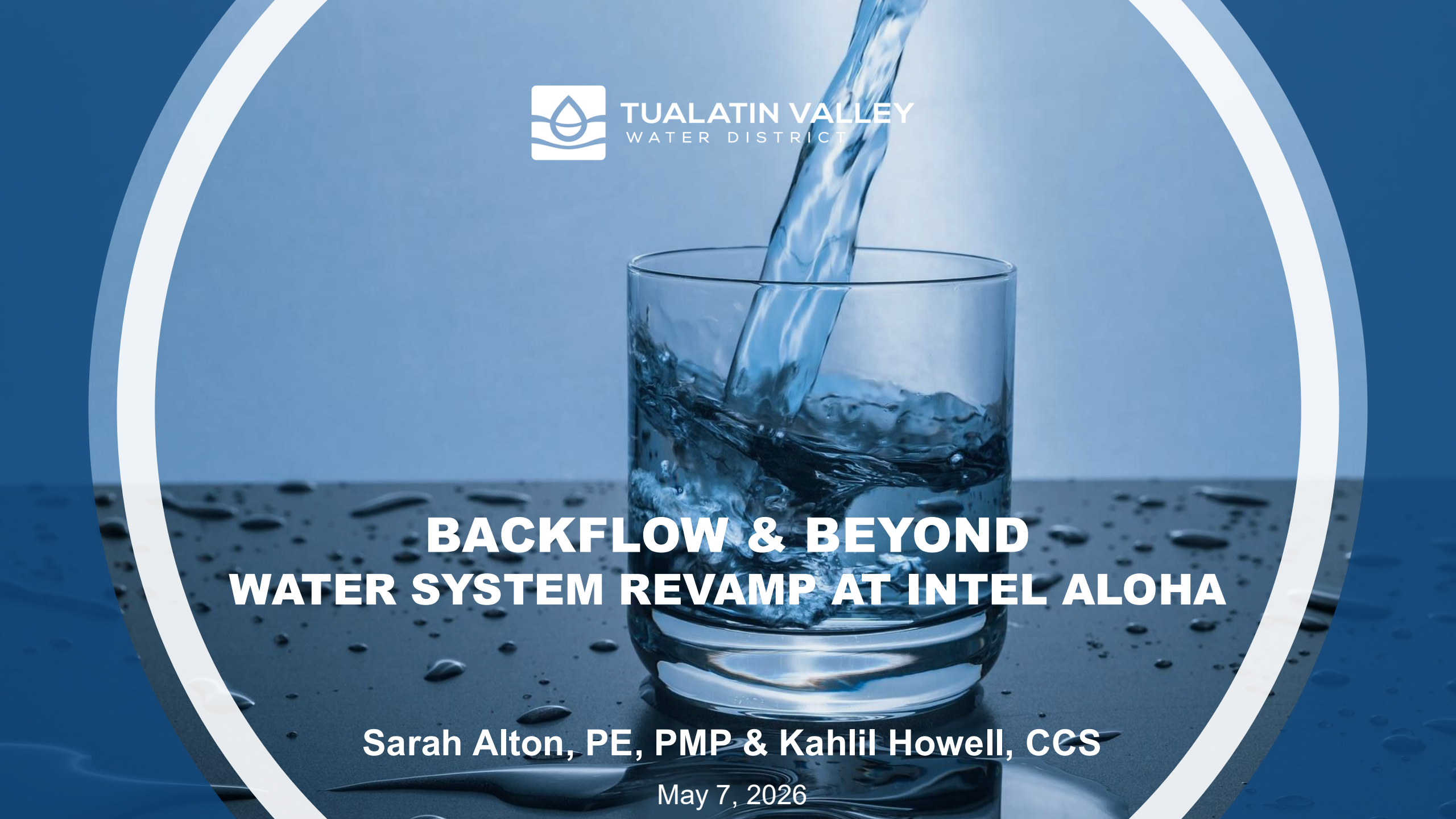


BACKFLOW & BEYOND
WATER SYSTEM REVAMP AT INTEL ALOHA

Sarah Alton, PE, PMP & Kahlil Howell, CCS

May 7, 2026

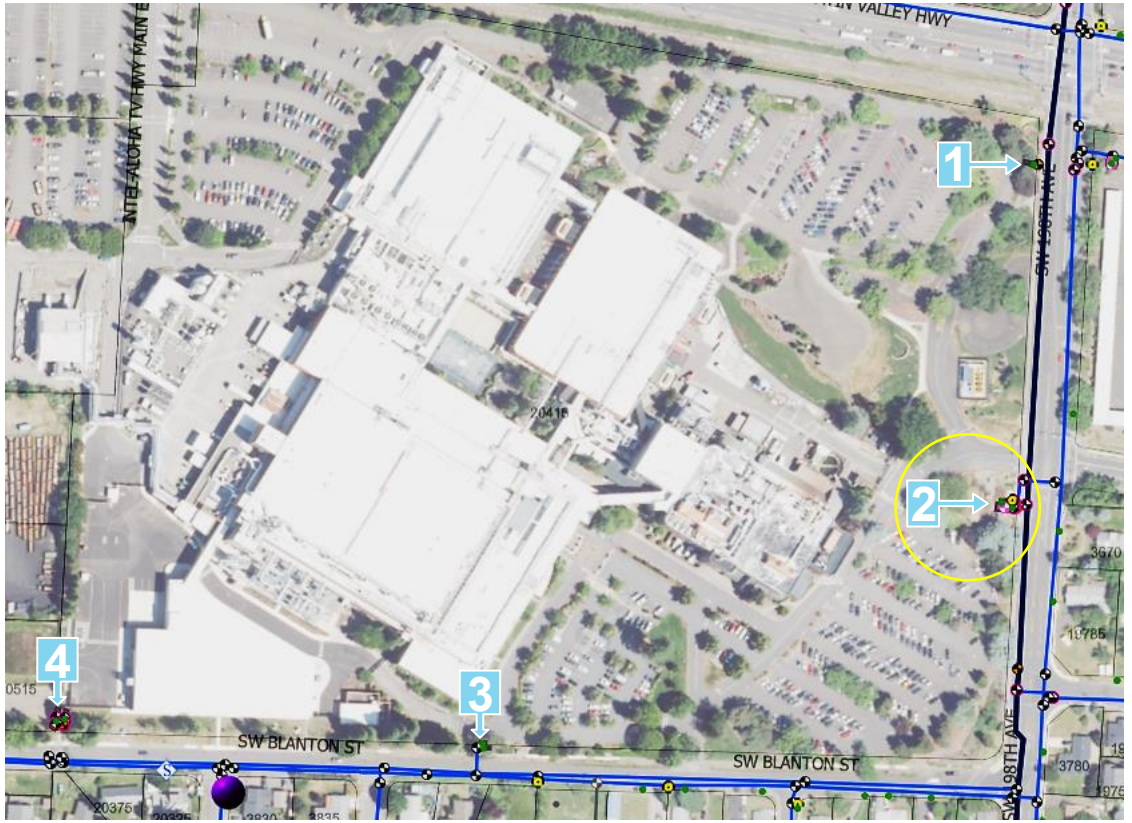
TVWD CROSS CONNECTION PROGRAM

- Inspections prioritized by – Degree of hazard, existing premises isolation type, testing compliance and inventory discrepancies.
- Inspections begin at the POC to verify existing premises isolation conditions.
- Assumptions based on test records may not reflect real-world conditions.
- Commercial and industrial facilities often reveal challenging conditions, with a higher risk of unprotected cross connections.
- Codes and hazard identification adapts over time.



BACKGROUND: INTEL ALOHA SITE INSPECTION

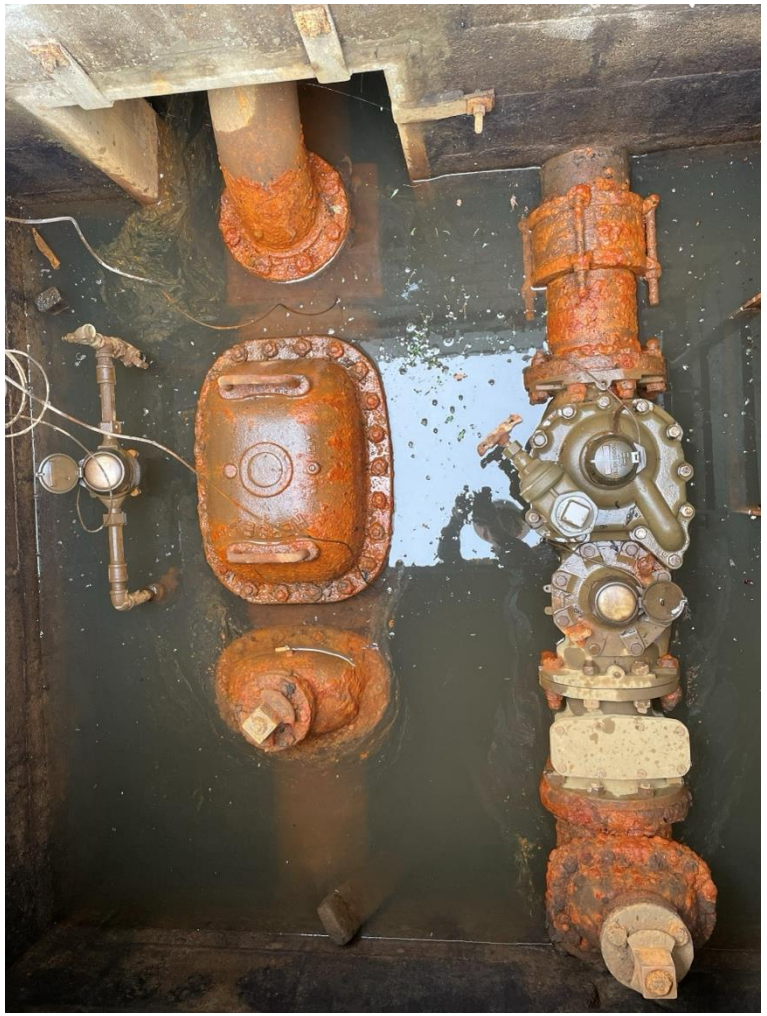
- Initial engagement was triggered by inventory discrepancies between Intel and TVWD.
- Met with contracted lead plumber to walk the property – Beginning at the POCs.
- Aligned inspection with other annual on-site work at meter assemblies on Blanton St (location 4).



TUALATIN VALLEY WATER DISTRICT

BACKGROUND: INTEL ALOHA SITE INSPECTION



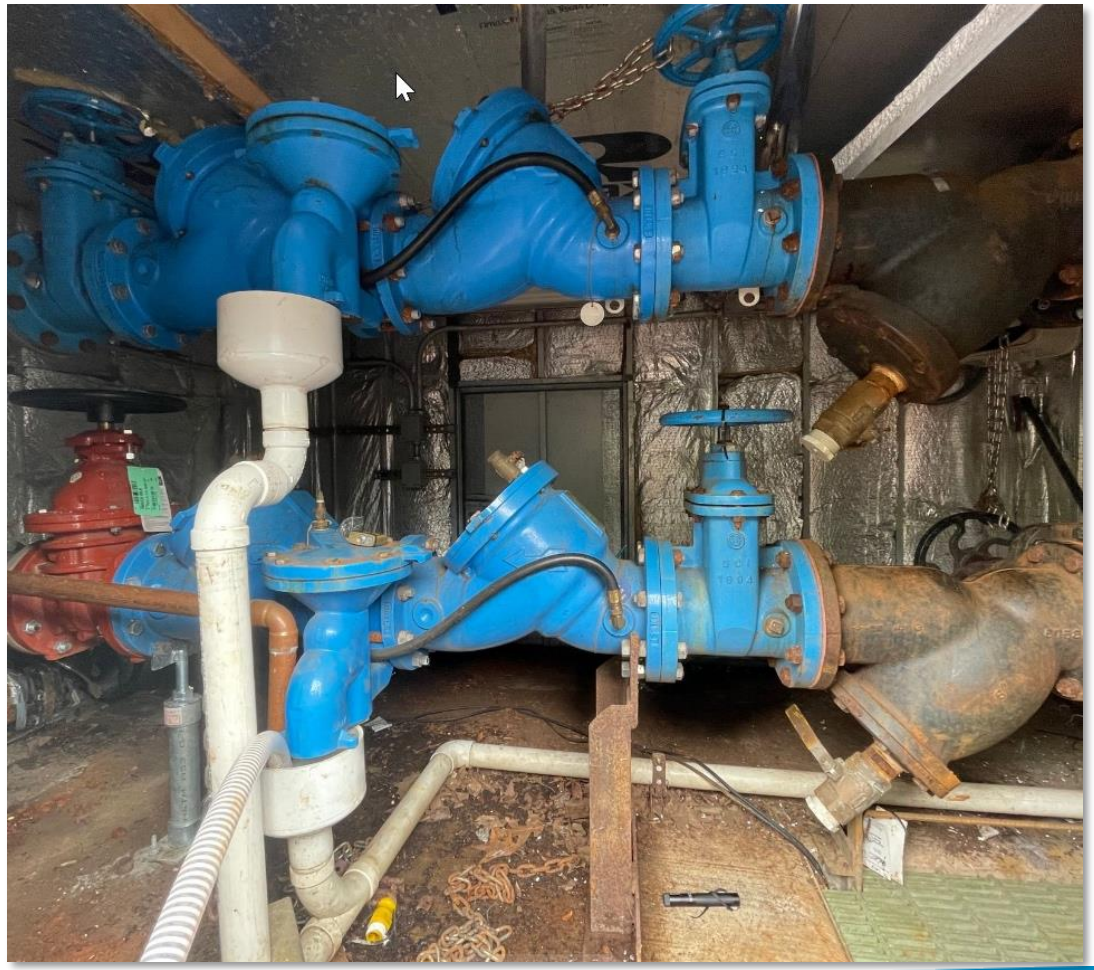


TUALATIN VALLEY WATER DISTRICT

BACKGROUND: INTEL ALOHA SITE INSPECTION



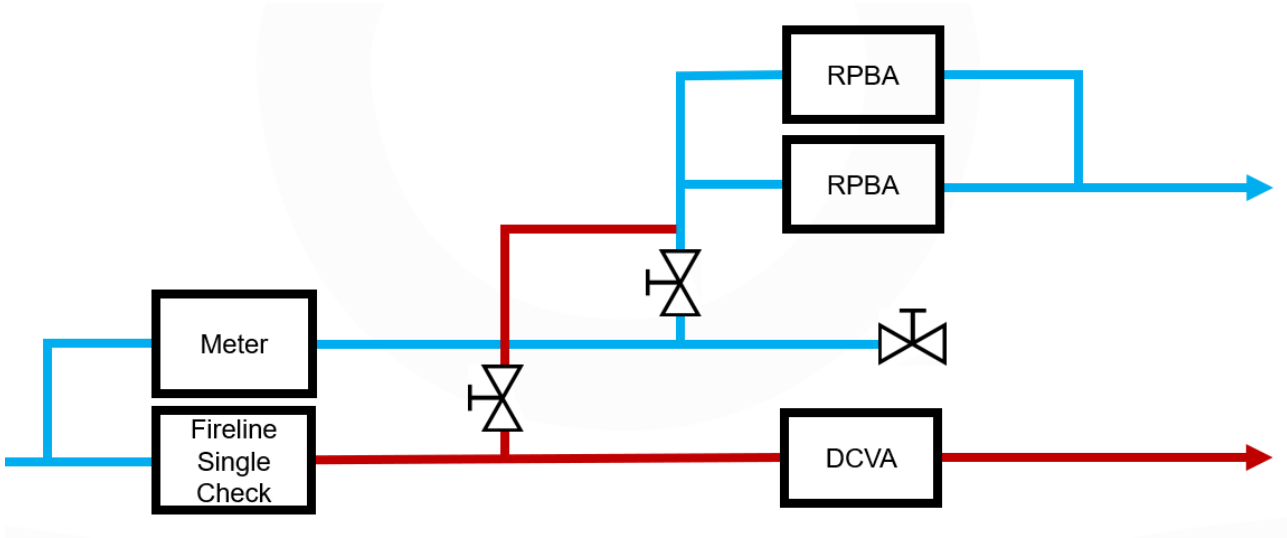




TUALATIN VALLEY WATER DISTRICT

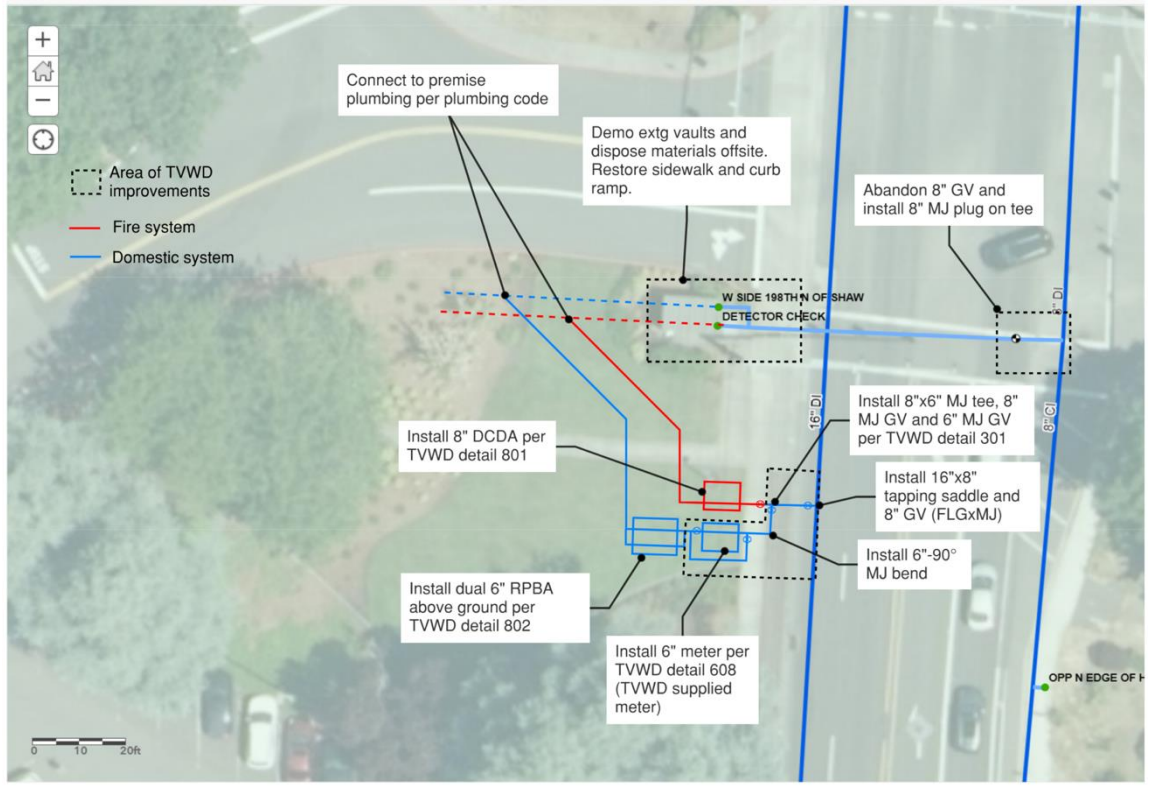
INSPECTION SUMMARY

- **Single-check valve on fireline point of connection**
  - Not adequate fireline protection – check valve most likely lead weighted.
- **Cross connection between fireline and domestic water**
  - Closed valve separating the two systems.
  - Stagnant non-potable fireline water could potentially supplement water in an emergency
- **Dead-leg piping**
  - Abandoned domestic line capped with blind flange, increasing the risk of stagnation and microbial growth
- **Continuously submerged DCVA**
  - Sump pump inefficiency. Standing water created cross connection between test ports and standing water
- **Access concerns and Confined space hazards**
  - Trip/fall hazards, engulfment, and assembly installed above 5-ft without approved platform



TUALATIN VALLEY WATER DISTRICT

PROJECT PLANNING & INTEL ENGAGEMENT



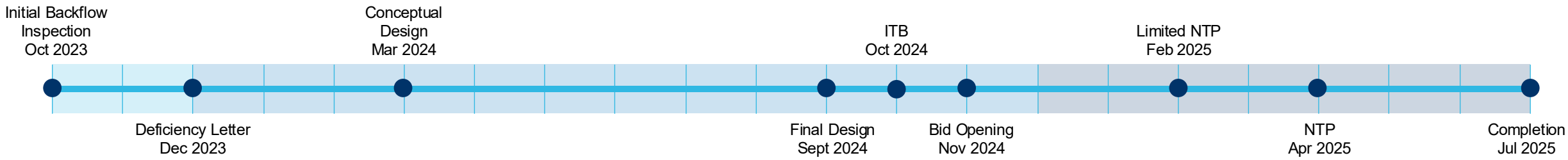
- We built off prior project success (meter and backflow upgrades on Blanton St).
- We engaged Intel staff (Process Engineer and Construction Manager) early in the process so they could secure funding for the backflow upgrades. Conceptual design provided to Intel in March 2024.
- Project schedules were aligned to build on project momentum.

<u>Project requirement: No TVWD interruption to water service.</u>

TUALATIN VALLEY WATER DISTRICT

PROJECT SCHEDULE & BUDGET

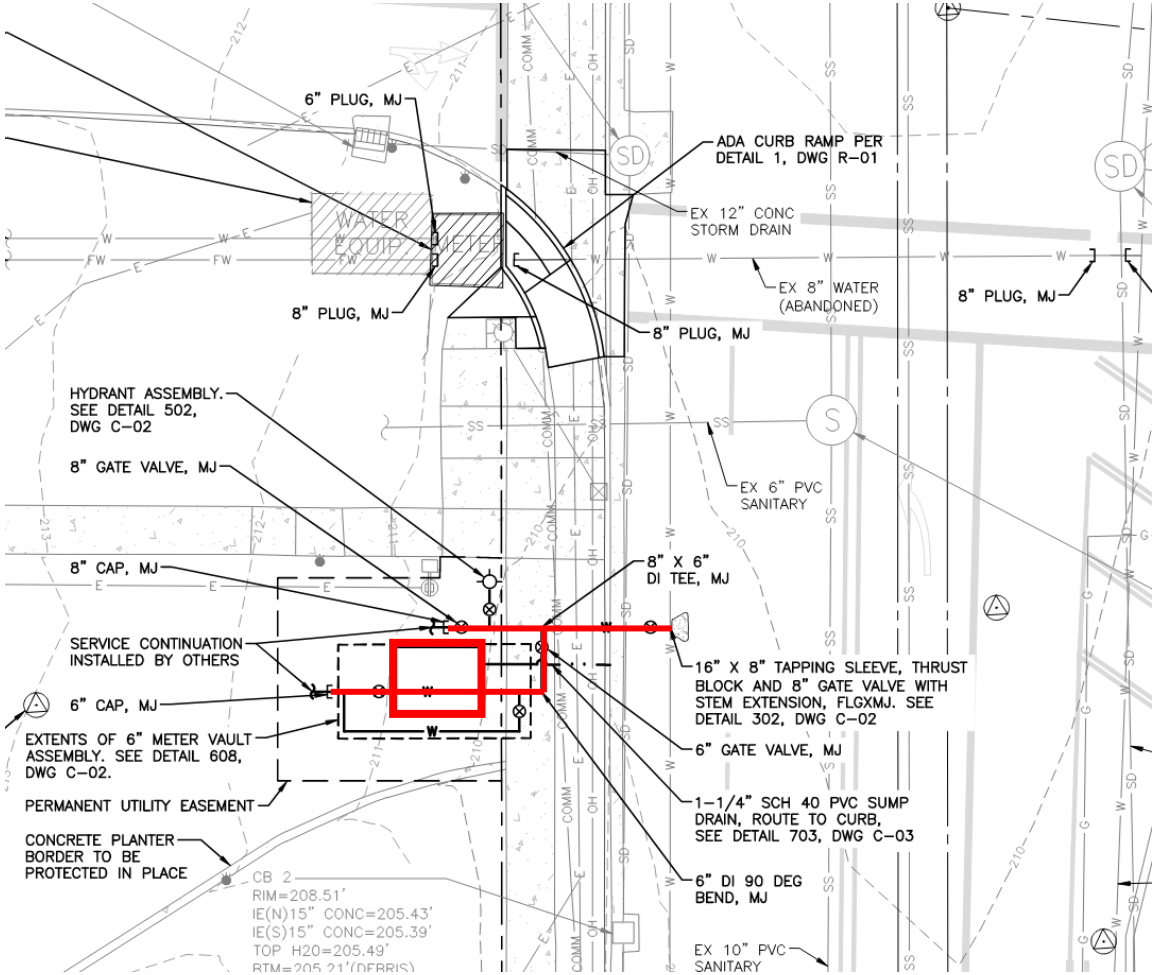
Total Duration: 22 months



Service	Cost
Easement Preparation (AKS Engineering)	$3,750
Engineering (Water Systems Consulting)	$71,120
Construction (Trench Line Excavation)	$283,305
Total TVWD Cost (including staff time)	**$430,000**

TUALATIN VALLEY WATER DISTRICT

DESIGN CONSIDERATIONS



- Proposed meter location should be built to maintain existing meter until it could be demolished.
- Collaborated with Intel real estate to secure a new location and easement for meter vault on private property.
- ADA ramp constrained by right of way and private property.

TUALATIN VALLEY WATER DISTRICT

CONSTRUCTION PROGRESS



SW 198th Ave Utility Conflicts



SW 198th Ave Hot Tap & Piping



Completed Vault & Hydrant

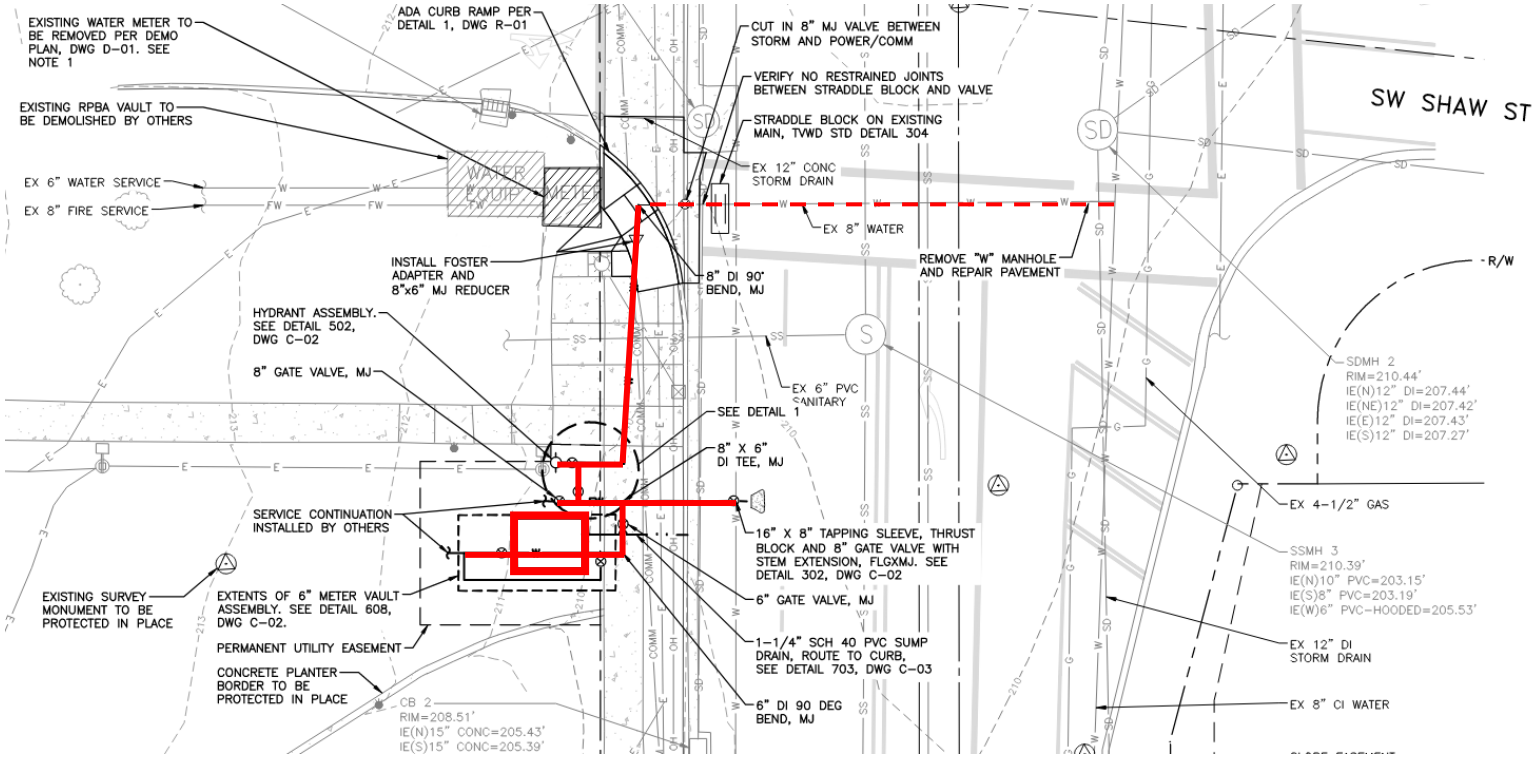
TUALATIN VALLEY WATER DISTRICT

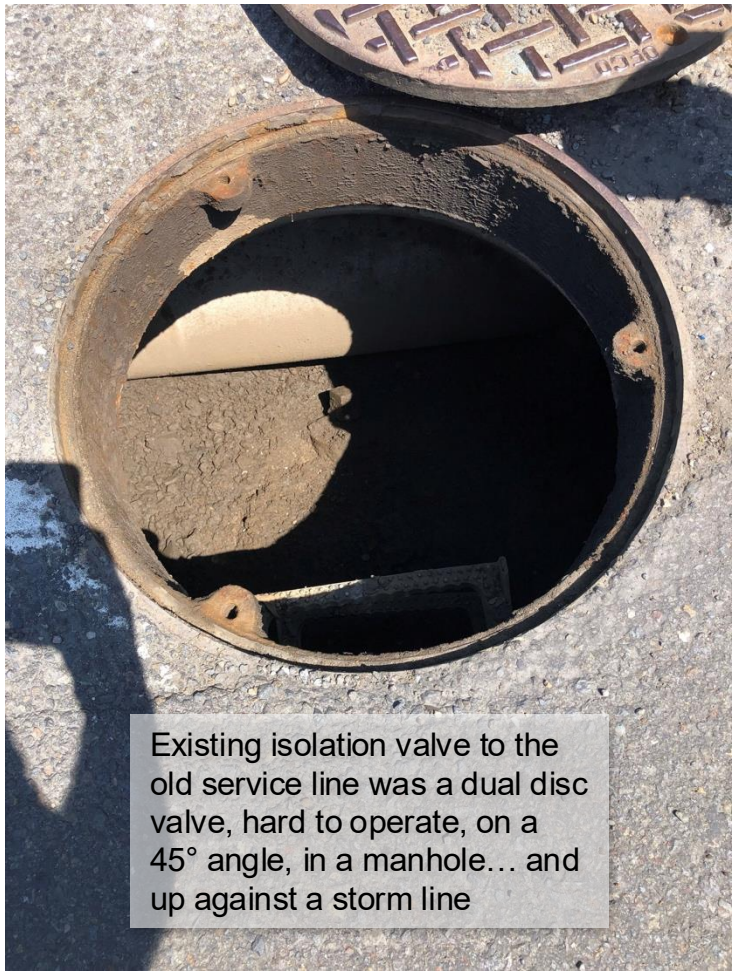
CONSTRUCTION PROGRESS



- After TVWD and Trench Line completed the meter vault install, Intel constructed their backside connection and re-installed an 8” DCDA (Watts 757) and two above-grade 8” RPs (Watts 957)
- Intel contributed significant financial investment to the 198th site and Blanton site.

CONSTRUCTION PROGRESS





Existing isolation valve to the old service line was a dual disc valve, hard to operate, on a 45° angle, in a manhole… and up against a storm line

Check your shutdown plan and the valves you need to use! You may end up with a costly change order.

TUALATIN VALLEY WATER DISTRICT

CONSTRUCTION PROGRESS



- Once the Fab was being served by the new connection, the old connection was completely removed. The area was restored and re-landscaped by Intel.

TUALATIN VALLEY WATER DISTRICT

COMPLETED PROJECT



Landscaping by Intel



Updated and improved ADA ramp

TUALATIN VALLEY WATER DISTRICT



TUALATIN VALLEY
WATER DISTRICT

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