



City of Fullerton Water Master Plan

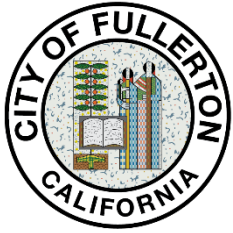
City Council Presentation

April 1, 2025



Agenda

1. Project Introduction & Approach
2. Hydraulic Model Evaluations
3. Visual Condition Assessment
4. Risk Assessment
5. Capital Improvement Plan

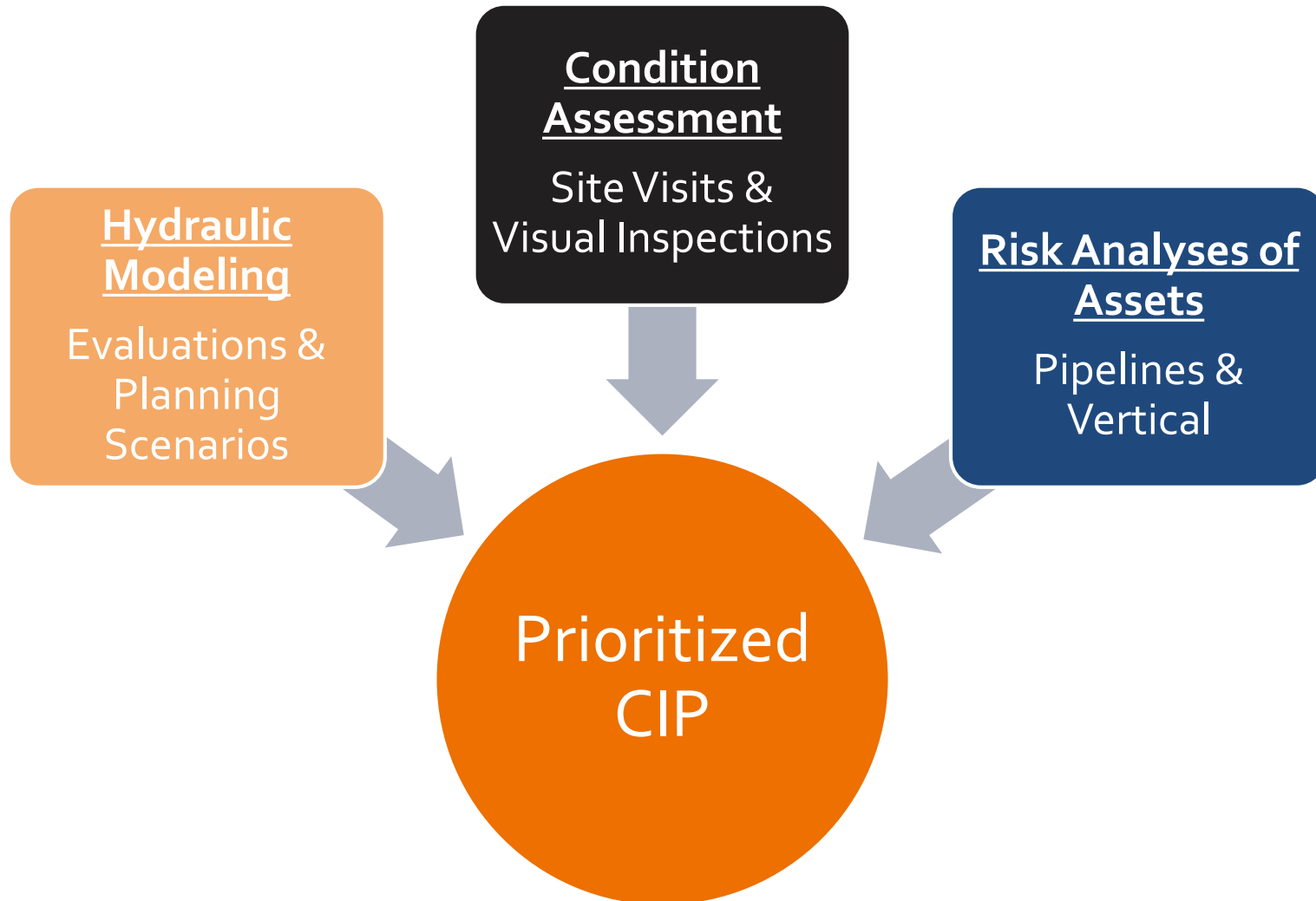


Project Introduction

- Water Master Plan
 - Long-term road map for managing water system and development of 20-year CIP
 - Last updated in 1997
- Basis for Updating the 2019 Water Rate Study



Project Approach



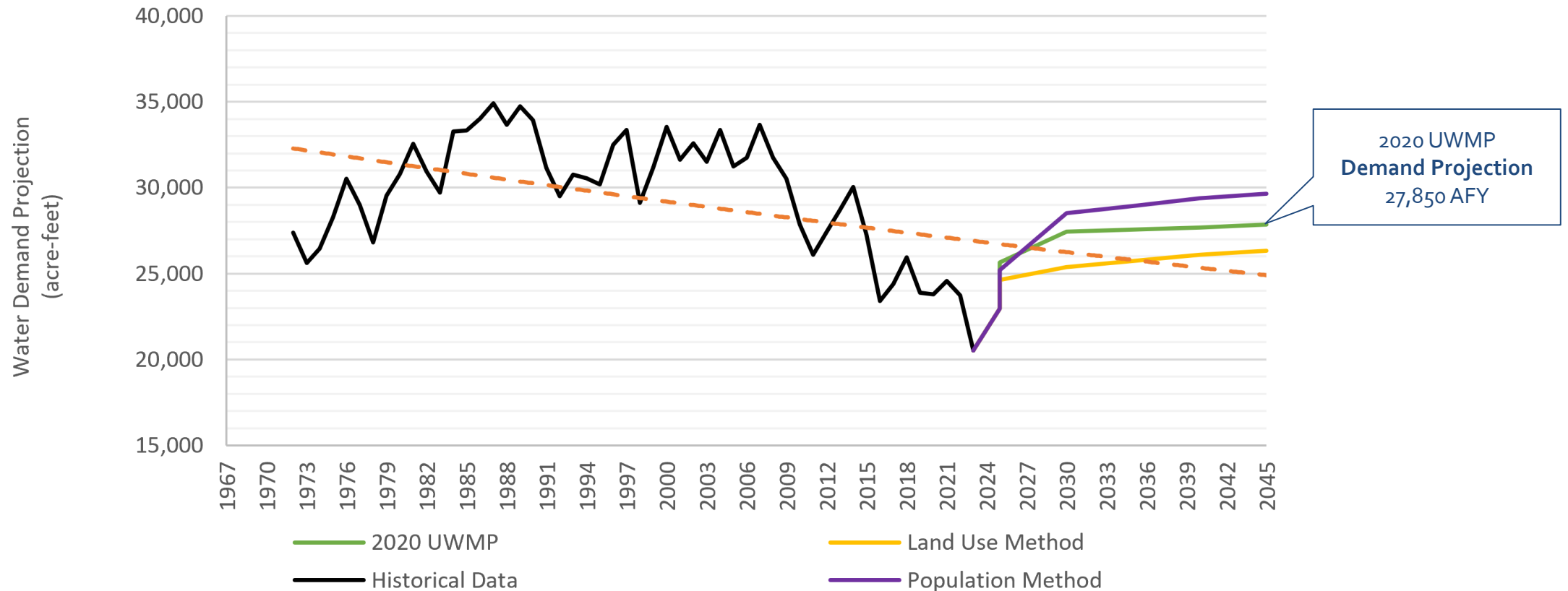


Hydraulic Model Capacity Evaluations

- Water Demand Forecasting
- System Evaluations under Normal Operations
- Planning Scenarios
 - Increase Groundwater Supply
 - System Operating Efficiency
 - System Resiliency



Water Demand Forecasting





System Evaluations under Normal Operating Conditions

Short-Term (2030), Near-Term (2035),
and Long-Term (2045)

Low- & High-
Pressure
Deficiency

Pipeline
Velocity

Fire Flow
Capacity

Well & Pump
Station
Capacity

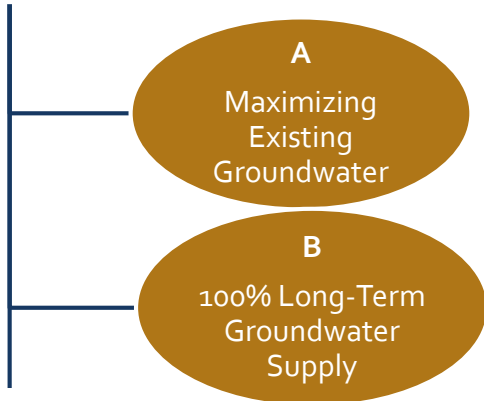
Storage
Capacity

Water
Quality/Age



Planning Scenarios

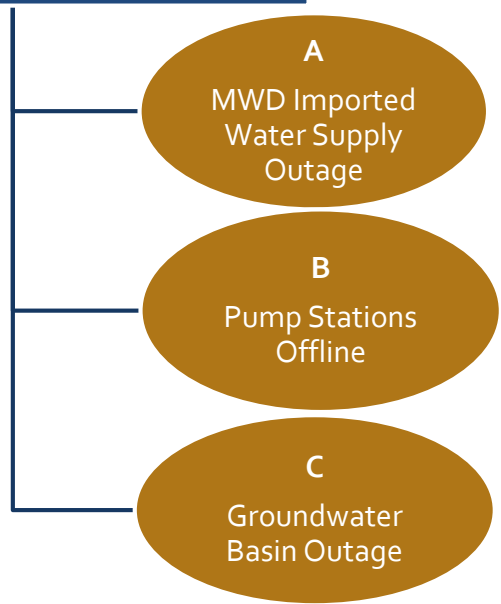
Maximize Groundwater



Operational Efficiency



Resiliency



RECOMMENDATIONS

- 5 Pump Station Capacity Upgrades
- 1 New Groundwater Well
- 7,000 LF Dedicated Transmission Main

- 2 Pump Station Rehabilitations
- Various PRV Adjustments

- 7 Backup Generators at Pump Stations
- 6 Backup Generators at Wells



Visual Condition Assessment

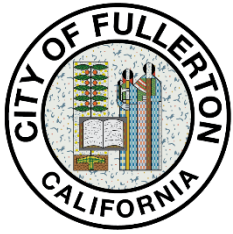
Reservoirs, Pump Stations, & Wells

Evaluate site conditions

Inspect mechanical & electrical equipment

Conduct structural observations

Review reports
(SCE tests, inspections etc.)



Risk Assessment

- Incorporated Condition Assessment Results
- Likelihood of Failure (LoF) and Consequence of Failure (CoF) Analyses
- Determine Business Risk Exposure (BRE) of Pipelines and Vertical Assets

		Consequence				
		1 Insignificant	2 Minor	3 Moderate	4 Major	5 Extreme
Likelihood	5 Almost Certain	78	791	152	8	0
	4 Likely	889	5366	945	5	0
	3 Possible	1080	4973	1289	56	0
	2 Unlikely	577	2366	397	2	0
	1 Rare	103	677	38	0	0

Vertical Assets

Risk Category	Number of BPS	Number of Reservoirs	Number of Wells
Low	4	2	0
Medium	2	7	2
High	4	1	2
Very High	0	0	0

Pipelines

Risk Category	Number of Pipe Segments	Approx. Length (LF)	% of Pipe Segments
Low	4,841	354,768	24.46%
Medium	12,994	1,546,532	65.65%
High	1,949	391,969	9.85%
Very High	8	2,003	0.04%



Pipeline Repair and Replacement Program

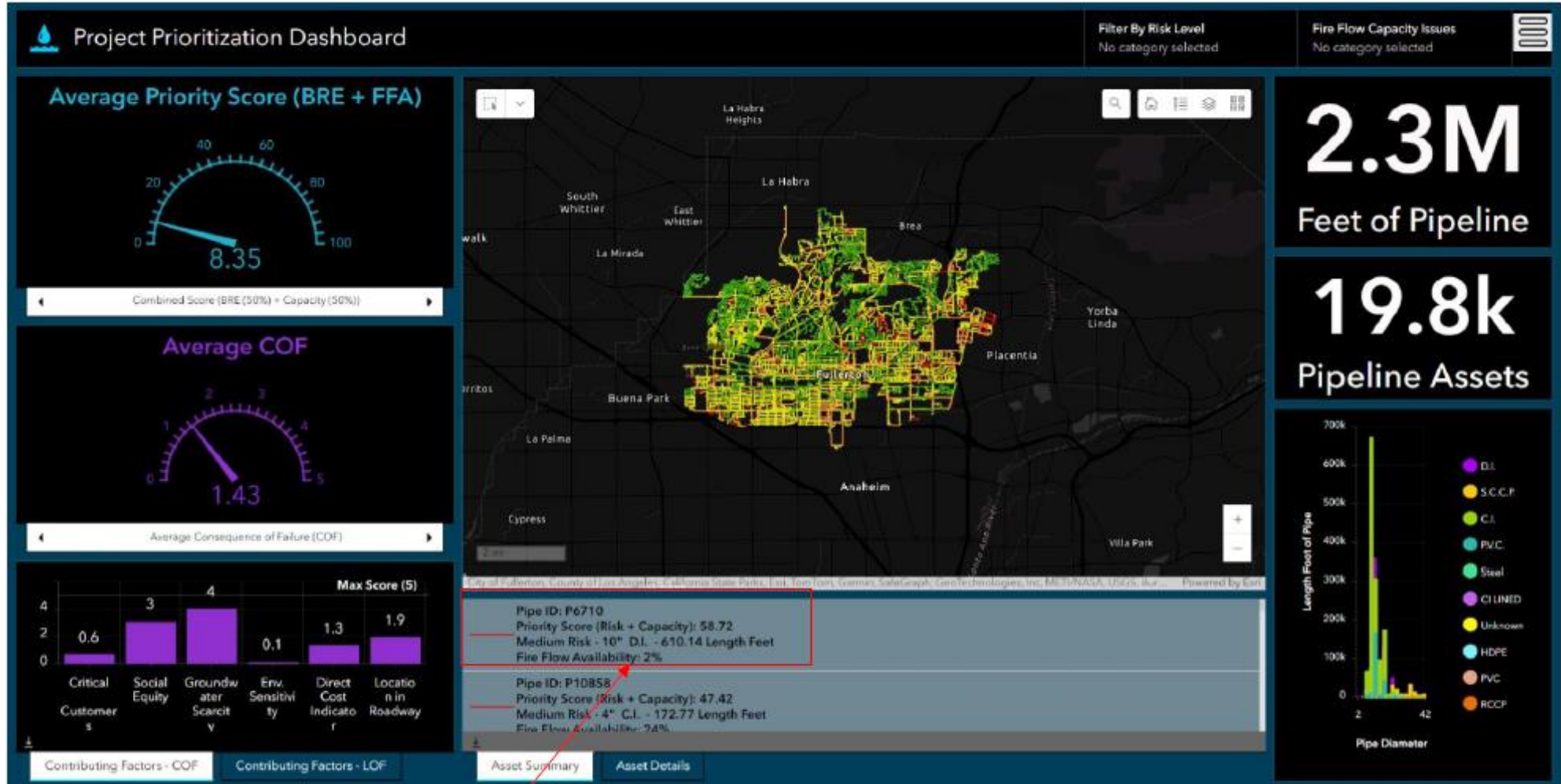
- Total Pipelines = 424 Miles
- Replacement Cycle = 60 Years
- Annual Budget = \$20.4 M per year

Planning Horizon	Cost Estimate
Short-Term (2030)	\$101.9 M
Near-Term (2035)	\$101.9 M
Long-Term (2045)	\$203.8 M
SUBTOTAL	\$ 407.6 M

Timeline	Unk.	Before 1950	1950s	1960s	1970s	1980s	1990s	2000s	2010 - 2024
Age (Years)	-	>75	75	65	55	45	35	25	<15
Breakdown	9%	2%	18%	16%	14%	8%	9%	13%	11%
50% of Pipelines Older than 50 Years									

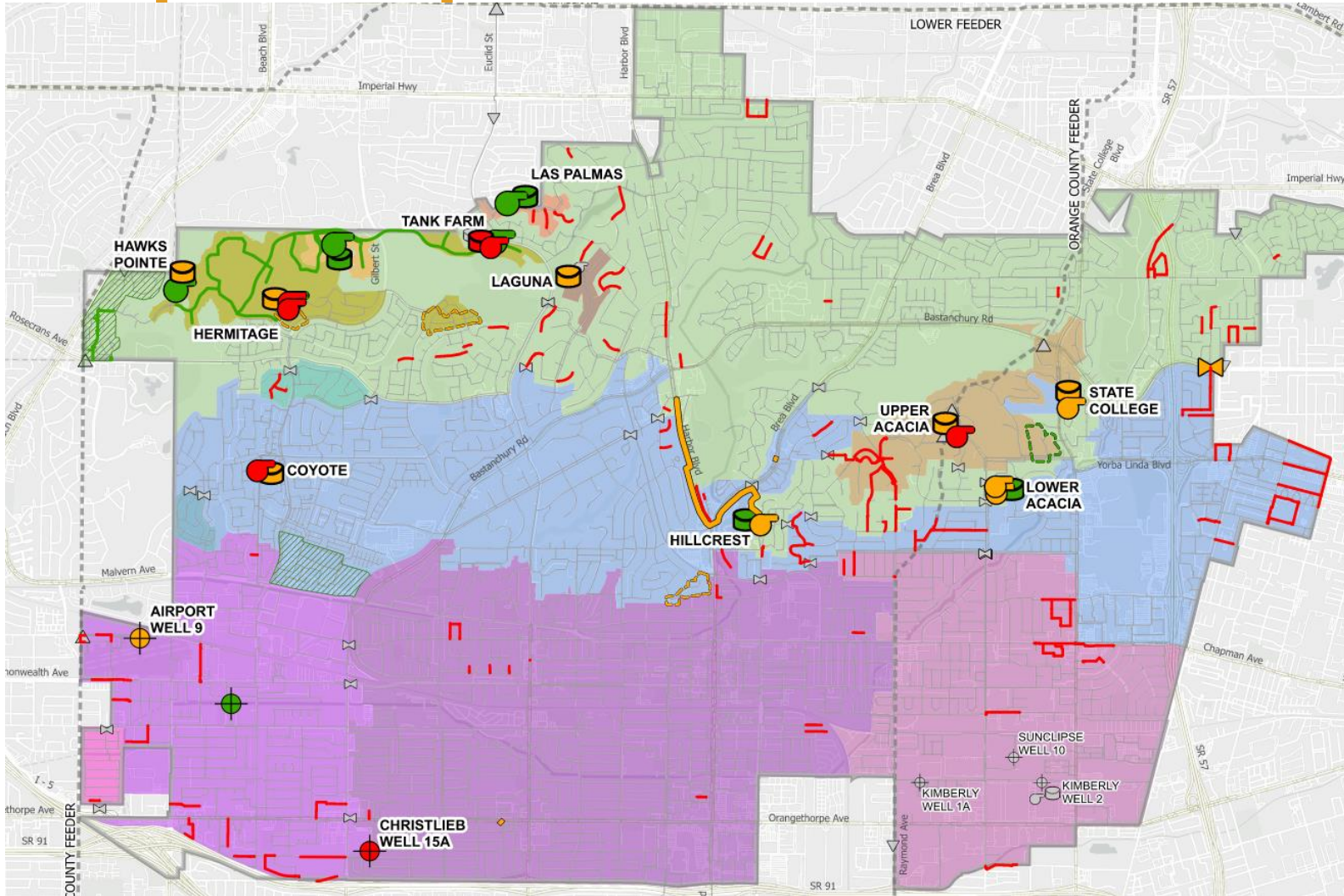


Prioritization Tool





Capital Improvement Plan



Recommended Improvement Planning Horizon

SHORT-TERM (2030)

NEAR-TERM (2035)

LONG-TERM (2045)

Near-Term:
7 Permanent Backup Generator Installed at Existing Pump Stations

Long-Term:
6 Permanent Backup Generator Installed at Existing Wells



CIP Cost Estimate Summary

Planning Horizon	Other Water Main Project Costs	Booster Pump Station Project Costs	Other Facility Project Costs	Total Project Improvement Costs	Pipeline Repair & Replacement Program Costs	Total 20-Year CIP Costs
Short-Term (2030)	\$42.9 M	\$11.6 M	\$4.5 M	\$59.0 M	\$101.9 M	\$160.9 M
Near-Term (2035)	\$6.3 M	\$9.6 M	\$17.1 M	\$33.0 M	\$101.9 M	\$134.9 M
Long-Term (2045)	\$16.2 M	\$9.6 M	\$33.2 M	\$59.0 M	\$203.8 M	\$262.8 M
TOTAL	\$65.4 M	\$30.8 M	\$54.8 M	\$151.0 M	\$407.6 M	\$558.6 M



Questions?