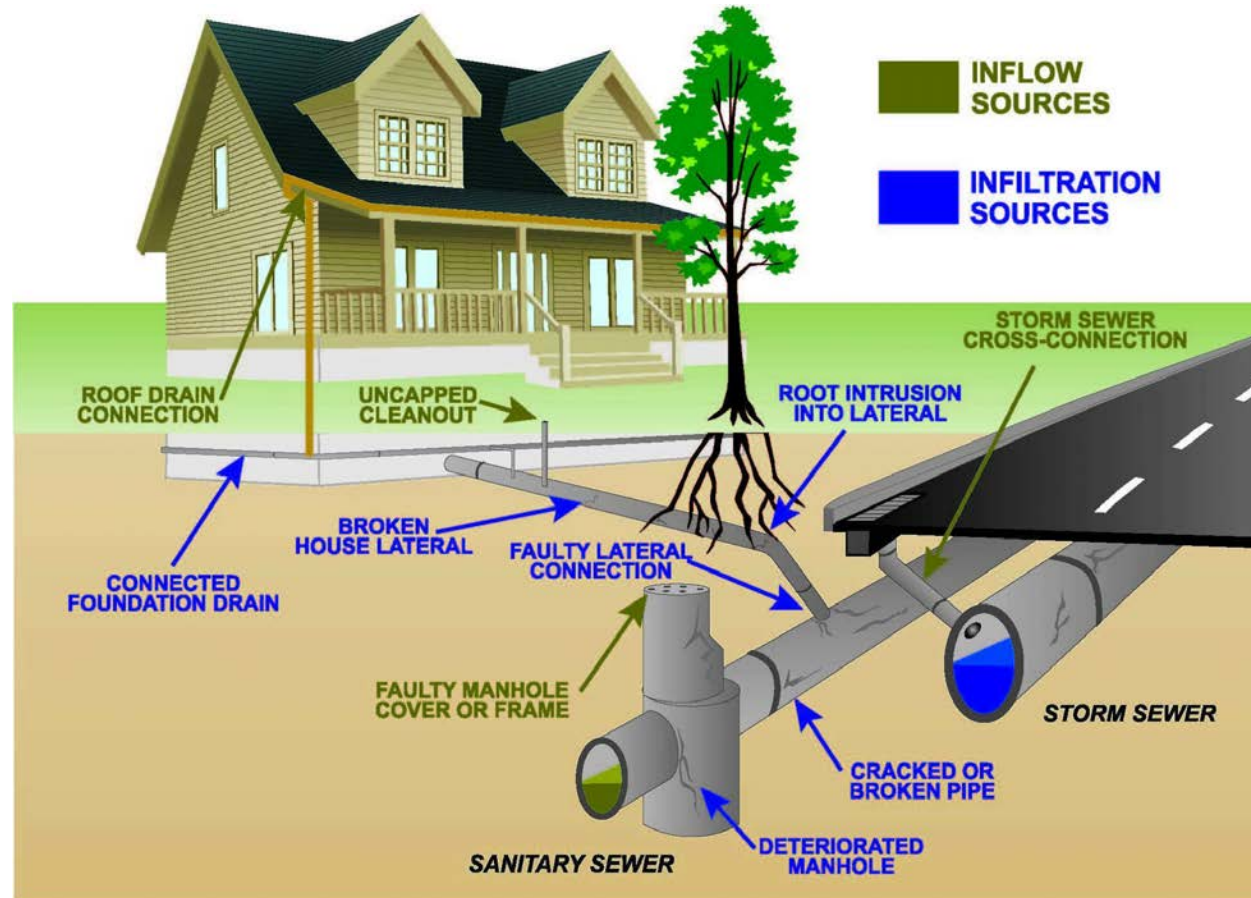




City of Sweet Home, Oregon

I/I Abatement Project – Success Story

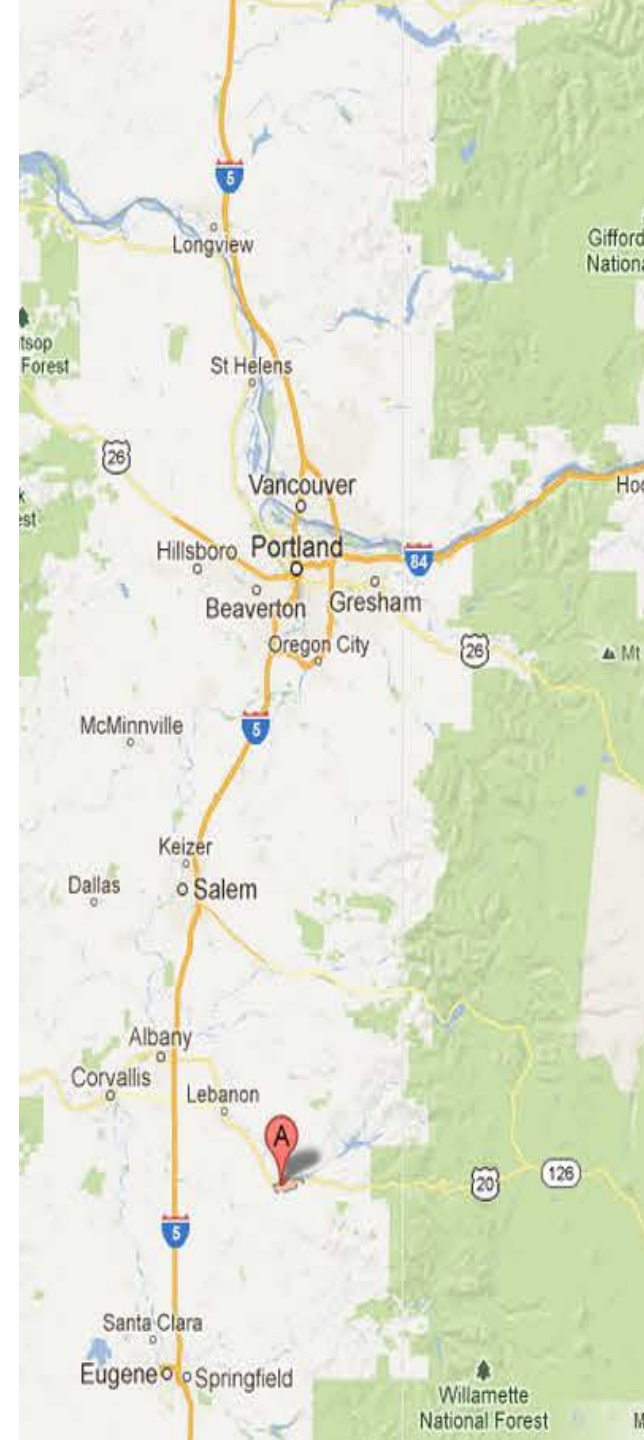
Greg Springman, Public Works Director





Background

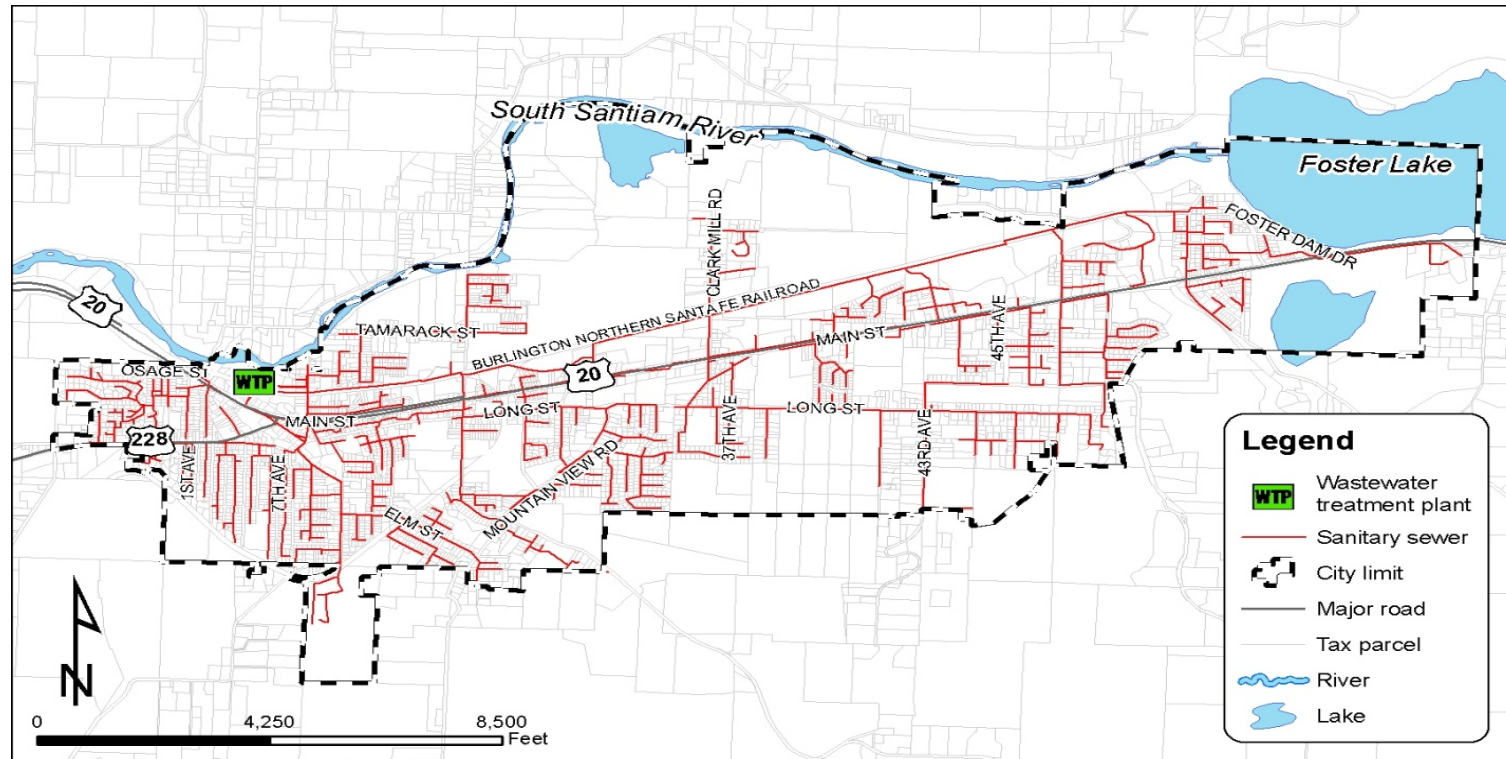
- Located in the foothills of the Cascades in the Willamette valley
- Nestled just below the Foster Dam along the South Santiam River
- Receives approximately 55 inches of rainfall per year
- Population 9,830 (current)
- Median income \$43,589
 - 31% below Oregon State average





Wastewater Collection System

- 49.5 miles of sewer pipe (all gravity)
- Pipe Size Range 6-in to 24-in
- System age: 1910s and up, mostly 1940s





Regulatory Compliance

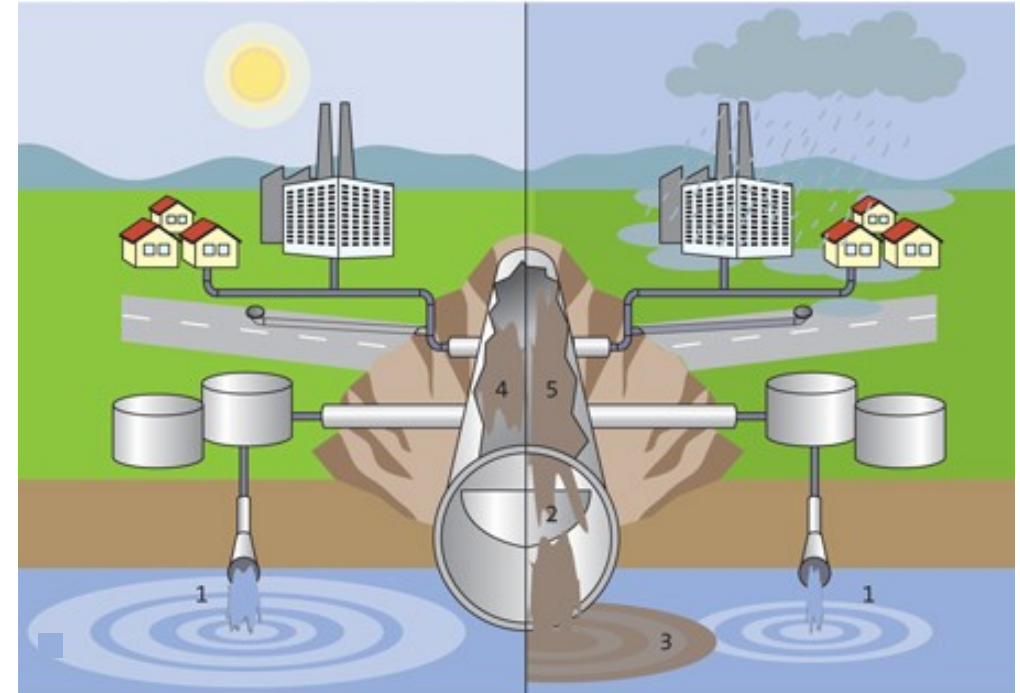
- Repeated sanitary sewer overflows (SSOs) at WWTP
- DEQ required elimination of SSOs by January 2010
- DEQ issued Mutual Agreement and Order (MAO)
 - Resolves past violations
 - Provides a schedule for needed improvements
 - Continued violations are not penalized





Facility Plan Alternatives

- WWTP Improvement to treat 25 mgd
 - \$25M estimated
- I/I reduction to replace/repair 75% of mains/laterals
 - \$30M estimated





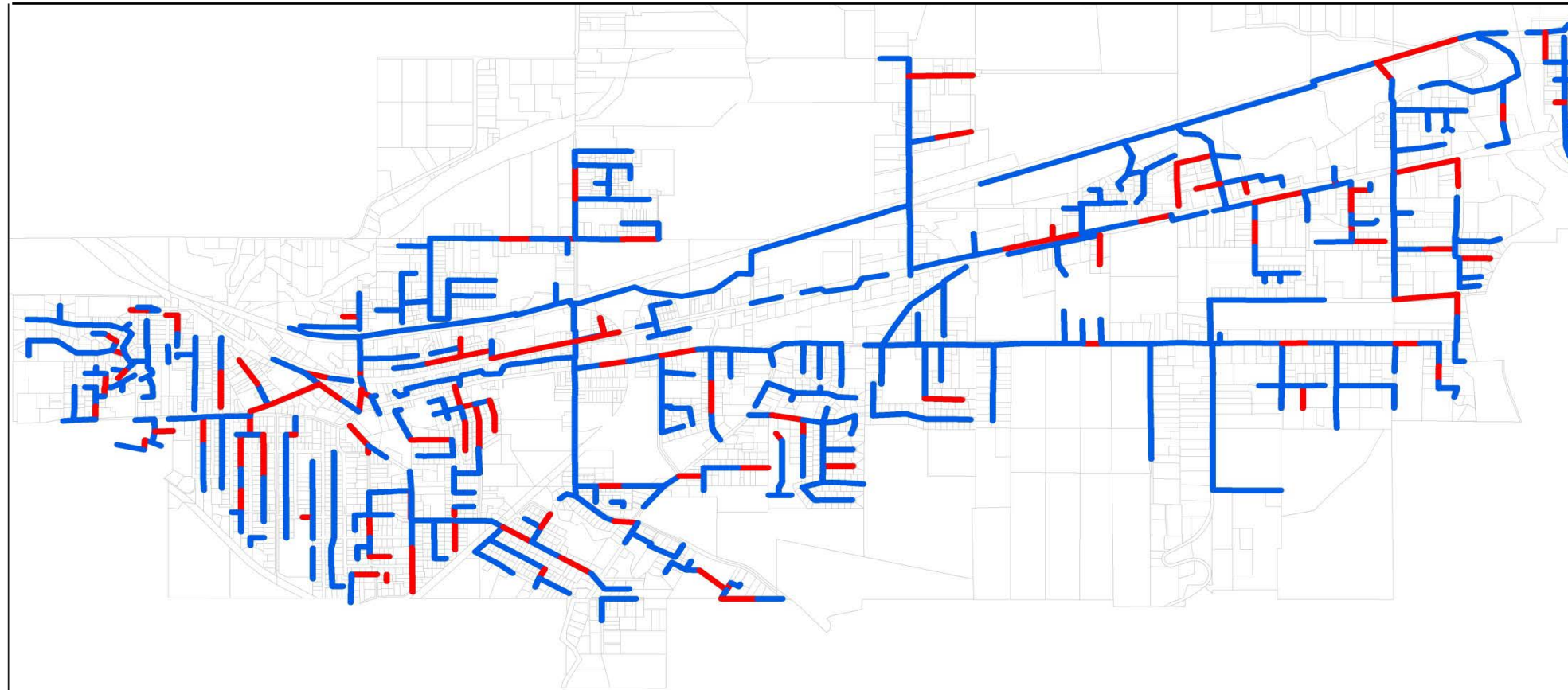
City Decision Process

- MAO regulatory deadline to comply
- Wet-weather issues not isolated to single basin or source
- Mixed success from I/I reduction programs in NW
- Aged collection system continuing to deteriorate
- Upgrade aged WWTP to handle peak capacity





CCTV Pre-Structural Assessment



Sewer Inspection Structural Grades

- 4 - Poor; 5 - Immediate Attention
- 2 - Good; 3 - Fair
- 1 - Excellent
- Property Lines





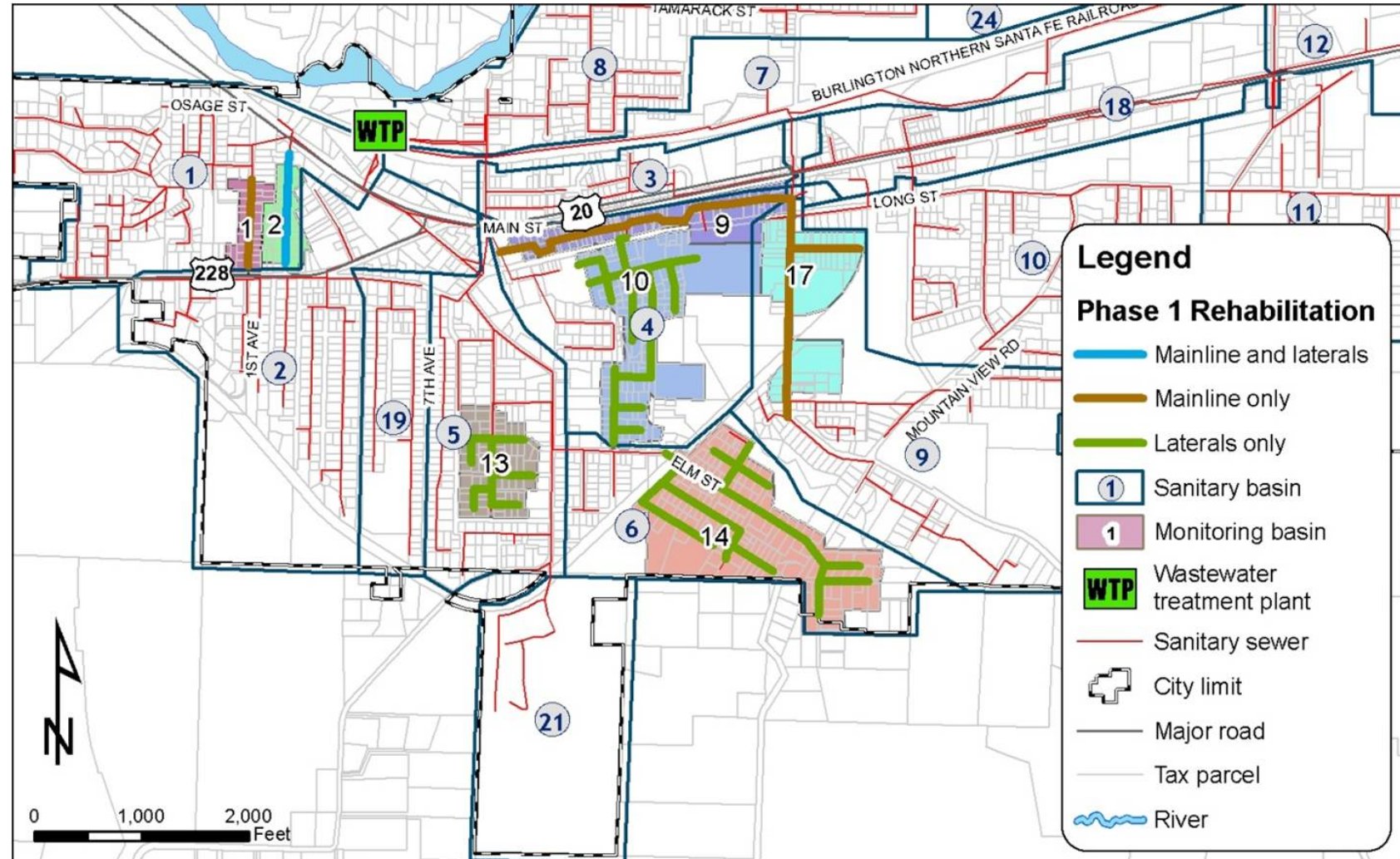
I/I Abatement Project Objective

- Compliance at least cost
 - Funding Challenges
 - Phased project approach
- Develop methodologies for rehabilitation
 - Cost-effective/value rehab
 - Cure in place pipe (CIPP)
 - HDPE
 - Spot open cut repair
- Address structural issues whenever possible
- Perform all flow monitoring “in-house”
- Reduce I/I wherever possible



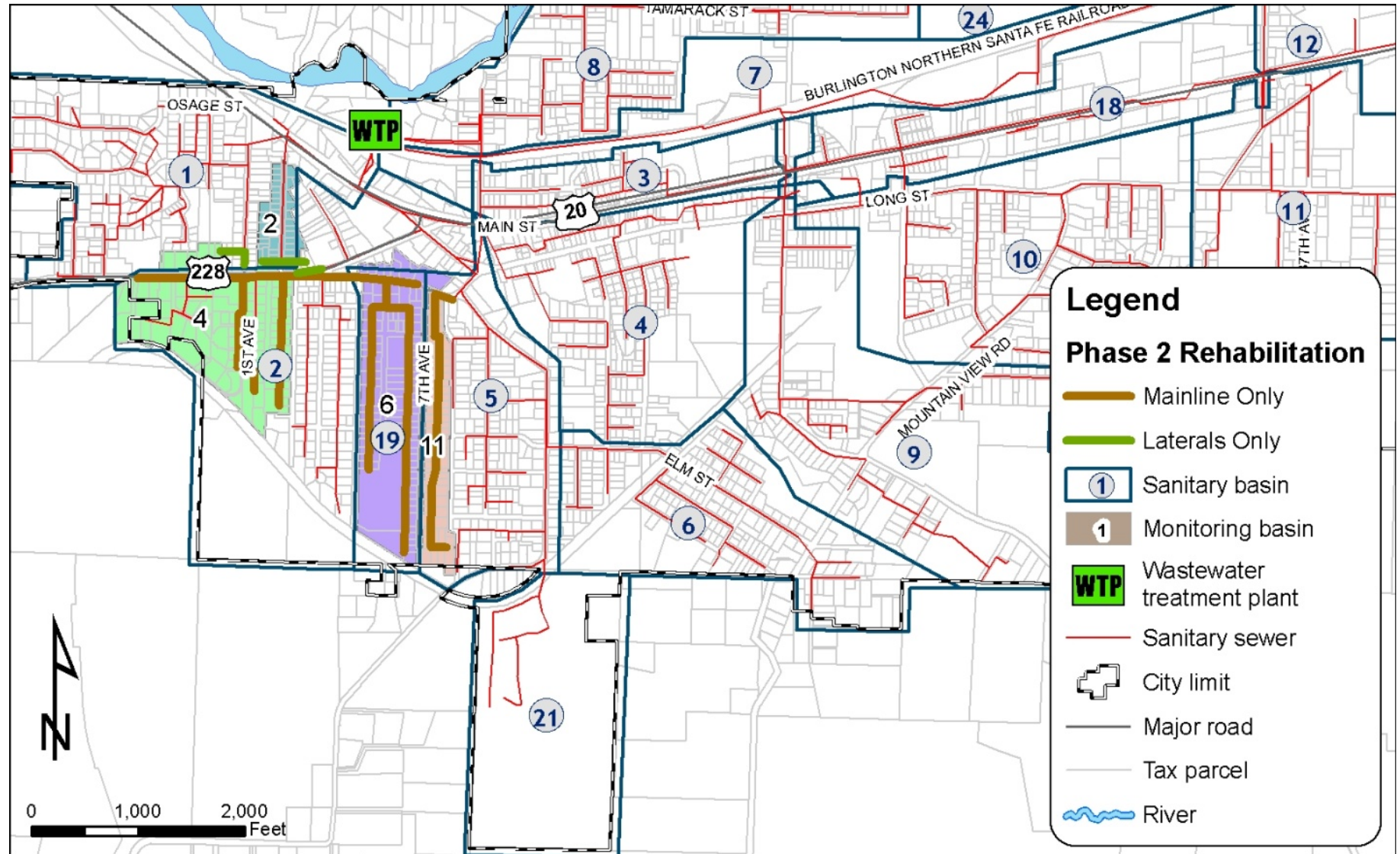


Phase 1: Laterals or Mains, then Mains and Laterals



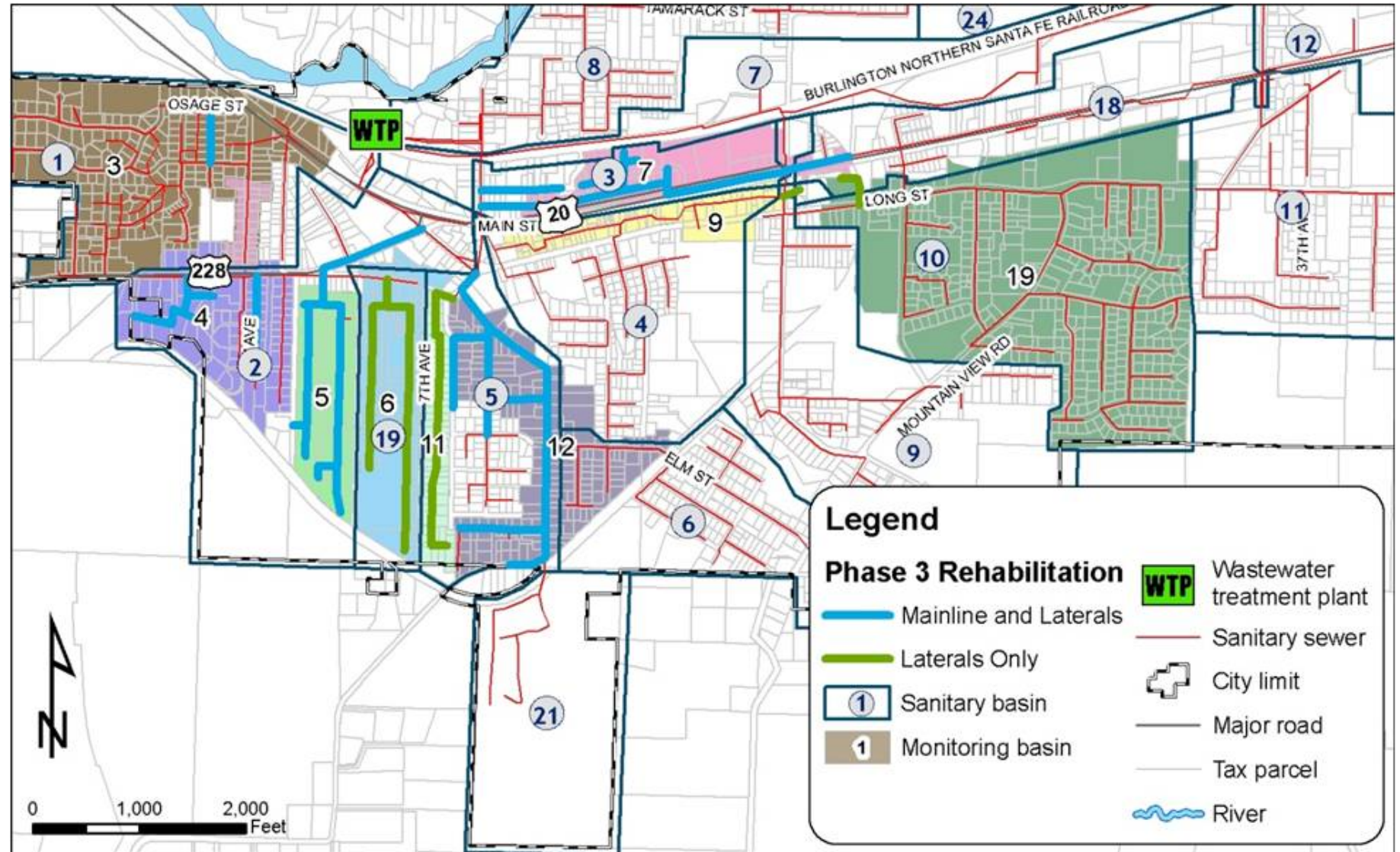


Phase 2: Mains and Lateral



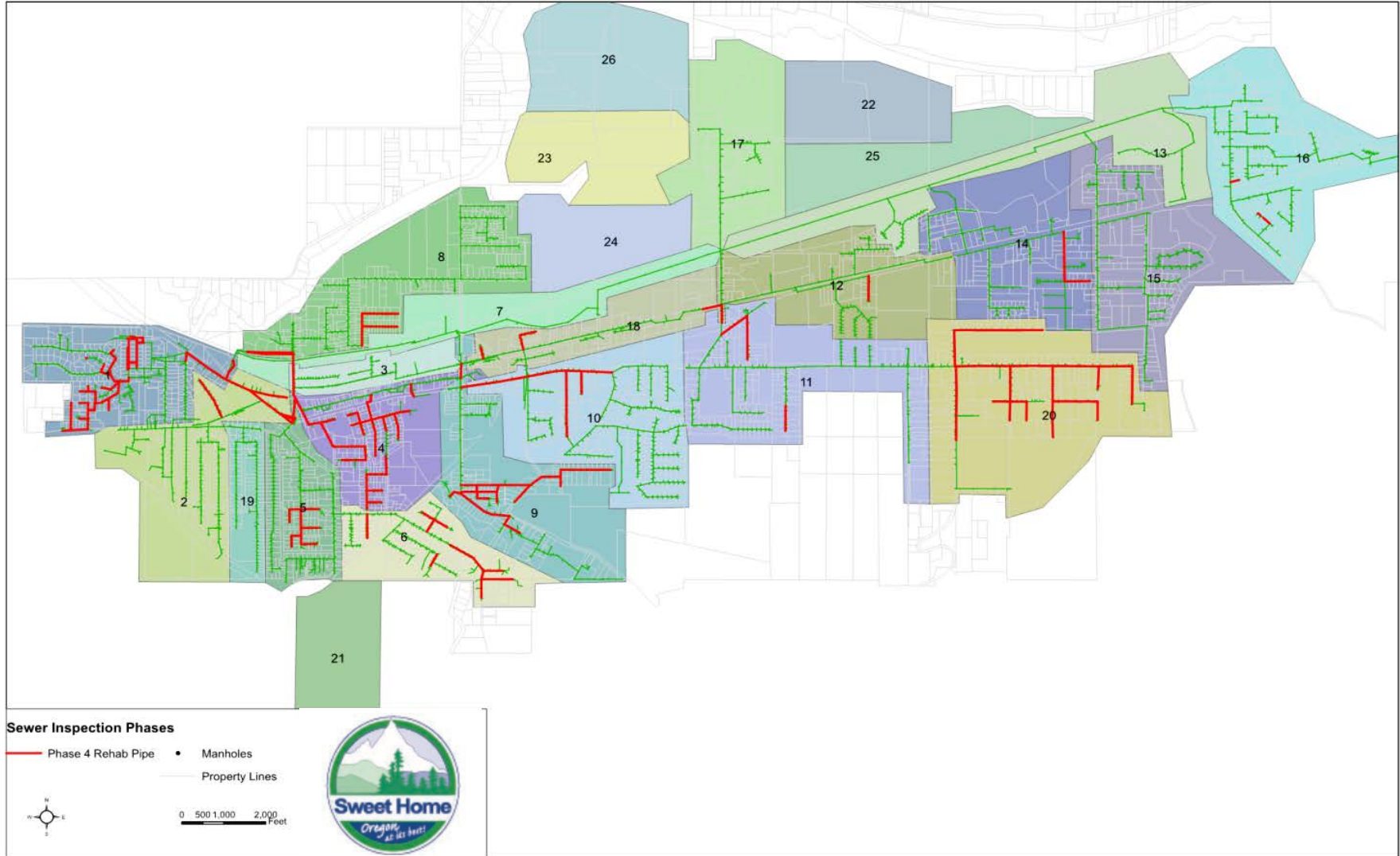


Phase 3: New Basins and Remaining Phase I & II





Phase 4: New Basins, Manholes, Verified Leaks





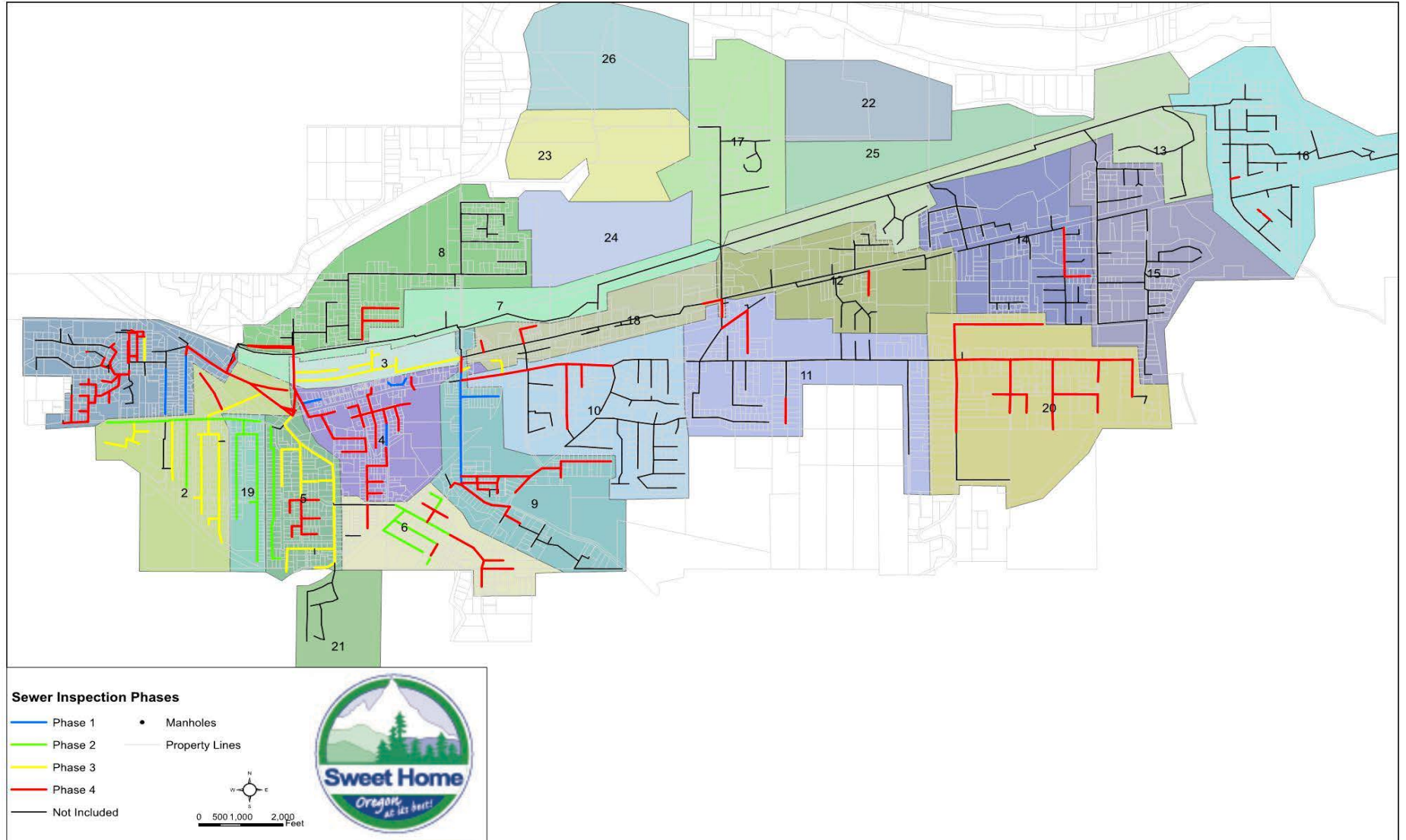
I/I Abatement Project Summary

- Four Phase project approach
 - Allowed for City funding
- Phase I
 - CIPP
 - Mains vs. Laterals
- Phase II
 - CIPP
 - Manhole Coating
- Phase III
 - HDPE
 - Open Cut Replacement
 - Manhole Replacement
- Phase IV
 - HDPE
 - Open Cut Replacement
 - Manhole Replacement





I/I Abatement Work Completed to Date





Project Overview

- Completed Phase 4 Rehabilitation in Summer 2012
- \$15M spent total (\$12M construction)
 - Phase 1: \$1.3M
 - Phase 2: \$1.7M
 - Phase 3: \$3.1M
 - Phase 4: \$6.0M
- 35% of main line sewers and 30% of laterals completed through Phase 4
- >50 percent of peak RDII removed





Conclusions and Lessons Learned

- Quality flow monitoring-foundation of I/I reduction work
- Prioritize work to maximize reduction
- Private laterals key to I/I reduction
- Focus on known I/I leaks
- No SSOs predicted under peak-hour flows
- Over \$1.4M in upsizing no longer needed
- Post-construction monitoring
 - Evaluate success
 - Prioritize future work
 - Determine when WWTP upgrades become cost-effective





Questions?

