiliency
- Schedule and Implementation
- Water Quality
- Environmental and Social Stewardship
- Economic and Financial

# Project Alternatives

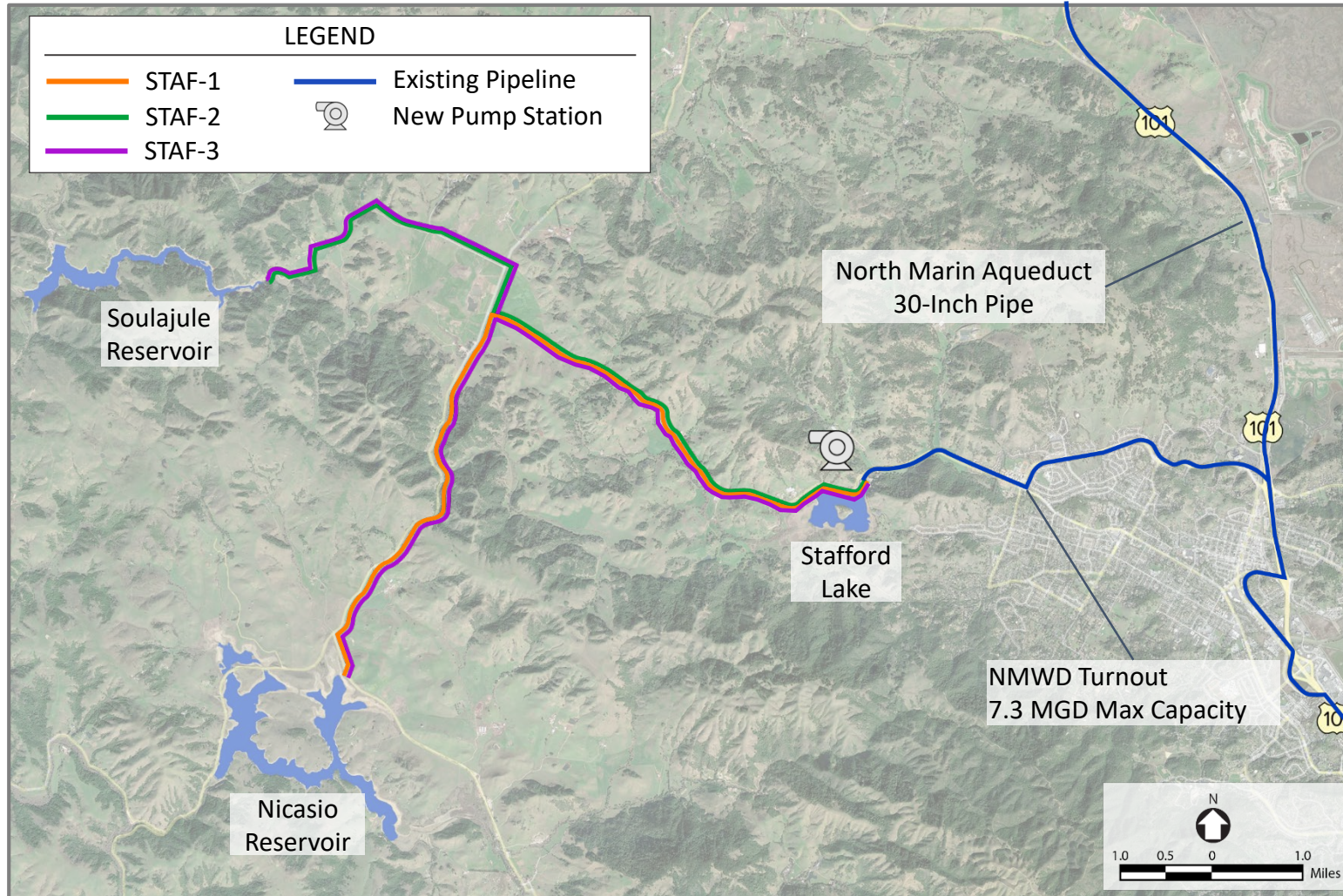
Description	Alternative	Details of Alternative	Length (miles)
Cotati Tanks to Kastania PS	STS-1	along 101 Corridor	10.5
	STS-2	through downtown Petaluma	12.1
	STS-3	through rural roads	15.5
Stafford Lake area to MMWD Lake(s)	STAF-1	to Nicasio Reservoir	8.0
	STAF-2	to Soulajule Reservoir	6.8
	STAF-3	to Nicasio and Soulajule Reservoir	11.0
North Marin Aqueduct to MMWD Lake(s)	PETA-1	to Nicasio Reservoir	13.2
	PETA-2	to Soulajule Reservoir	12.0
	PETA-3	to Nicasio and Soulajule Reservoir	16.2
	PETA-4	to Nicasio and Soulajule Reservoir via San Antonio Road	14.8
Cotati Tanks to MMWD Lake(s)	COTATI-1	to Nicasio Reservoir	24.2
	COTATI-2	to Soulajule Reservoir	20.5
	COTATI-3	to Nicasio and Soulajule Reservoir	25.9

# Southern Transmission System (STS)

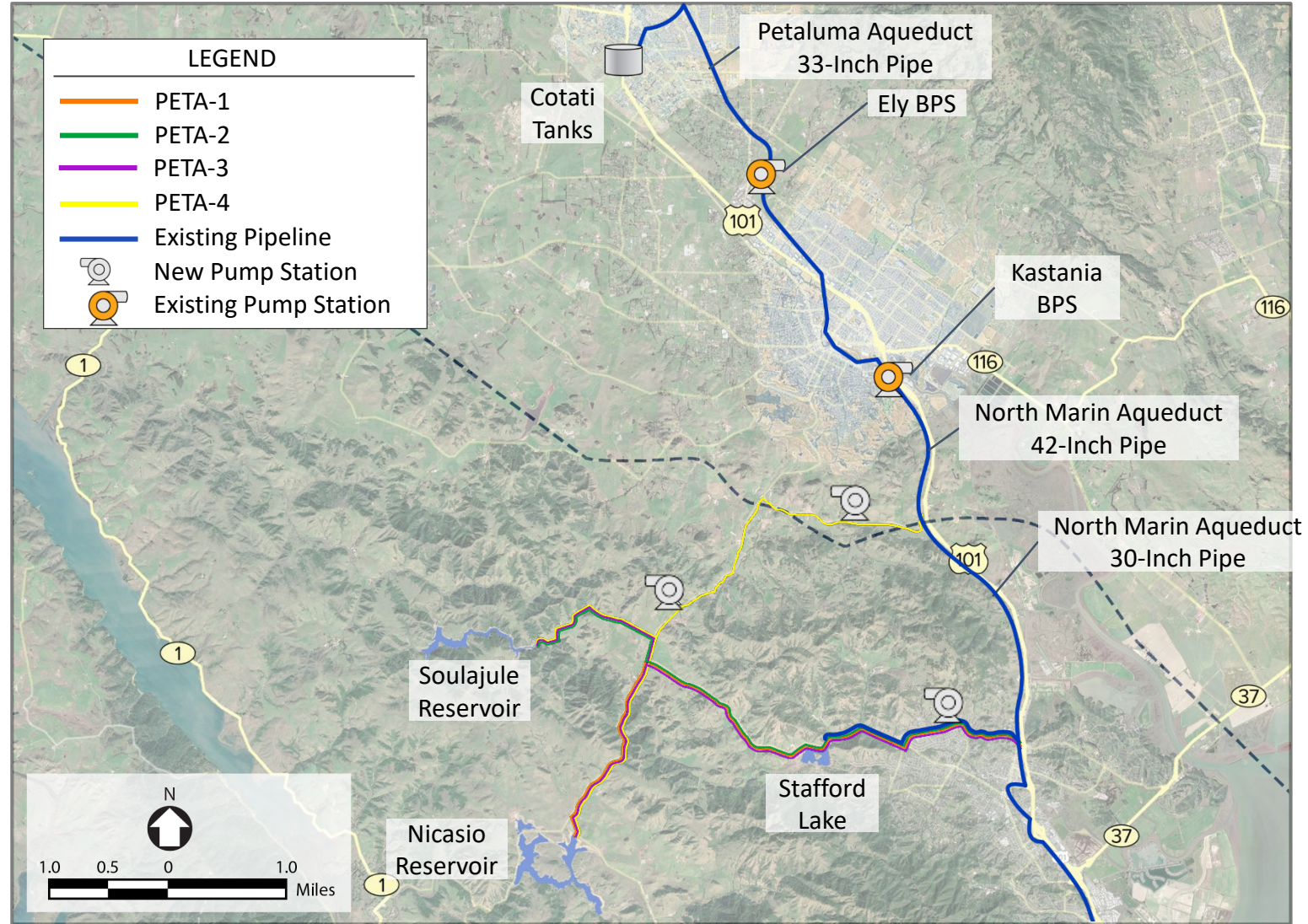




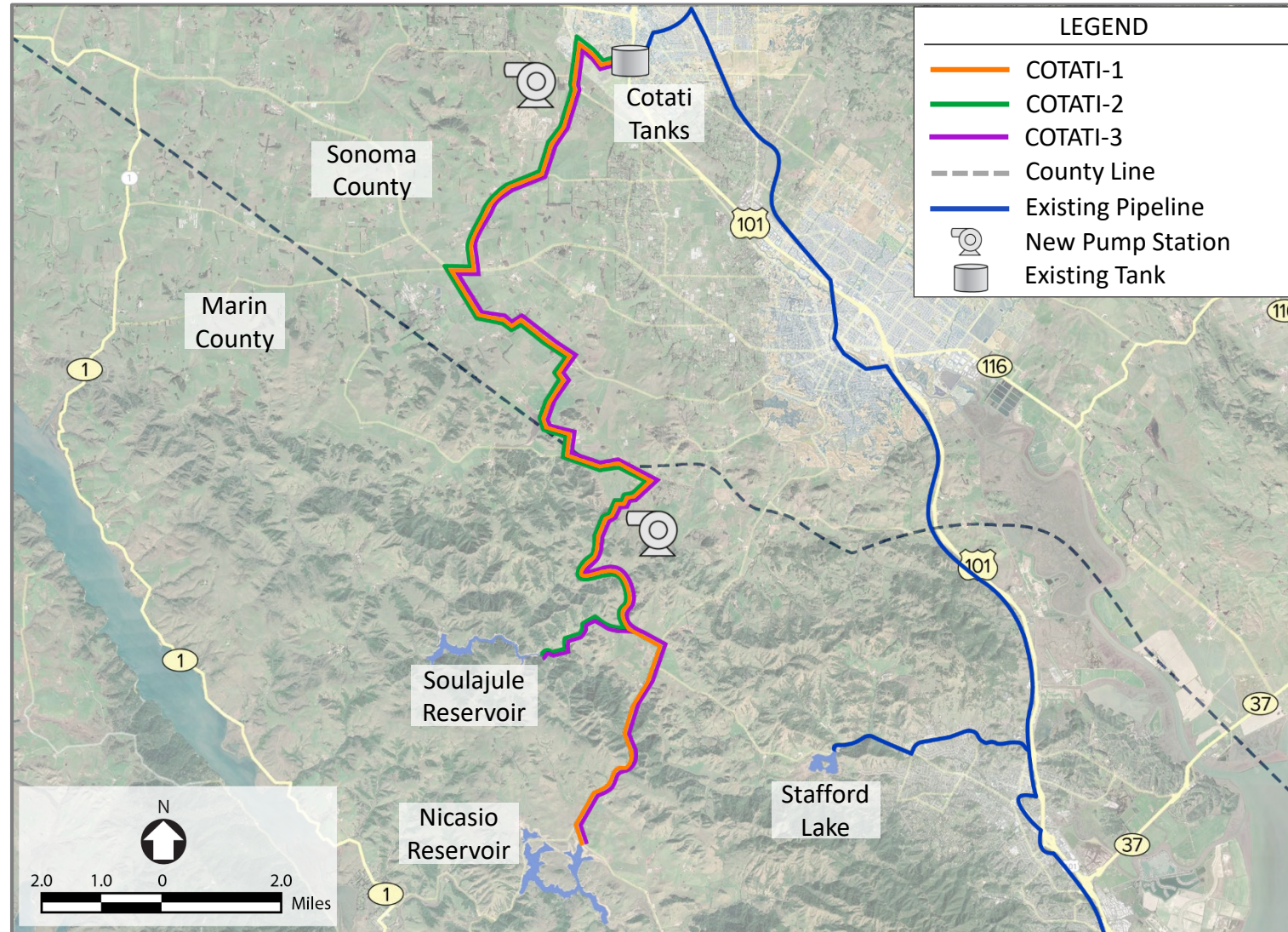
# Stafford Transmission System (STAF)



# Petaluma Aqueduct System (PETA)



# Cotati Transmission System (COTATI)



# Project Alternatives

Description	Alternative	Details of Alternative	Length (miles)	Max MGD	Cost (\$M)
Cotati Tanks to Kastania PS	STS-1	along 101 Corridor	10.5	0	\$148
	STS-2	through downtown Petaluma	12.1	0	\$163
	STS-3	through rural roads	15.5	0	\$200
Stafford Lake area to MMWD Lake(s)	STAF-1	to Nicasio Reservoir	8.0	3-7	\$63
	STAF-2	to Soulagule Reservoir	6.8	3-7	\$56
	STAF-3	to Nicasio and Soulagule Reservoir	11.0	3-7	\$77
North Marin Aqueduct to MMWD Lake(s)	PETA-1	to Nicasio Reservoir	13.2	10	\$111
				14	\$144
	PETA-2	to Soulagule Reservoir	12.0	10	\$105
				14	\$135
PETA-3	to Nicasio and Soulagule Reservoir	16.2	11	\$129	
PETA-4	to Nicasio and Soulagule Reservoir via San Antonio Road	14.8	13	\$148	
				26	\$378
Cotati Tanks to MMWD Lake(s)	COTATI-1	to Nicasio Reservoir	24.2	30	\$364
	COTATI-2	to Soulagule Reservoir	20.5	30	\$322
	COTATI-3	to Nicasio and Soulagule Reservoir	25.9	30	\$380

# Evaluation Criteria: (Draft) Scoring of Alternatives

PHASE 1 ALTERNATIVES EVALUATION WITH WEIGHTING								
Criteria	Water Supply Benefit	Water Reliability and Sustainability	Flexibility and Resiliency	Schedule and Implementation	Water Quality	Environmental and Social Stewardship	Economic and Financial	Total Score
Criteria Weighting	5	4	4	3	2	2	4	
STS-1	1	1	2	2	3	2	2	41
STS-2	1	1	2	2	3	2	2	41
STS-3	1	1	2	2	3	3	2	43
STAF-1	1	1	2	2	3	2	2	41
STAF-2	1	1	2	2	3	2	2	41
STAF-3	1	1	2	2	3	2	2	41
PETA-1	2	2	2	2	3	2	2	50
PETA-2	2	2	2	2	3	2	2	50
PETA-3	3	2	3	3	3	2	2	62
PETA-4	4	3	3	3	3	2	2	71
COTATI-1	3	3	2	2	3	2	1	55
COTATI-2	3	3	2	2	3	2	1	55
COTATI-3	4	3	2	3	3	2	1	63

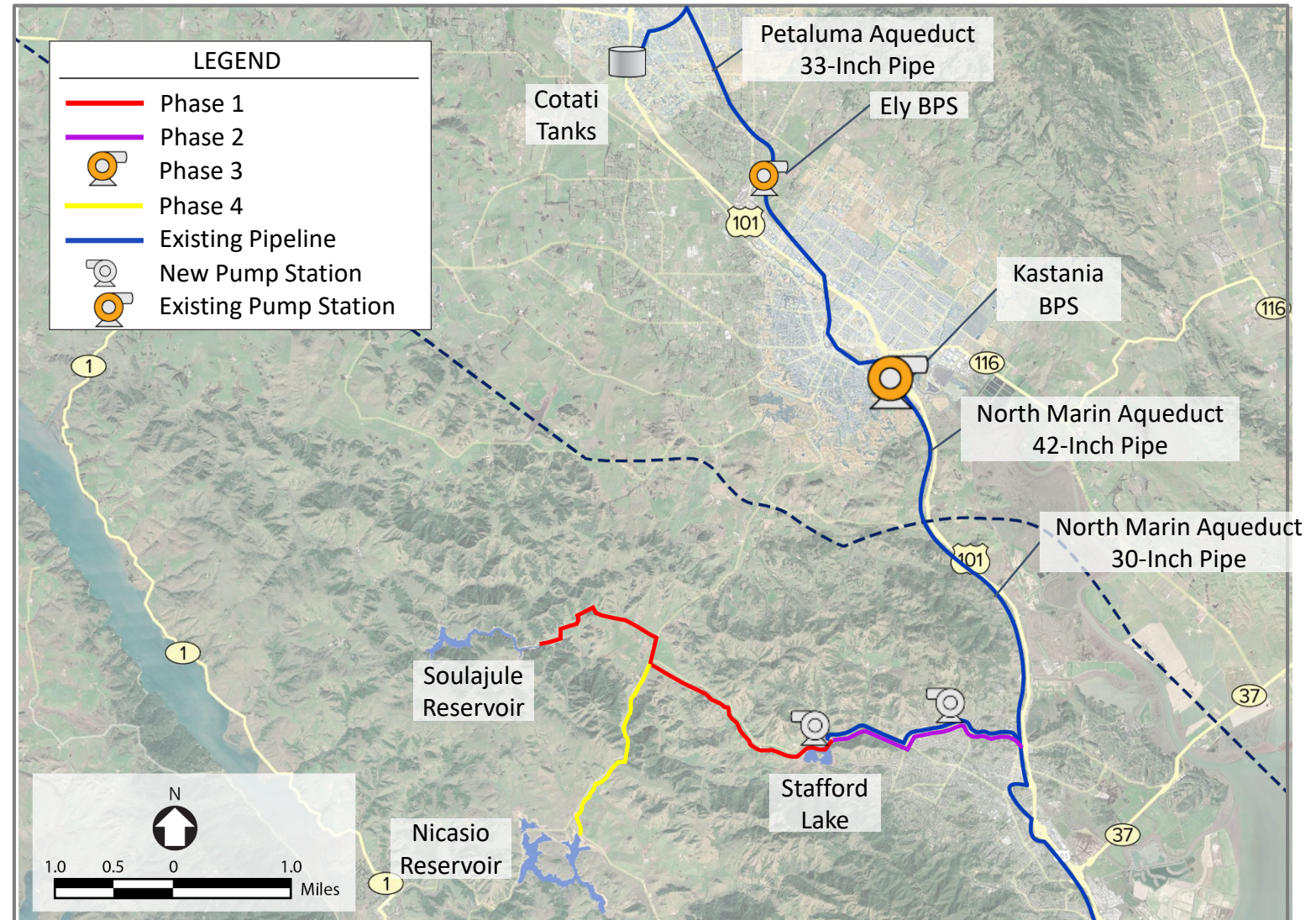
# Proposed Shortlist of Projects for Further Analysis

# Potential Shortlist of Projects For Deeper Analysis

- PETA-3
- PETA-4
- COTATI-3

# PETA-3 Alternative

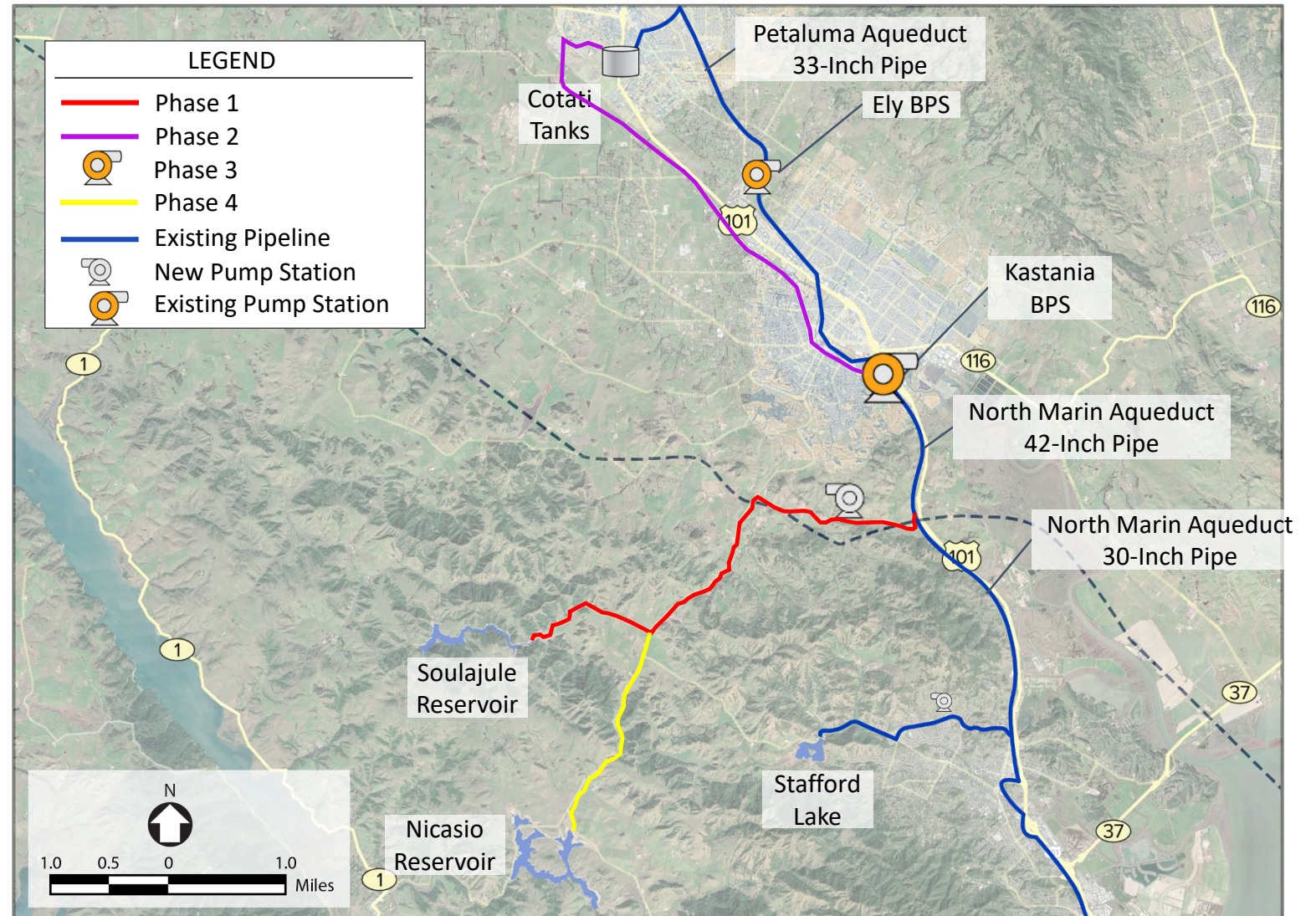
- 10 mgd Water Supply Benefit
  - No Add'l Improvements
- 14 mgd Water Supply Benefit
  - Increase Kastania PS capacity and increase NMWD Aqueduct velocity to 8.7 fps





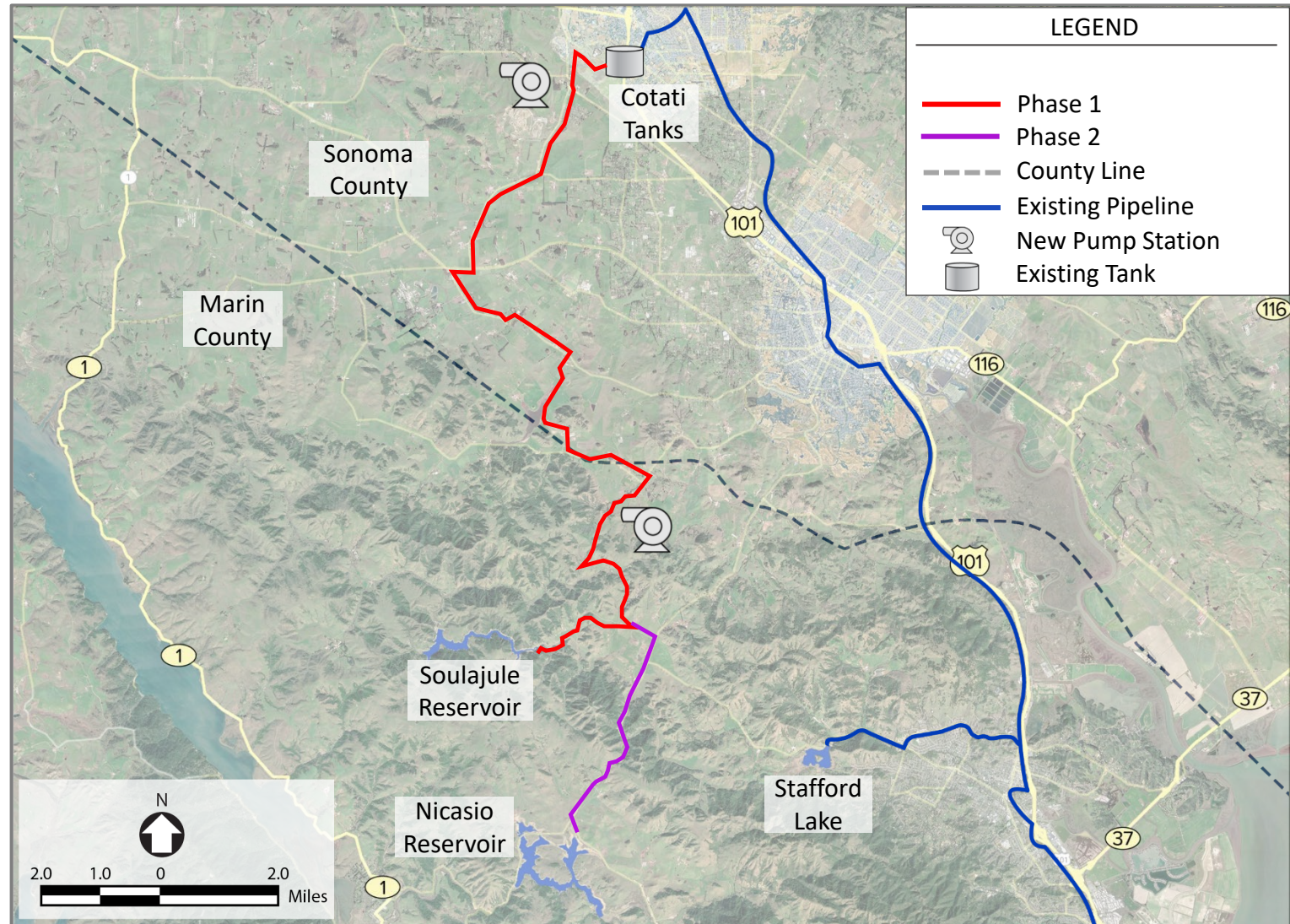
# PETA-4 Alternative

- 13.0mgd Water Supply Benefit
  - No Add'l Improvements
- 26 mgd Water Supply Benefit
  - Construct STS
  - Increase Kastania PS capacity



# COTATI-3 Alternative

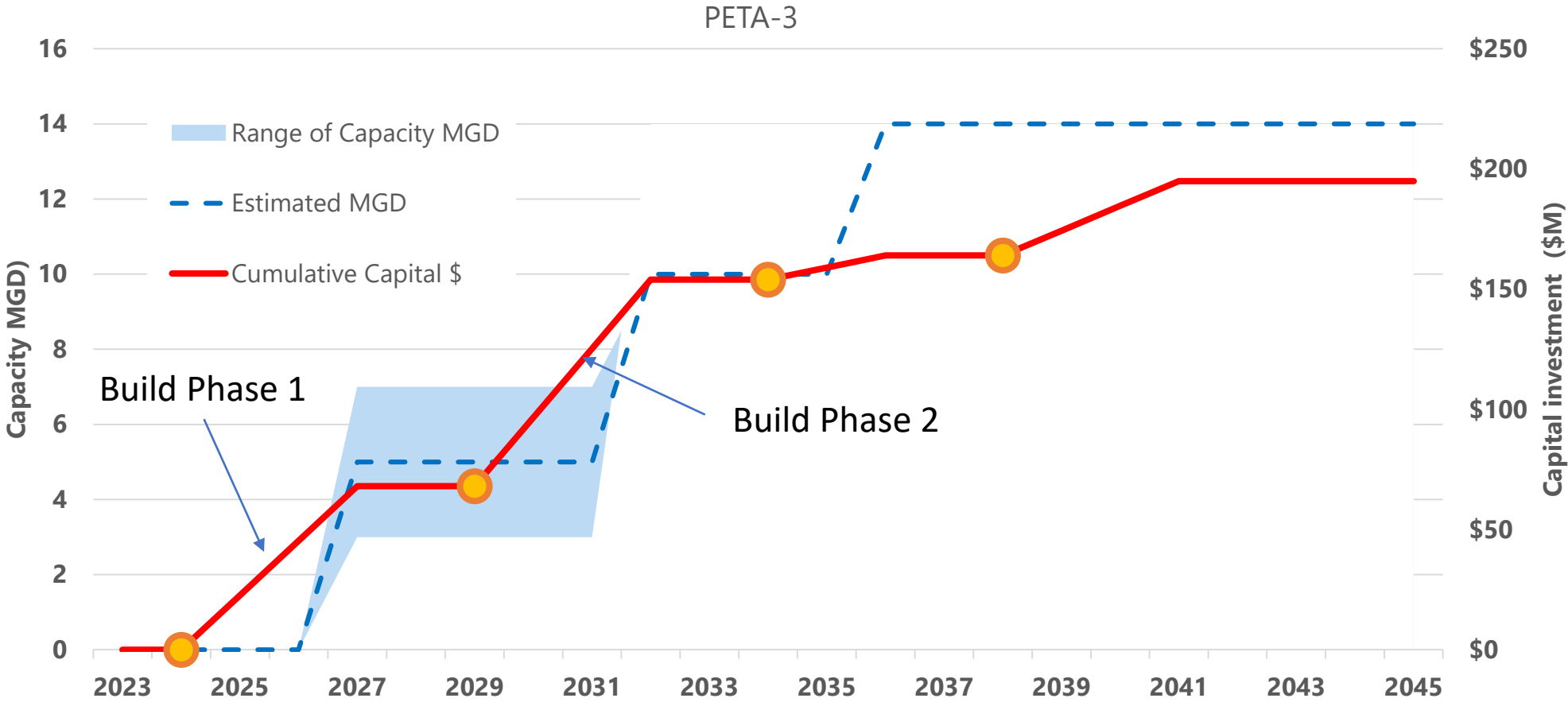
- 30 mgd Water Supply Benefit
  - Allows design for District needs



# Summary of Attributes Shared by Top Alternatives

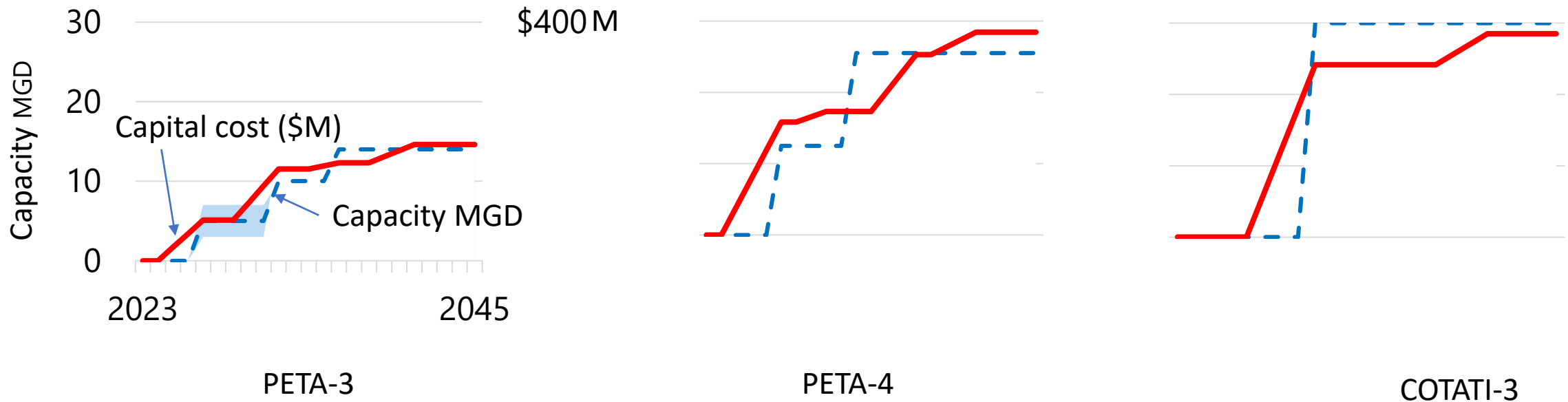
- All of the top alternatives address the project goal by enhancing drought reliability
- The top alternatives are the most flexible version of a cluster of alternatives:
  - PETA 3, PETA 4 are the best of the PETA options
  - PETA 3 includes STAF options, PETA 4 includes STS options
  - COTATI 3 is the best of the COTATI options
- All of the alternatives permit a degree of phasing and optionality

# Phasing Over Time: PETA 3 Example



Decision Point

# Capacity and Capital Cost Over Time



# Next Steps

- Develop shortlist projects in greater detail:
  - Refine alignment
  - Study environmental constraints
  - Refine lifecycle cost
- Evaluate yield, and benefit, through modeling & partner collaboration
- Return to the Board in May 2024 for an update on Conveyance
- Continue updates on Storage project
- Identify preferred projects later in the summer