Water System Improvement Projects

City of Washington, IL

Committee of the Whole

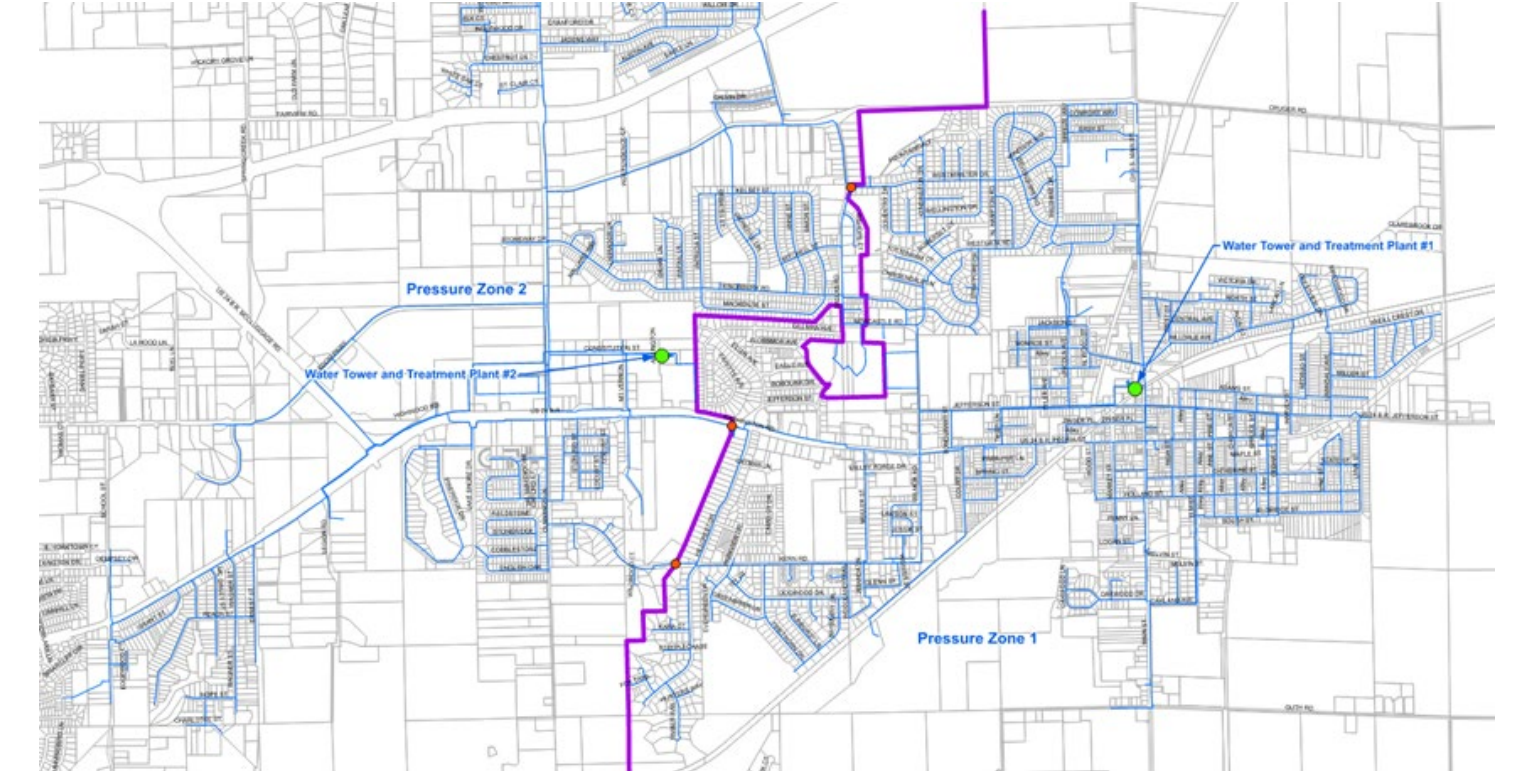May 12, 2025

Existing Water System Assets

2 Water Treatment Plants
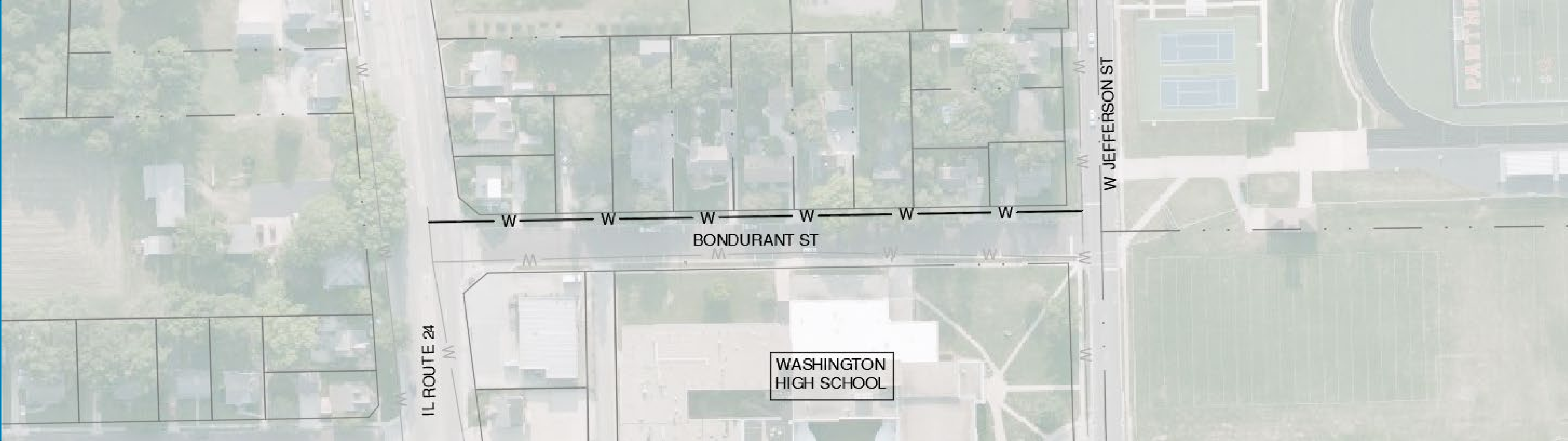

2 Water Towers
450,000 gallons each

Water Distribution Pipe Network

- ~85 miles of watermain ranging in size from 4" – 16"
- ~5,400 customers

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Overview of Projects

- Bondurant Street Watermain Replacement
- Route 24 Watermain Relocation
- Water Tower #3
- Sunnyland Water Service Redundancy
- Southeast Area Watermain Improvements
- Well #13

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Bondurant Street Watermain Replacement

Need for Project:

- Aging infrastructure of existing watermain serving critical facility – Washington High School

Project Design:

- Replace ~ 670 lineal feet of 4" watermain with new 8" watermain

Estimated Project Construction Cost:

- $375,000

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Route 24 Watermain Relocation

Need for Project:

- Accommodate future IDOT roadway improvements from Legion Road to Lynn Street

- Critical Watermain Location = Wilmor Road to Lynn Street
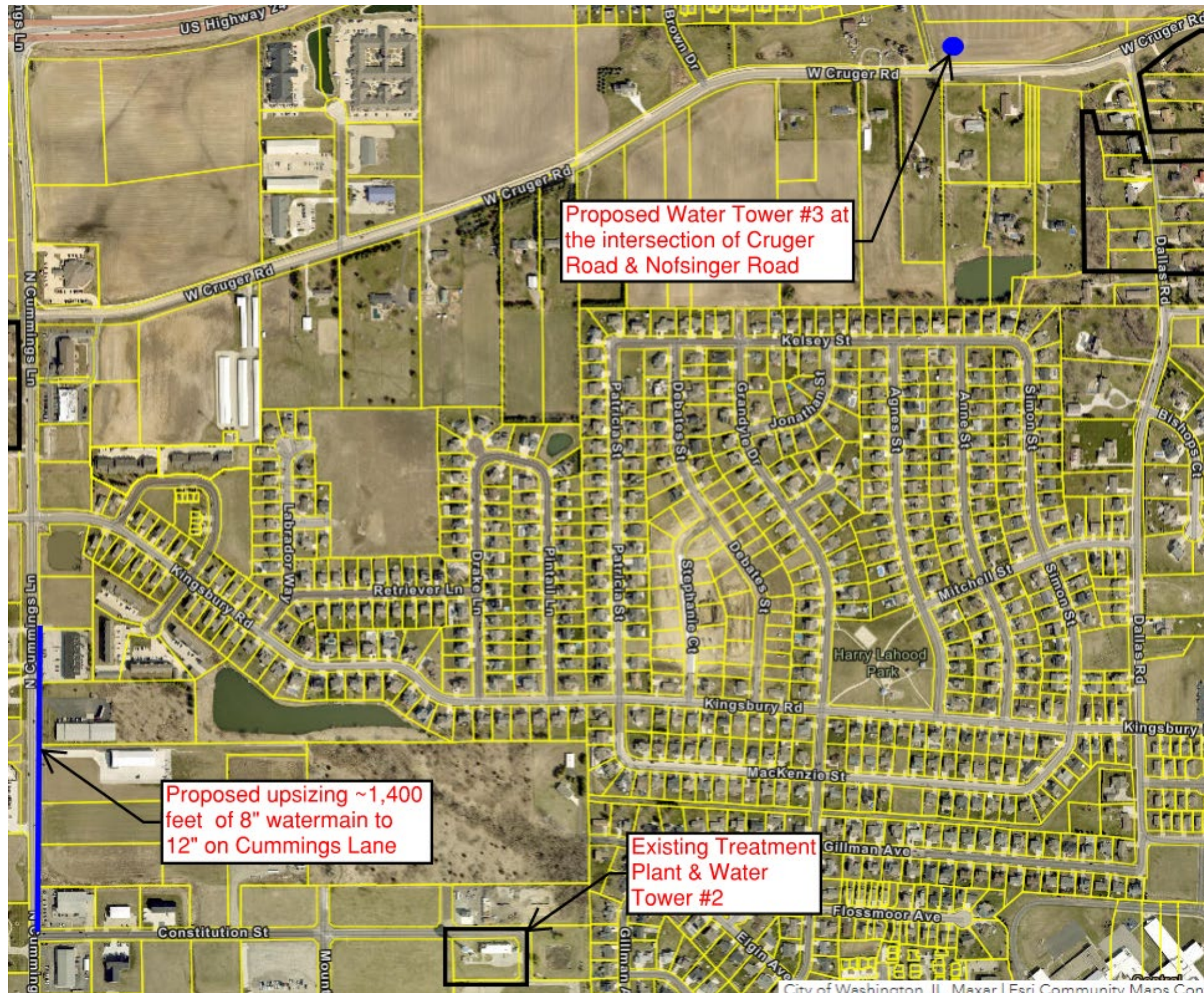
Project Design:

- Relocate ~20,050 lineal feet of 6" – 10" watermain to outside pavement limits

- ~180 service connections

- 38 connections to existing watermains

Estimated Project Construction Cost:

Total Length – $7,730,000

Critical Length – $4,500,000

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Water Tower #3

Need for Project:

- City does not meet ISO fire flow recommendation of having a minimum storage equal to the highest flow for 3 hours
  - Tower #2 Capacity = 450,000 gallons
  - City's highest flow = 3,500 gpm which equals 630,000 total gallons for a 3 hour period

- City does not meet IEPA Title 35 minimum storage recommendation for systems not providing fire protection – minimum system storage should equal daily consumption
  - City's Average Daily Consumption = 1.1 MGD
  - City's System Storage = 0.9 MGD

Project Design:

- 500,000 gallon elevated spheroid shaped tank

- 1,427 lineal feet of new 12" diameter watermain along Cummings Lane

Estimated Project Construction Cost:

- Water Tower – $4,300,000

- Cummings Lane Watermain – $530,000

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Sunnyland Water Service Redundancy
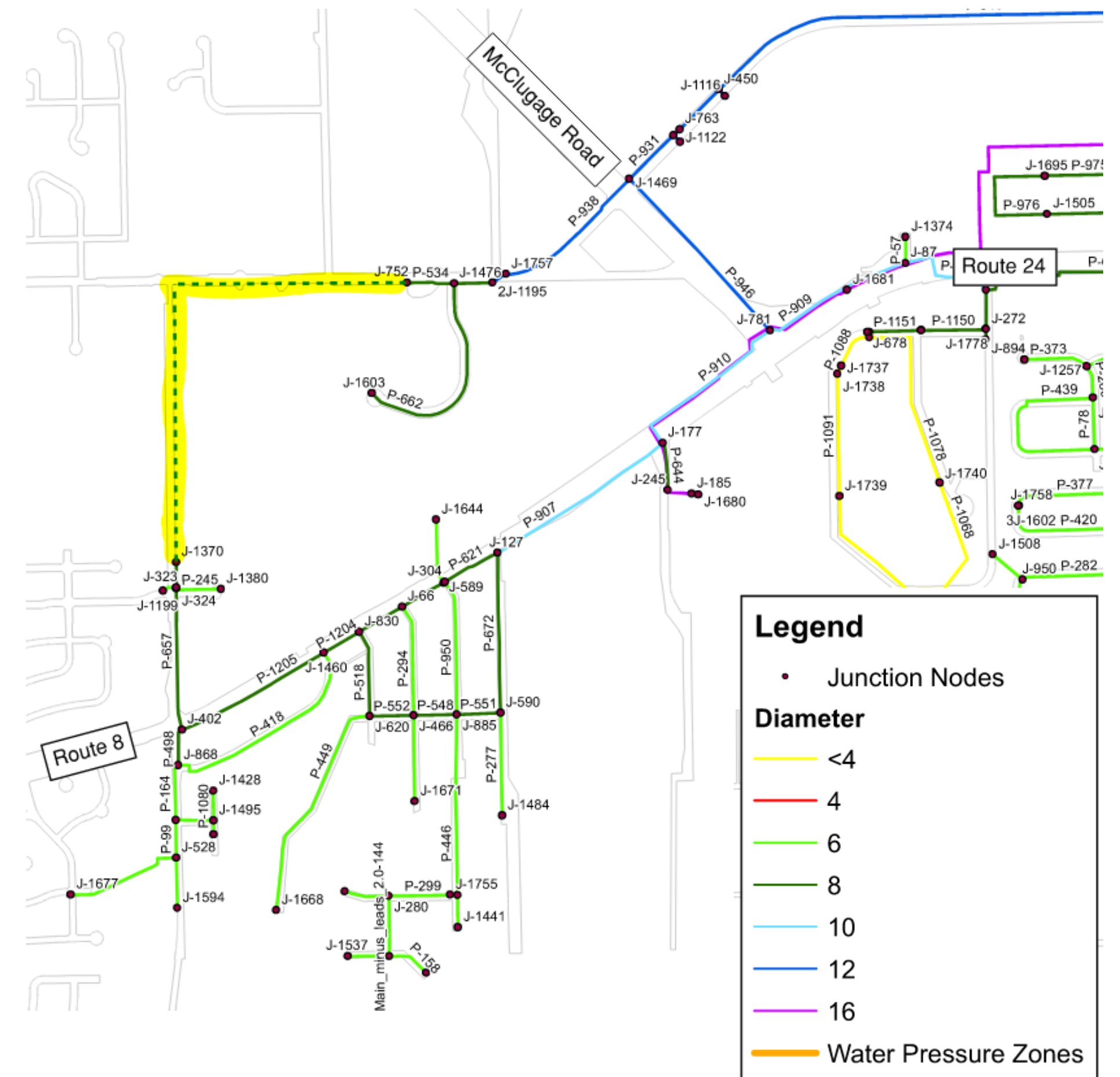
Need for Project:

- Currently, a single existing 10" watermain serves Sunnyland

- Any failure of that line would leave Sunnyland with no access to water

- Connecting the existing 8" diameter watermain lines to the North of Sunnyland allows for redundancy in serving those residents

Project Design:

- ~4,100 lineal feet of new 8" diameter watermain along School Street and Centennial Drive

Estimated Project Construction Cost:

- $875,000

Southeast Area Watermain Improvements
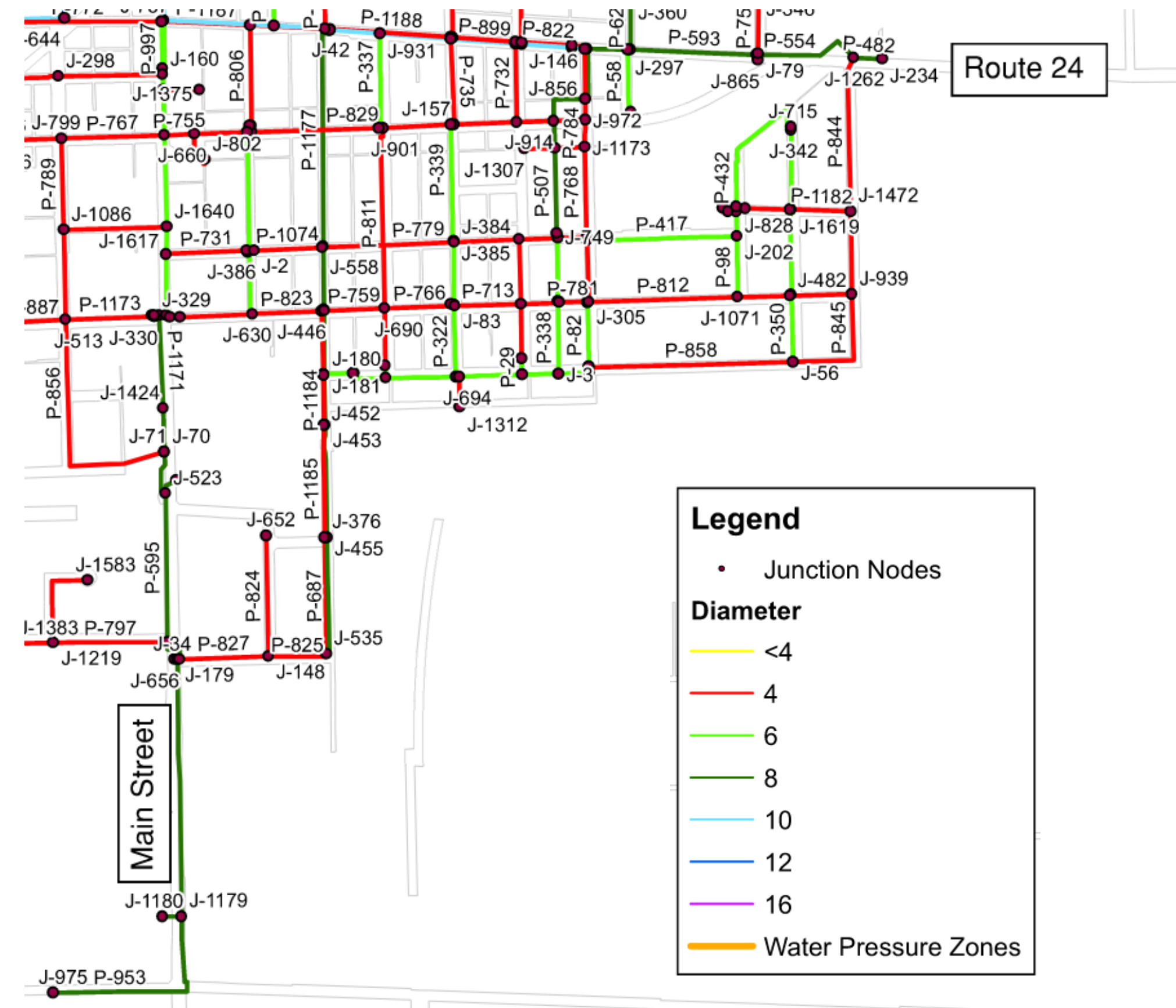
Need for Project:

- Aging infrastructure of cast iron piping pasted its life expectancy

- Cast iron water mains account for 1/3 of the system but represent an average of 2/3 of the breaks

- Oldest watermain in the system is over 100 years old

Project Design:

- ~17,000 lineal feet of 4" diameter watermain replacement

- ~286 service connections

Estimated Project Construction Cost:

- $8,8700,000 (Split into multiple projects over 20 years)

Well #13

Need for Project:

- Water Treatment Plant #2 is primarily served by Wells #11 and #12 located at the Washington Public Works building off Legion Road

- In an emergency, the Plant can run off wells #9 and #10 located near the Plant. However, the water chemistry of this aquifer location is very high in ammonia. Current plant operations are ill-equipped to remove excess ammonia.

- Increase the treatment capacity at Water Treatment Plant #2 from 1.5 MGD to 2.0 MGD

- Proposed Well #13 is a better suited alternative for a redundant, emergency well

Project Design:

- Submersible well pump located 424 feet deep by an 8" diameter steel column

- ~20 foot x 15 foot block building

- Connected to existing 16" raw water line running to Water Treatment Plant #2

Estimated Project Construction Cost:

- $1,500,000

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Questions

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