

**OBG PRESENTS:**

# **Vly High Service Area Expansion Study**

Public Information Meeting March 27, 2018

# Introductions



Latham Water District:

John Frazer, Superintendent

Dan Seaver, Water Engineer



O'Brien & Gere:

Rick Gell, Project Manager

Brian Edwards, Engineer





# Purpose

- Latham Water has received customer requests to improve pressure in the elevated area on the western side of Town
- Present Latham Water's evaluation of how to improve pressures through the expansion of the Vly High Service Area
- Describe origination of the Vly High Service Area
- Outline what Latham Water will be expecting from you
- Garner input from the community



# Latham Water System

## Three Sources of Raw Water

- Stony Creek Reservoir
- Mohawk River
- Wells Along the Mohawk River

Sources Combined at the Mohawk View Water Treatment Plant

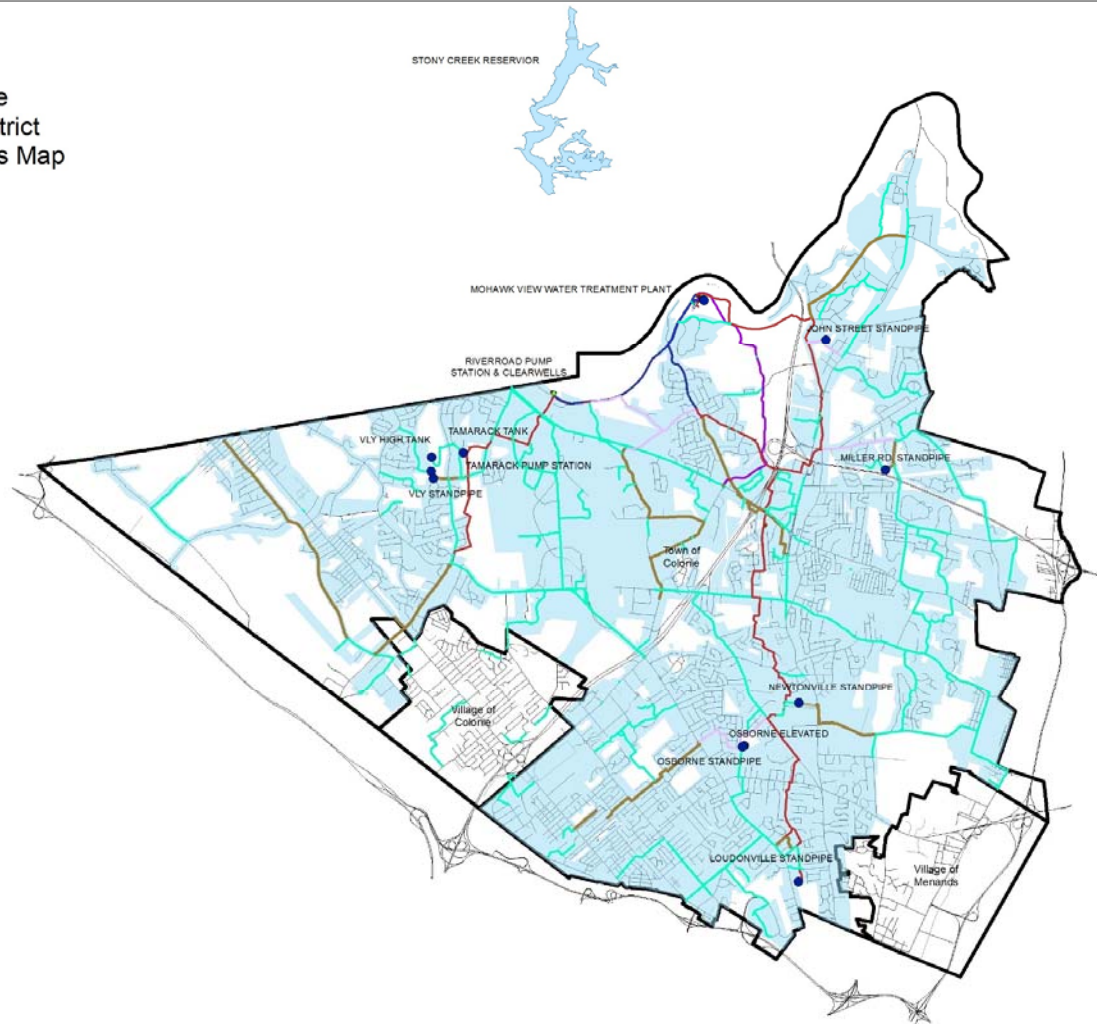
Water is distributed through more than 430 miles of water mains



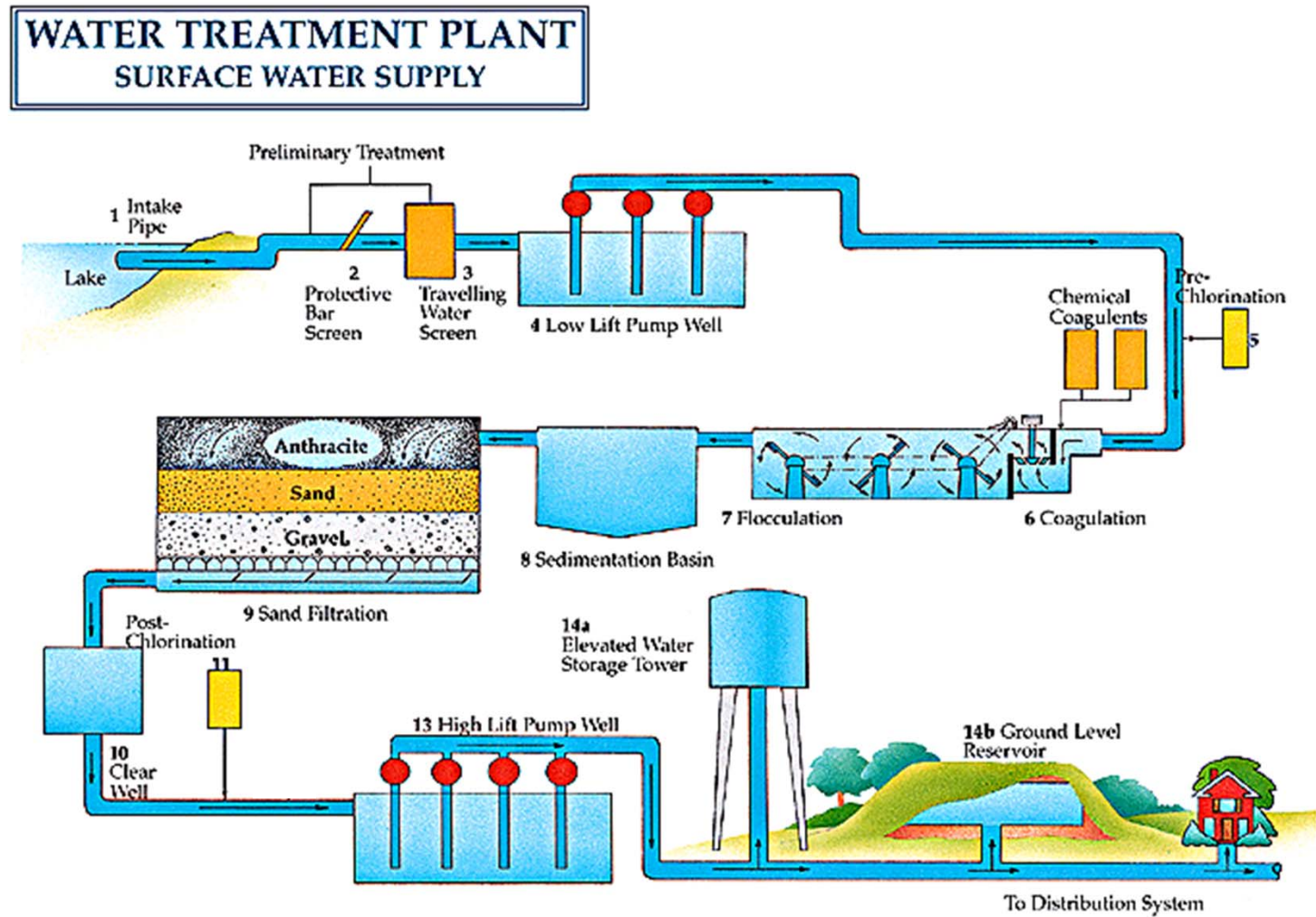
# Drinking Water for Colonie

## Town of Colonie Latham Water District Boundary & Facilities Map

- Legend**  
**Pressurized Main**  
**Diameter**
- 12 inch
  - 14 inch
  - 16 inch
  - 20 inch
  - 24 inch
  - 30 inch
  - 36 inch



# Drinking Water Treatment & Delivery



# Water System Hydraulics

## Hydraulic Considerations

- ▶ Hydraulic Grade Line
- ▶ System Flow
- ▶ Hydrant Flow Required
- ▶ Static Head or Pressure
- ▶ Head or Pressure Loss

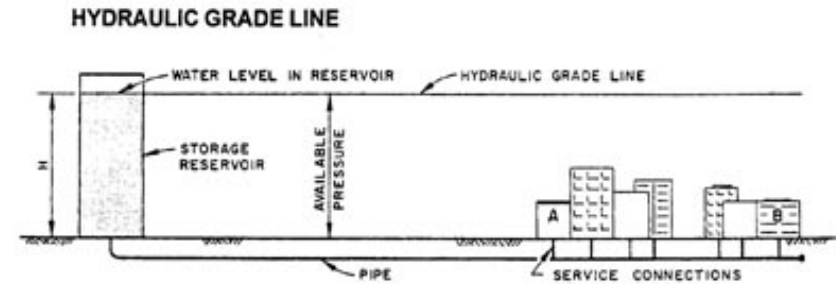


Figure 7.2a No Flow Condition

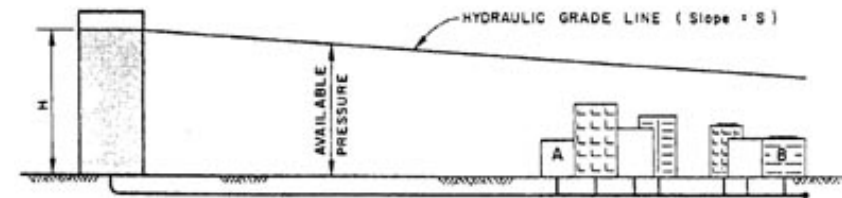


Figure 7.2.b Low Flow Condition

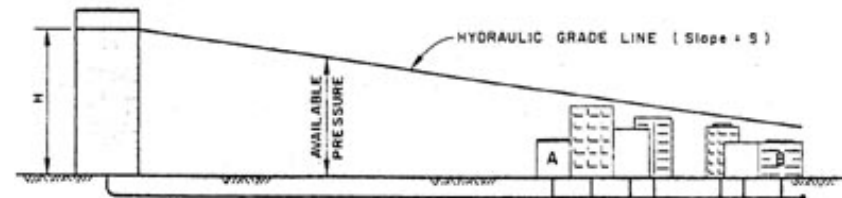
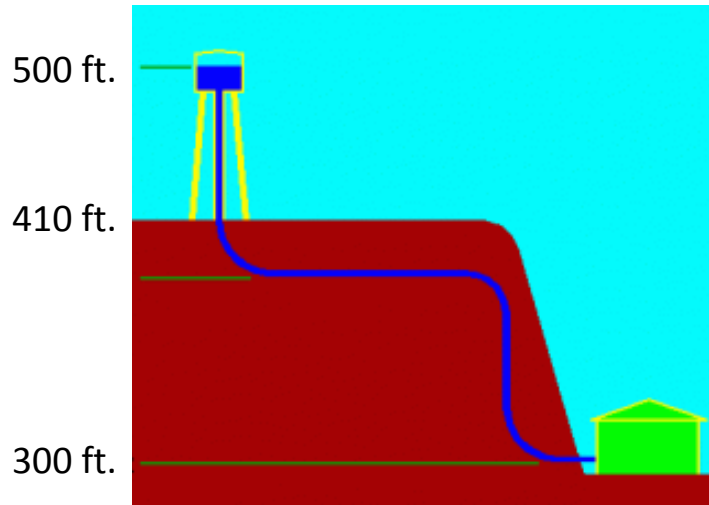


Figure 7.2c High Demand Condition

# Hydraulics Basics – Static Head



Static Head at water surface = 0psi

Static Head at base of tank = 39psi  
(500ft. – 410ft.) x 0.433psi/ft.

Static Head at House = 87psi  
(500ft. – 300ft.) x 0.433psi/ft.

The water level in Latham Water's tanks varies between about 470ft. and 500ft. above sea level depending on time of day and time of year.



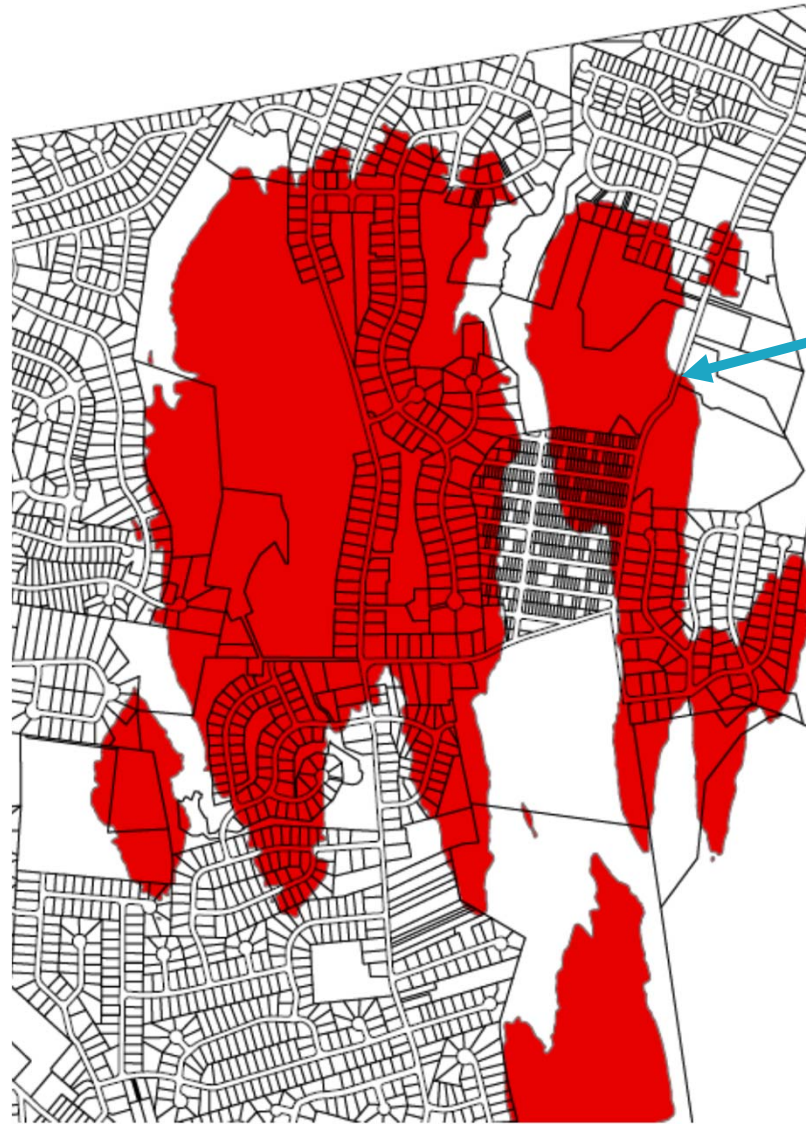
The higher you move up the hill, the lower the pressure will be at the house.



The further down the hill you move, the higher the pressure will be at the house.

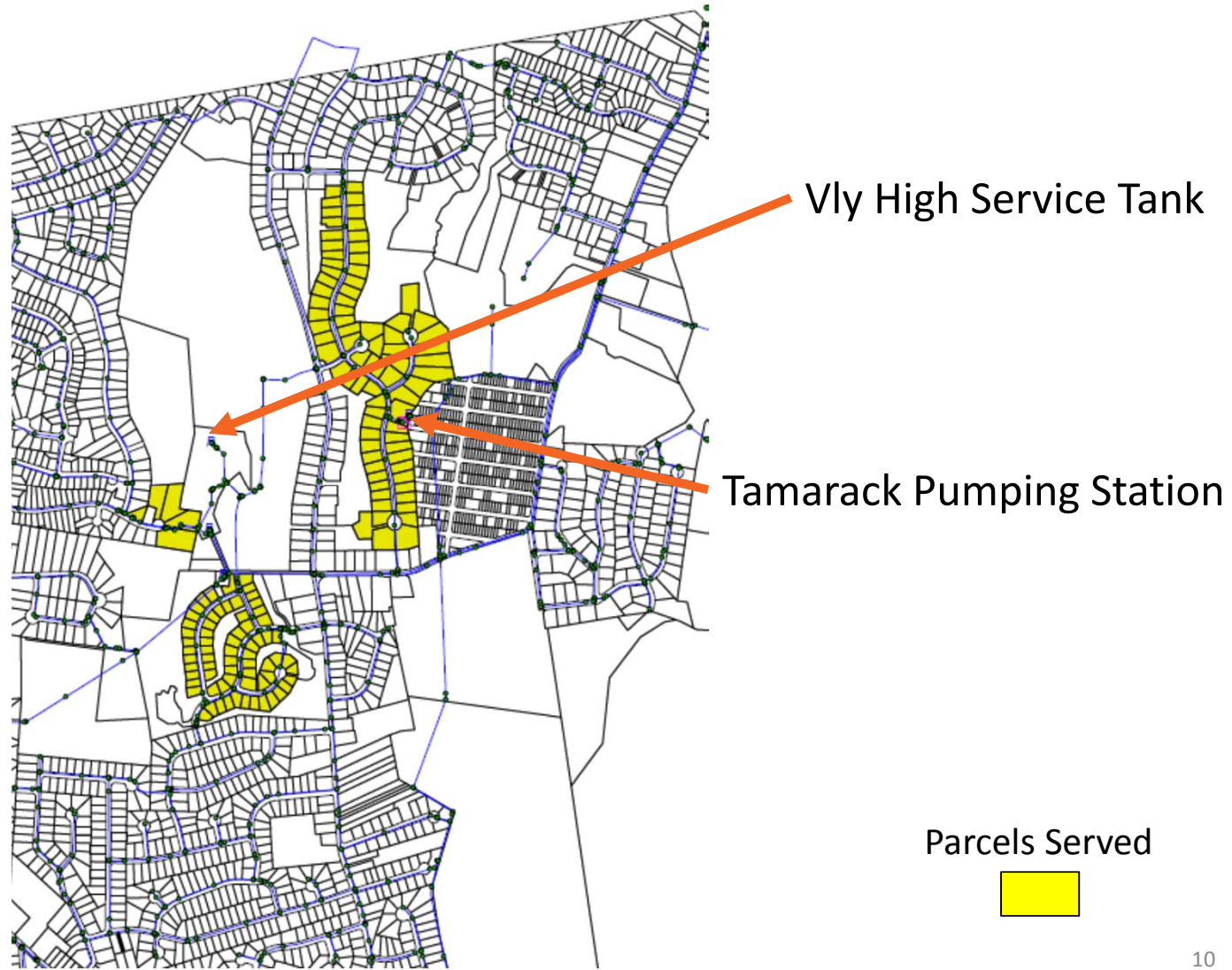


# Vly High Topography

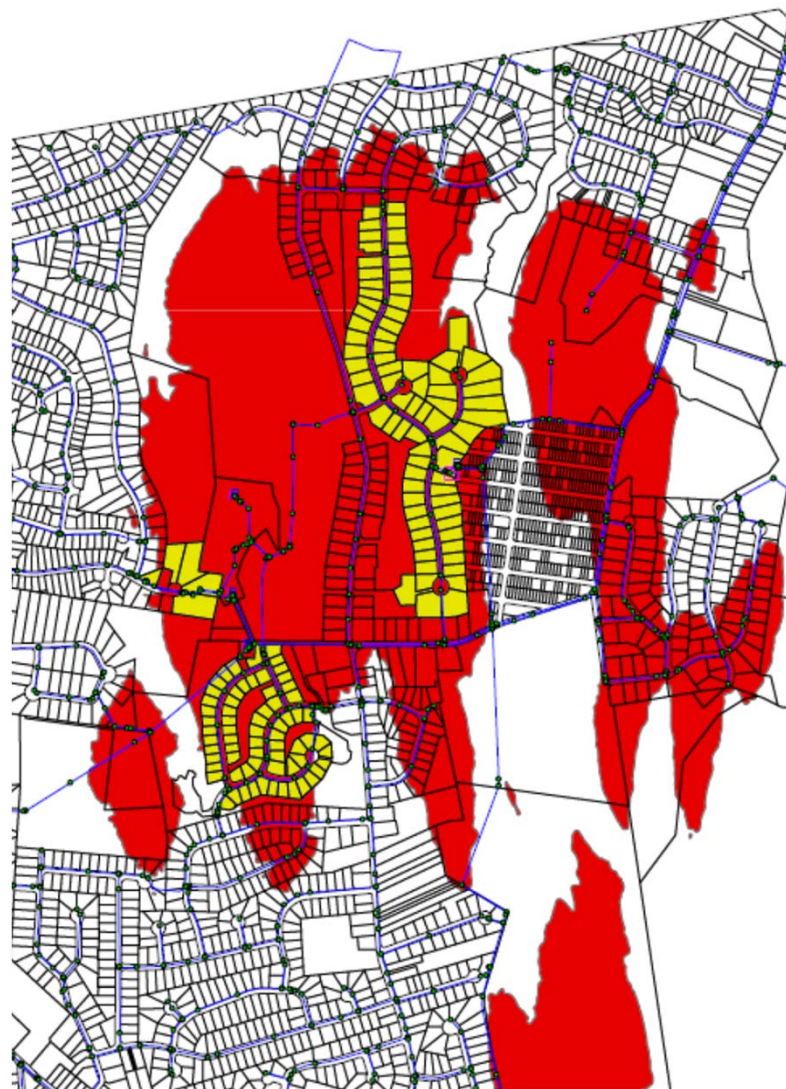


Ground Elev.  
Above 400 ft

# Map of Current Vly High Service Area



# Map of Current Pressures



Parcels within red that are not highlighted in yellow may have pressures below 35 psi.

Parcels Served



# Current Regulatory Requirements/Standards

## 2012 Recommended Standards of Waterworks (“Ten State Standards”)

8.2.1 Pressure: All water mains, including those not designed to provide fire protection, shall be sized after a hydraulic analysis based on flow demands and pressure requirements. The system shall be designed to maintain a minimum pressure of 20 psi (140 kPa) at ground level at all points in the distribution system under all conditions of flow. The normal working pressure in the distribution system shall be at least 35 psi (240 kPa) and should be approximately 60 to 80 psi (410 - 550 kPa) and not less than 35 psi (240 kPa).

## New York State Part 5 Drinking Water Supply

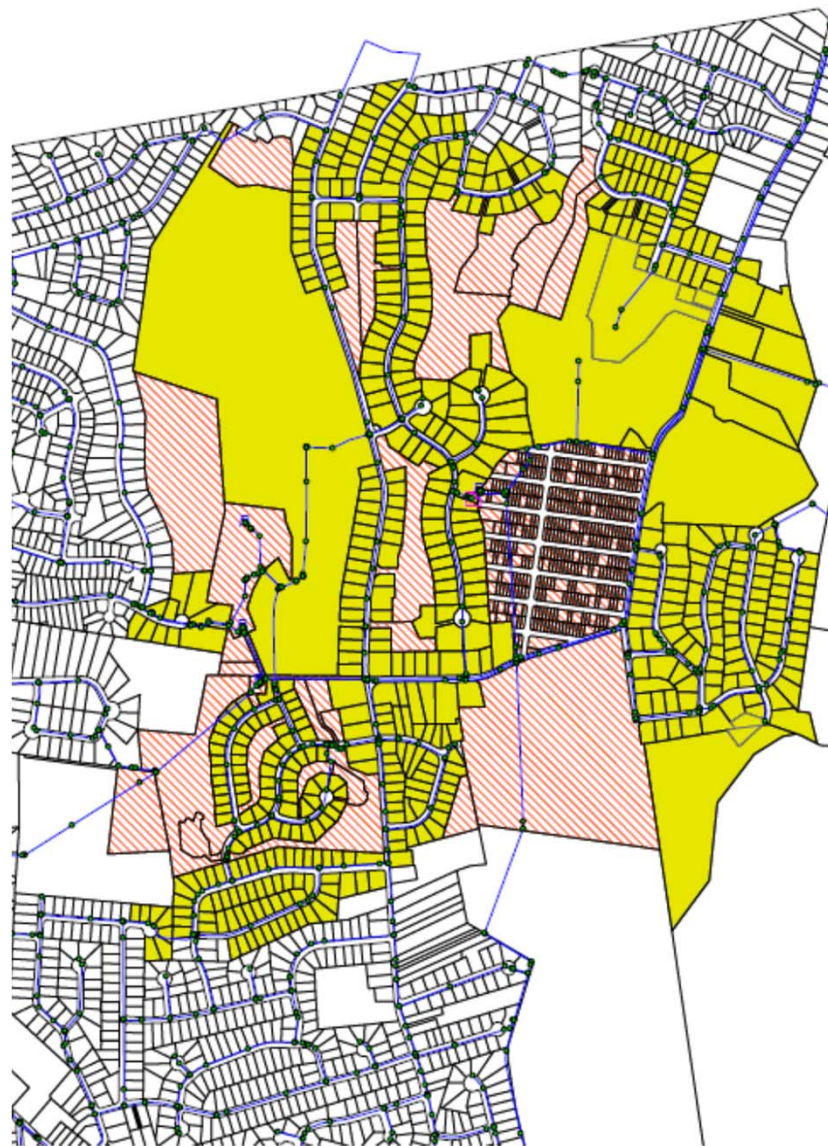
5-1.27 Adequacy of Distribution System: The public water system shall be maintained and operated by the supplier of water to assure a minimum working pressure of 20 pounds per square inch at ground level at all points in the distribution system.

## New York State Building Code

604.8 Water pressure-reducing valve or regulator. Where water pressure within a building exceeds 80 psi (553kPa) static, an approved water pressure reducing valve conforming to ASSE 1003 or CSA B356 with strainer shall be installed...



# Map of Proposed Expanded Vly High Service Area



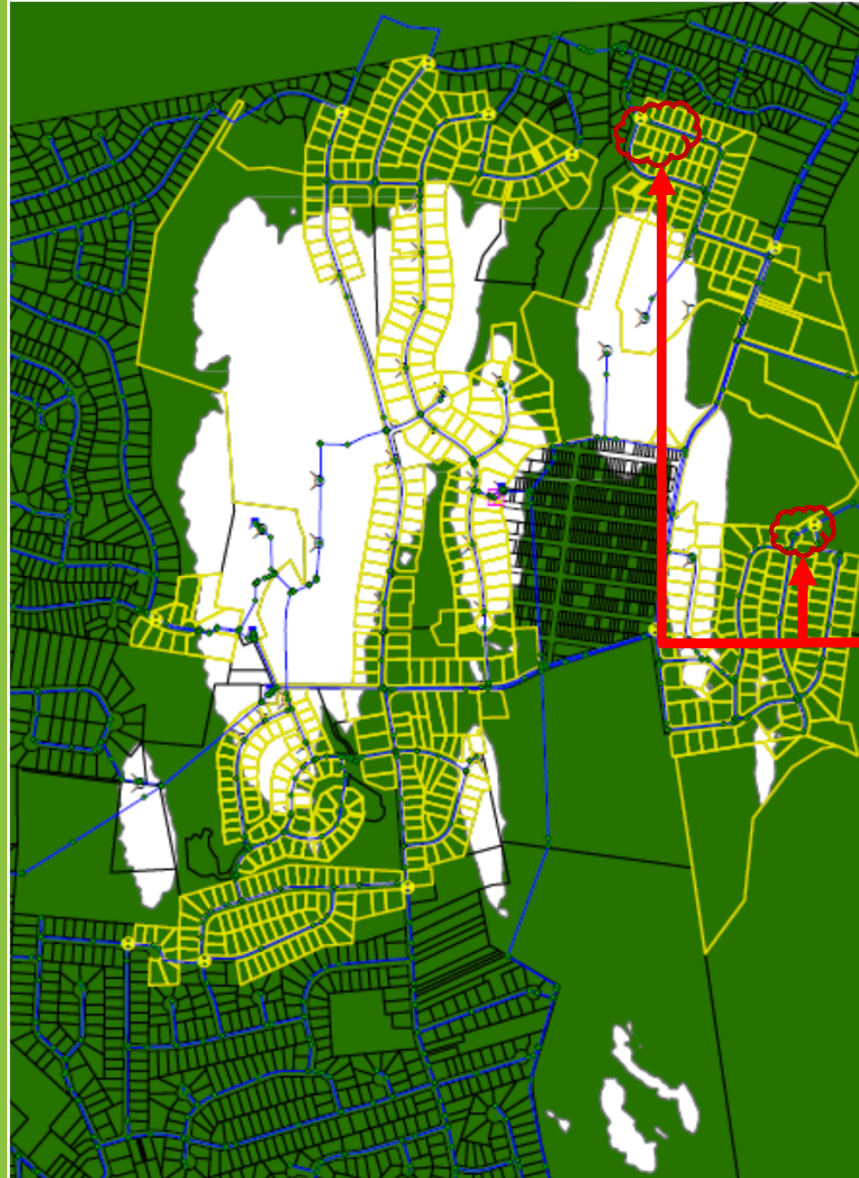
Parcels Served



Parcels potentially  
served in future



Map of  
Projected  
Normal  
Operating  
Pressures in  
Proposed High  
Pressure Zone

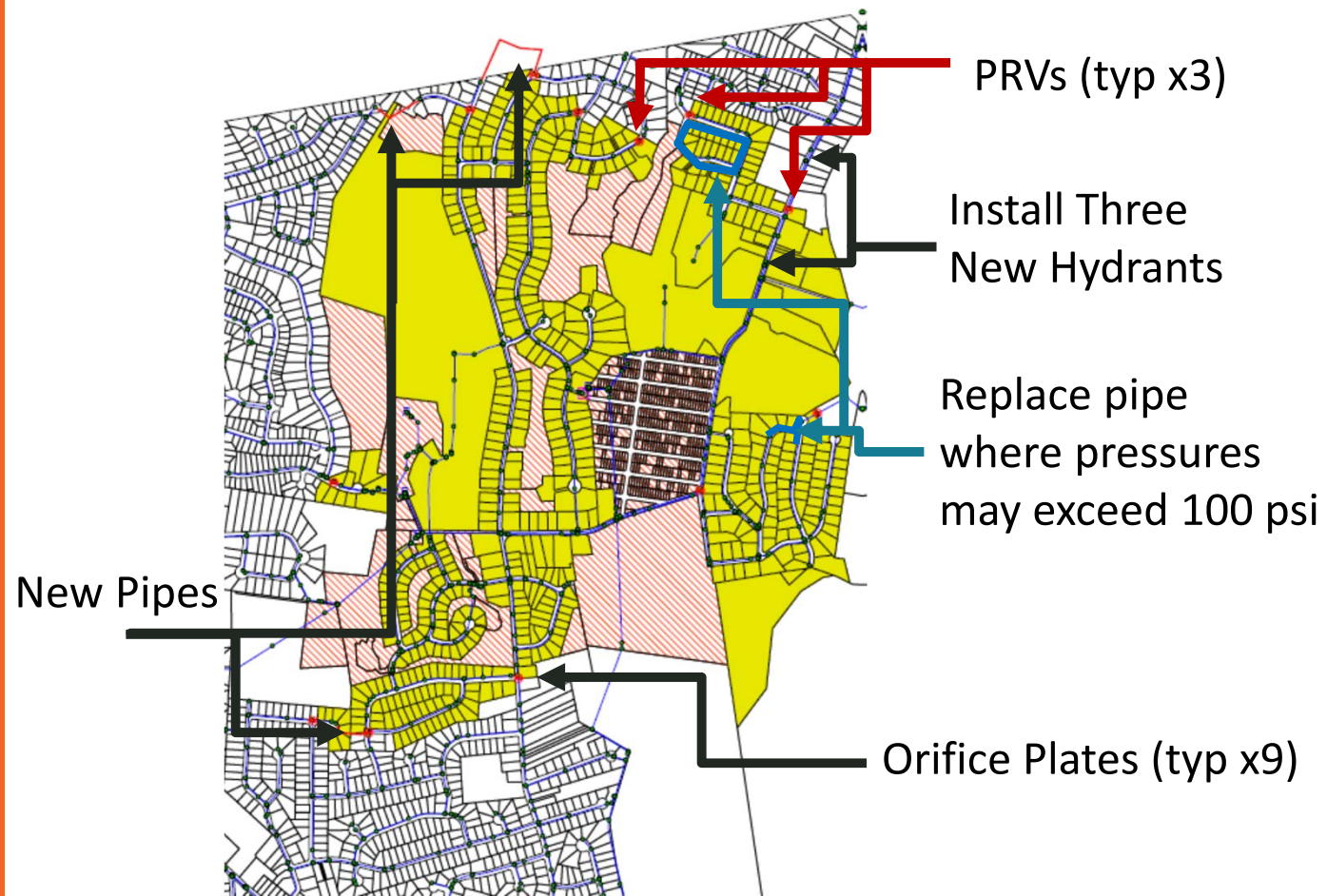


High Pressure  
Zone Parcels in  
green areas would  
have pressures  
greater than 80 psi  
and may require  
PRVs.

Water mains  
(Elev < 370 ft.)  
which may have  
pressures greater  
than 100 psi.



# Latham Water Improvements Needed to expand Vly High Service Area



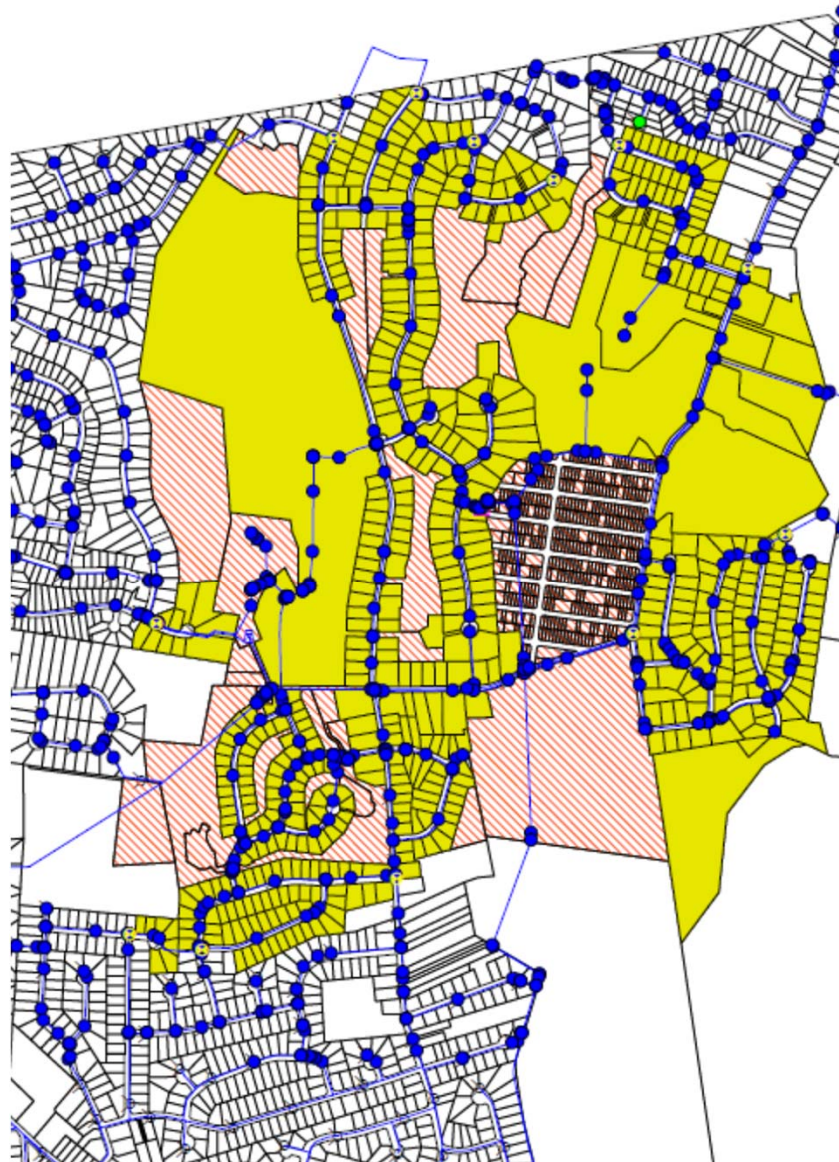
## FIRE FLOWS

**Latham Water has a goal of supplying at least 750 gpm at 20 psi residual, which is sufficient to meet the ISO recommended minimum fire flows for single family residences.**





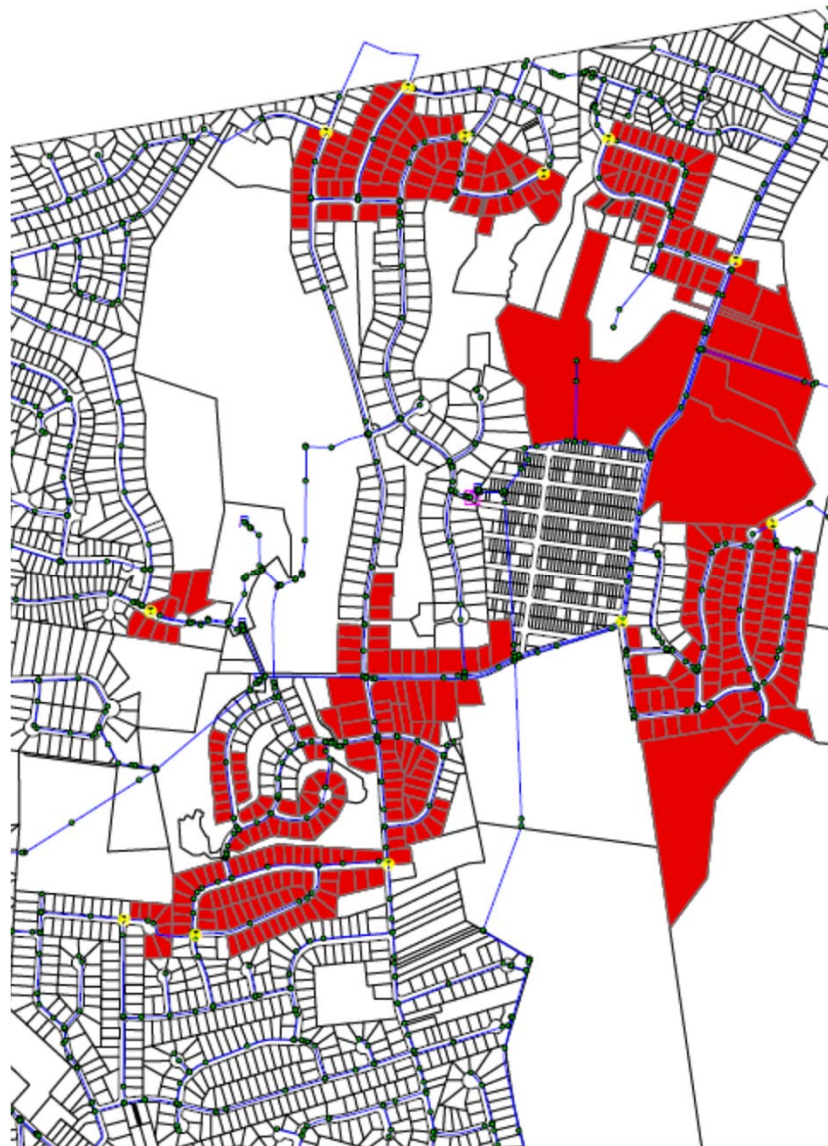
# Map of projected available fire flows



## Design Fire Flow

- <500 gpm
- 500-750 gpm
- >750 gpm

## Customer Needed Improvements

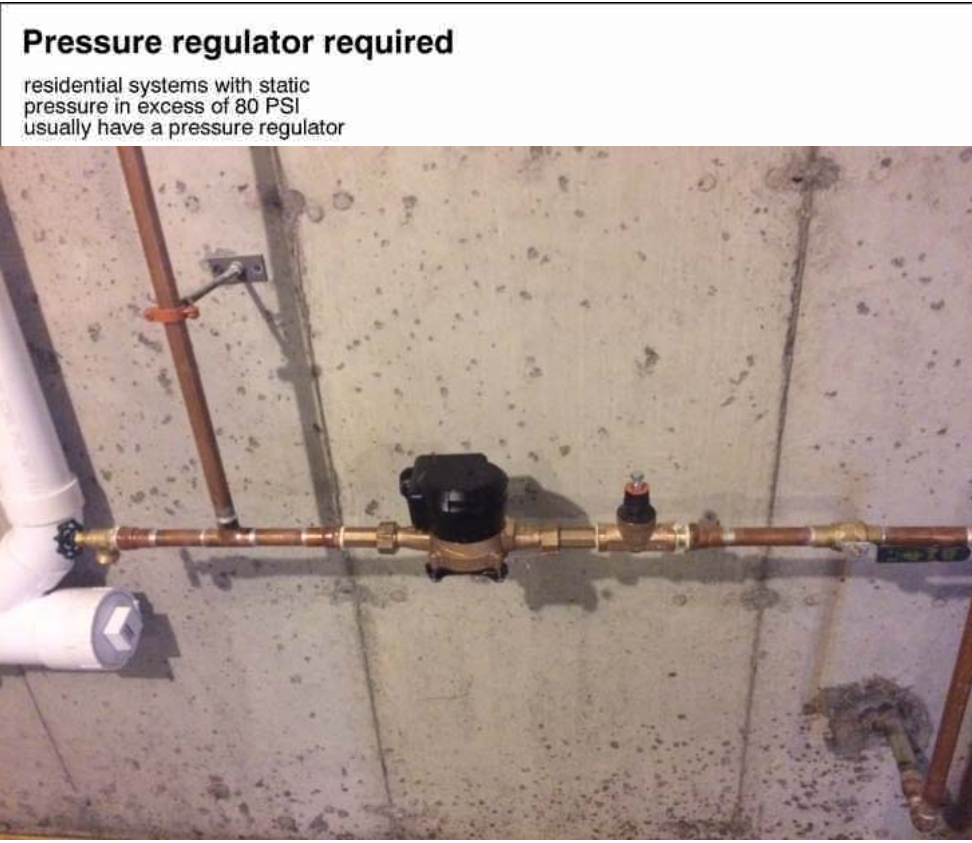
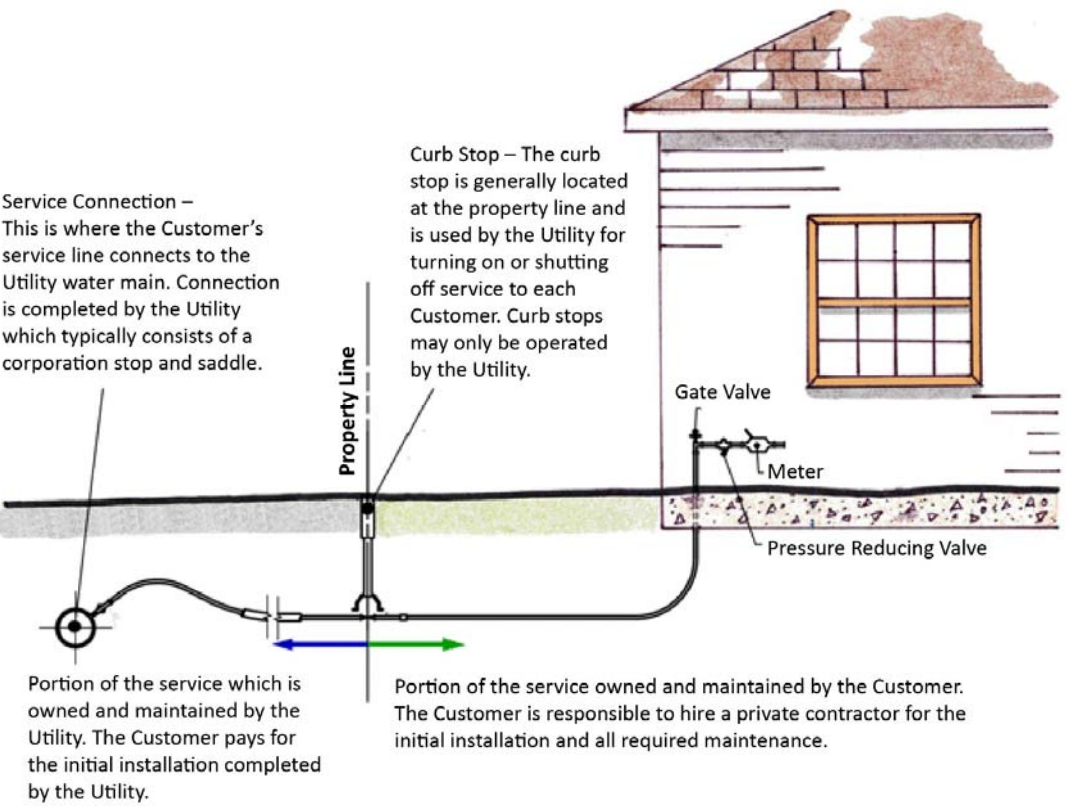


**Parcels Highlighted in Red have pressures potentially above 80 psi (PRVs required)**

Latham Water will purchase and turn over the PRVs to Customer

Customer would install and maintain

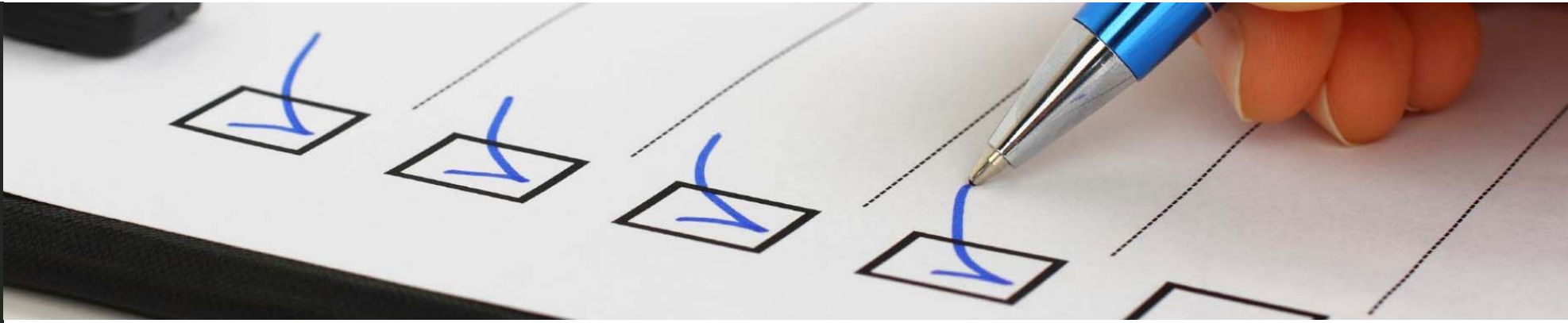
# Service Connection Requirements



## Other Potential Customer Impacts



Increasing the water pressure could result in new leaks in deteriorating water mains and service connections, and interior premise plumbing. Latham Water maintains on-call crews to repair the water mains breaks and the utility owned portion of the service lines. Customers own and are responsible for the portion of the service line and premise plumbing on their property.



## Summary & Conclusions

Expansion of the Vly High Service Area is a viable alternative to installation and maintenance of individual booster pumps by customers

Proposed service area boundaries would position Latham Water to deliver water to customers throughout the western portion of the District at pressures of 35 PSI or more under normal operating conditions

Expansion of the Vly High Service Area will maintain or improve fire flows in the area

Approximately 334 homeowners would need to install PRVs on their service lines





## **NEXT STEPS**

*Where do we go from here?*

## Next Steps



Latham Water garners input from the community



Engineering report outlining proposed improvements and service area is finalized



Project advances through the capital planning and administrative approval process. A phased implementation plan is likely.



Once a phase is selected and approved, homeowners will be notified of the implementation plan and schedule.



PRVs would be turned over to homeowners for installation by owner.



Latham Water would complete the needed District improvements and complete the changeover.





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Questions? Thank you!