

San Benito Urban Areas Water Supply and Treatment Master Plan

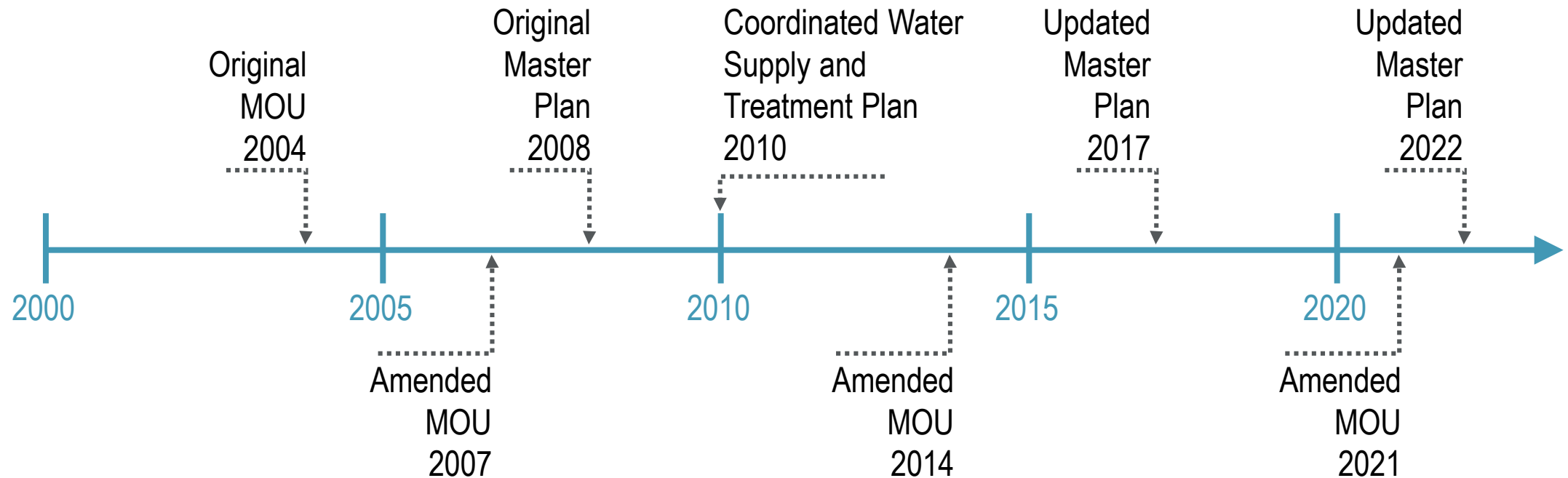
San Benito County Water District



March 30, 2022

Background

- Agencies recognized need to coordinate on water and wastewater planning and implementation
- A coordinated Master Plan was identified as the best method to incorporate all agencies needs and concerns



Why update the Master Plan now?

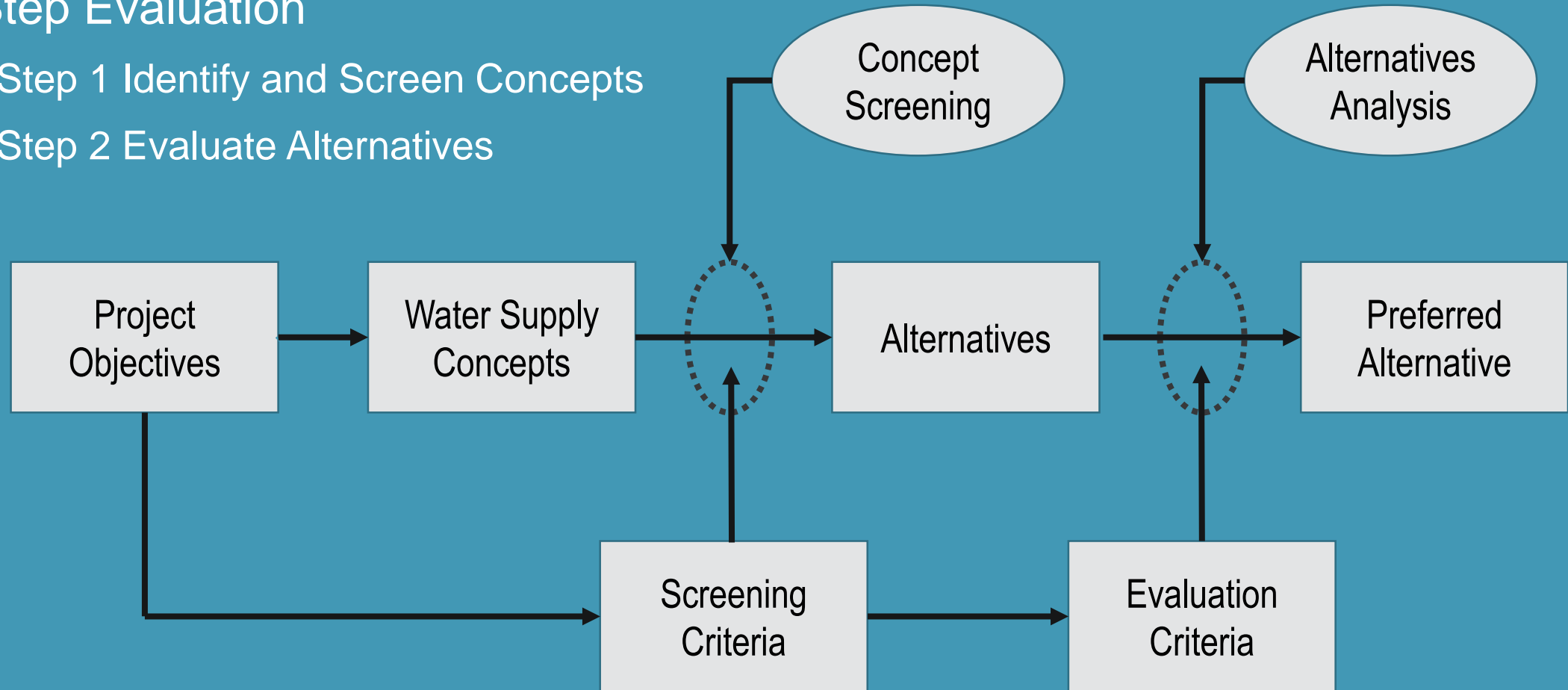
- Ensure SBCWD can meet demand when needed
- Water demand forecasts have shifted
- Severe drought is impacting water supply reliability
- Long term water supply options have evolved
 - Pacheco Reservoir Expansion Project
 - Sustainable Groundwater Management Act
- A new partner, City of San Juan Bautista (SJB), has joined the MOU
- Position for grant funding opportunities that may be available in 2022 / 2023



San Luis Reservoir at 10% capacity in August 2016, ValleyAgVoice

Approach for Water Supply Evaluation

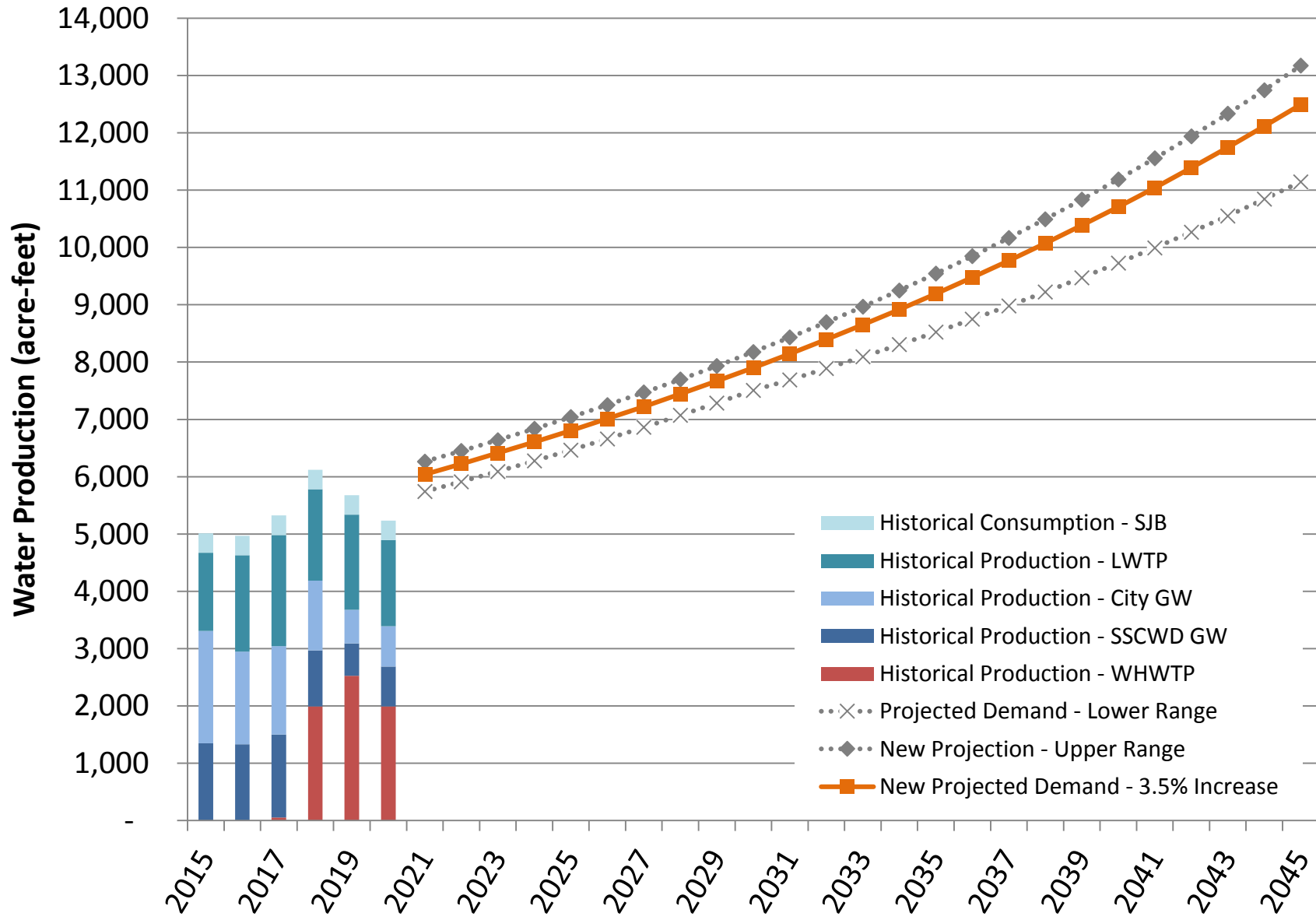
- 2 Step Evaluation
 - Step 1 Identify and Screen Concepts
 - Step 2 Evaluate Alternatives



Objectives of the 2022 Master Plan Update

- Provide continuous improvement towards achieving drinking water and recycled water quality goals. Hardness is the focus for M&I supply.
- Continue efforts to identify and implement water supply options to increase dry year water supply reliability.
- Provide reliable and sustainable water supply to respond to long-term growth needs.
- Coordinate with ongoing programs including SGMA, the Managed Aquifer Recharge (MAR) project, and supply of treated surface water to SJB.
- Continue to address water needs through coordinated regional solutions.

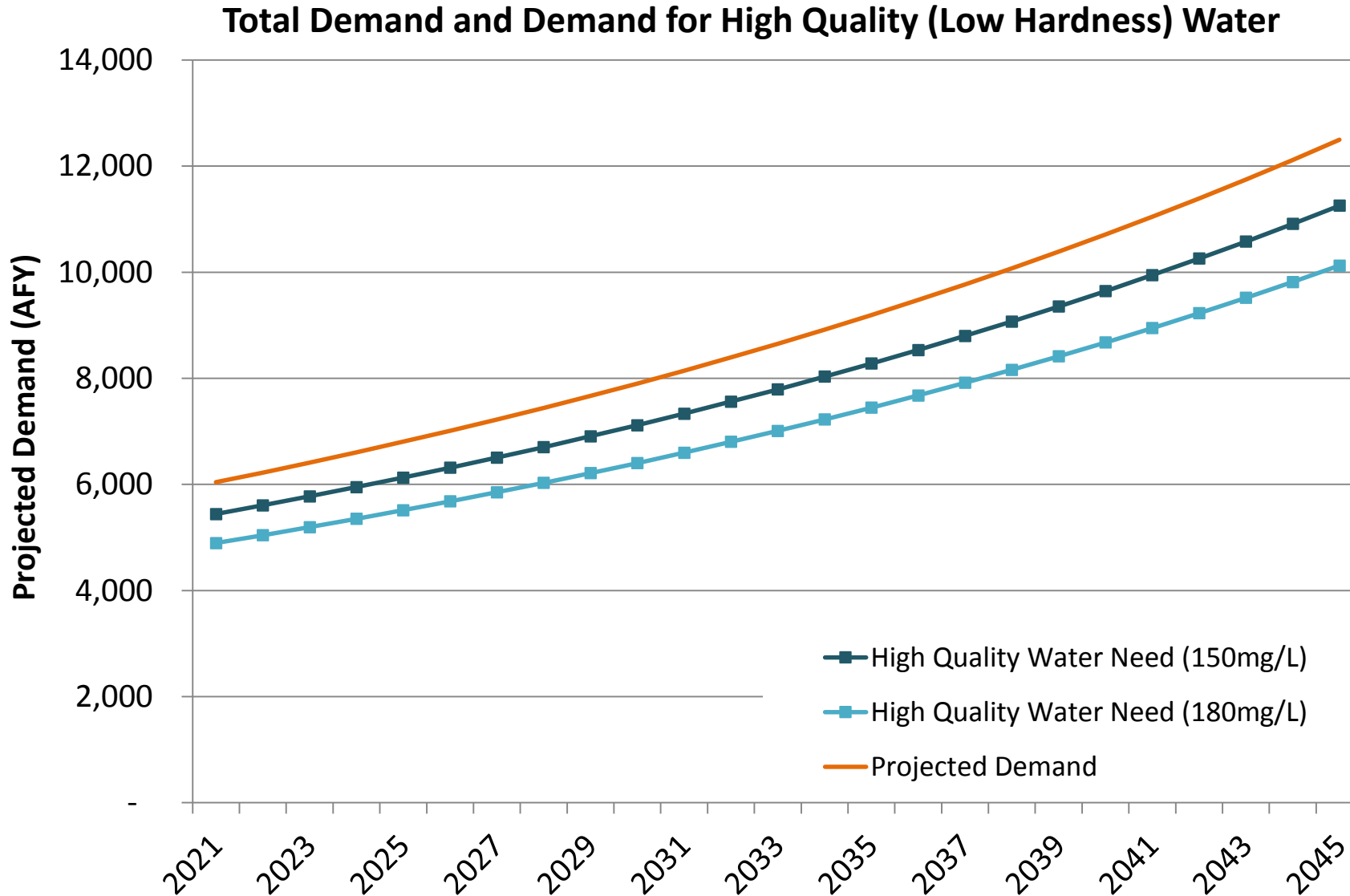
Water Demand Forecast



Forecasted Demands

Year	Demand (AFY)
2025	6,810
2030	7,900
2035	9,190
2040	10,710
2045	12,500

Water Quality is Key Driver - Hardness



- Hardness is key factor
- Target Range is 150mg/L to 180mg/L
- 150mg/L requires ~90% imported surface water
- 180mg/L requires ~81% surface Water

Surface Water Storage Concepts

- Expand San Justo Reservoir
- Expand Paicines Reservoir
- New Hawkins Reservoir
- New Off Stream Reservoir in Lone Tree Valley
- Pacheco Reservoir Expansion Project
- BF Sisk Dam Raise (San Luis Reservoir Expansion)



Groundwater Concepts

- North Area Groundwater
- Groundwater Demineralization
- Expand Percolation
- Indirect Potable Reuse
- Aquifer Storage and Recovery
- Semitropic Groundwater Bank (out of basin storage)



Evaluation Criteria

- Increases Use of Existing CVP Allocations
- Increases Dry Year Water Supply Reliability
- Maximizes Local Control and Resources
- Minimizes Implementation Risk
- Minimizes Cost

Concept Screening

	Increases Use of Existing CVP Allocations	Increases Dry Year Water Supply Reliability	Maximizes Local Control and Resources	Minimizes Implementation Risks	Screening Score
Expand San Justo	3	3	3	1	10
Expand Paicines	3	3	3	1	10
New Hawkins Reservoir	3	3	3	1	10
New Reservoir in Lone Tree	3	3	3	1	10
BF Sisk Dam Raise	3	3	1	2	9
Semitropic Groundwater Bank	1	1	1	2	5
Pacheco Reservoir	3	3	1	2	9
North Area Groundwater	1	2	3	3	9
Groundwater Demin for MI	1	2	3	2	8
Expand Percolation	3	1	3	1	8
Indirect Potable Reuse	1	1	3	1	6
ASR Wells	3	2	3	2	10

Concept Screening

	Increases Use of Existing CVP Allocations	Increases Dry Year Water Supply Reliability	Maximizes Local Control and Resources	Minimizes Implementation Risks	Screening Score
Expand San Justo	3	3	3	1	10
Expand Paicines	3	3	3	1	10
New Hawkins Reservoir	3	3	3	1	10
New Reservoir in Lone Tree	3	3	3	1	10
BF Sisk Dam Raise	3	3	1	2	9
Semitropic Groundwater Bank	1	1	1	2	5
Pacheco Reservoir	3	3	1	2	9
North Area Groundwater	1	2	3	3	9
Groundwater Demin for MI	1	2	3	2	8
Expand Percolation	3	1	3	1	8
Indirect Potable Reuse	1	1	3	1	6
ASR Wells	3	2	3	2	10

Estimated Capital Cost

Alternatives	Capital Cost (\$M)	Capacity (AF)	Capital Cost (\$/AF)	Relative Score
In Basin Surface Water Storage				
Expand San Justo Reservoir	\$137	3400	\$40,300	1
Expand Paicines Reservoir	\$92	5400	\$17,100	2
New Hawkins Reservoir	\$279	6000	\$46,500	1
New Reservoir at Lone Tree	\$324	6000	\$54,000	1
Out of Basin Surface Water Storage				
Pacheco Reservoir Expansion	\$137	6000	\$22,900	2
BF Sisk Dam Raise	\$50	5000	\$10,000	3
Groundwater				
North Area Groundwater	\$25	2000	\$12,200	3
ASR Wells	\$75	6000	\$12,600	3

Estimated Yield Cost

Alternatives	Total Annual Cost (\$1,000s)	Estimated Annual Yield (AFY)	Yield Cost (\$/AFY)	Relative Score
In Basin Surface Water Storage				
Expand San Justo Reservoir	\$9,237	1020	\$9,060	1
Expand Paicines Reservoir	\$6,755	1620	\$4,170	2
New Hawkins Reservoir	\$17,452	1800	\$9,700	1
New Reservoir at Lone Tree	\$19,983	1800	\$11,200	1
Out of Basin Surface Water Storage				
Pacheco Reservoir Expansion	\$8,501	720	\$11,900	1
BF Sisk Dam Raise	\$4,356	1500	\$2,910	3
Groundwater				
North Area Groundwater	\$3,325	1400	\$2,380	3
ASR Wells	\$6,472	2190	\$2,960	3

Water Supply Alternatives Evaluation

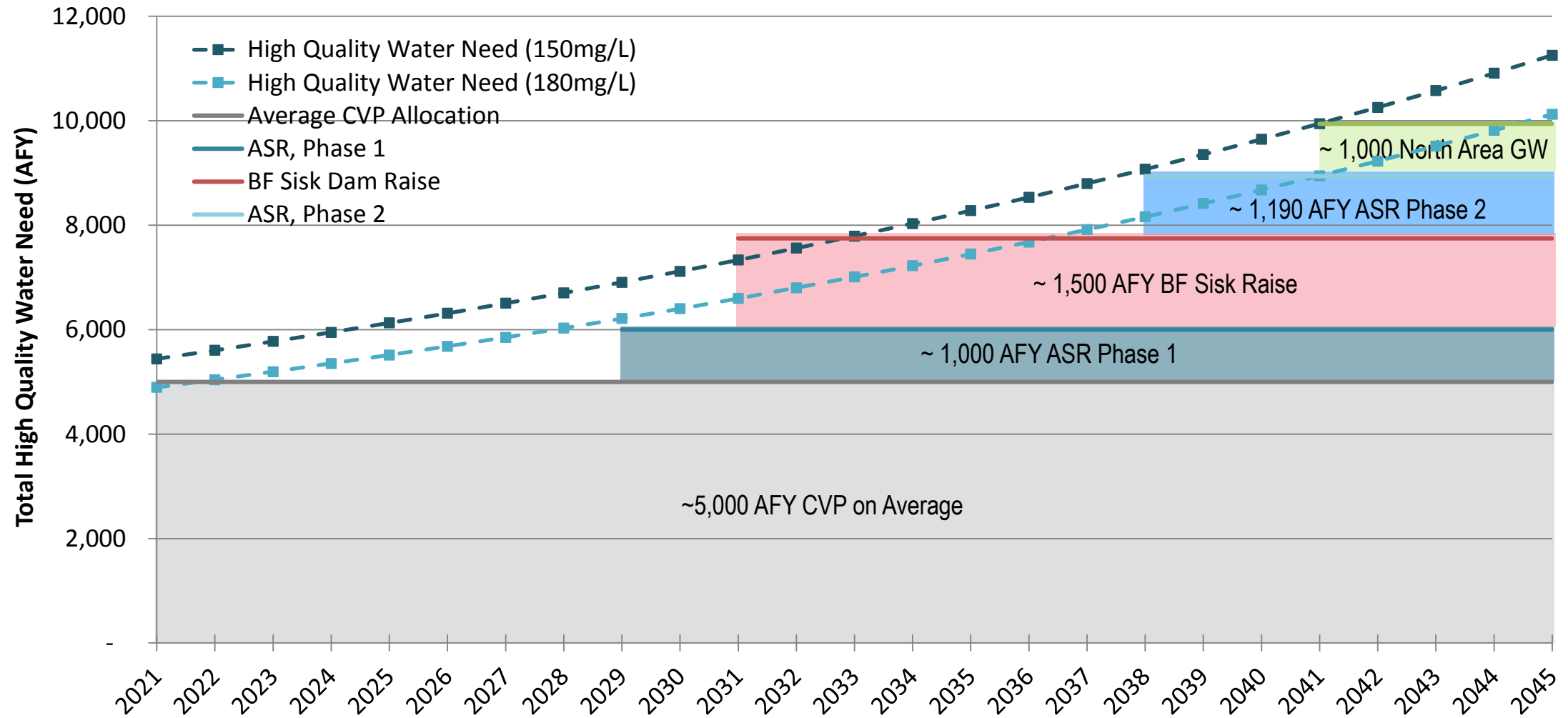
	Increases Use of Existing CVP Allocations	Increases Dry Year Water Supply Reliability	Maximizes Local Control and Resources	Minimizes Implementation Risks	Capital Cost	Yield Cost	Total	Comments
Expand San Justo	3	3	3	1	1	1	12	Permitting/environmental, leakage
Expand Paicines	3	3	3	1	2	2	14	Permitting/environmental
New Hawkins Reservoir	3	3	3	1	1	1	12	Permitting/environmental, land acquisition
New Reservoir in Lone Tree	3	3	3	1	1	1	12	Permitting/environmental, land acquisition
BF Sisk Dam Raise	3	3	1	2	3	3	15	Strong Agency Support/Contract for Access to Supply
Pacheco Reservoir	3	3	1	2	2	1	12	Significant cost increases
North Area Groundwater	1	2	3	3	3	3	15	Requires water in HC for blending, challenge in dry years
ASR Wells	3	2	3	2	3	3	16	Permitting/environmental

Summary:

1. ASR Wells includes water treatment and has relative low Capital and Yield Costs – Priority 1
2. BF Sisk Dam Raise Moving forward with Federal Support – Priority 2
3. North Area Groundwater enhances dry year reliability – Priority 3
4. Pacheco Reservoir is moving forward. Due to High Costs, consider alternative funding strategies for participation – Priority 4
5. Expand Paicines has significant environmental permitting risks – Priority 5
6. Others should be reevaluated in future Master Plan Updates

Recommended Phasing Strategy for Water Supply

Water Supply Phasing



Capital Improvement Program

	15-Year CIP	Future	Total
ASR Pilot Project	\$7,100,000		\$7,100,000
ASR Phase 1 ¹	\$39,400,000		\$39,400,000
BF Sisk Dam Raise ²	\$50,000,000		\$50,000,000
ASR Phase 2 ³		\$41,600,000	\$41,600,000
North Area Groundwater Phase 1 ⁴		\$14,100,000	\$14,100,000
Pacheco Reservoir ⁵	TBD	TBD	TBD
Total	\$96,500,000	\$55,700,000	\$152,200,000
Spot Market / Transfers ⁶			\$5,000,000

1. Initial treatment capacity of 2.5 mgd, 1,000 AFY yield

2. 5,000 AF Storage with 1,500 AFY yield

3. Additional treatment capacity of 3.0 mgd, 1,190 AFY yield

4. Capacity of 1,000 AFY

5. Future involvement in PREP to be determined

6. Present value of estimated spot purchases to target hardness of 180mg/L at \$1200 per AF

7. Through 2045, anticipate average of ~730 new connections per year

8. Costs are \$2021, referenced to ENR SF CCI of 13110.

Next Steps

- Initiate ASR Pilot Study to confirm feasibility of the ASR Alternative
 - If ASR is not feasible, move to North Area Groundwater Project and West Hills Expansion
- Keep multiple supply options in play to provide long term flexibility (including contract purchases, transfers, ASR, NAGW, BF Sisk, and PREP)
 - Maintain engagement in BF Sisk Raise
 - Evaluate level of future involvement in PREP
- Complete design and permitting for the SJB Pipeline
- Evaluate Funding and Financing Strategies
- Establish Institutional Agreements
- Stakeholder Outreach
- Update Master Plan in 5 years

**Questions
+
Discussion**