Folsom Water Vision Final Report

CITY OF FOLSOM
DISTINCTIVE BY NATURE

January 13, 2026

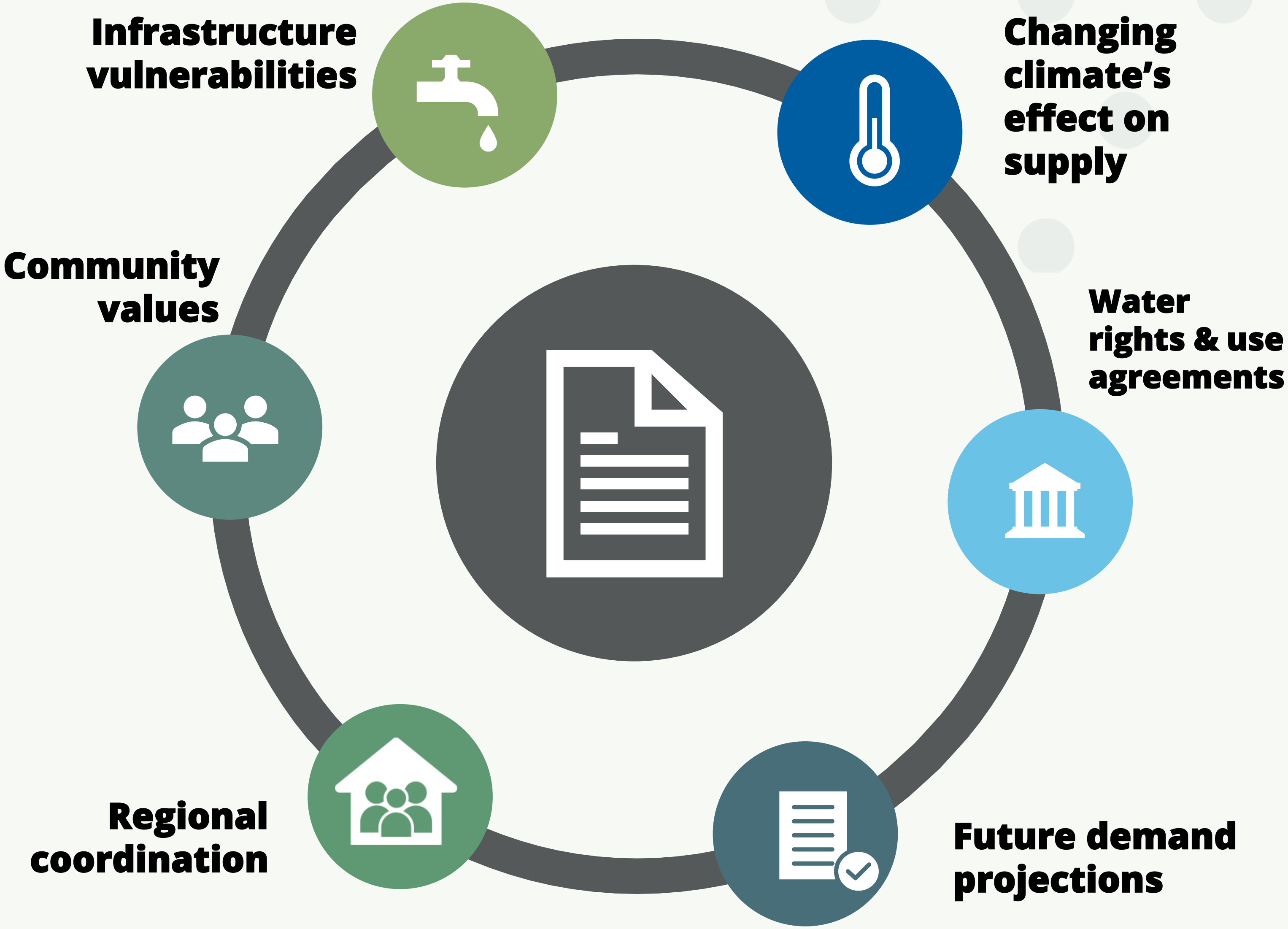
WSC

Why Folsom Water Vision?

Proactively addressing our water supply vulnerabilities and planning for the future.

Shaping our water resources future over the next 50+ years.

Key considerations include:



Stakeholder Engagement

- City Council
- Utility Commissioners
- Planning Commissioners
- Parks & Recreation Commissioners
- Building Industry Authority
- Regional Water Authority
- Sacramento Groundwater Authority
- Sacramento Water Forum
- City Communications Department
- Intel
- Kikkoman
- Gekkeikan Sake
- Folsom Lake College
- Folsom Cordova Unified School District
- Friends of Folsom Preservation
- Sunzi Consulting
- K Cole Policy Advisors

- 6 stakeholder meetings open to the public
- Project specific website

Public Workshops

- Workshop 1: Your Water Values and Goals
- Workshop 2: Our Drinking Water Supply
- Workshop 3: Confirm New Water Supply Alternatives
- Workshop 4: Future Water Supply Portfolios
- Workshop 5: Defining the Recommended Portfolio
- Workshop 6: Adaptable Implementation Roadmap

Step-by-Step Progress

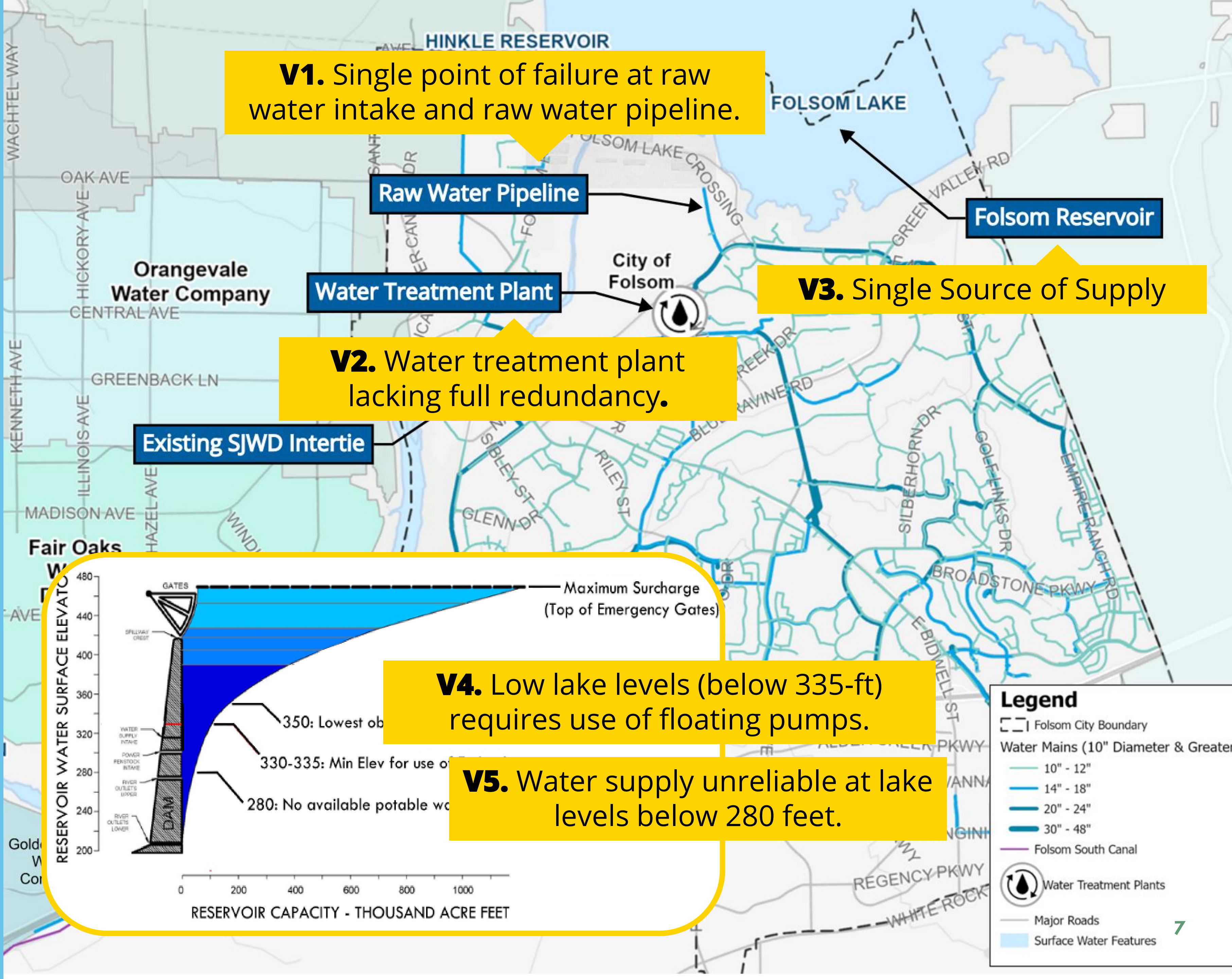
1. Defining planning objectives to reflect city values, desired outcomes, and process goals
2. Assessing risks and vulnerabilities in the current supply
3. Screening potential projects for supply improvements
4. Developing themed water supply portfolios
5. Evaluating and refining these portfolios
6. Identifying a recommended future supply portfolio
7. Creating an adaptable roadmap for implementation
8. Documenting the process in a comprehensive report

1 Identify Project Goals, Values & Objectives

COMMUNITY WATER VALUES	DESIRED OUTCOMES	PROCESS GOALS
• Reliable water supply • Resilient water supply • High-quality water • Affordable water • Trust in water supply • Efficient water use	• Build consensus around an affordable, reliable, and resilient water supply portfolio that provides high-quality drinking water for the City of Folsom. • Develop an adaptable plan to implement for the selected water supply portfolio. • Build trust in the City's water supply.	• Evaluate current and future water supply sources and infrastructure using metrics that consider the community values articulated in this process. • Manage water supply portfolio costs that minimize impacts to water rates. • Conduct a transparent planning process through thoughtful stakeholder outreach, engagement, and education.

2 Assess Risk and Vulnerabilities

Water is drawn from the lake at Folsom Dam and then treated at the treatment plant before it enters the distribution system.



Vulnerabilities & Level of Service Goals

No.	Existing Vulnerabilities	Level of Service Goal
1	Single point of failure at raw water intake and raw water pipeline.	Provide raw water supply redundancy up to the maximum day demand.
2	Not fully redundant at the WTP.	Provide water treatment plant redundancy up to the maximum day demand.
3	Single source of supply.	Diversify the source of the supply by adding groundwater or Sacramento River water.
4	Low lake levels (below 335-ft) requires use of alternative intake (barge).	Provide a minimum of 80% of demands at lake level 335-ft. (≈ 100,000 AF)
5	If the lake level falls below 280 feet, the water supply becomes unreliable.	Provide health and safety level demands at lake level 280-ft.

3 Screen Potential Supply Projects

Past Studies and Options

↓

Potential Projects

↓

Feasible Projects

↓

Projects for Portfolio Inclusion

Reviewed past studies and considered options to develop a list of all potential supply alternatives.

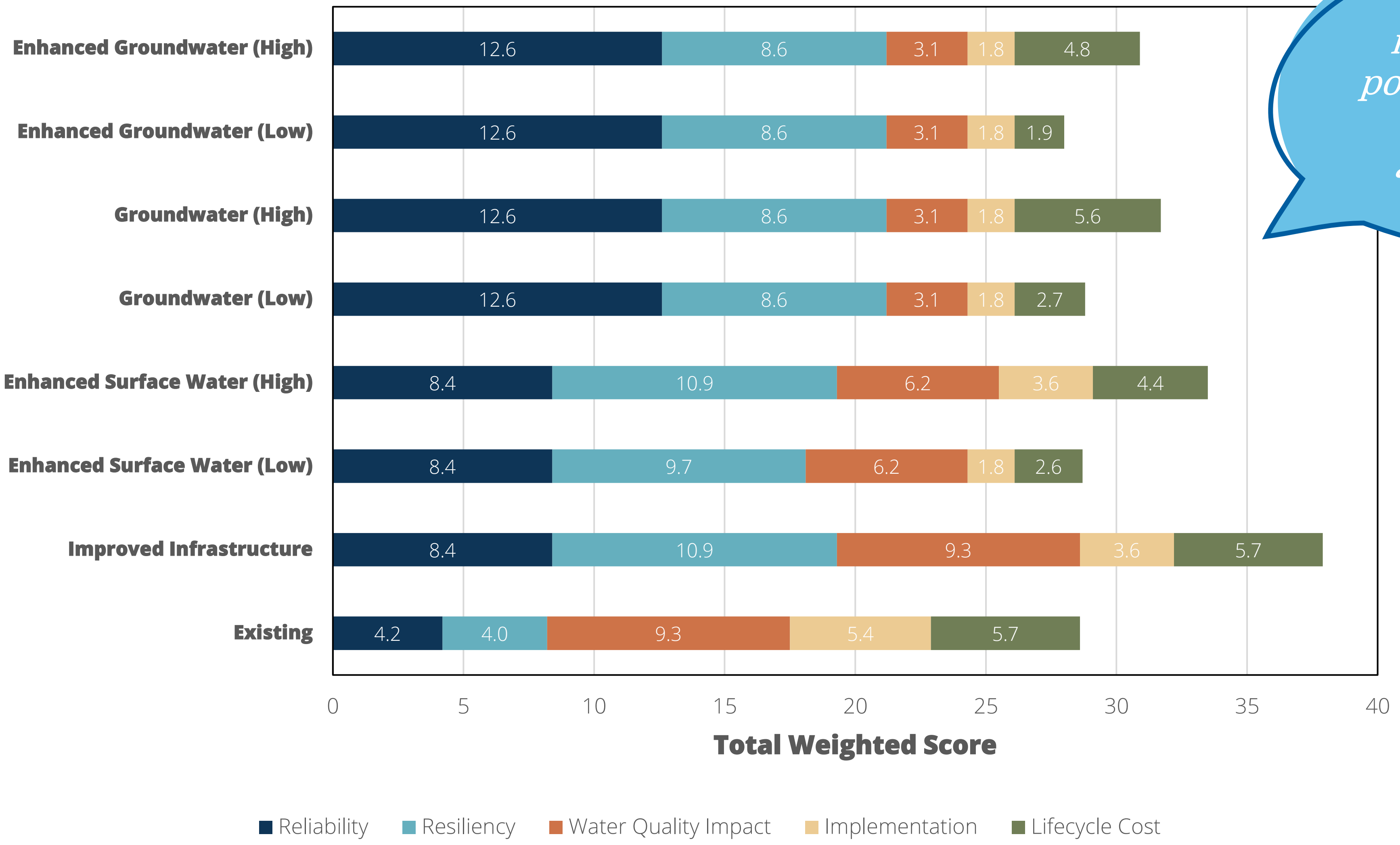
Screen all potential options for feasibility. Revised a few options based on stakeholder feedback.

Used our evaluation criteria analysis to determine the recommended alternatives.

4 Develop Draft Supply Portfolios

	SURFACE WATER FOCUSED	ADDING GROUNDWATER
BASE	**IMPROVED INFRASTRUCTURE** • Install redundant raw water pipeline from Folsom Lake to the City's Water Treatment Plant. • Install redundant treatment technologies including filters and process piping to achieve full redundancy at the Water Treatment Plant. • Upsize the San Juan Water District intertie and install a new intertie with EID • Use Aerojet GET A-B well remediated groundwater for nonportable reuse.	**GROUNDWATER** • Establish a partnership with Sacramento County Water Agency and/or Golden State Water Company to provide groundwater from north or south county including pipelines and pump stations to convey the water to the City's Water Treatment Plant.
ENHANCED	**ENHANCED SURFACE WATER** • Construct new raw water intake downstream of Nimbus Dam. • Install redundant treatment technologies including filters and process piping to achieve full redundancy at the Water Treatment Plant. • Use Aerojet GET A-B wells remediated groundwater for nonportable reuse.	**ENHANCED GROUNDWATER** • Establish a partnership with Sacramento County Water Agency and/or Golden State Water Company to provide groundwater from north or south county including pipelines and pump stations to convey the water to the City's Water Treatment Plant. • Install redundant treatment technologies including filters and process piping to achieve full redundancy at the Water Treatment Plant. • Use Aerojet GET A-B well remediated groundwater for nonportable reuse.

5 Evaluate Future Supply Portfolios



Data-driven method to rank portfolios based on how well they align to project goals.

Stakeholder Input on Desired Supply Portfolio

Interest in a hybrid portfolio with both groundwater and surface water.

Other key themes included:

Adaptability
The selected portfolio requires adaptability to withstand the unknowns over 50 years.

Enhancing Existing Portfolio
Secure the City's existing water supply by adding redundancy to critical infrastructure.

Regional Partnerships
Consider partnering, contracting, or pursuing a water rights exchange with another agency.

Adding Groundwater
Groundwater is crucial to enhancing the reliability of the City's water portfolio.

6 Summary of Recommended Portfolio

*Increased portfolio **adaptability** by focusing on the key elements of the portfolio and identifying alternative ways to address them.*

1
Add Raw Water Supply Redundancy

- Construct new Lake Natoma intake & raw water pipeline
- Develop existing Folsom South Canal intake & raw water pipeline

2
Improve Treated Water Redundancy

- Add redundancy at the existing WTP
- Build new WTP south of Highway 50

3
Develop Diverse Water Supply

- BASE: Add Aerojet non-potable supply
- Develop North County groundwater partnership
- Develop GSWC & SCWA supply partnership

4
Enhance Folsom Lake Reliability

- Construct new Lake Natoma intake & raw water pipeline
- Develop existing Folsom South Canal intake & raw water pipeline

Implementation Plan Background

Key Elements & Programs

Key Elements	Programs
1. Added Raw Water Supply Redundancy	1. Raw Water Redundancy
2. Improve Treated Water Redundancy	2. Treated Water Redundancy
3. Develop a Diverse Water Supply	3. Develop a Diverse **Potable** Supply
	4. Develop a **Non-Potable** Supply
4. Enhance Folsom Lake Reliability	5. Support Regional Supply Reliability

Risk Levels for System Vulnerabilities

Supply Infrastructure		Water Supply		
V-1. Single point of failure for raw water intake and delivery.	**V-2. Water treatment plant lacking full redundancy.**	**V-3. Single source of supply.**	**V-4. Low lake levels (below 335-ft) require use of alternative intake (barge).**	**V-5. Water supply unreliable at lake levels below 280 feet.**

Level of Risk

High **Moderate** **Low**

Risk Scoring of Vulnerabilities

	System Vulnerability	Estimated Probability		Percent of Supply Impacted		Score
V1	Single point of failure at raw water intake and raw water pipeline.	**1.0**	*Based on historical events.*	**100%**	*All supply would be impacted.*	**1.0**
V-2a	Water treatment plant lacks full treatment redundancy.	**0.25**	*Based on the assumed likelihood of two or more filters failing at the same time.*	**20%**	*The WTP can maintain 40 MGD treatment capacity with two filters out of service, while its full capacity is 50 MGD.*	**0.05**
V-2b	Single point of failure for piping between WTP unit processes and immediately downstream of the WTP	**0.5**	*Based on a steel pipeline failure between or downstream of the WTP unit processes.*	**20%**	*The pipelines are low pressure and steel. In the event of a break, the City can continue WTP operation, fill storage tanks, and then complete emergency repairs, minimizing system impacts.*	**0.10**
V3	Single source of supply.	**0.25**	*Historically, there have been minor contamination events but nothing that had a significant impact on the City's supply. Therefore, the likelihood going forward is assumed to be low as well.*	**50%**	*A significant contamination event would likely reduce the City's treatment capacity to approximately 50%.*	**0.13**
V4	Low lake levels (below 335-ft) requires use of alternative intake (barge).	**2.0**	*Based on the Central Tendency climate projection in the ARBS.*	**43%**	*The City can use existing floating intake pumps to supply 20 MGD, while the City's buildout MDD with WUE efforts is expected to be 35 MGD.*	**0.86**
V5	Water supply unreliable at lake levels below 280 feet.	**0.10**	*Even in the climate projections provided in the ARBS, the likelihood of this event is low.*	**100%**	*All supply would be impacted.*	**0.10**

[1] Estimated probabilities are the estimated number of times this event will occur in the next 50 years.
[2] Risk Score = Estimated Probability x Percent of Supply Impacted (Percent of Supply as a decimal)

Portfolio Programs to Address Vulnerabilities

Vulnerabilities		Programs
V1	Single point of failure at raw water intake and raw water pipeline.	**P1** Raw Water Redundancy (*with Mitigation Support by* **P3**)
V2	Water treatment plant lacking full redundancy.	**P2** Treated Water Redundancy (*with Mitigation Support by* **P3**)
V3	Single source of supply.	**P3** Diversify Potable Supply AND **P4** Develop Non-Potable Supply
V4	Low lake levels (below 335-ft) requires use of alternative intake (barge).	**P1** New Folsom Intake & Raw Water Pipeline AND **P5** Support Regional Water Supply Reliability in the American River Basin *Assisted by* **P3**
V5	Water supply unreliable at lake levels below 280 feet.	

Developing Implementation Triggers

The water you need.

Maximum Day Demand

- Impacted by numerous factors including:
  - Population growth
  - Outdoor watering practices
  - Customer conservation efforts

The water that's available.

Drier and Driest Year Frequencies

- Based on the water level in Folsom Reservoir.
- Related to **climate scenarios described in the *American River Basin Study*.**

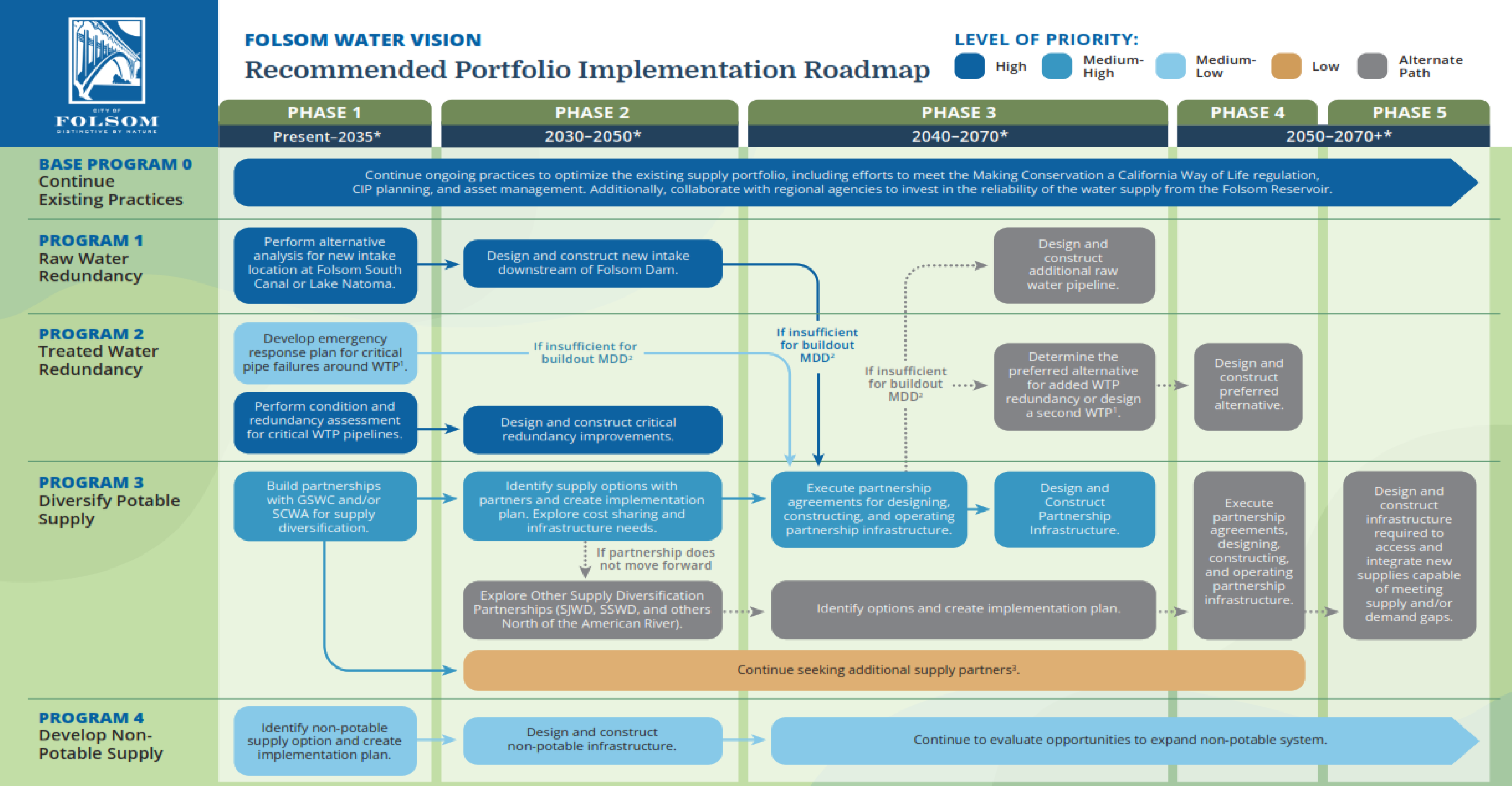
Implementation Phasing & Triggers

Phase	Trigger	Trigger Probability
1	Current phase.	**Existing**
2	Max day demand reaches 35 MGD—the projected MDD at buildout with WUE.	**High**
3	A: Max day demand reaches 35 MGD AND the probability of a Driest Year event approaches 5% or a Drier Year event approaches 33%—aligning with Central Tendency from the ARBS. B: Max day demand reaches 50 MGD—the projected MDD at buildout.	**Moderate High**
4	A: Max day demand reaches 50 MGD AND Drier and Driest Year event probabilities align with Central Tendency projections. B: Max day demand reaches 35 MGD AND the probability of a Driest Year event approaches 17% or a Drier Year event approaches 41%—aligning with Hot Dry from the ARBS.	**Moderate Low**
5	Max day demand reaches 50 MGD AND Drier and Driest Year event probabilities align with Hot Dry projections.	**Low**

Adaptable Implementation Plan

FOLSOM WATER VISION

Recommended Portfolio Implementation Roadmap



1. WTP = Water Treatment Plant
2. MDD = Maximum Day Demand, see Folsom Water Vision report for the potential range of Build Out MDD.
3. The City should remain open to additional supply diversification partnerships as a supply reliability measure.

* The years shown for phases are approximate (the overlapping is intentional) and are meant to provide a rough timeline based on current projections. Phases will be initiated by increases in Maximum Day Demands and/or Drier and Driest Year Frequencies, not a set number of years. This is detailed in the Folsom Water Vision Report.

Phase 1 Overview

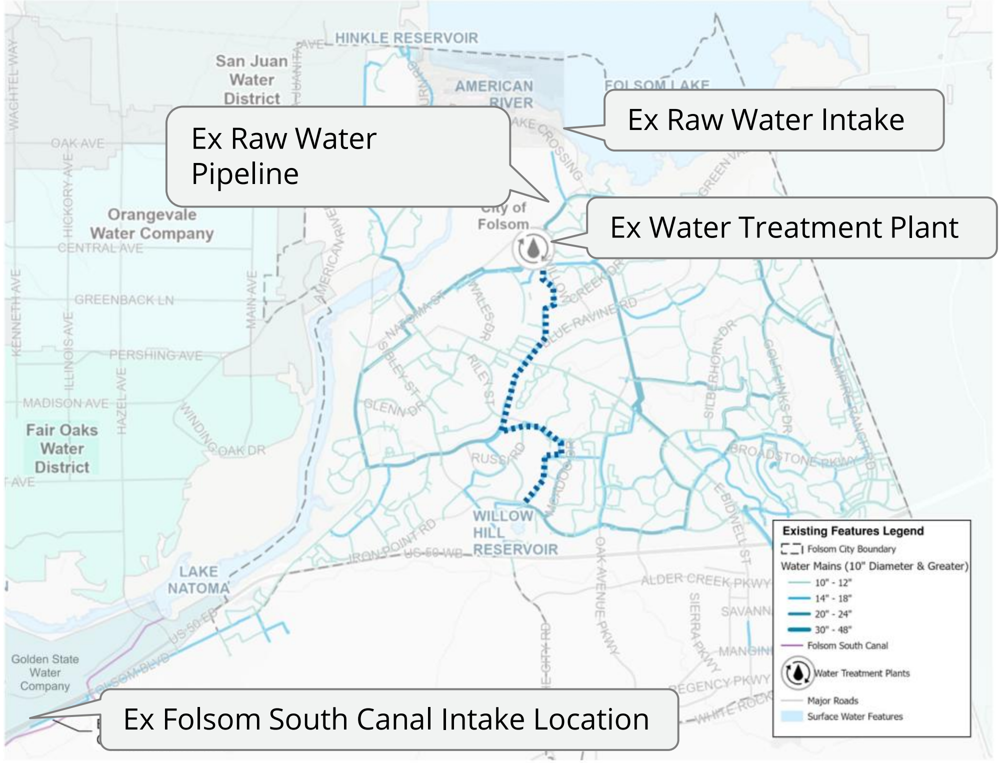
Time Frame: Now through approximately 2035

Estimated Cost $500 thousand to $1.0 million

Vulnerabilities Addressed

V1 ✓ V2A ✓ V2B ✓ V3 ✓ V4 ✓ V5 ✓

Program Actions	
P1	Alternative analysis on new intake location
P2	Develop Emergency Response Plan for pipe breaks at WTP
P3	Build supply partnerships with adjacent agencies.
P4	Create implementation plan for non-potable supply system.
P5	Collaborate with regional agencies to support the reliability of water supply in the American River Basin.



Phase 2 Overview

Time Frame: 2035 through approximately 2050

Estimated Cost $50 million to $175 million*

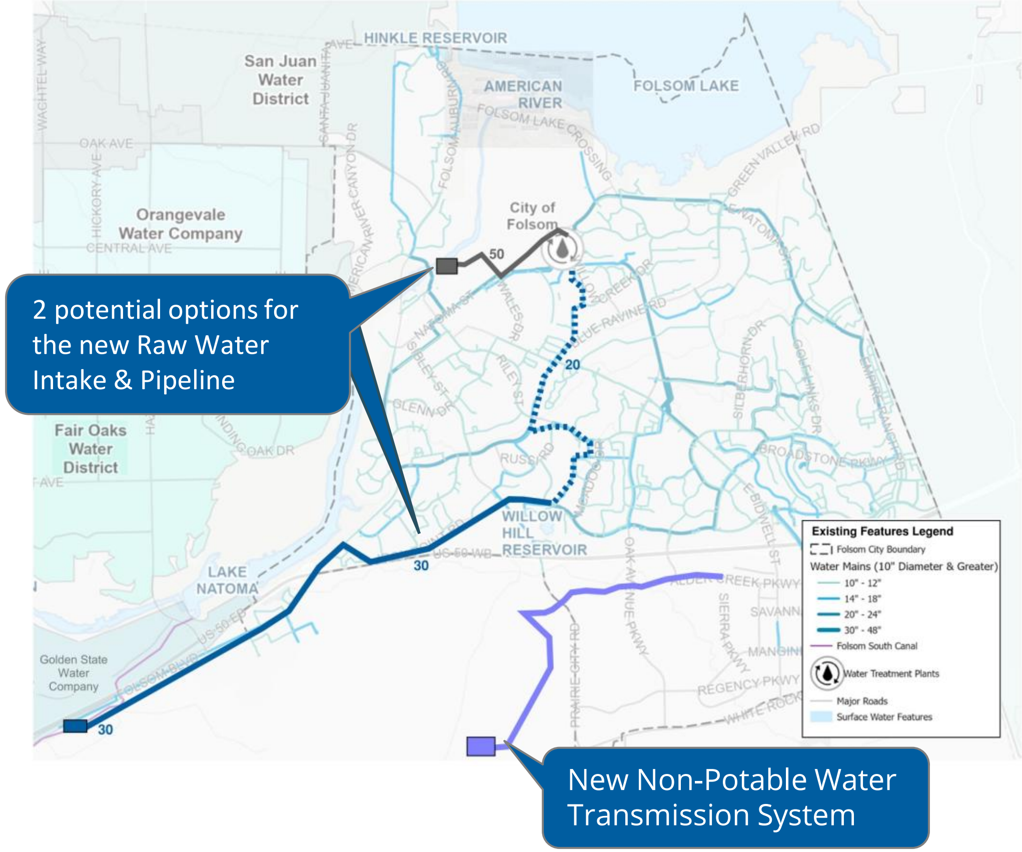
Program Actions

P1	Design and construct new intake and raw water pipeline.
P2 P3	Identify supply options with partners and create implementation plan. Explore cost sharing and infrastructure needs.
P4	Design and construct non-potable infrastructure.
P5	Collaborate with regional agencies to support the reliability of water supply in the American River Basin.

*Preliminary costs—Stantec is developing estimates for the Lake Natomas Intake.

Vulnerabilities Addressed

V1 ✓ V2A ✓ V2B ✓ V3 ✓ V4 ✓ V5 ✓



Phase 3 Overview

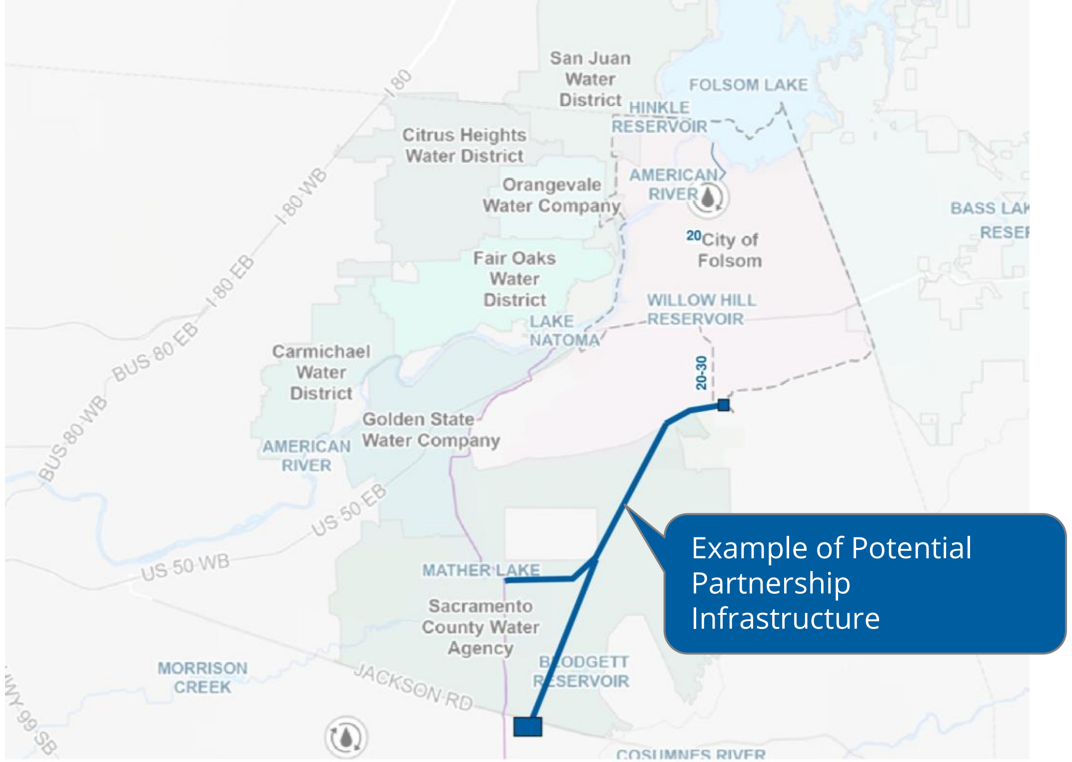
Time Frame: 2050 through approximately 2070

Estimated Cost $25 million to $150 million*

Vulnerabilities Addressed

V1 ✓ V2A ✓ V2B ✓ V3 ✓ V4 ✓ V5 ✓

Program Actions	
P1 P2 P3	Execute partnership agreements for designing, building, and operating partnership infrastructure. Then design and construct partnership infrastructure
P4	Continue to evaluate opportunities to expand non-potable system.
P5	Collaborate with regional agencies to support the reliability of water supply in the American River Basin.



*Preliminary costs—dependent on the partnership agreements and supply alternatives selected.

Phase 4 & 5 Overview

Trigger: Demand increases beyond current projections OR Drier/Driest water years become significantly more frequent.

Vulnerabilities Addressed

V1	V2A	V2B	V3	V4	V5
✓	✓	✓	✓+	✓+	✓+

Estimated Cost	Undetermined

Program Actions

P1	Identify additional supply partners and/or groundwater supply options.
P2	Design and construct necessary infrastructure to access additional supply.
P3	
P4	Continue to evaluate opportunities to expand non-potable system.
P5	Collaborate with regional agencies to support the reliability of water supply in the American River Basin.

Next Steps

- GET A/B non-potable water Feasibility Study
- Raw Water Alternative Intake Analysis
- GSWC/SCWA/Folsom south county groundwater discussion
- FOWD/CHWD/Folsom north county groundwater discussion
- Raw water parallel pipeline discussion

Questions