

Keep the Water Flowing: Staying Ahead of the Water Demand Curve in a Multi-Source System

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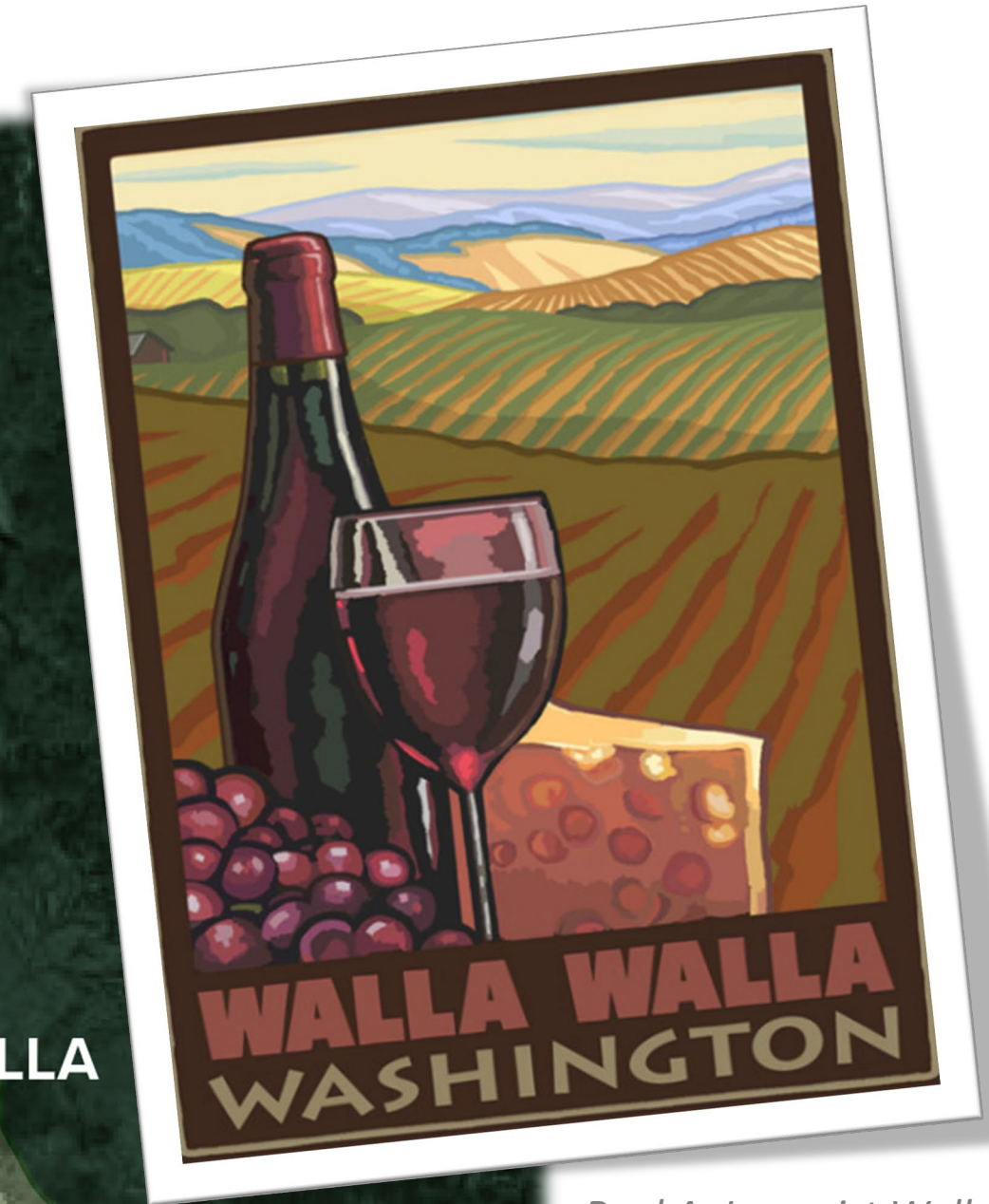
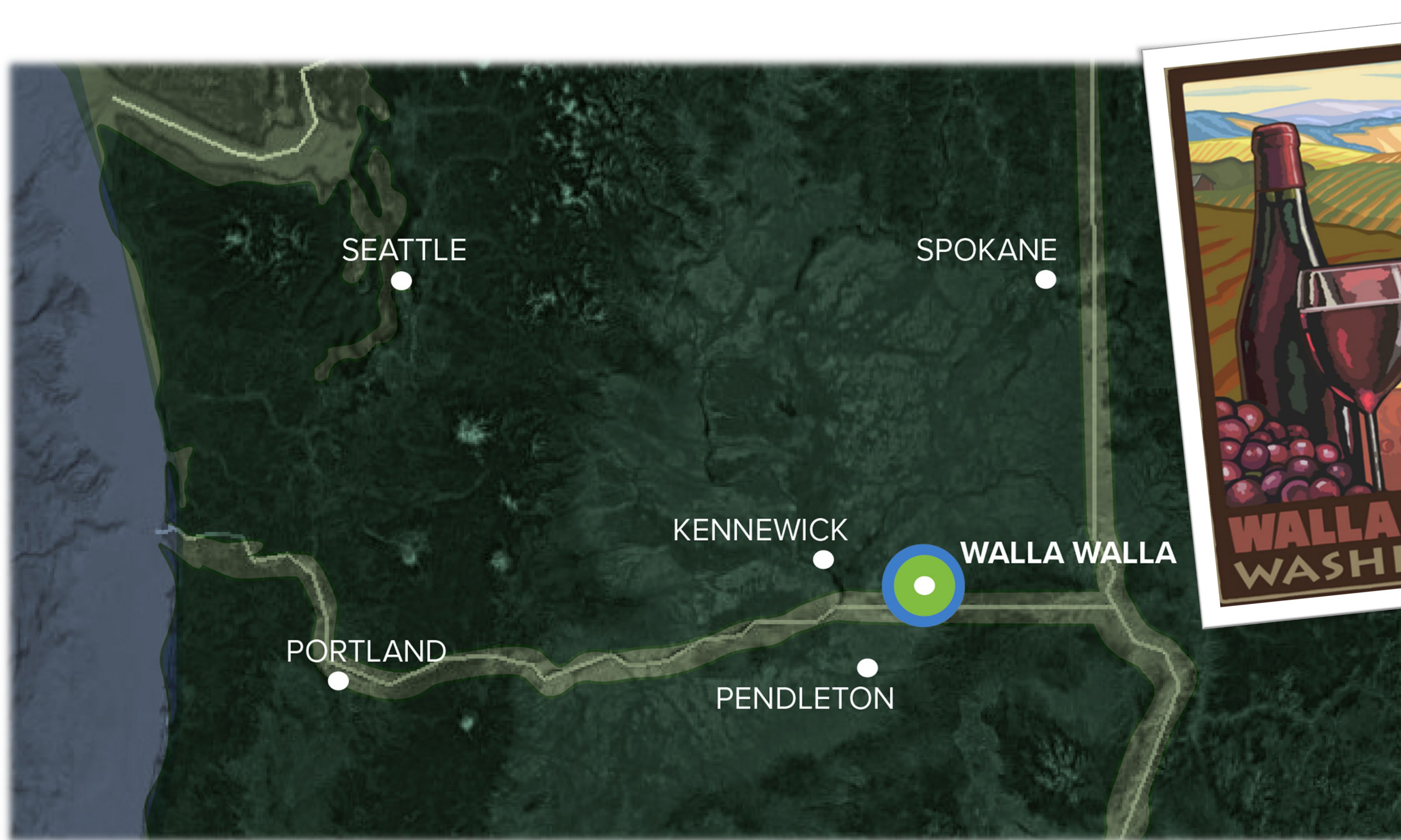


WHY ARE WE HERE?



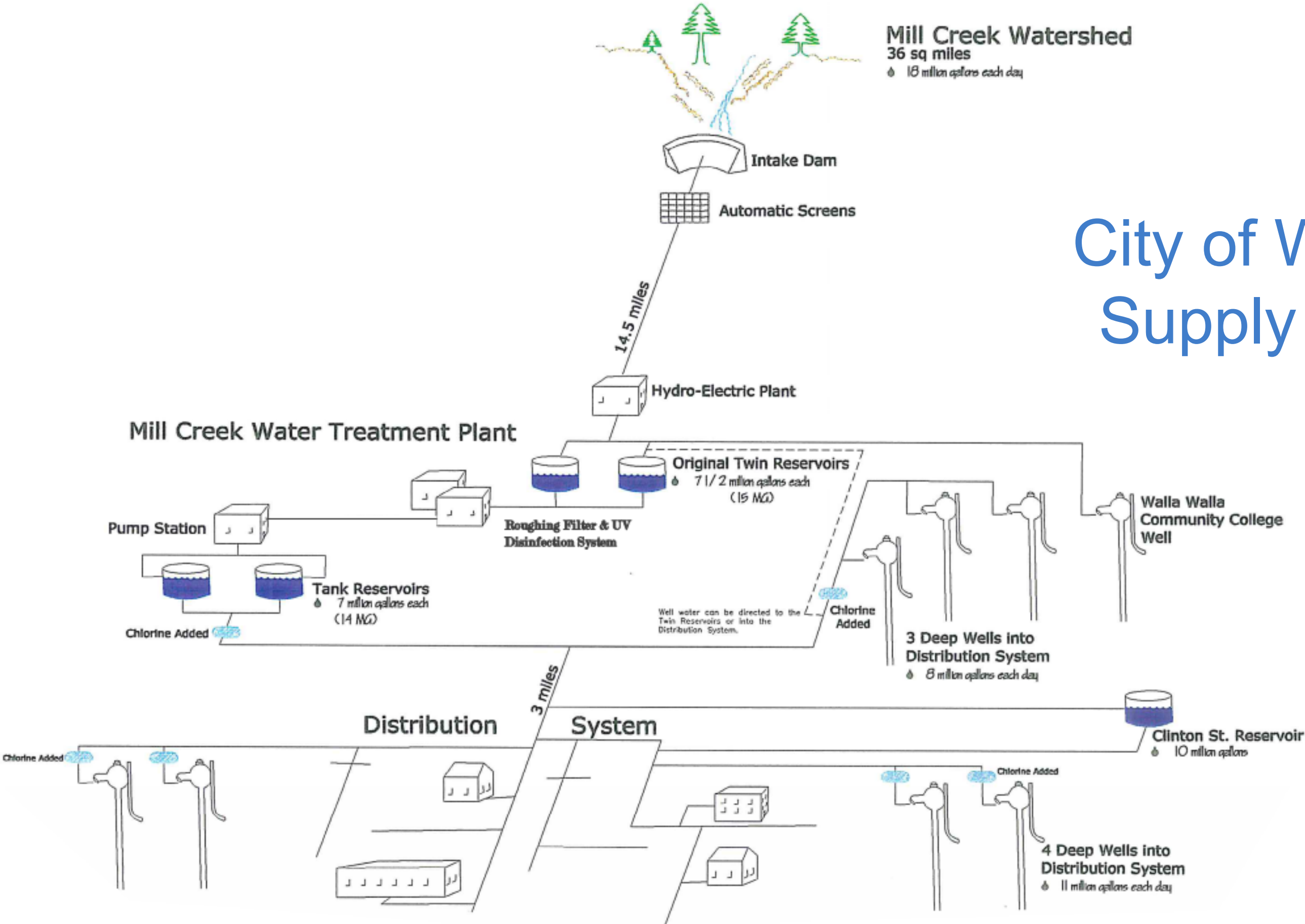
- Water System Supply Resiliency
 - For Supplemental Supply
 - For Emergency Supply
- Prioritize Well Facility Infrastructure Upgrades
- Operation and Maintenance Recommendations

LOCATION



*Paul A. Lanquist Walla Walla
Washington Wine Country Art Print*

CITY'S EXISTING WATER SYSTEM



City of Walla Walla Supply Overview

WHY ARE WE HERE?



2020 WASHOUT



Project site "before."

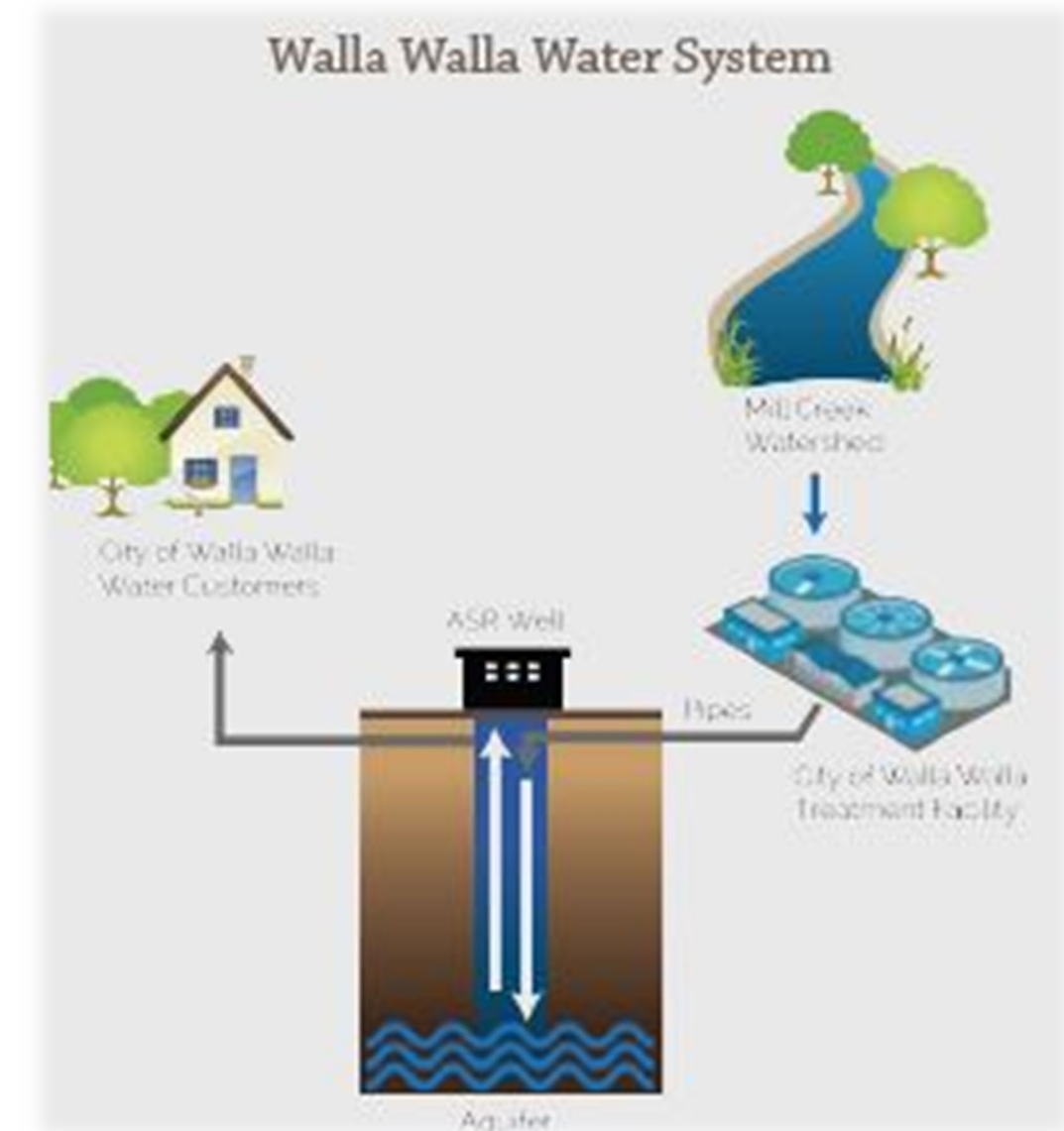


Project site "after."

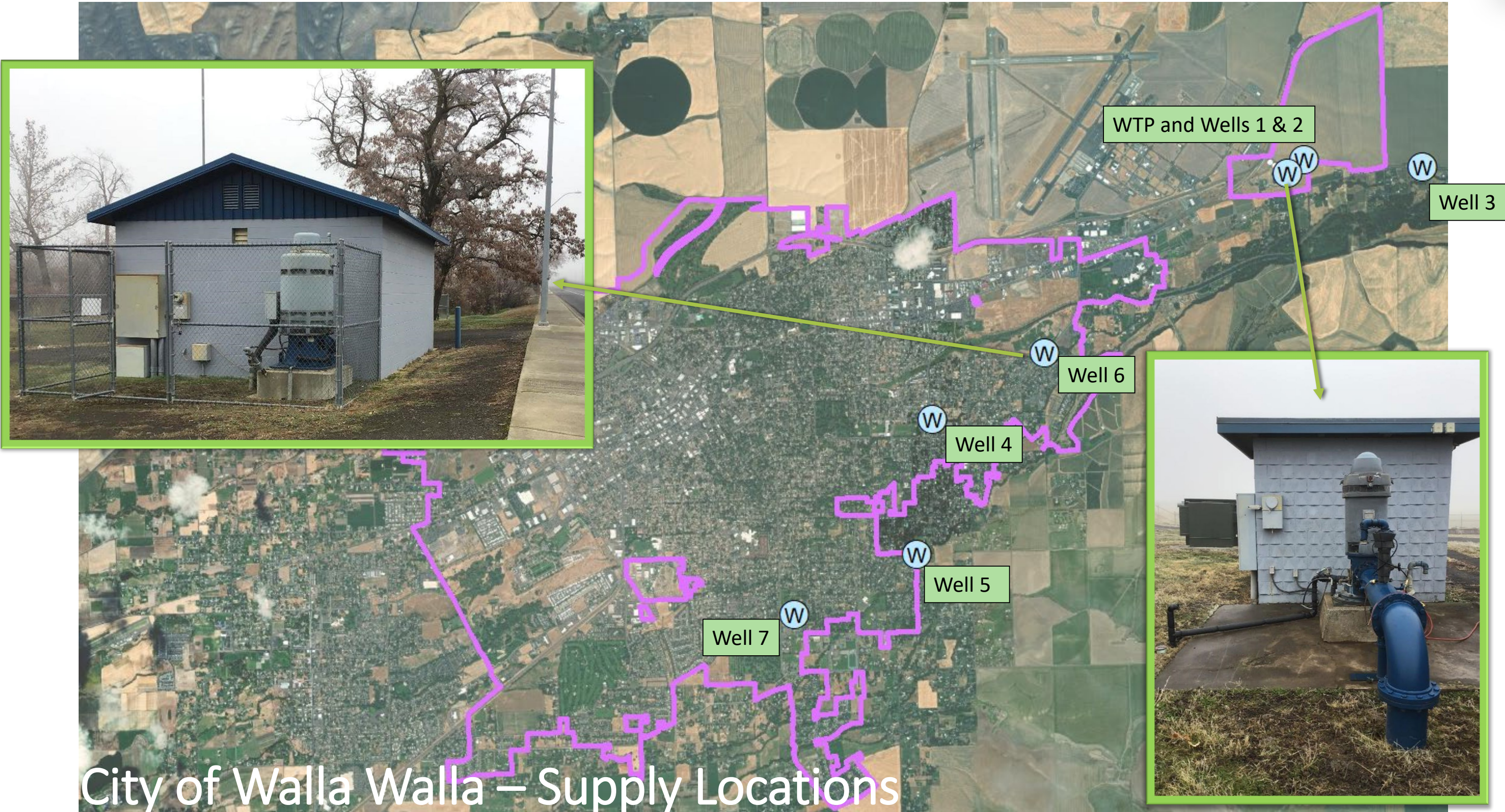


Well Master Plan Drivers

- **Level of Service Needs**
 - Minimum Supply Requirements
 - Health and welfare+ (ADD)
 - Highest level of service (MDD)
 - Supplemental needs
 - Improve supply reliability
- **Supply resiliency – Back-up surface water (Mill Creek)**
- **Provides a roadmap to staff and project funding**



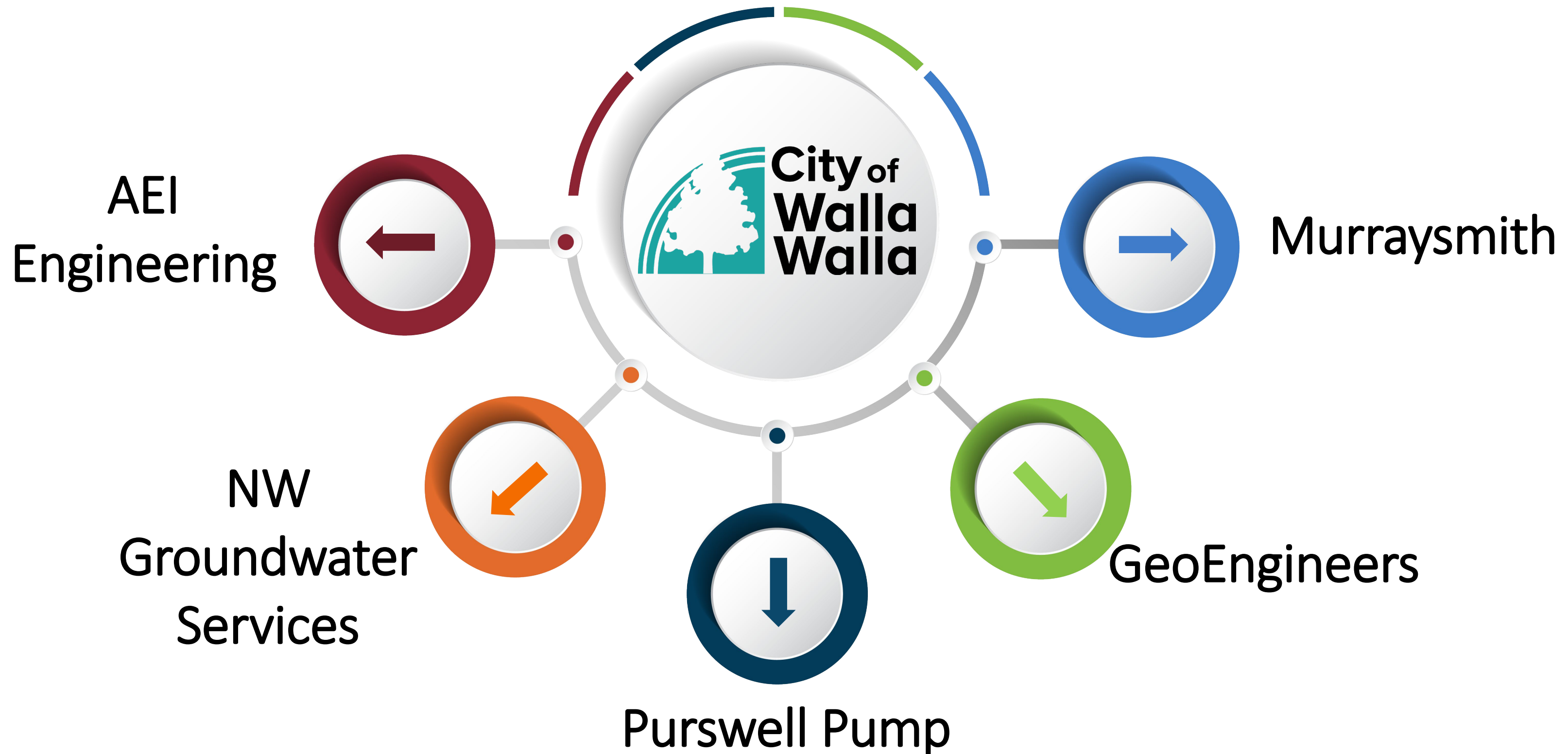
CITY'S EXISTING WATER SYSTEM



City of Walla Walla – Supply Locations



Well Facility Assessment – **PROJECT TEAM**



WELL MASTER PLAN PROJECT



Site Assessment

9. Describe the existing condition of the site and site accessibility.

City Response: Access at this well is good although any major pump or motor work requires the roof to be removed.

Field Notes: There is a private property sign, no site lighting, no fence, large lawn. Recommend to add a no parking sign.

10. Does the pump house and site provide protection from trespassers, vandals and saboteurs? Are there any surveillance systems or intrusion alarms?

Examples: Adequate exterior lighting, egress door locks, site fencing, locks on access hatches?

City Response: This well and pumphouse is right along a well travelled road which keeps trespassers and vandals away. The door is locked and the intrusion alarm is tied to the SCADA system.

Field Notes:

11. Sanitary Control Area Concerns/Limitations

City Response: There is only one parcels with a legal SCA around this well but at the same time a creek flows within the 100' radius and sanitary sewer and storm drainage are present in the roadway.

Field Notes: The floor drain connects to the waste discharge vault. No screen on the bottom of the waste discharge pipe into waste vault.

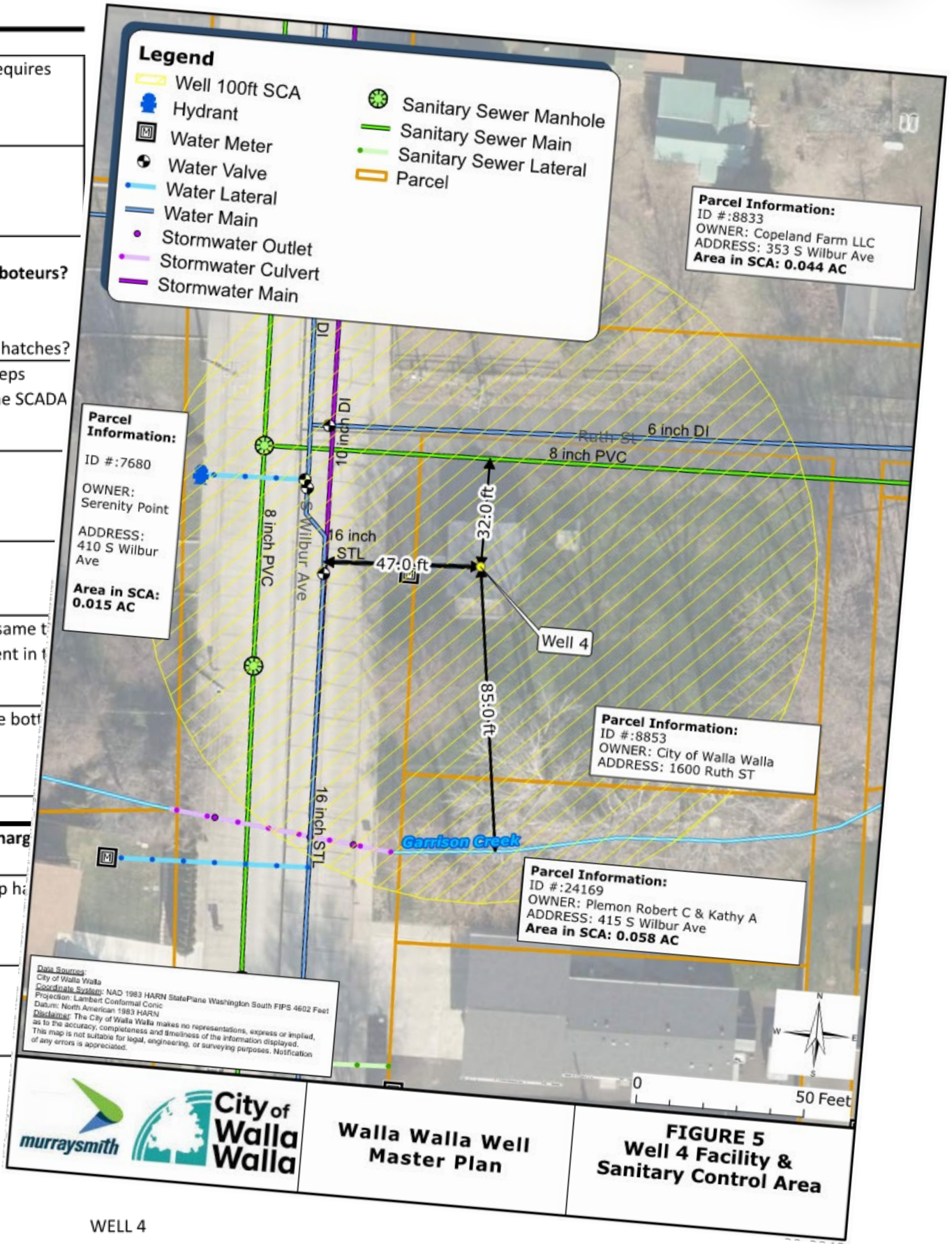
Equipment Assessment

Describe the existing condition of the pump equipment (pump, pump column, discharge pipe, etc.)

When were the pumping components installed?

City Response: Good condition, everything was updated in 2006, since then the pump has run a great deal. The flow meter was replaced with a mag meter in 2019-2020.

Field Notes:



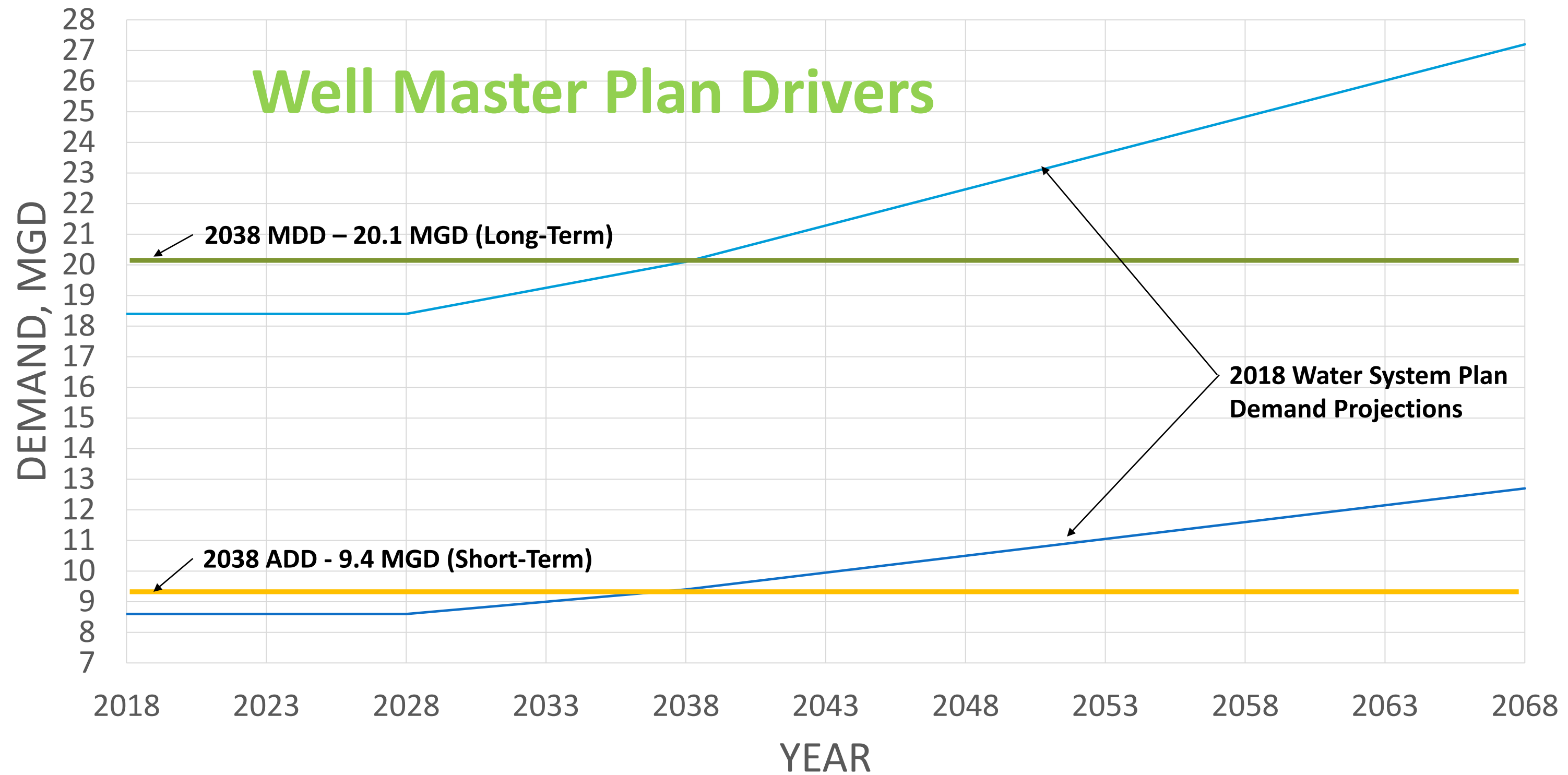
Picture 13: Well 4 facility

Picture 14: Well 4 pump discharge piping and motor located inside building

Picture 15: Looking inside Well 4 chlorine room

Picture 16: Well 4 pump to waste system

WELL MASTER PLAN PROJECT





- Sequencing of Increased City's Water Supply Resiliency:
 - Short-Term: Meet "2038 ADD" by 2025
 - Long-Term: Meet "2038 MDD" by 2033
- Prioritize Well Facility Infrastructure Upgrades

SUPPLY STRATEGY RECOMMENDATIONS SEQUENCING

Recommendation Project Type - Well Facility	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034+
SCA - Well 1, 2, 3, & 6	\$651,000											
SCA/Piping – Well 4	\$339,500											
Wellhead – Well 6	\$509,250											
Security (Risk and Resiliency) – Well 1	\$19,500	\$71,500										
Security (Risk and Resiliency) – Well 2	\$48,000	\$176,000										
Security (Risk and Resiliency) – Well 3	\$40,875	\$149,875										
Security (Risk and Resiliency) – Well 4	\$46,125	\$169,125										
Security (Risk and Resiliency) – Well 6	\$74,250	\$272,250										
Water Rights Consolidation		\$85,200										
Electrical – Well 1		\$3,375	\$12,375									
Electrical – Well 2		\$8,625	\$31,625									
Electrical – Well 3		\$9,750	\$35,750									
Electrical – Well 4		\$1,875	\$6,875									
Electrical – Well 6		\$105,375	\$386,375									
Wellhead – Well 1			\$70,125	\$257,125								
Wellhead/Piping – Well 2				\$16,875	\$61,875							
Wellhead/Piping – Well 3						\$77,250	\$283,250					
Wellhead/Piping/Facility – Well 4								\$170,250	\$624,250			
Inspection – Well 7										\$166,600		
Well 3 Pre-Lube System										\$39,000	\$143,000	
Facility – Well 2												\$5,358,500
Facility – Well 7												\$5,745,600

Well Facility Improvement Recommendations

SUPPLY STRATEGY FINANCIAL PLANNING



Planning Horizon	Total Improvement Costs
2023	\$1,728,500
2024	\$1,052,950
2025	\$543,125
2026	\$274,000
2027	\$61,875
2028	\$77,250
2029	\$283,250
2030	\$170,250
2031	\$624,250
2032	\$205,600
2033	\$143,000
2034+	\$11,104,100

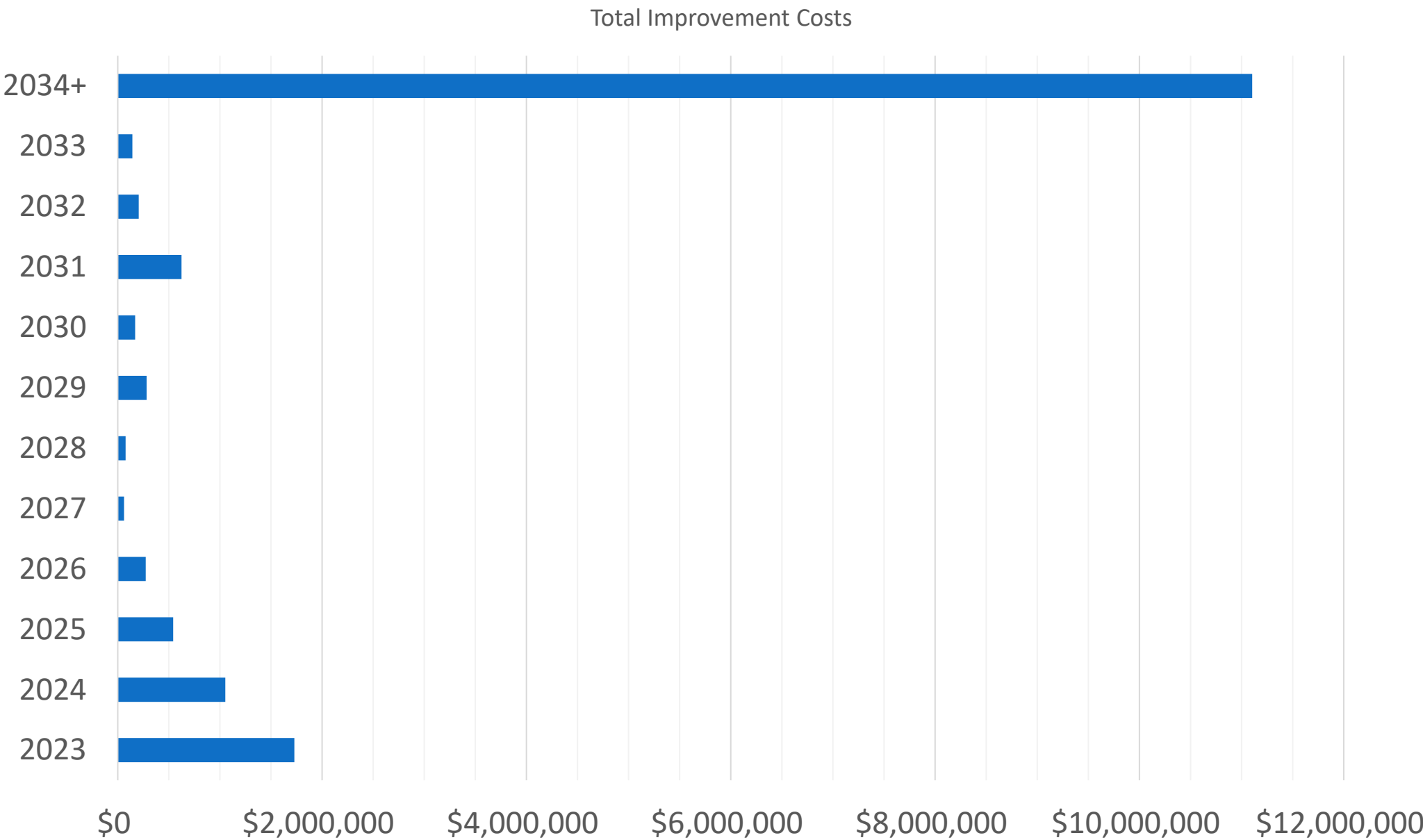
Well Facility Improvement Recommendations

Well Capital Improvement Program - Yearly Total

Well Capital Improvement Program Total ~\$16.27 Million

✓ Short-Term ~\$3.3 Million

✓ Long-Term ~\$1.8 Million





Operations and Maintenance Considerations

- Supplemental/Emergency Operation
- Continuous Operation – Dedicated supply
- ASR Operations – Impacts from expansion of ASR Program



City's Well 4 Facility



Operation and Maintenance Costs

Item	Supplemental Operation Short-Term (Wells 1, 2, & 6)	Supplemental Operation Long-Term (All Wells Except 7)
Staffing	\$30,700	\$59,400
Vehicle	\$4,200	\$4,200
WQ Testing	\$6,400	\$6,400
Power	\$80,300	\$92,00
Chlorine	\$3,300	\$6,600
Total Annual Cost	\$124,900	\$168,600



Operation & Maintenance Recommendations

- Conduct Facility Assessments on a Routine Basis
- Additional Resources for Implementing Recommendations:
 - Short-Term: Current/2038 ADD, Wells 1, 2, and 6
 - 0.5 FTE and 1 Vehicle
 - \$124,900 Annual Costs
 - Long-Term: 2038 MDD/2068 ADD, Wells 1, 2, 6, 5, 3, 4
 - 1 FTE and 1 Vehicle
 - \$168,600 Annual Costs

KEY TAKEAWAYS



- Paved the way for approval of financial plan that allowed funding of all improvements and hire additional staff
- Transfers risk of operations from operators to the City Council





murraysmith



Questions?