CITY OF ROLLINGWOOD
WATER CAPITAL IMPROVEMENTS PLAN

City Council Meeting – February 16, 2022

K·FRIESE
+ ASSOCIATES
PUBLIC PROJECT ENGINEERING

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Agenda

1. Water System Basics
2. Existing Rollingwood Water System
3. Water Modeling
4. Proposed Projects
5. Next Steps
6. Questions

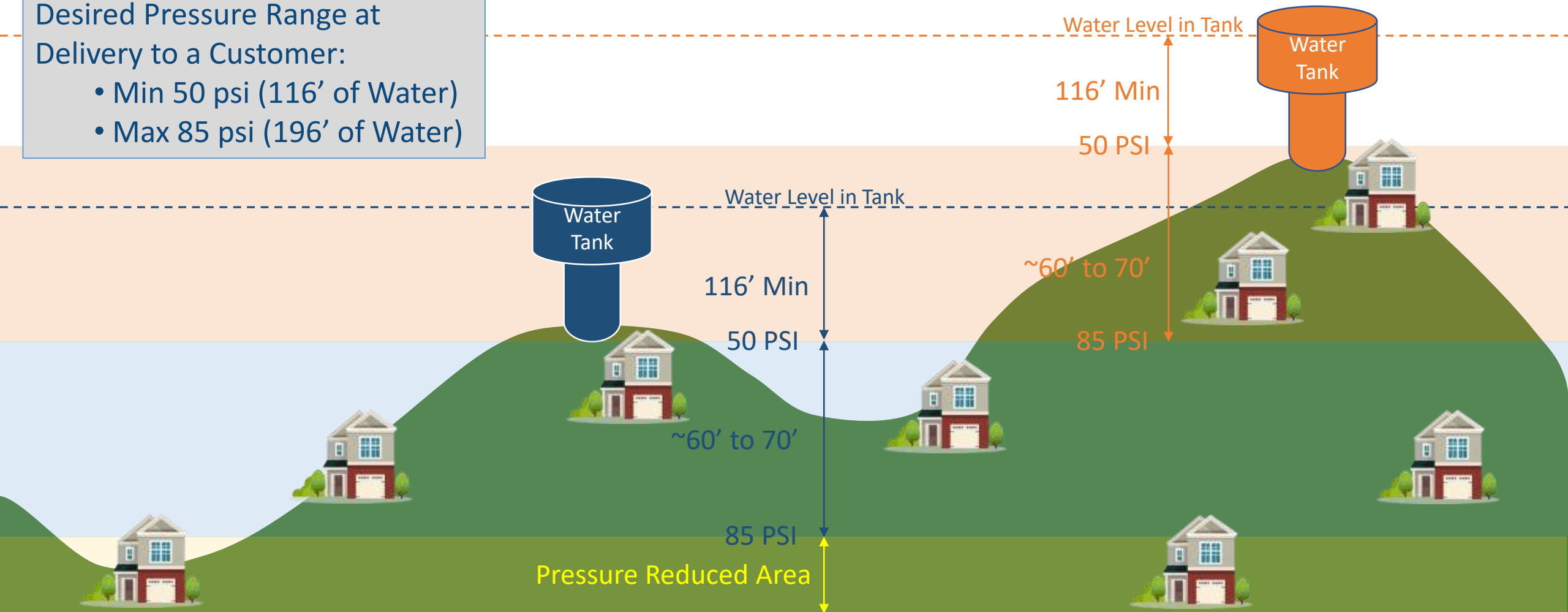
WATER SYSTEM DEFINITIONS

- **Raw Water Sources** - surface water, ground water
- **Water Treatment Plants** - turn raw water into potable water
- **Pump Stations** - move water to higher elevations, pressure planes
- **Ground Storage Tanks** – ground level tanks that are usually used to pump from to higher elevations
- **Elevated Storage Tanks** - water storage that provides supply and pressure when pump stations are off, during power outages, etc.
- **Pressure Reducing Valves** - reduce pressures to let water flow from higher pressure planes to lower pressure planes

Water System Basics – Pressure Planes

Desired Pressure Range at Delivery to a Customer:

- Min 50 psi (116’ of Water)
- Max 85 psi (196’ of Water)



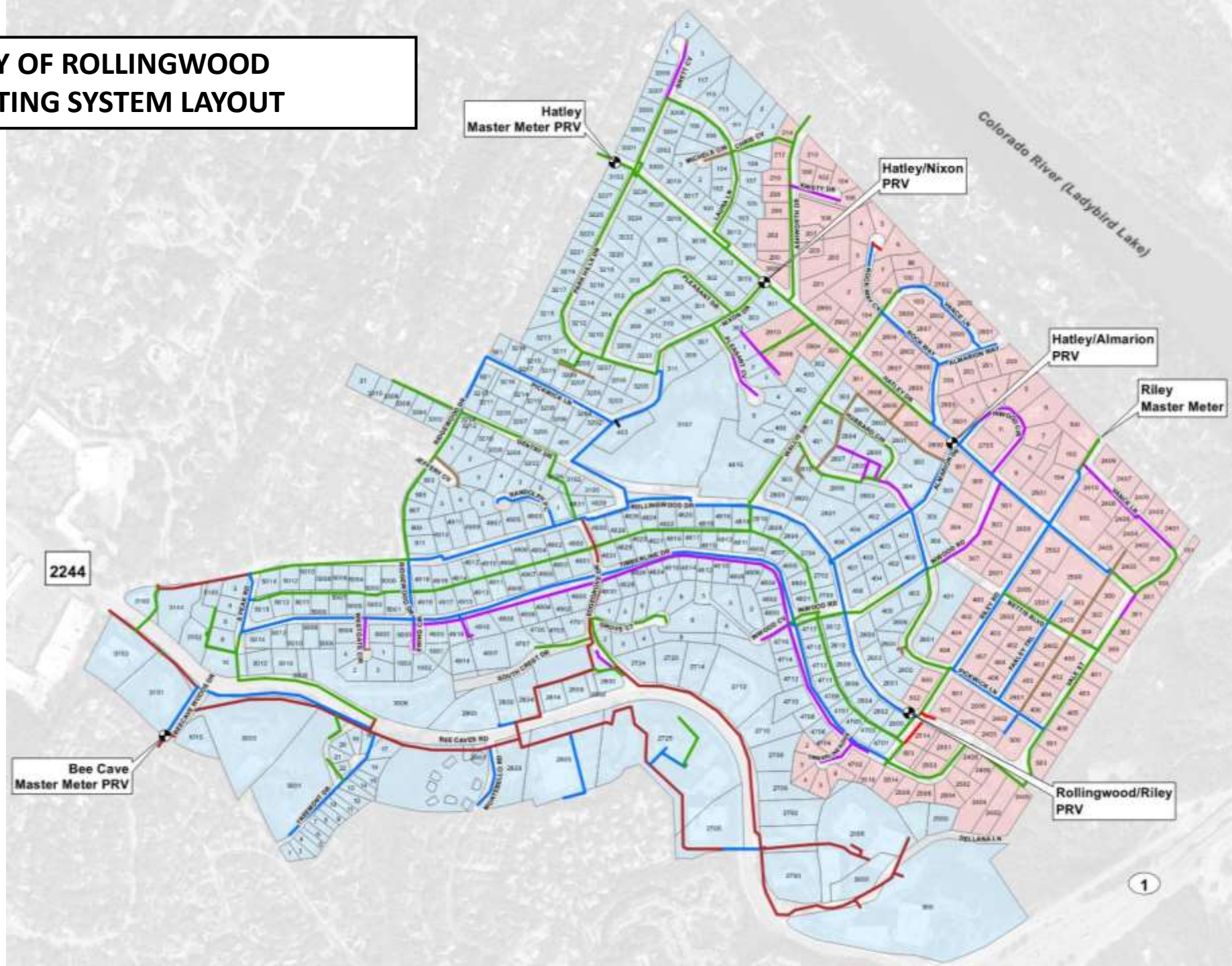
Rollingwood Water Supply

- All raw/treated water comes from a contract with City of Austin
  - *Contract Max = 1 million gallons/day monthly average*
  - *Historical Max = 0.625 million gallons/day monthly average*
- City of Austin currently holds raw water contract with LCRA to cover Rollingwood, expected to change in the future
- Raw water is pumped from Lake Austin to City of Austin water treatment plants (Ullrich WTP) for treatment
- Treated water is delivered to Rollingwood through Austin's distribution system

Rollingwood Water System Overview

- Water supplied from Austin Water via three connection points (meters) to Rollingwood
- Two existing pressure planes in Rollingwood
- Five pressure reducing valves:
  - Two at COA connection points
  - Three internal PRVs separating pressure planes
- Approx. 15.7 miles of pipes ranging from 1- to 12-inches in diameter
- Approx. 250 valves and 100 fire hydrants in Rollingwood

CITY OF ROLLINGWOOD
EXISTING SYSTEM LAYOUT



Water Modeling Overview

- System modeled using WaterCAD V8i
- Two model runs:
  - Extended Period Simulation (EPS) – 24 hr period
  - Fire flow analysis
- Desired pressure range for customer delivery between 50 - 85 psi during normal operating conditions
- Fire flow requirements:
  - Residential – 1,500 gpm at 20 psi residual
  - Commercial – 3,500 gpm at 20 psi residual

Project Development

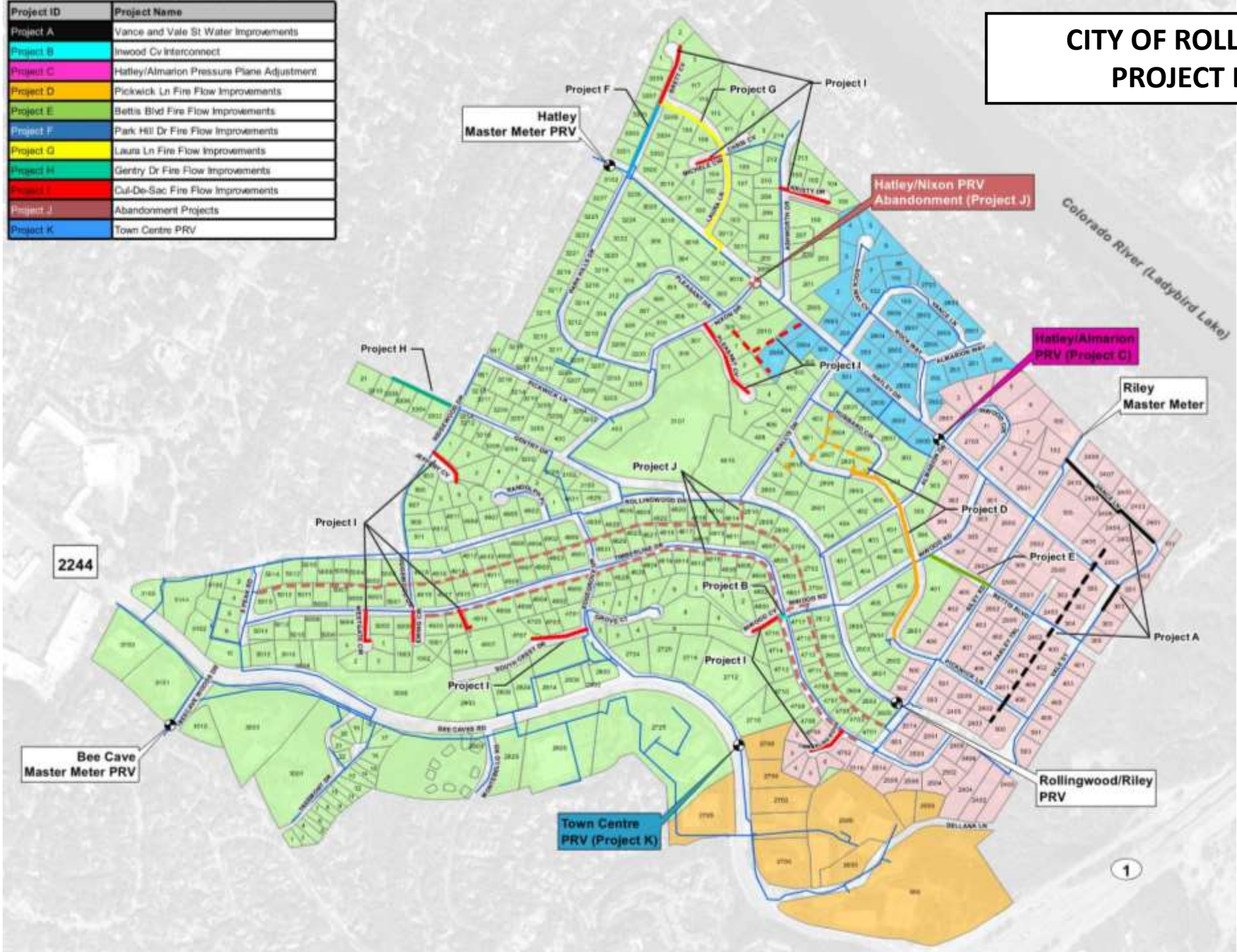
- Model used to identify projects in CIP
- Resolve high/low pressure issues and inadequate fire flows
- Remediate maintenance concerns and access issues for City Staff
- Projects ranked based on priority

ID	Proposed Projects	Cost Estimate
A	Vance & Vale St Water Improvements	$887,000
B	Inwood Cove Interconnect	$105,000
C	Hatley/Almarion Pressure Plane Adjustment	$50,000
D	Pickwick Ln Fire Flow Improvements	$855,000
E	Bettis Blvd Fire Flow Improvements	$189,000
F	Park Hill Dr Fire Flow Improvements	$279,000
G	Laura Ln Fire Flow Improvements	$779,000
H	Gentry Dr Fire Flow Improvements	$232,000
I	Cul-De-Sac Fire Flow Improvements	$1,751,000
J	Abandonment Projects	$964,000
K	Town Centre PRV	$133,000
Total		**$6,224,000**

Note: Error in table found in report in Council Packet. Table has been updated for this presentation and will be revised in final report.

CITY OF ROLLINGWOOD
PROJECT LAYOUT

Project ID	Project Name
Project A	Vance and Vale St Water Improvements
Project B	Inwood Cv Interconnect
Project C	Hatley/Almarion Pressure Plane Adjustment
Project D	Pickwick Ln Fire Flow Improvements
Project E	Bettis Blvd Fire Flow Improvements
Project F	Park Hill Dr Fire Flow Improvements
Project G	Laura Ln Fire Flow Improvements
Project H	Gentry Dr Fire Flow Improvements
Project I	Cul-De-Sac Fire Flow Improvements
Project J	Abandonment Projects
Project K	Town Centre PRV

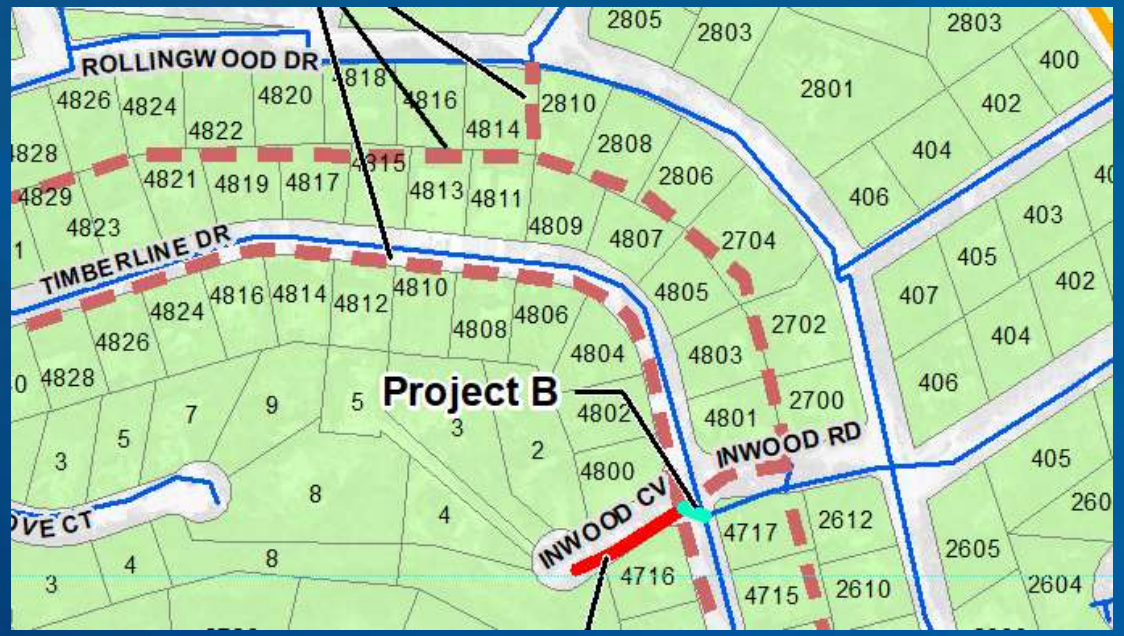


Project A – Vance & Vale Water Improvements

- History of repeated main breaks
- Main was not originally installed correctly:
  - Improper bedding
  - Insufficient cover (less than 4’)
  - PVC material does not meet current industry standards for pressure rating

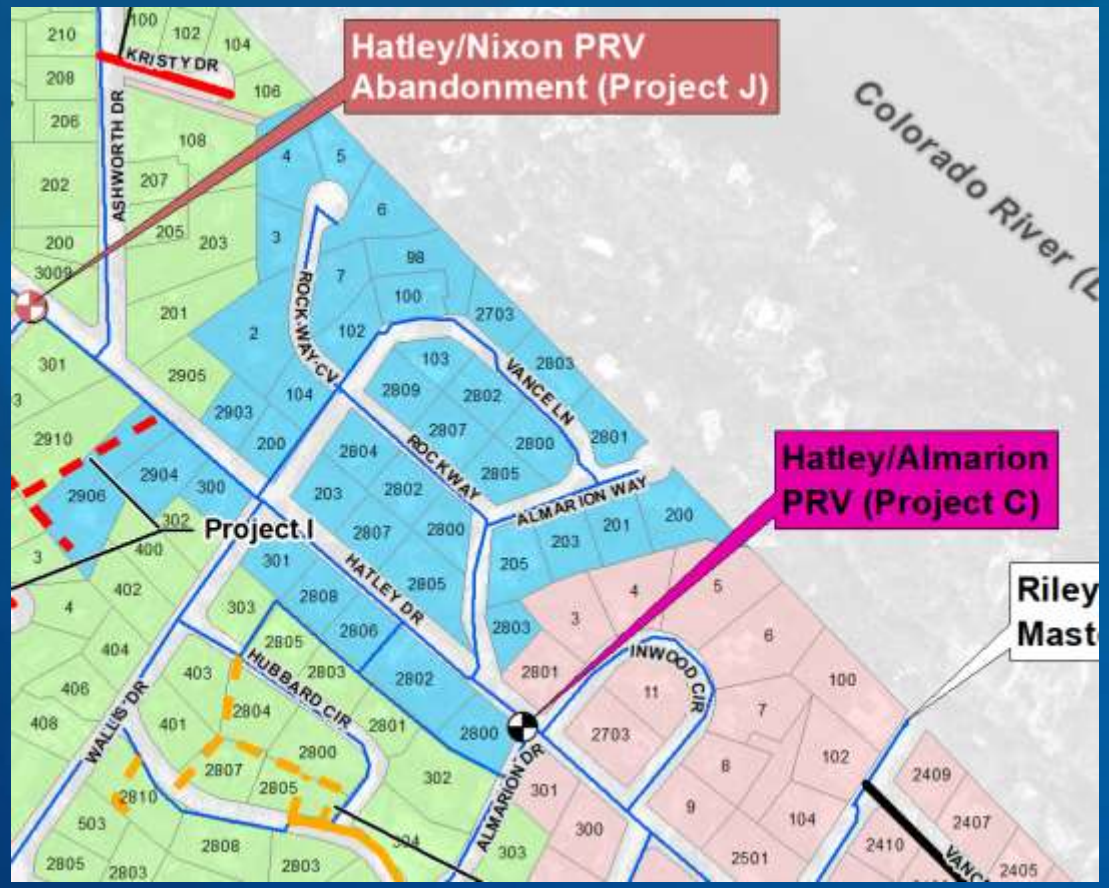
Project B – Inwood Cove Interconnect

- Provides interconnected and better looped system
- Improves system pressures and increased available fire flows
- Project relatively inexpensive



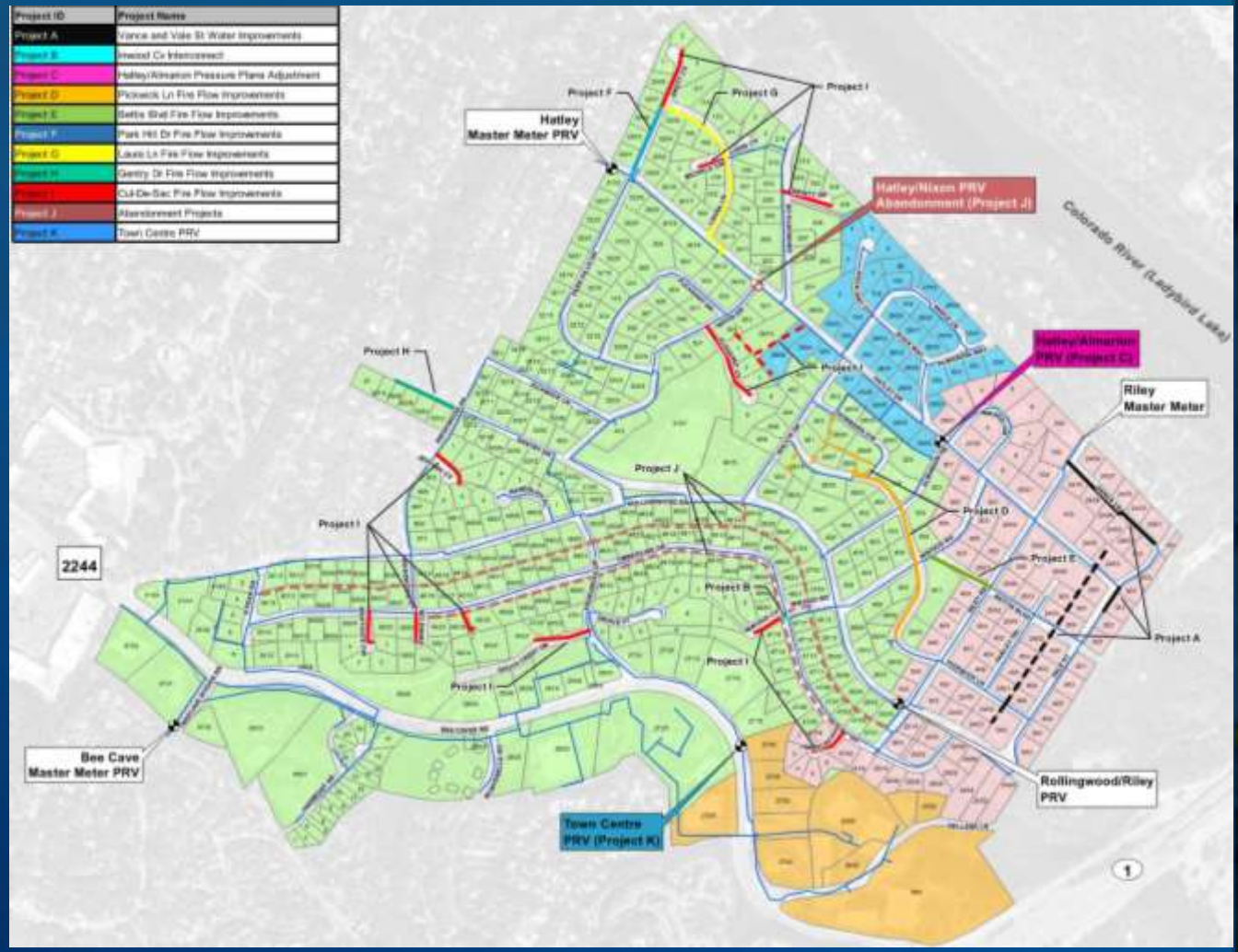
Project C – Hatley/Almarion Pressure Plan Adjutsment

- Moves Ashworth to High Plane
- Creates a third (Mid) pressure plane
- Resolves low pressures in the northern portion of City



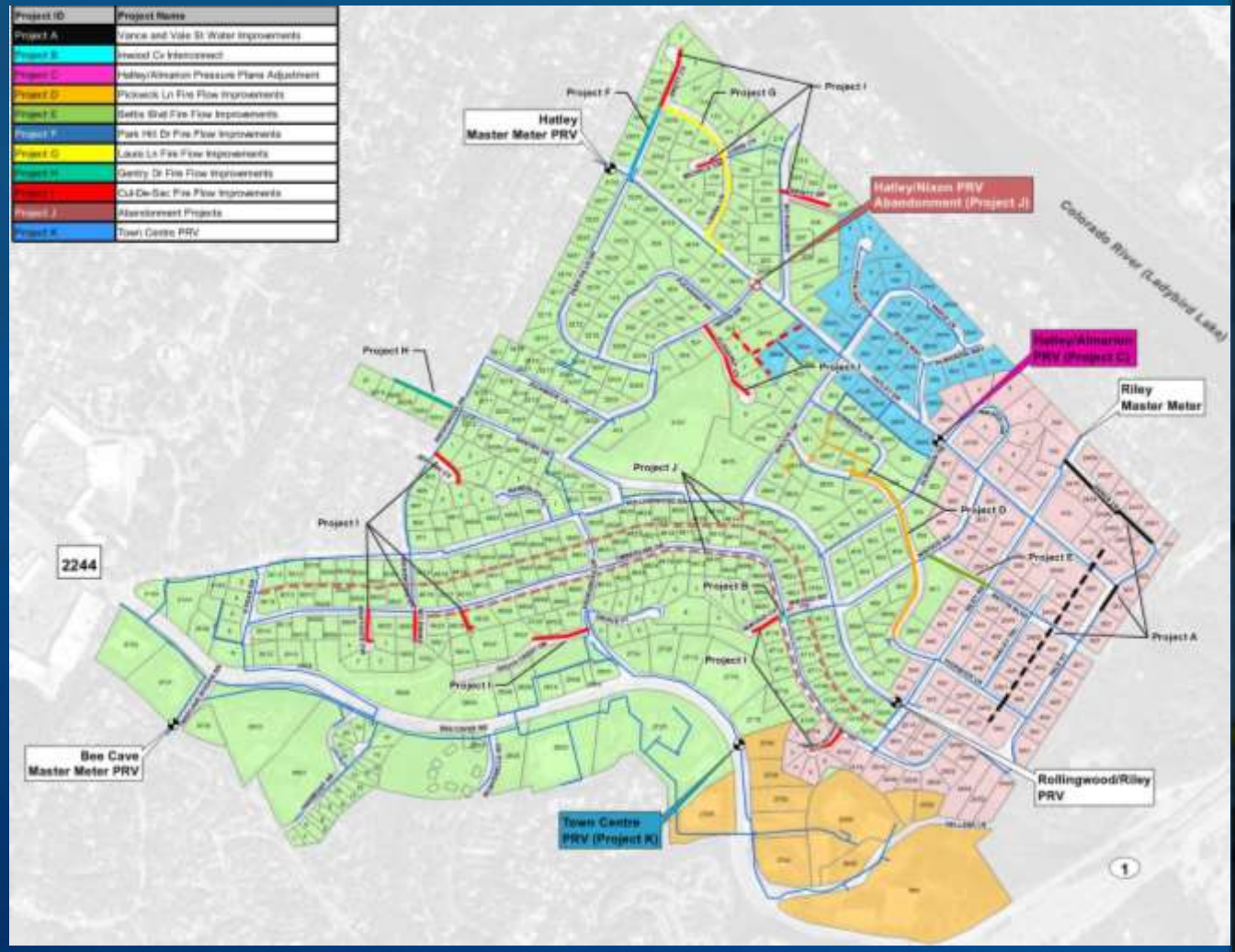
Projects D thru I – Fire Flow Improvements

- Looping and upsizing of pipes throughout the City to improve fire flow in various areas



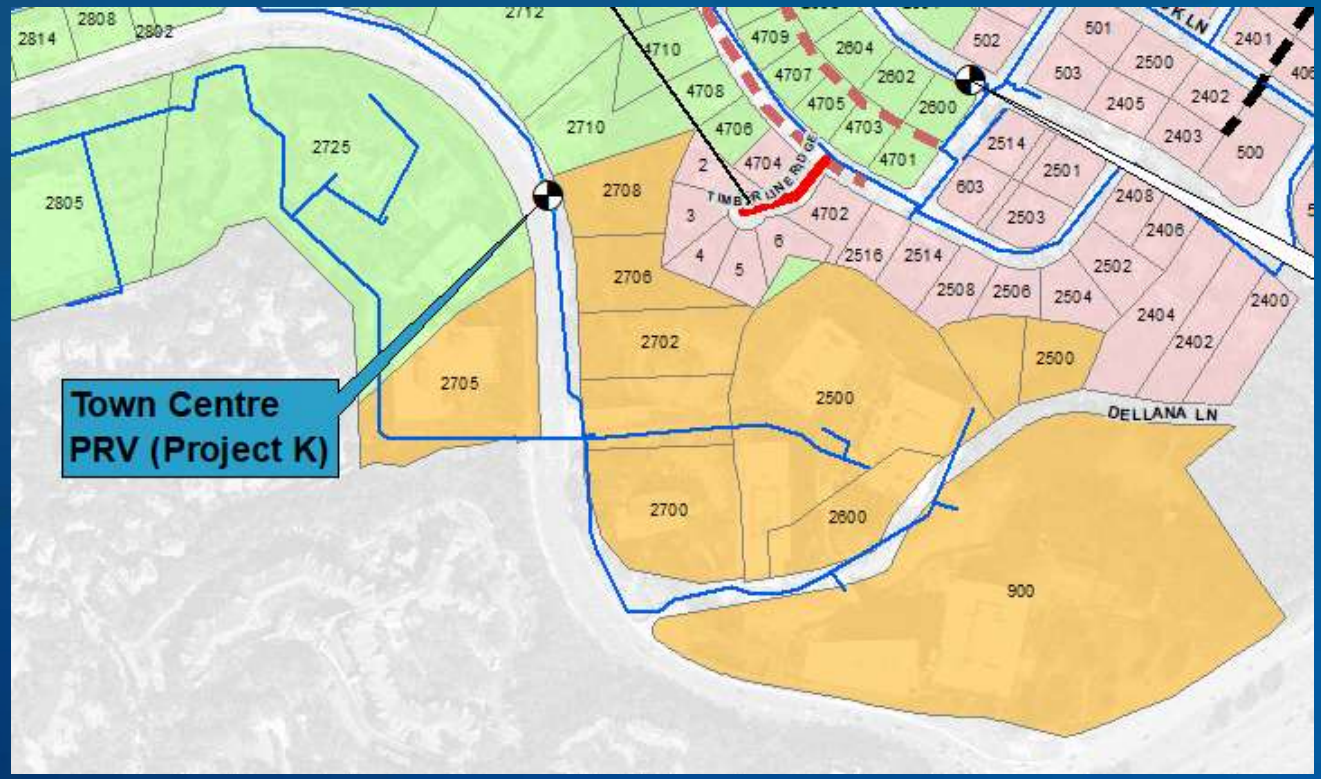
Projects J – Abandonment Projects

- Abandon existing waterlines in backyard easements
- Abandon redundant 4-inch in Timberline Dr
- Abandon Hatley/Nixon PRV, as it is no longer needed
- Costly to relocate meters/services to front yard



Projects K – Town Centre PRV

- Install PRV to serve commercial properties along southeast Bee Caves
- Relieves high pressures
- Unknown if properties have individual PRVs – project may not be necessary



Next Steps

- Continue field investigations and GIS mapping updates
- Update model with new information as field investigation continues
- Further explore potential funding sources
- Design and install CIP projects
- Future discussions with COA and LCRA regarding water contracts

Questions?