



Union Public Utility District

Water Master Plan Progress Update

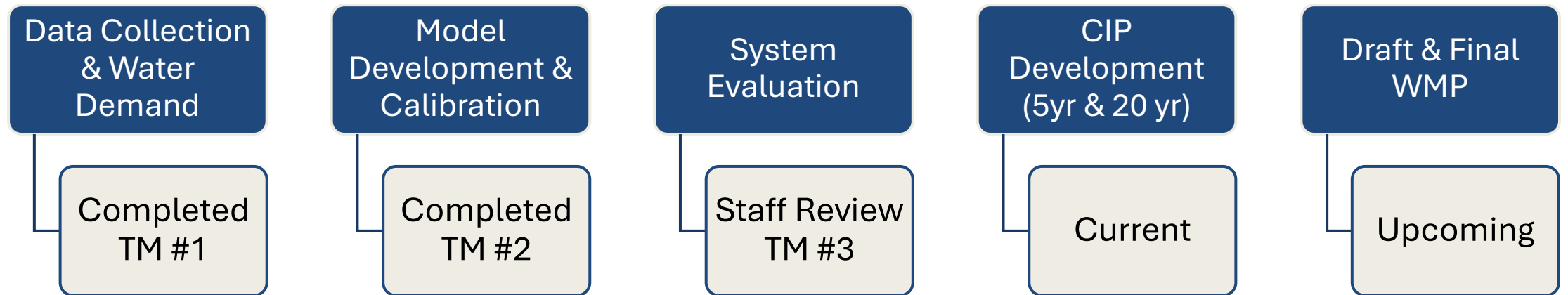
September 21, 2026

Justin Shobe, P.E.

Philip L'Amoreaux, P.E.



Water Master Plan Status

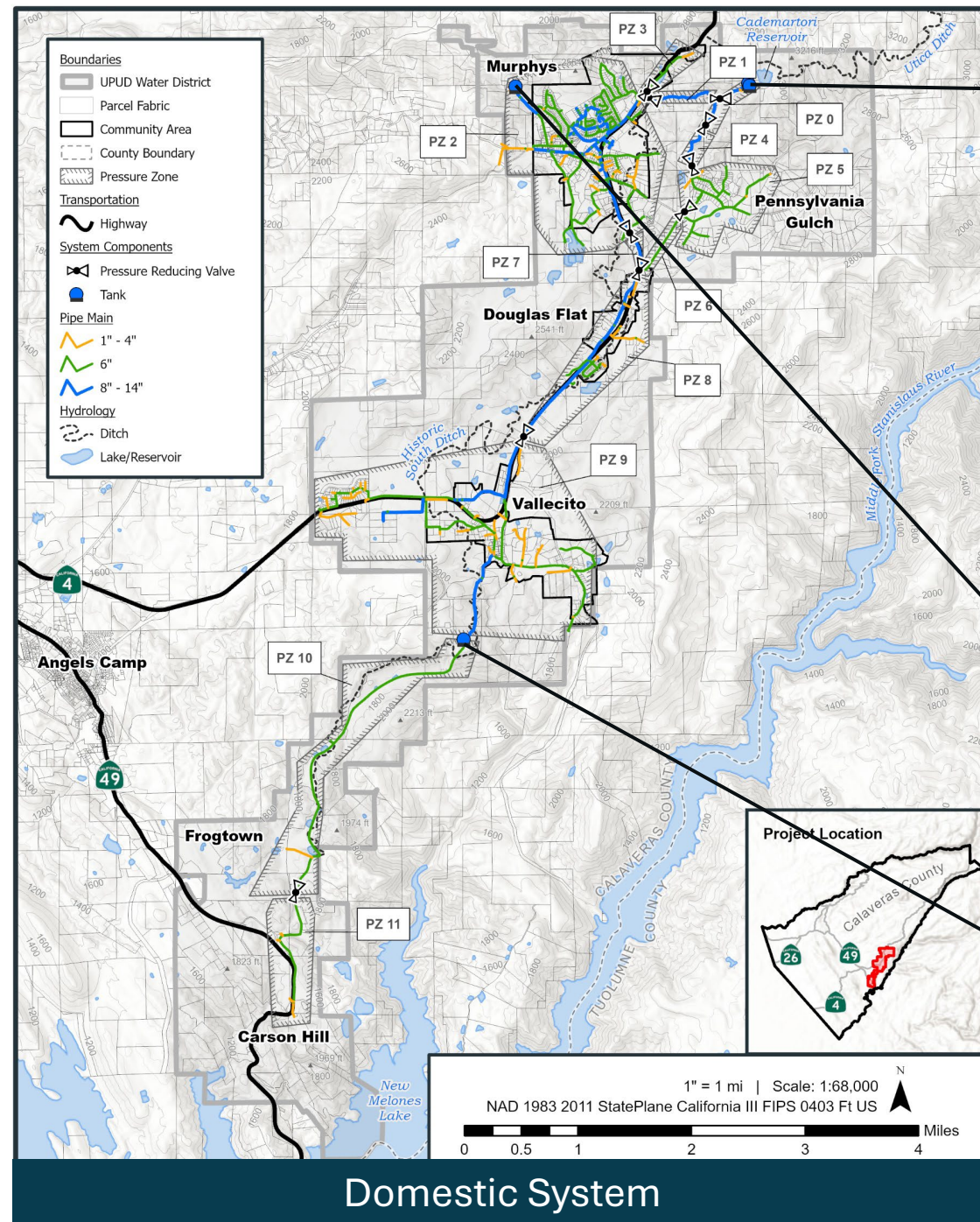


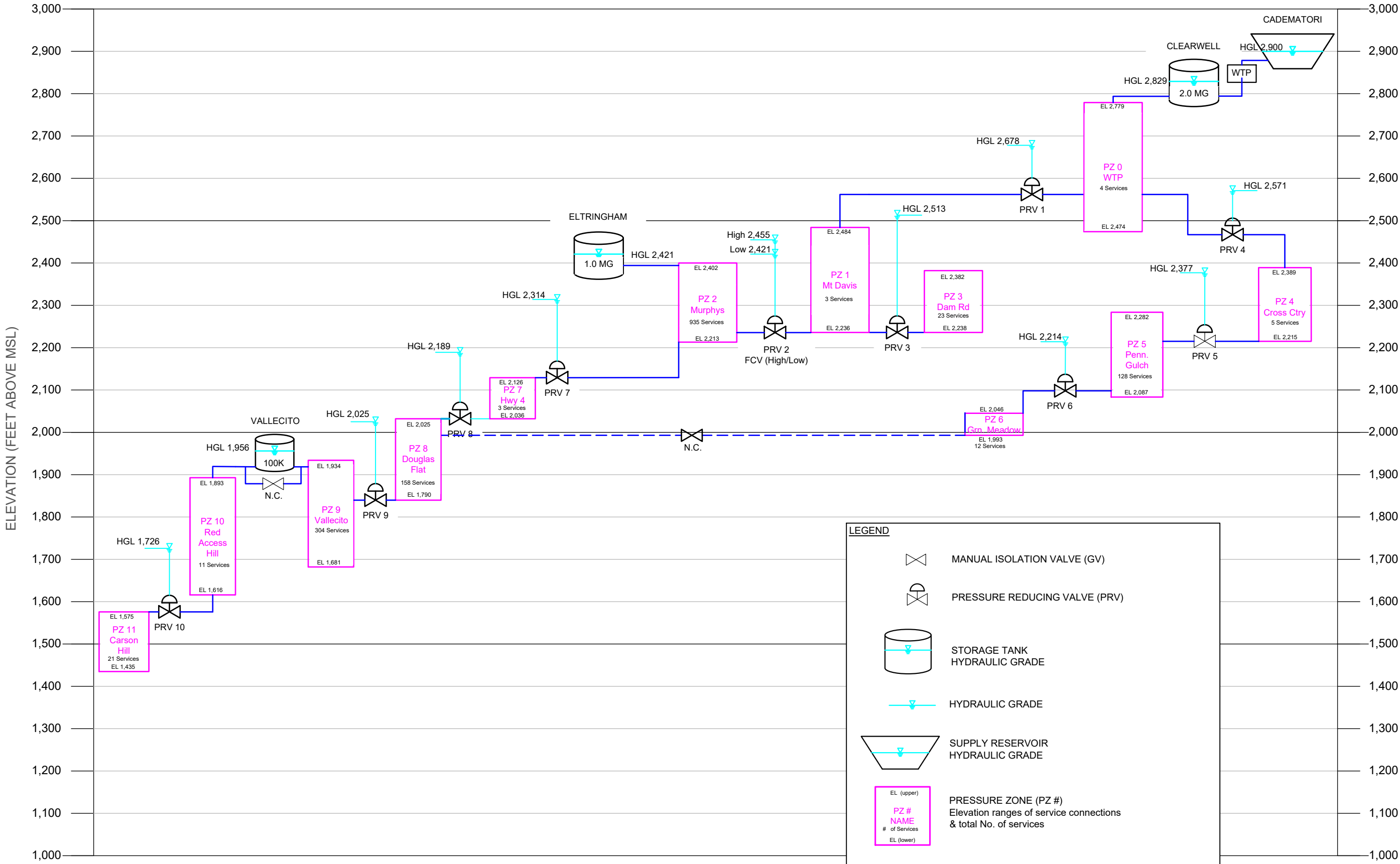
Domestic Overview

1,592 Customers
 12 Pressure Zones
 10 PRVs
 45 miles of main
 4 Storage Tanks
 Gravity Fed
 Elevation 1,400-,2900 ft

ADD: 508 gpm
 MDD: 1,389 gpm
 PHD: 2,083 gpm

- Special Operations
- PRV#2 – Eltringham Fill/Balancing
 - Lower system below Vallecito





DOMESTIC SYSTEM HYDRAULIC PROFILE

UNION PUBLIC UTILITY DISTRICT

Shobe Engineering

1214 Bay Street
Eureka, CA 95501

PROJECT NO:	DESIGN OFFICE:	DESIGNED BY:	DRAWN BY:	CHK'D BY:	APPROVED BY:	DATE:	MARK
25-03	EUREKA	J. SHOBE	J. SHOBE	P. LAMOREAUX	s	JUNE 25, 2026	
DATE	DESCRIPTION	APPROVED	DATE	APPROVED	DATE	APPROVED	DATE

FIGURE 4-2

SHEET OF

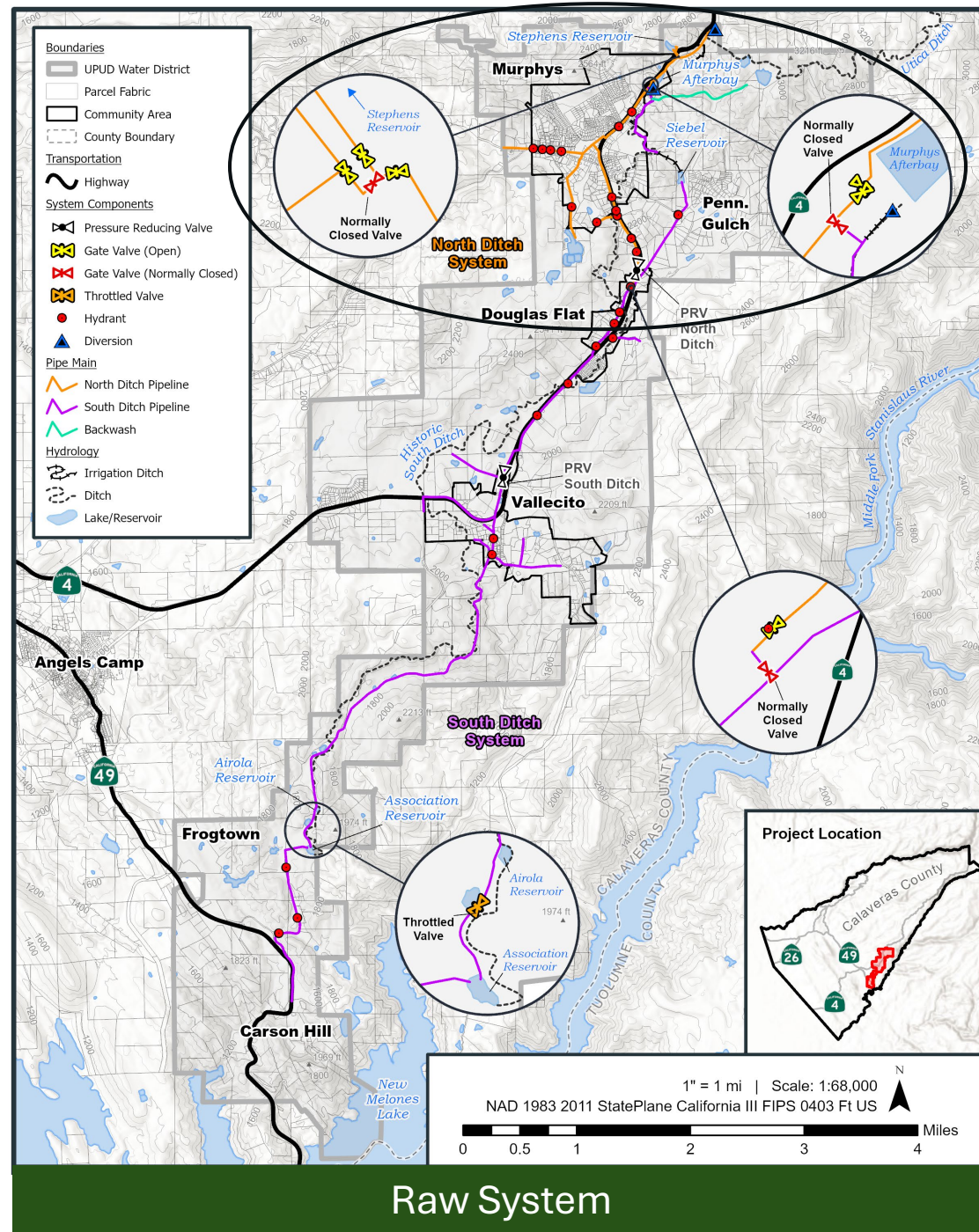
Raw Overview

108 Customers
3 Open Reservoirs
5 Pressure Zones
17 miles of main

ADD 1,746 gpm
MDD 3,442 gpm

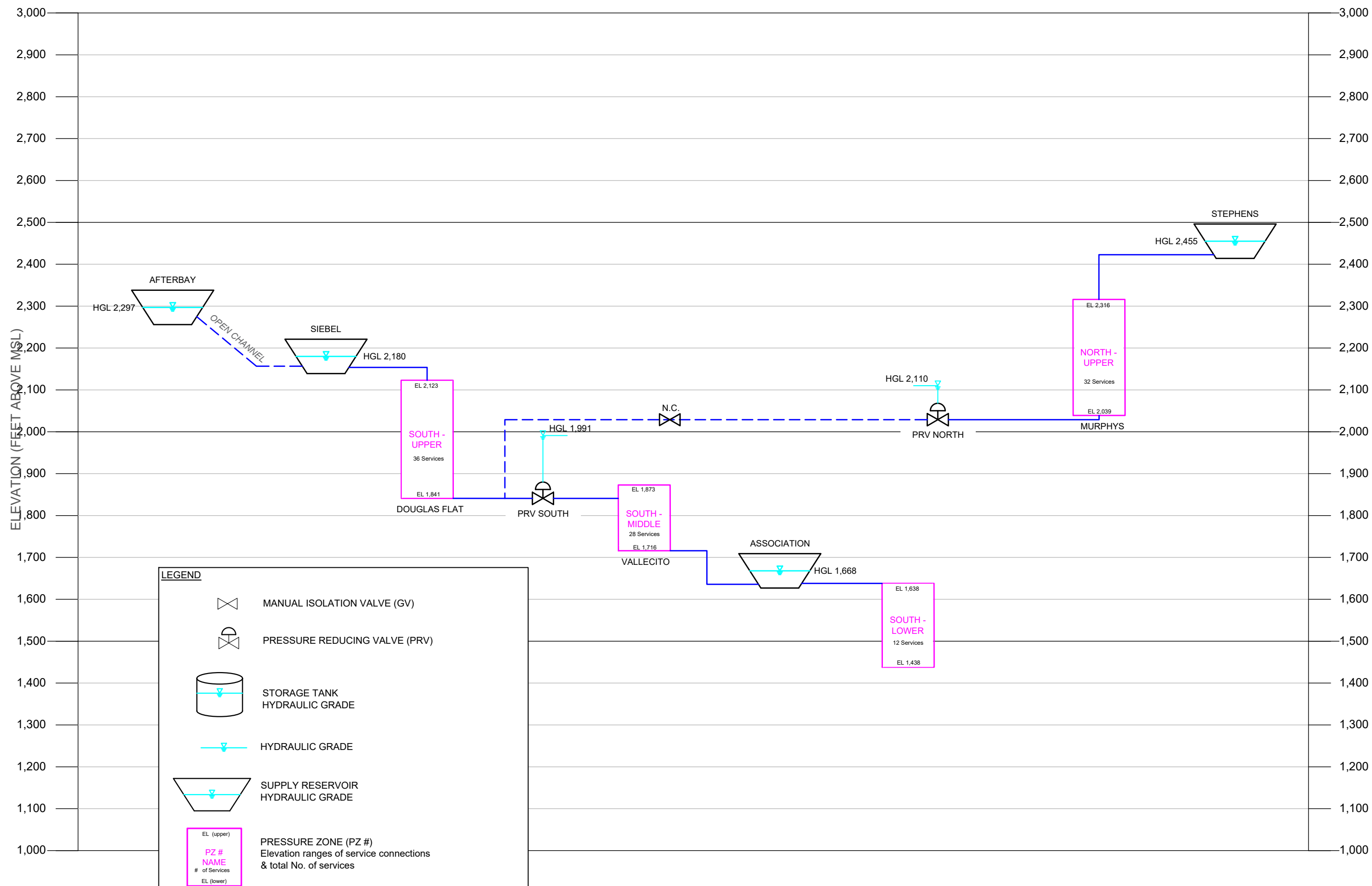
Special Operations:

- North & South Systems
- Separate Reservoir Feeds
- Lower system



Raw System





RAW SYSTEM HYDRAULIC PROFILE

UNION PUBLIC UTILITY DISTRICT

MURPHYS, CA



1214 Bay Street
Eureka, CA 95501

PROJECT NO: 25-03				
DESIGN OFFICE: EUREKA				
DESIGNED BY: J. SHOBE				
DRAWN BY: J. SHOBE				
CHECK'D BY: P. LAMOREAUX				
APPROVED BY:				
DATE: AUGUST 5, 2026				
	MARK	DESCRIPTION	DATE	APPROVED

FIGURE 4-4
SHEET OF



Calibration Phase

Learning how the system behaves

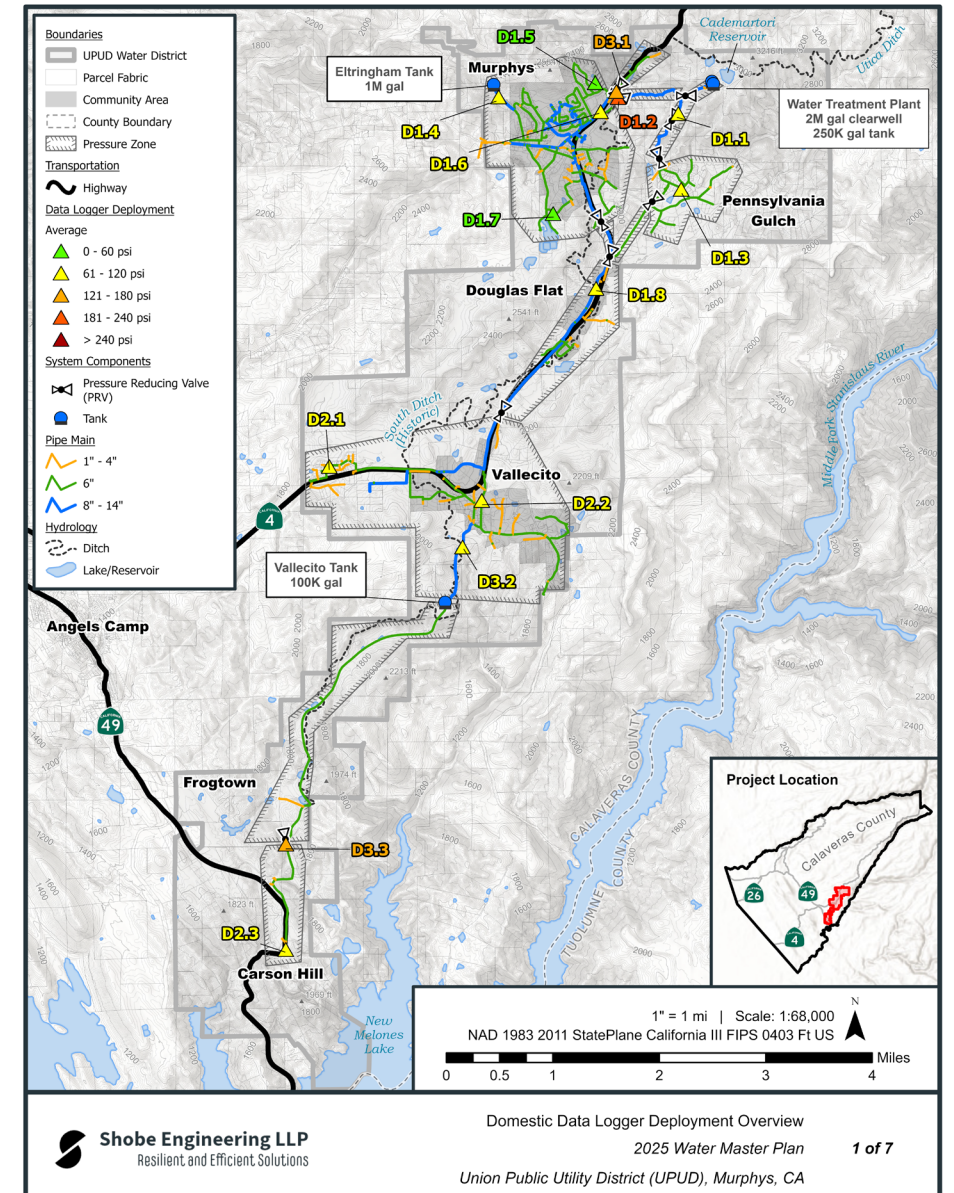
Calibration: improved our understanding of system conditions.

- Interaction of pressure zones, PRVs and storage facilities
- Air management, ARVs and pipeline high points
- Identified critical headloss locations
- Incorporated operator knowledge
- RAW and DOMESTIC calibrated models



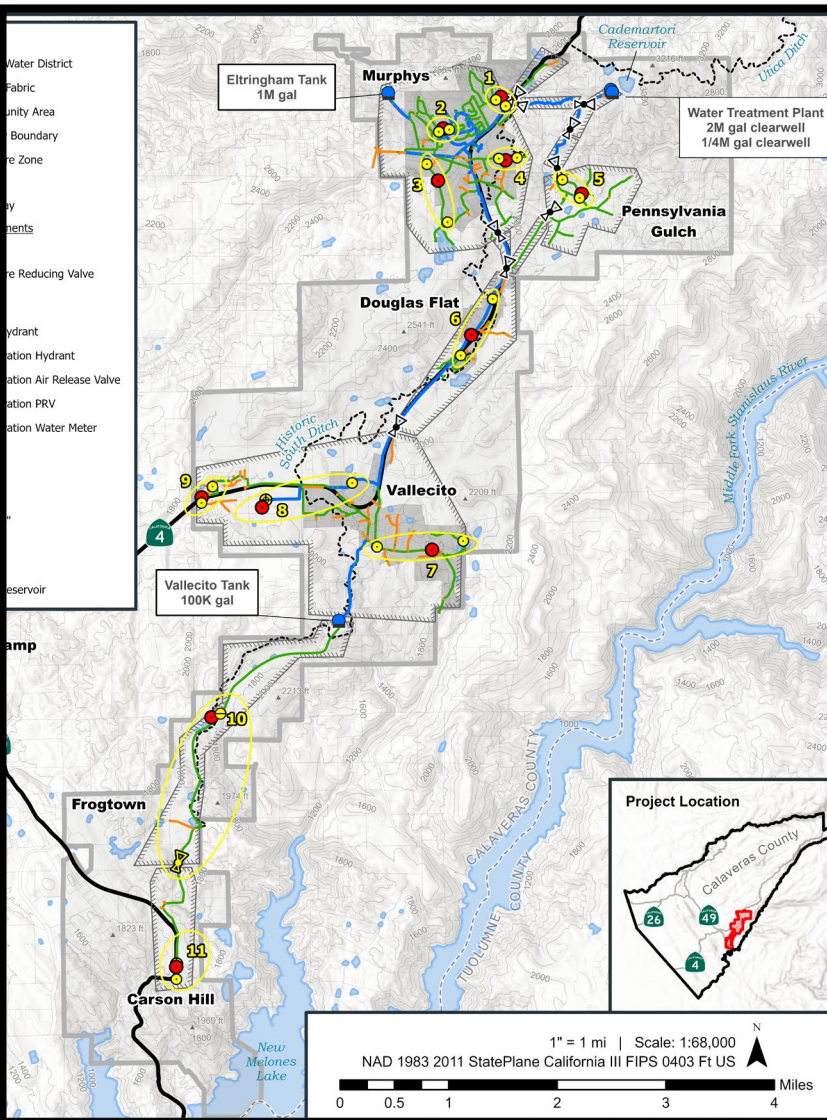
Data Loggers

- Deployed over 20 locations
- Monitored over 3-months
- Regular system variations



Hydrant Testing

- 20 tests in multiple phases
- Flowing and residual hydrants
- Covered each pressure zone



Objectives of Models

Develop Model

- 1st ever for both systems

Explore

- Low pressure areas
- Fire Flow capacity
- Zone Configuration

Leverage Raw System

- Fire Flow Coverage
- Supplement Fire Flow capacity

Develop Solutions

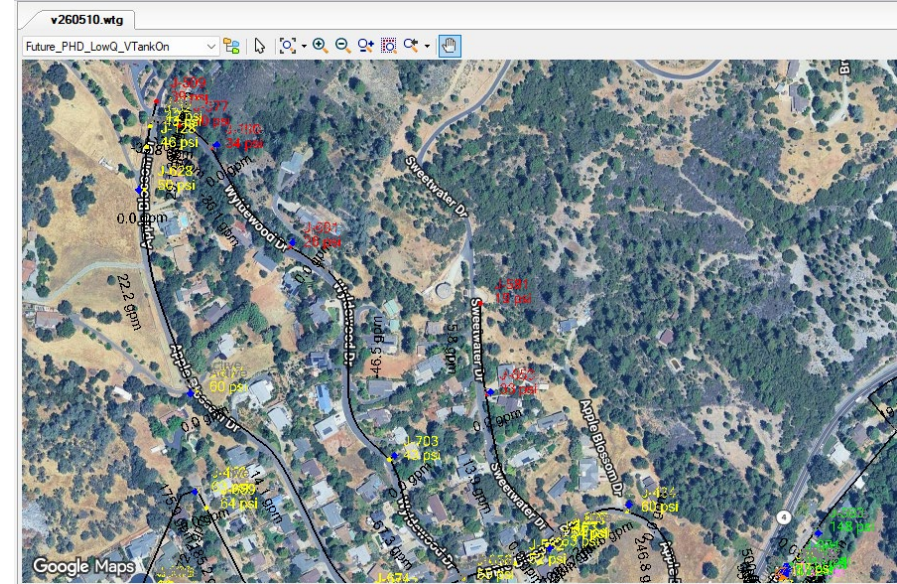
- Right-sizing
- Looping / Redundancy
- Aging Pipelines

Planning

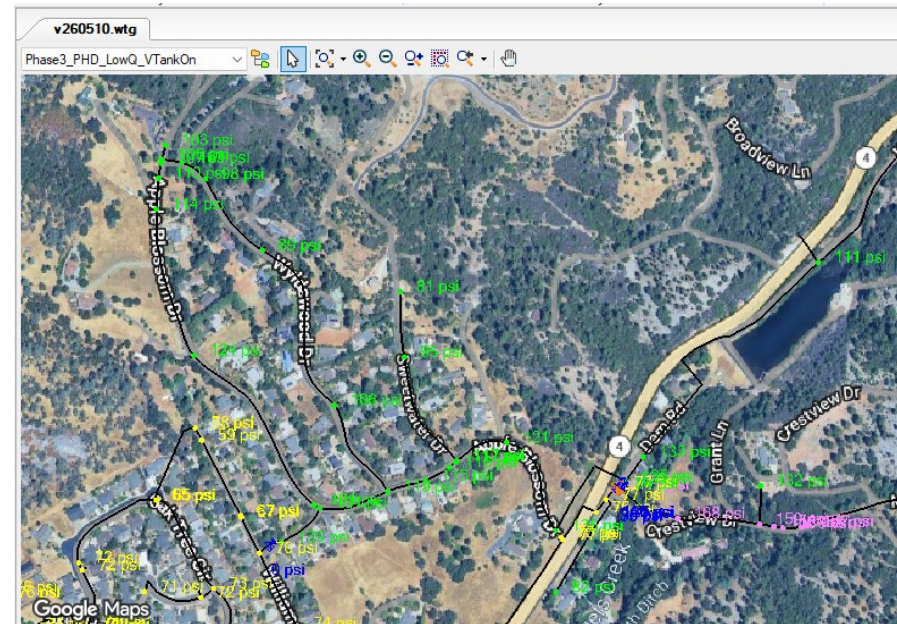
- Long-Range CIP
- Funding Alignment with Projects

Findings Overview

- Ample source and storage capacity
- WTP upgrades not imminently needed
- Quantified fire flow capacity by zone
- Exploring practical, targeted improvements
- Fireflows benefit from targeted improvements (example to the right)
- Raw system benefits from pipe renewal, more so in the South Ditch
- Raw system can supplement fireflows in certain locations



Existing



Improved

Next Steps

From Analysis into CIP Projects

- Define individual projects from the model scenarios
- Separate operation actions vs. CIP projects

Evaluate and Prioritize

- Hydraulic benefit
- Reliability improvement
- Constructability

Develop CIP

- Near-term (5-year) vs. Long-term (20-year)
- Planning-level scopes and costs
- Project sequencing
- Align with potential funding opportunities



Thank you