

Union County Water Capital Improvement Program Update

May 18, 2022



UNIONCOUNTY
north carolina



Agenda

CIP Primer

- How it is developed
- Contents
- Project Budgets

Project Types

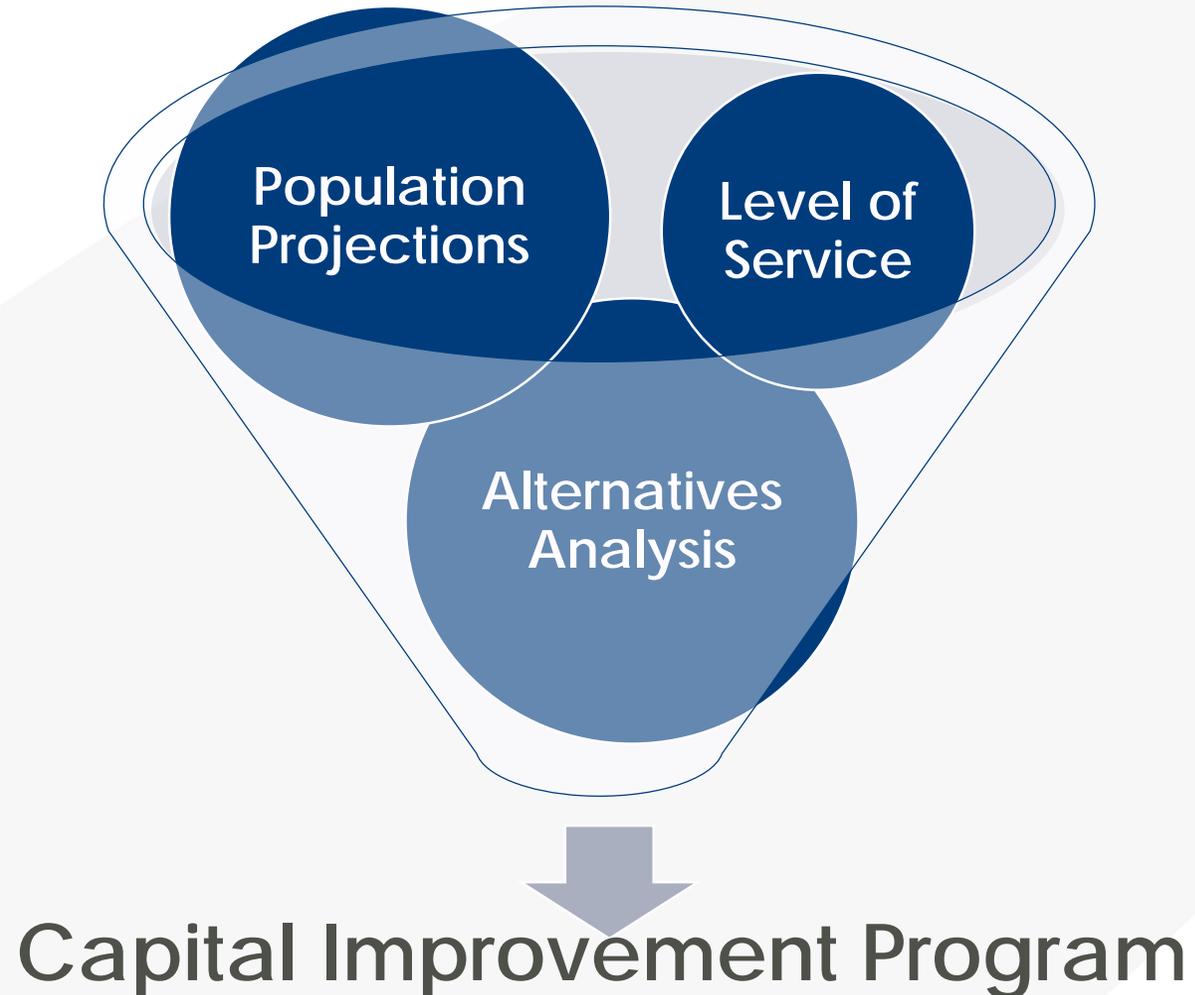
- Capacity
- Conveyance
- R&R

Possibilities

- What are the options

How is the CIP Developed

- Outcome of a master planning process



Contents of the CIP

Water

- Treatment
- Transmission
- Distribution

Wastewater

- Collection
- Conveyance
- Treatment

R&R

- Water
- Wastewater
- Technology

Facilities

- People
- Equipment
- Materials

- List of projects and investments planned over time
- Potential projects are based in the 2016 Masterplan Updates
- Timeframes and budgets are best available information

Budgeting for the CIP

- Budgets are at the planning level
 - **ACE Class 5, Range is -30% to +50%**
 - ACE Class 4, Range is -20% to +30%
 - ACE Class 3, Range is -15% to +20%
 - ACE Class 2, Range is -10% to +15%
 - ACE Class 1, Range is -05% to +10%
- Once budget requirements are known, CIP expenditures are funded by customer rates and fees either:
 - Cash funding
 - Bond funding
- Long term planning for revenue, debt, and operation

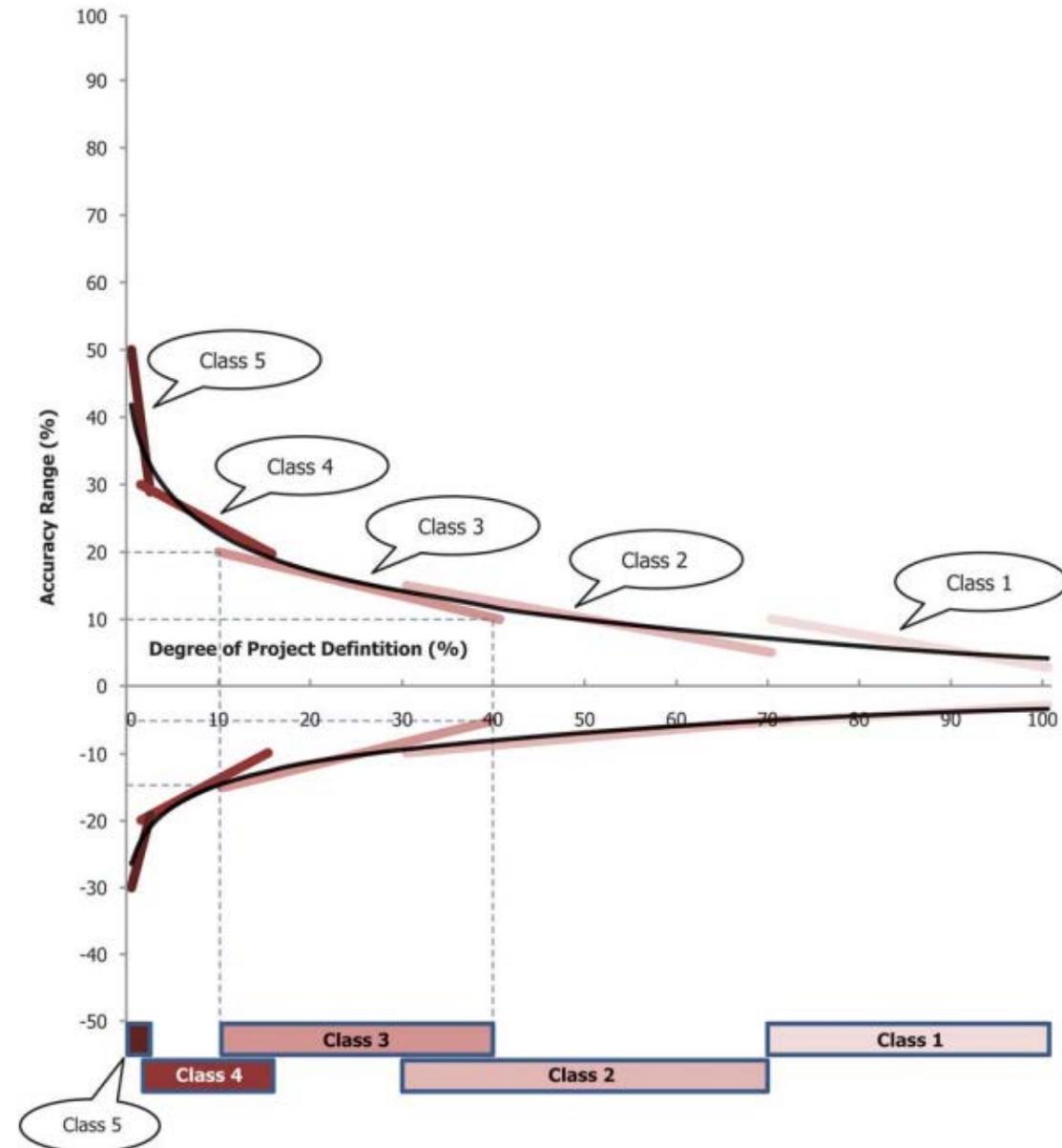


FIG. X1.1 Example of the Variability in Accuracy Ranges for a Building and General Construction Industry Estimate

Budgeting for the CIP

- Budgets account for escalation

- FY19 and prior years: 3.0%
- FY20 and future years: 4.5%

- Data Sources

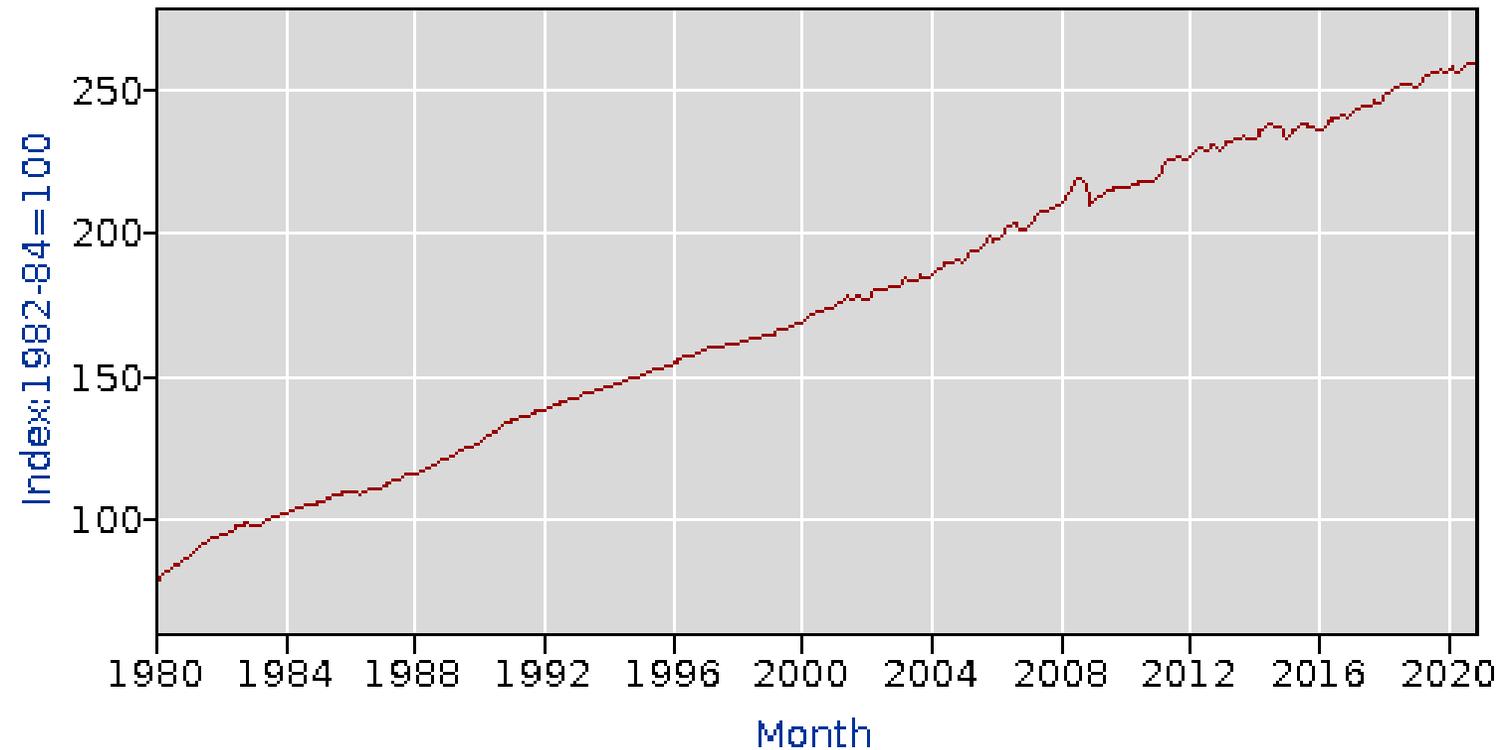
- Consumer Price Index

- 40 year average 3.05%
- FY17-FY19 1.96%
- FY20-FY22 3.85%

- Engineering News Record

- 40 year average 3.21%
- FY17-FY19 2.91%
- FY20-FY22 4.32%

Consumer Price Index
1980-2020



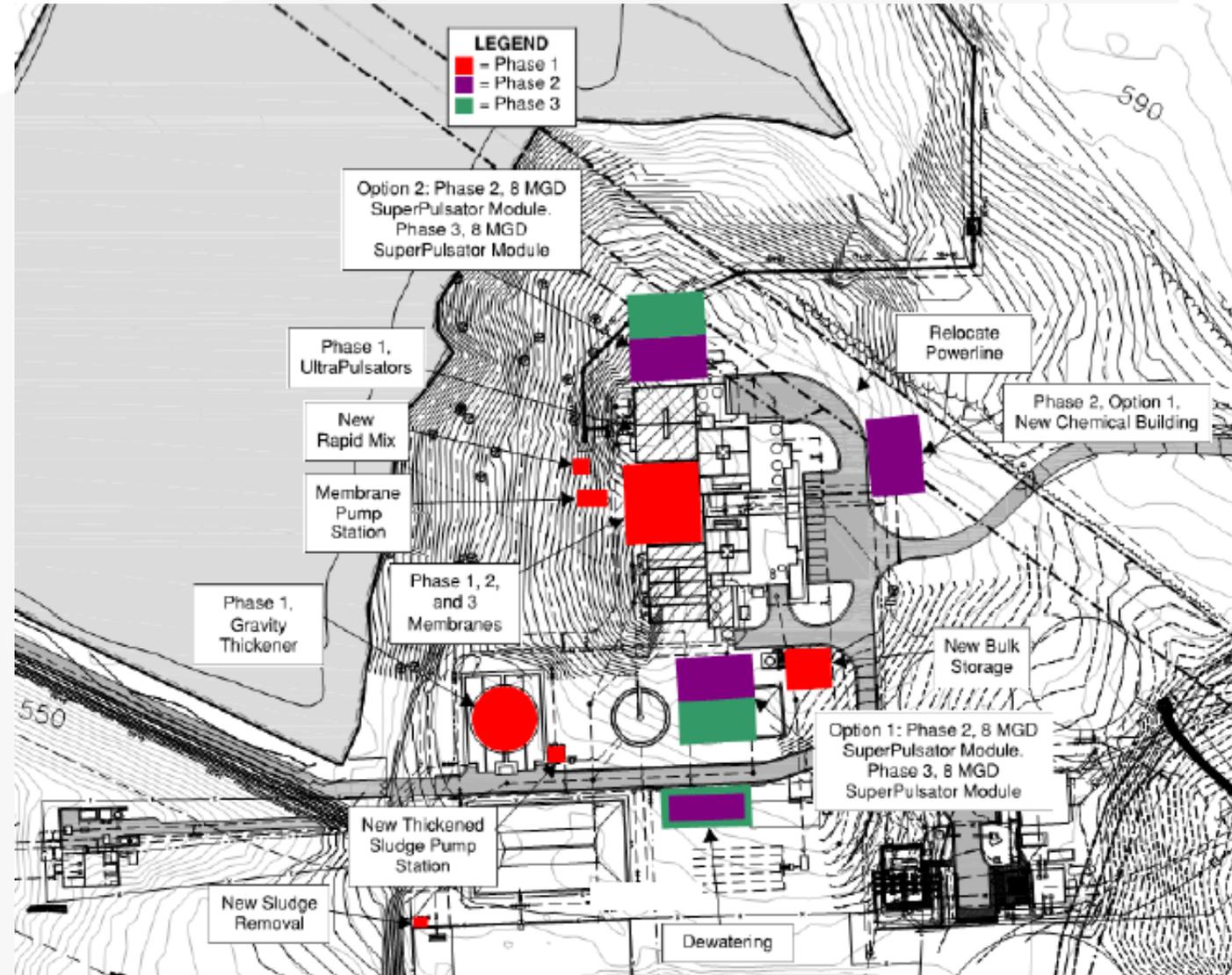
Water Projects - Capacity

- Treatment
 - CRWTP 16 MGD Expansion
 - YRWTP 12 MGD Expansion
- Storage
 - 853 South Zone (0.75 MG)
 - Indian Trail (2MG)
 - 935 Zone (1MG)

Water Projects - Capacity

CRWTP 16 MGD Expansion

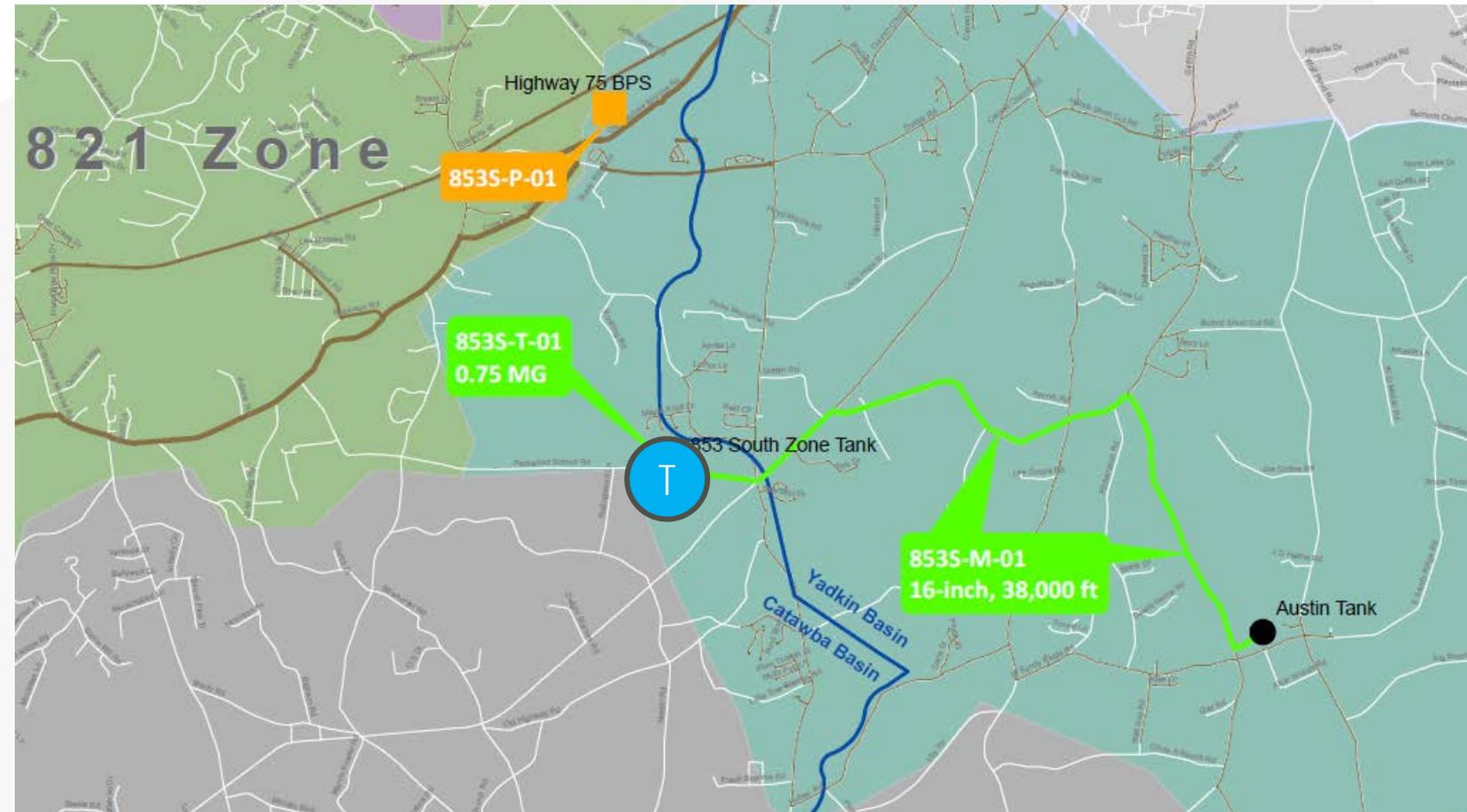
- Project includes:
 - Additional treatment train
 - Addition of membrane filters and pump station
 - Chemical building
 - Expansion of solids handling (dewatering)
 - Expansion of lab and office space
 - Related site, mechanical, electrical, and controls improvements
 - Budget: \$24.5M
 - Timeframe: 2024-2027



Water Projects - Capacity

853 South Zone Elevated Storage Tank

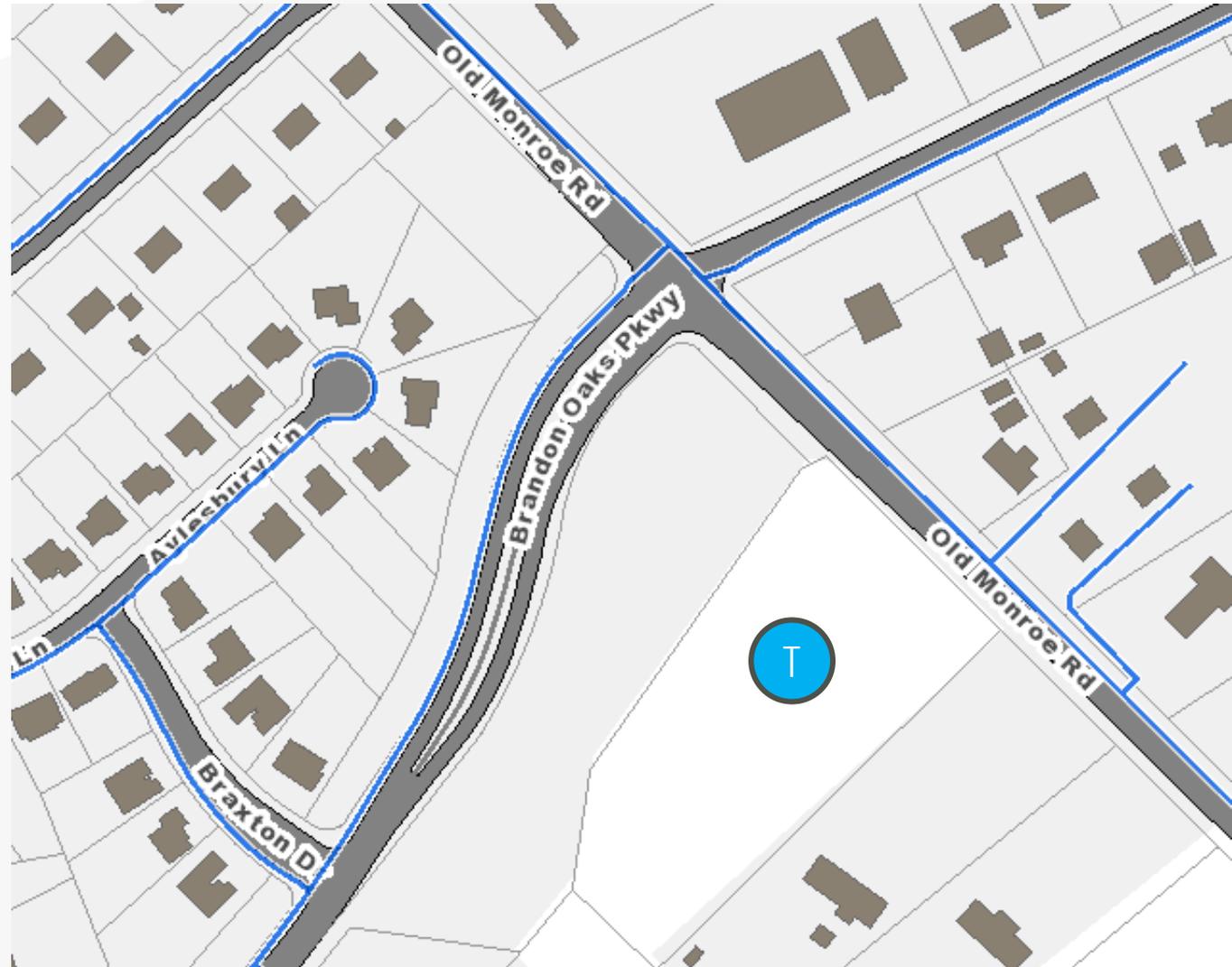
- Project includes:
 - Design and construction of a 0.75 MG elevated storage tank
 - Budget: \$3.3M
 - Timeframe: 2025-2028



Water Projects - Capacity

Indian Trail Elevated Storage Tank

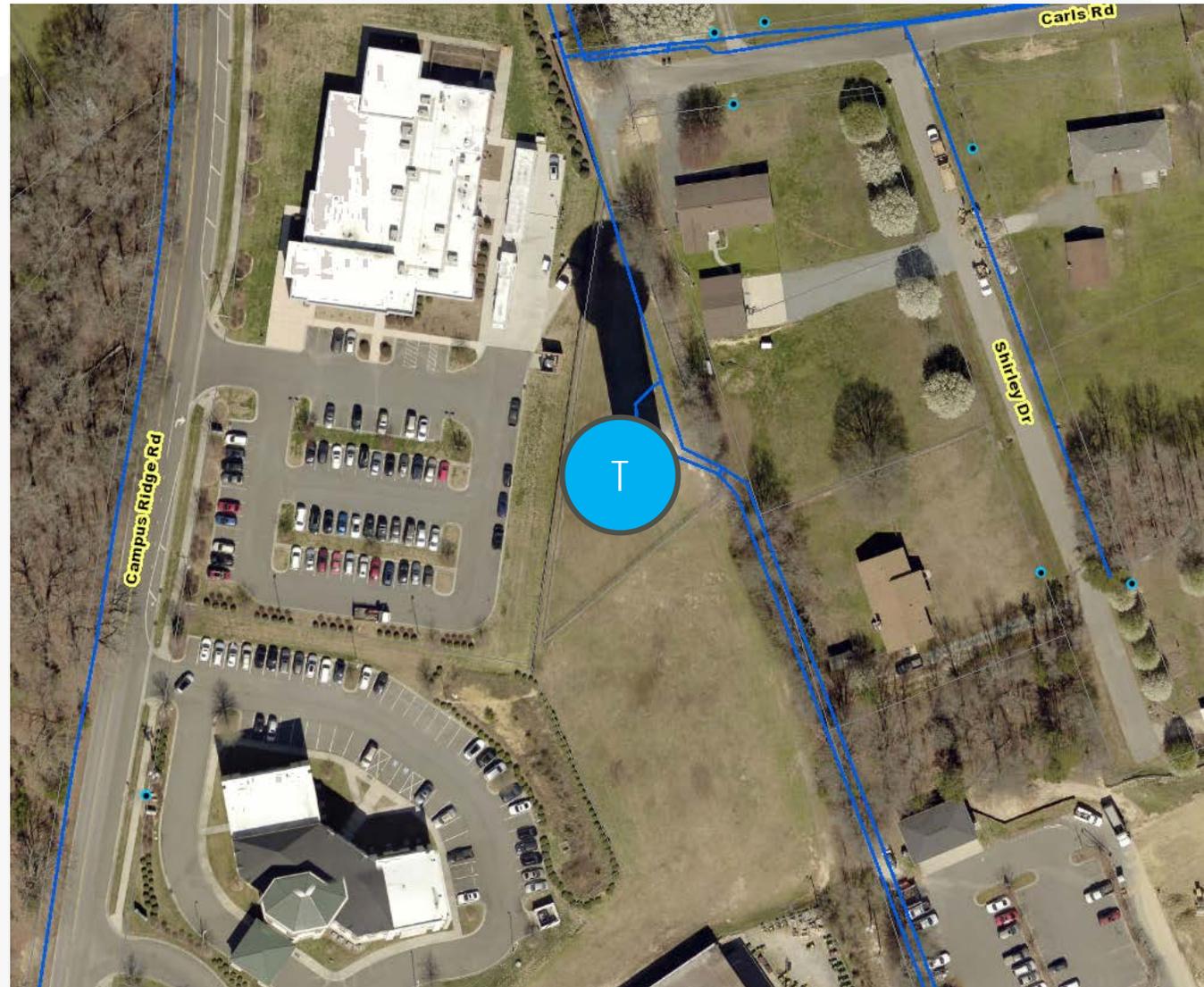
- Project includes:
 - Design and construction of a 2.0 MG elevated storage tank
 - Budget: \$8.9M
 - Timeframe: 2022-2025



Water Projects - Capacity

935 Zone Elevated Storage Tank

- Project includes:
 - Design and construction of a 1.0 MG elevated storage tank
 - Budget: \$4.9M
 - Timeframe: 2028-2031



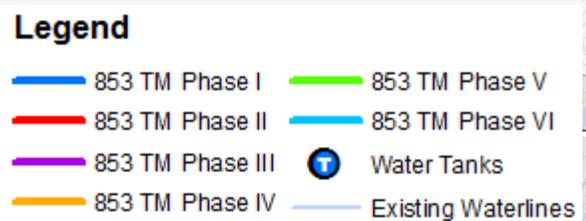
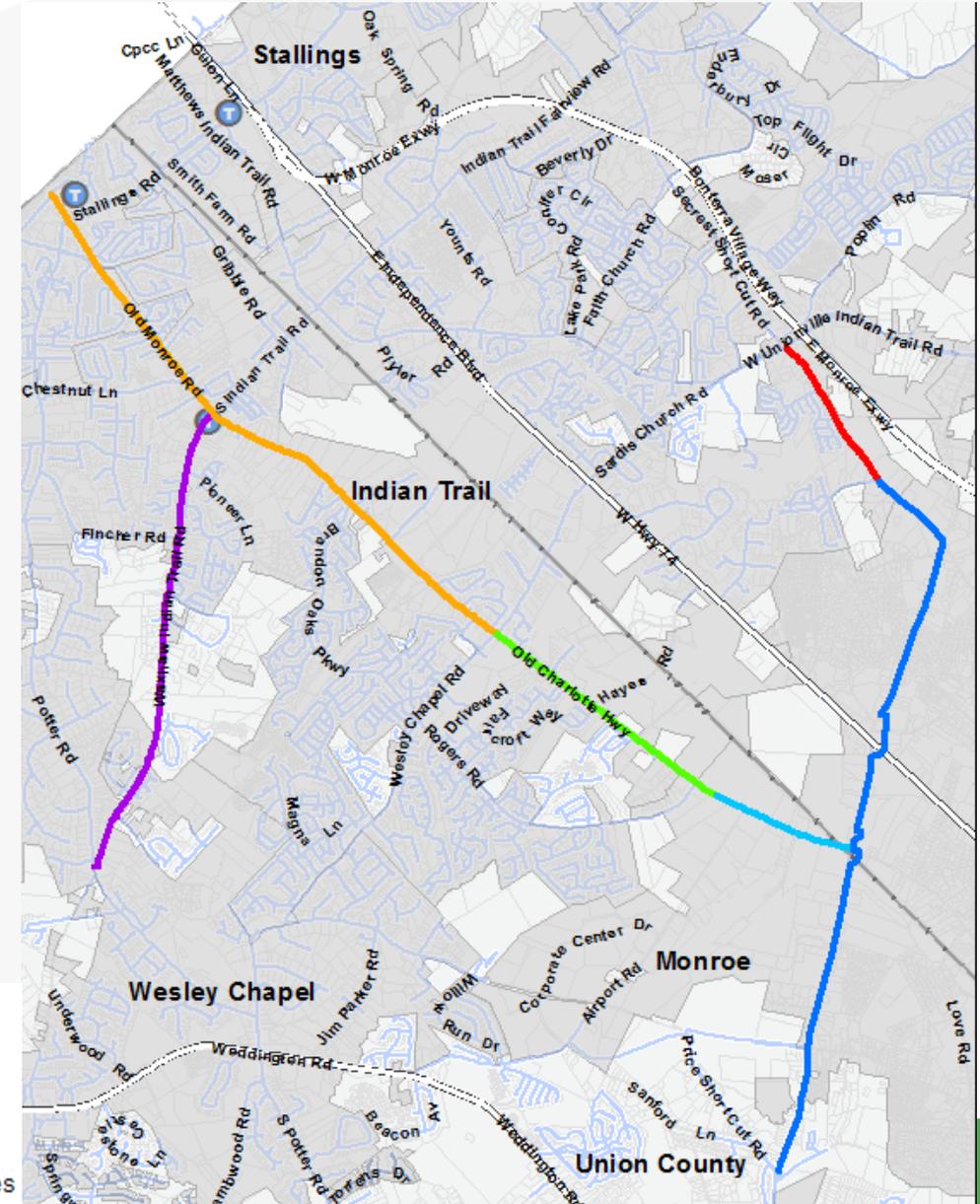
Water Projects – Transmission & Distribution

- Transmission
 - 853 West Zone Transmission Main – Phases II through VI
 - 853 South Zone Transmission Main
 - Highway 75 BPS Improvements
 - 762 Zone 24-inch Transmission Main
 - 762 Zone 12-inch Transmission Main
- Distribution
 - Waterline Extensions
 - Short Water Line Extension Program

Water Projects – Transmission & Distribution

853 West Zone Transmission Main Phases II-VI

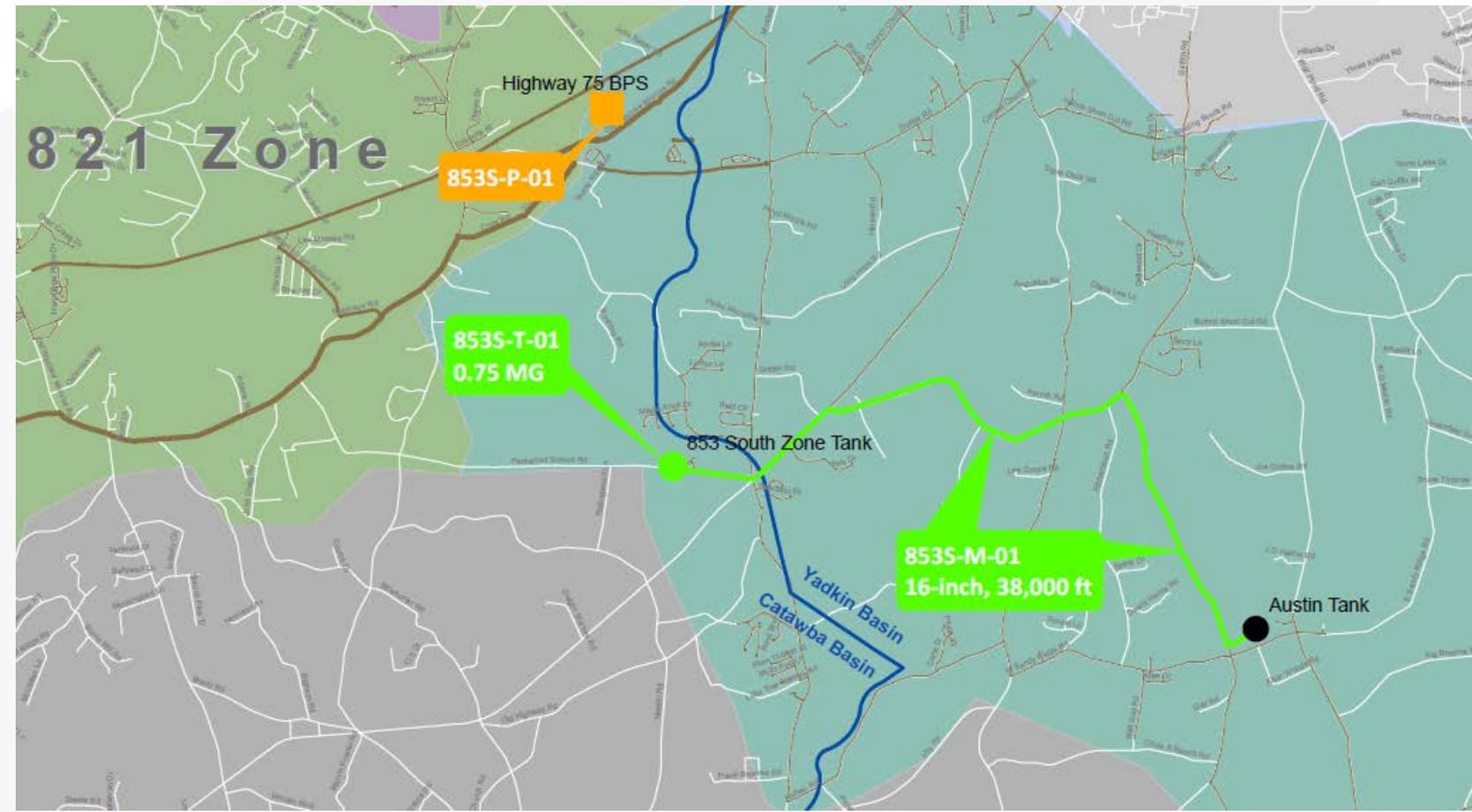
- Project includes:
 - 44,000 feet of 16-inch transmission main piping
 - Budget: \$39.9M
 - Timeframe:
 - 2022-2023, Ph II
 - 2022-2025, Ph III
 - 2022-2025, Ph IV
 - 2028-2032, Ph V & VI



Water Projects – Transmission & Distribution

853 South Zone Transmission Main

- Project includes:
 - 38,000 feet of 16-inch transmission main piping
 - Budget: \$13.5M
 - Timeframe: 2025-2028



Water Projects – Transmission & Distribution

Highway 75 BPS Improvements

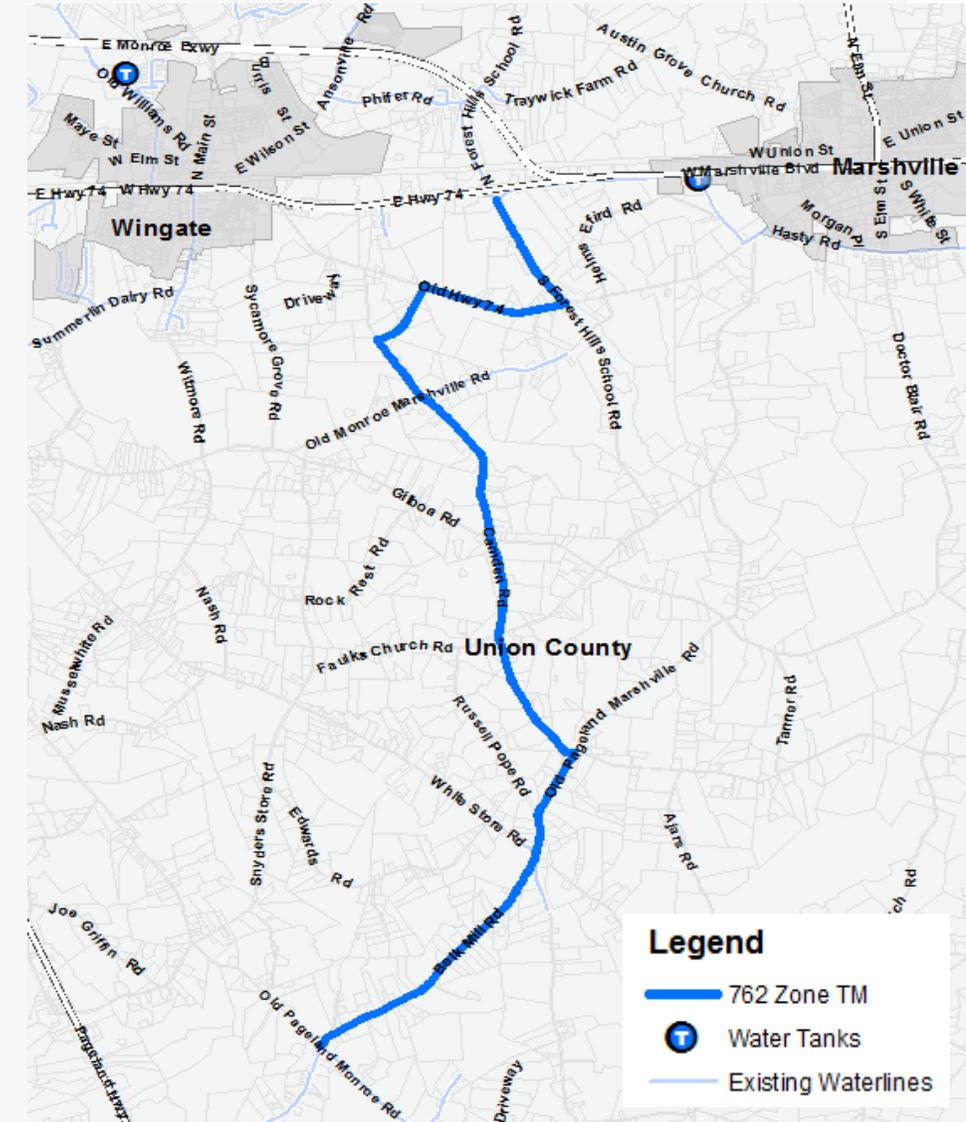
- Project includes:
 - Increasing pumping capacity to approximately 2 MGD to meet projected system demands
 - Budget: \$1.3M
 - Timeframe: 2022-2025



Water Projects – Transmission & Distribution

762 Zone 12-Inch Transmission Main

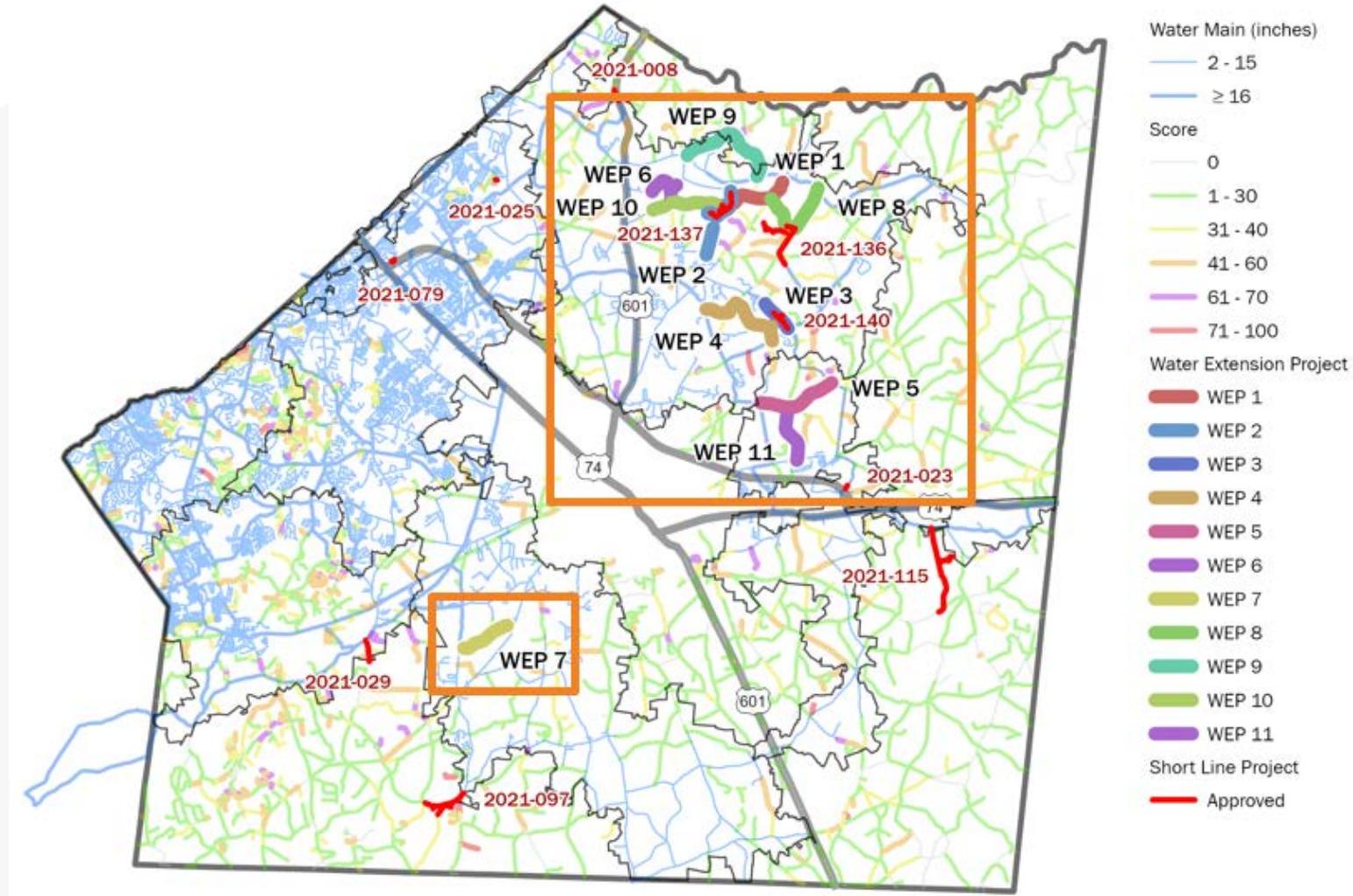
- Project includes:
 - Design, permitting and construction of approximately 47,000 feet of 12-inch waterline from US 74 to Old Pageland Monroe Road
 - Budget: \$12.0M
 - Timeframe: 2023-2027



Water Projects – Transmission & Distribution

Water Transmission Main Extensions

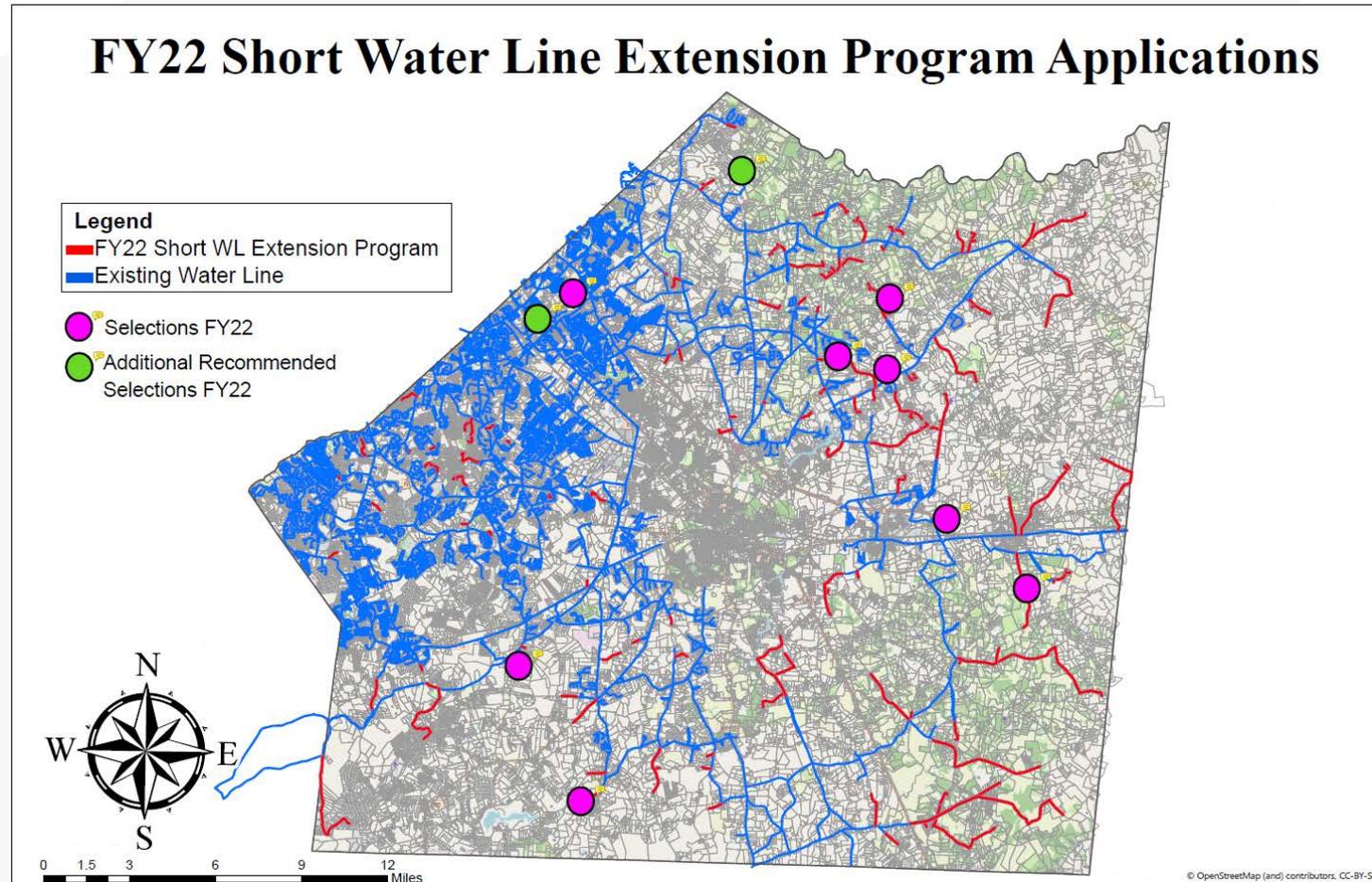
- Projects to be defined based on ability to address water quality issues, current/projected population, and known interest in connecting to public water supply (short water line extension program applicants)
- Budget: \$5.0M/year



Water Projects – Transmission & Distribution

Short Water Line Extension Program

- Open application for County funded extension of the public water system to serve existing residents
- Applications are ranked based on Board approved criteria
- No Backlog
- Budget: \$5.0M/year



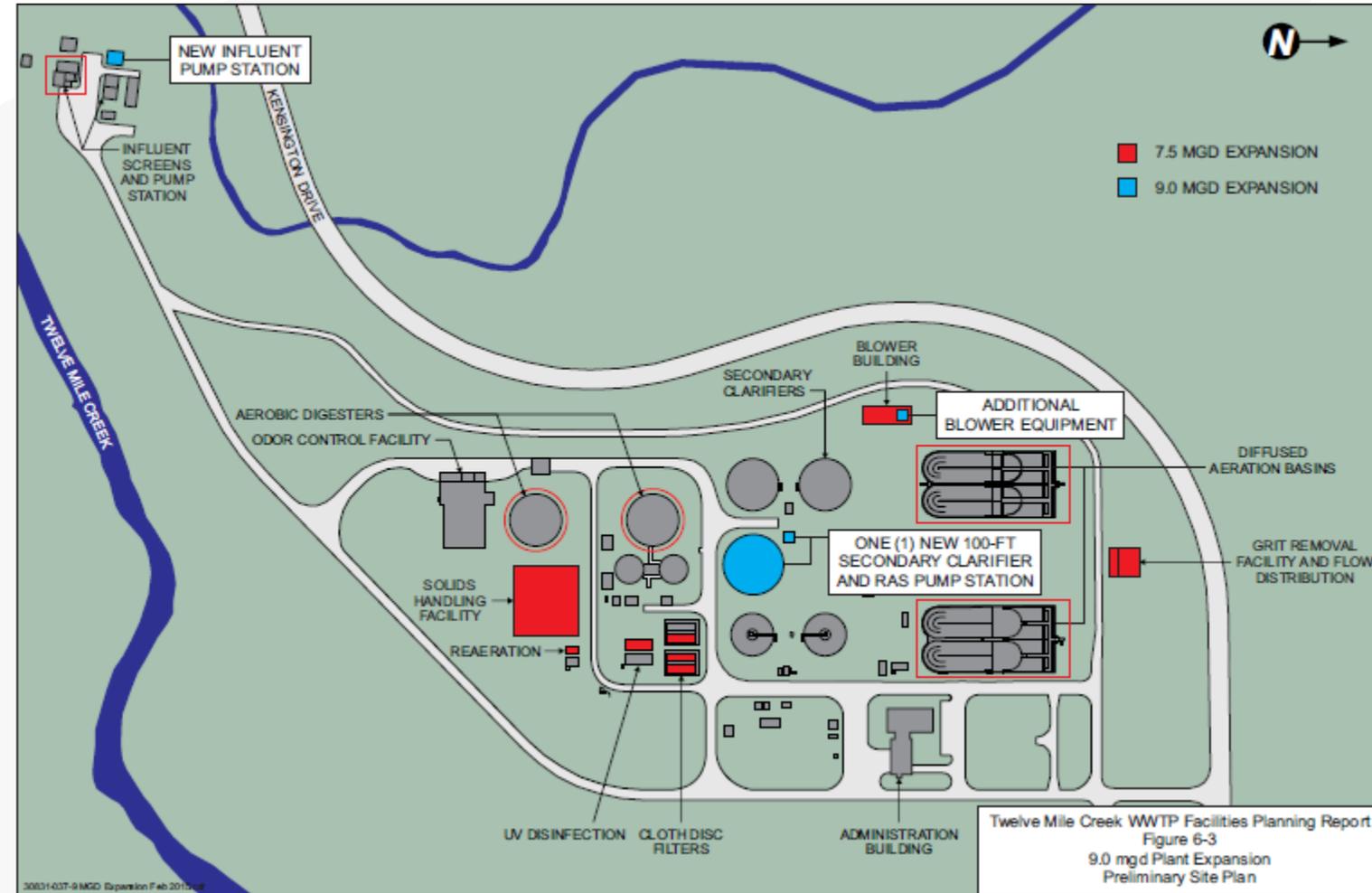
Wastewater Projects – Capacity

- Treatment
 - 12-Mile Creek WRF 9.0 MGD Expansion
 - 12-Mile Creek WRF 12.0 MGD Expansion
 - Crooked Creek WRF Diversion Pumping Improvements
 - New Crooked Creek Basin WRF (Site B)

Wastewater Projects – Capacity

12-Mile Creek WRF 9.0 MGD Expansion

- Project includes:
 - Influent pump station
 - Blower Equipment
 - Clarifier and RAS Pump Station
 - Related site, mechanical, electrical, and controls improvements
- Budget: \$30.5M
- Timeframe: 2022-2025

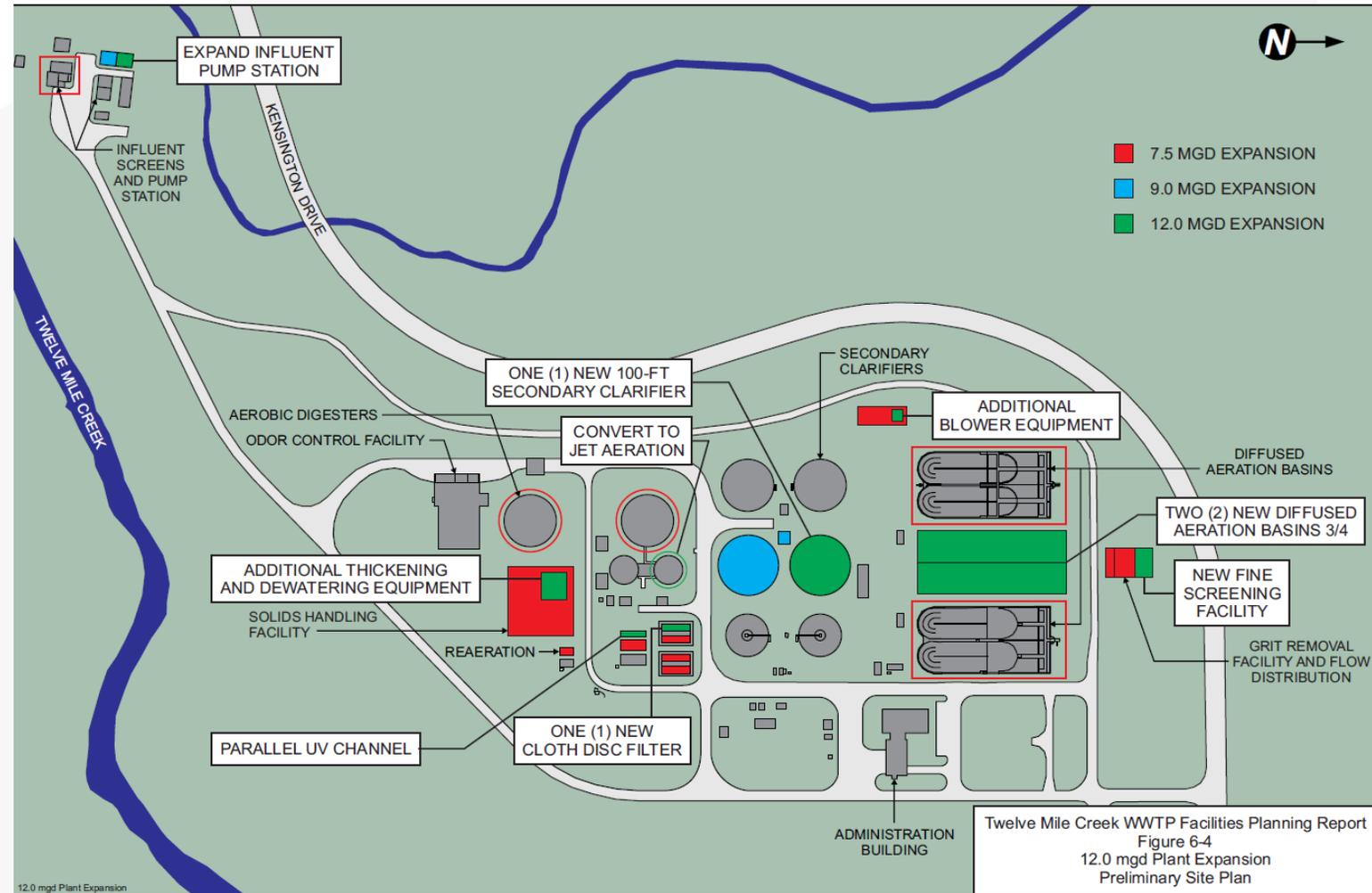


Wastewater Projects – Capacity

12-Mile Creek WRF 12.0 MGD Expansion

- Project includes:

- Influent pump station
- Fine Screening
- Aeration Basins
- Blower Equipment
- Solids handling
- Filtration and UV disinfection equipment
- Related site, mechanical, electrical, and controls improvements
- Budget: \$54.9M
- Timeframe: 2025-2029

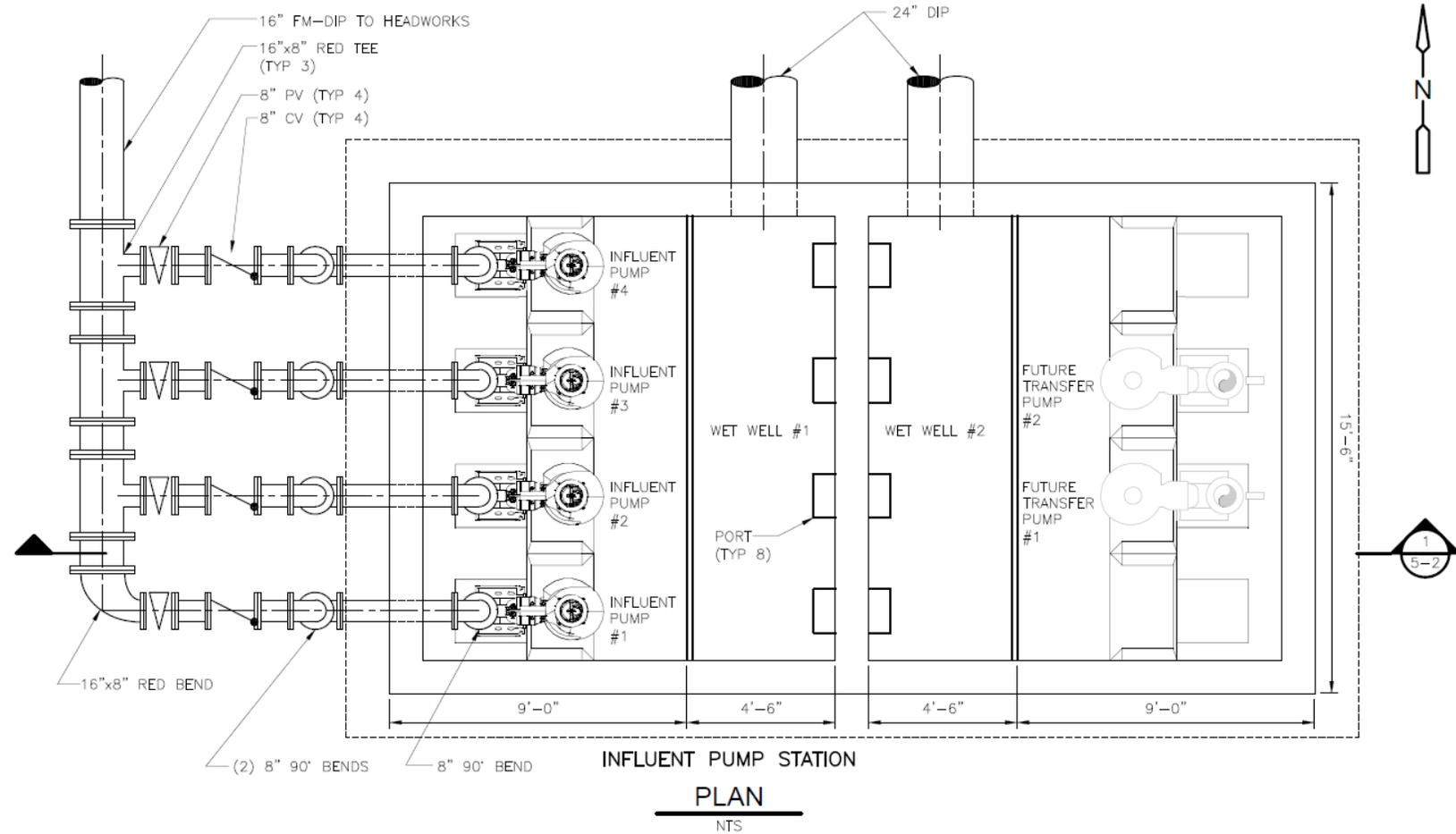


Wastewater Projects – Capacity

Crooked Creek Diversion Pumping Improvements

- Project includes:

- Diversion pumps
- Related site, mechanical, electrical, and controls improvements
- Budget: \$2.8M
- Timeframe: 2026-2028



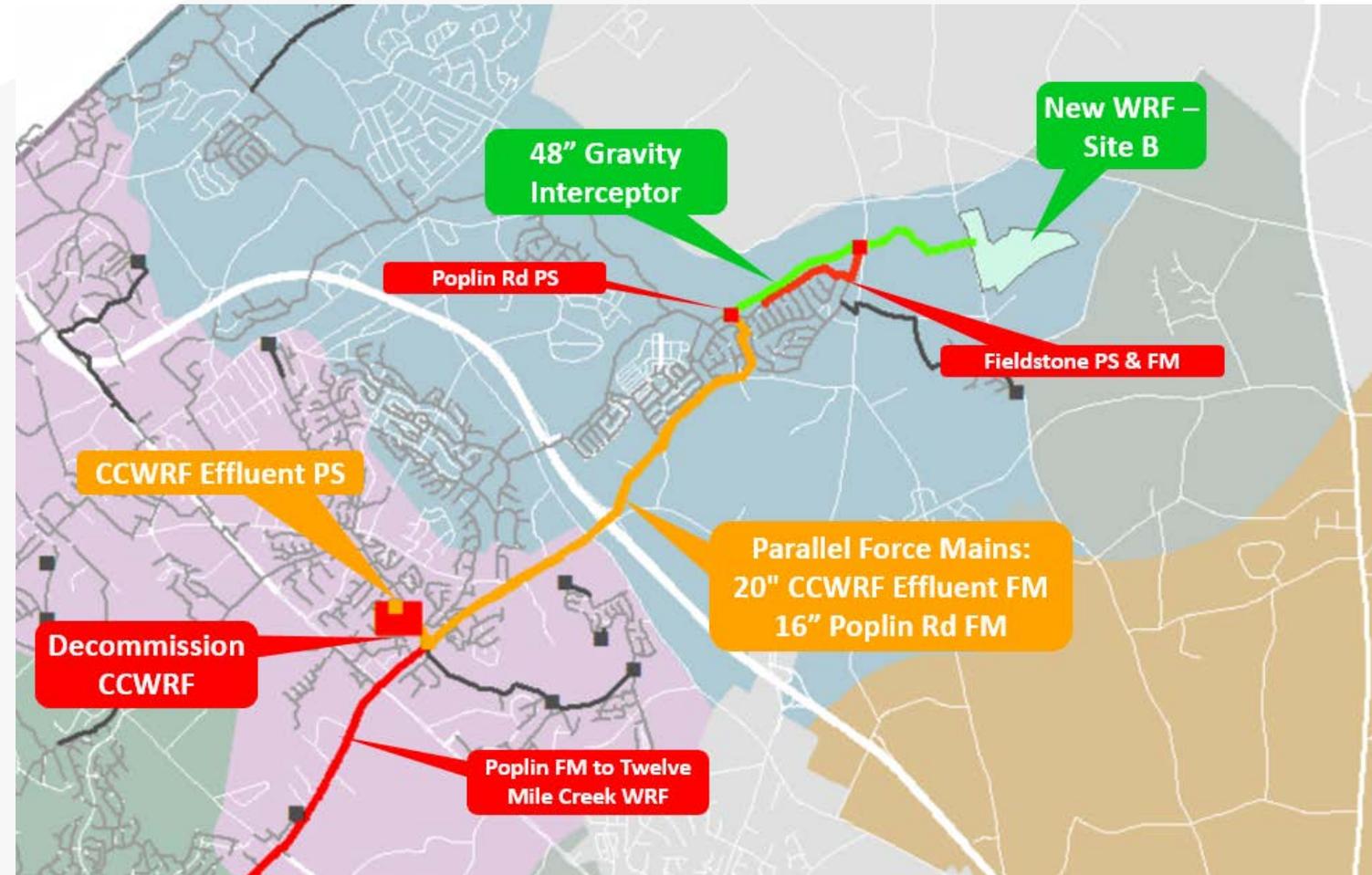
Wastewater Projects – Capacity

New Crooked Creek Basin WRF

- Project includes:

- 6 MGD WRF
- 48-inch Interceptor
- Decommissioning of Poplin Road PS, Fieldstone PS, and Crooked Creek WRF
- Conversion of Crooked Creek WRF to a transfer pump station
- Related site, mechanical, electrical, and controls improvements
- Budget: \$276.6M*
- Timeframe: 2022-2028*

*Based on Black & Veatch Presentation, TBD based on timing of decision and scope of project



Wastewater Projects – Collections & Conveyance

- Collections
 - Crooked Creek Service Area Inflow and Infiltration Abatement
 - 12-Mile Creek Service Area Inflow and Infiltration Abatement
- Conveyance
 - Crooked Creek Interceptor Improvements Phases IV and V
 - Forest Park Force Pump Station and Forcemain Improvements

Wastewater Projects – Collections & Conveyance

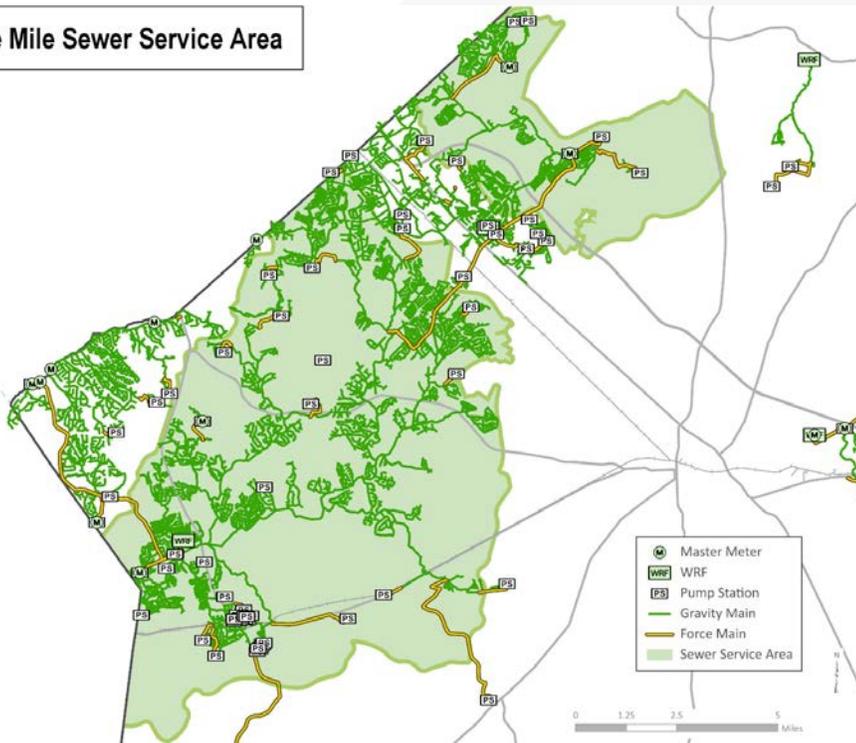
Crooked Creek and 12-Mile Creek I&I Abatement

- Comprehensive approach by sewer basin
 - Monitor, Inspect, Repair and repeat.....
 - Investment of \$10.4M for FY23-FY32

12-Mile Creek

- 408.4 miles of gravity piping
- 10,780 manholes
- 44.2 miles of pressure piping

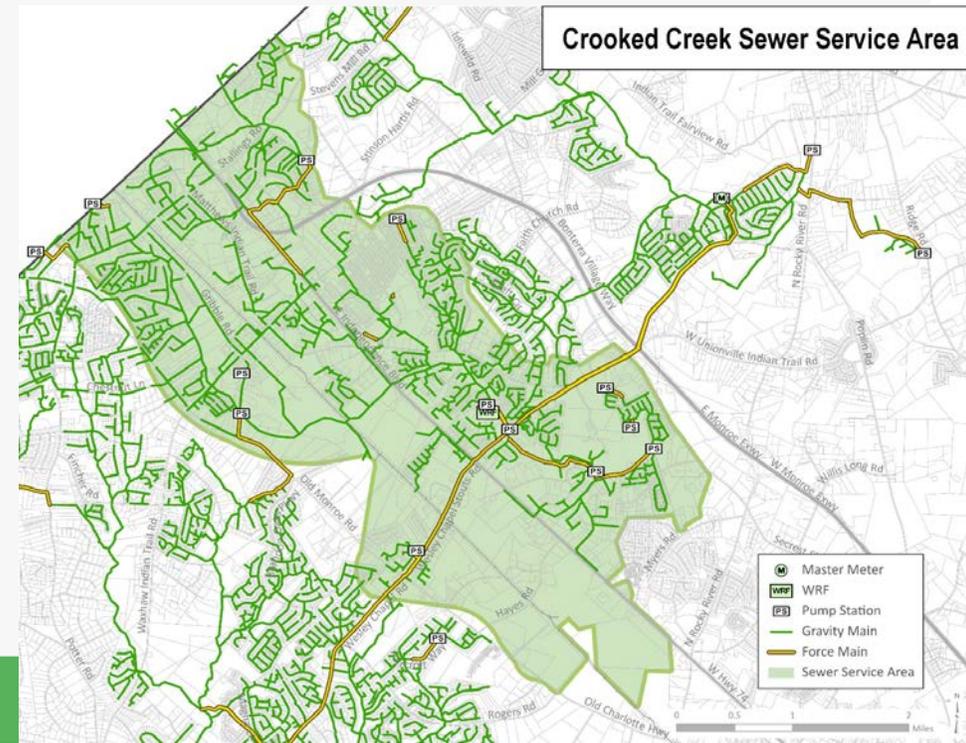
Twelve Mile Sewer Service Area



Crooked Creek

- 88.8 miles of gravity piping
- 1,883 manholes
- 5.2 miles of pressure piping

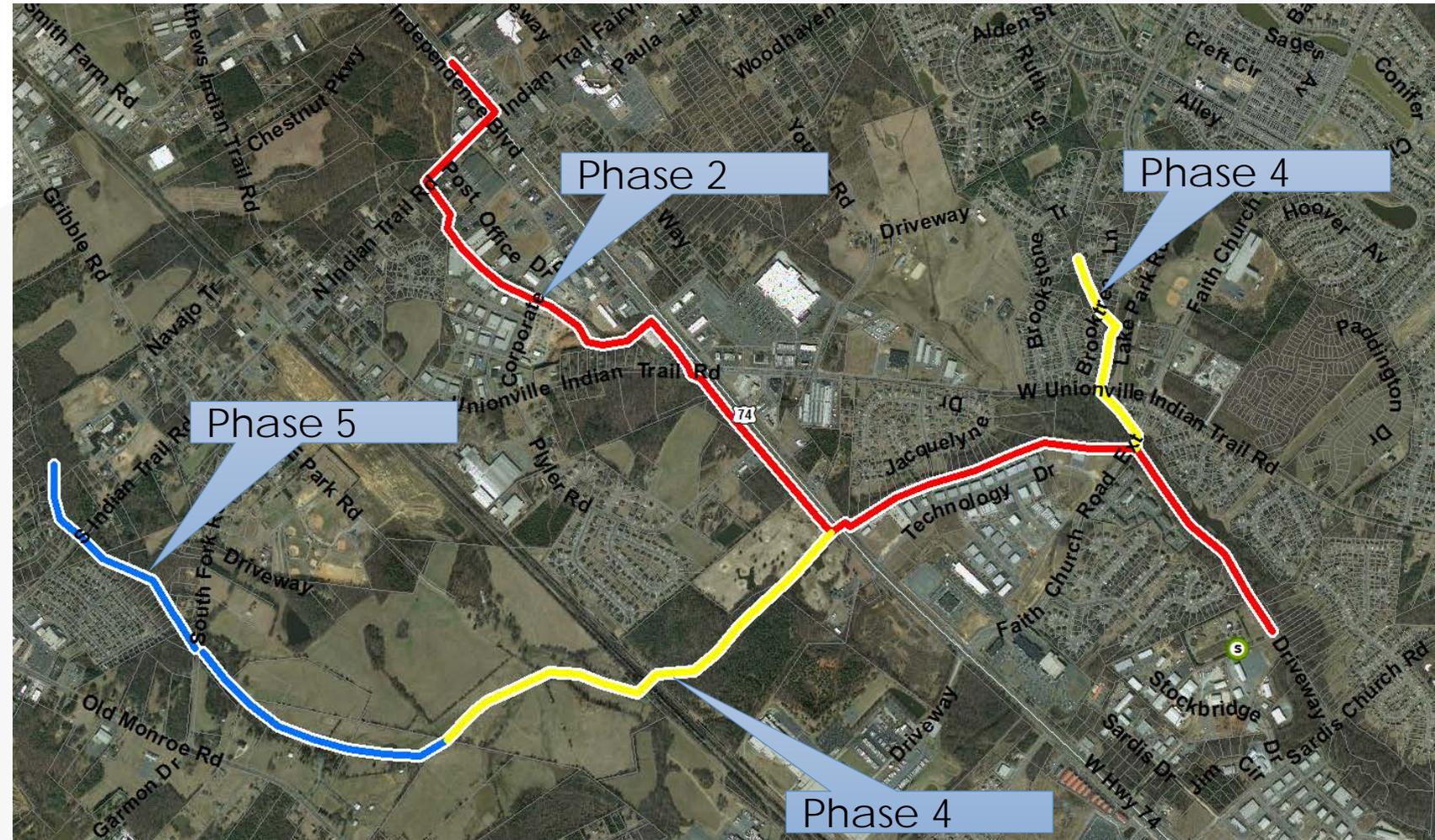
Crooked Creek Sewer Service Area



Wastewater Projects – Collections & Conveyance

Crooked Creek Interceptor Improvements Phases IV-V

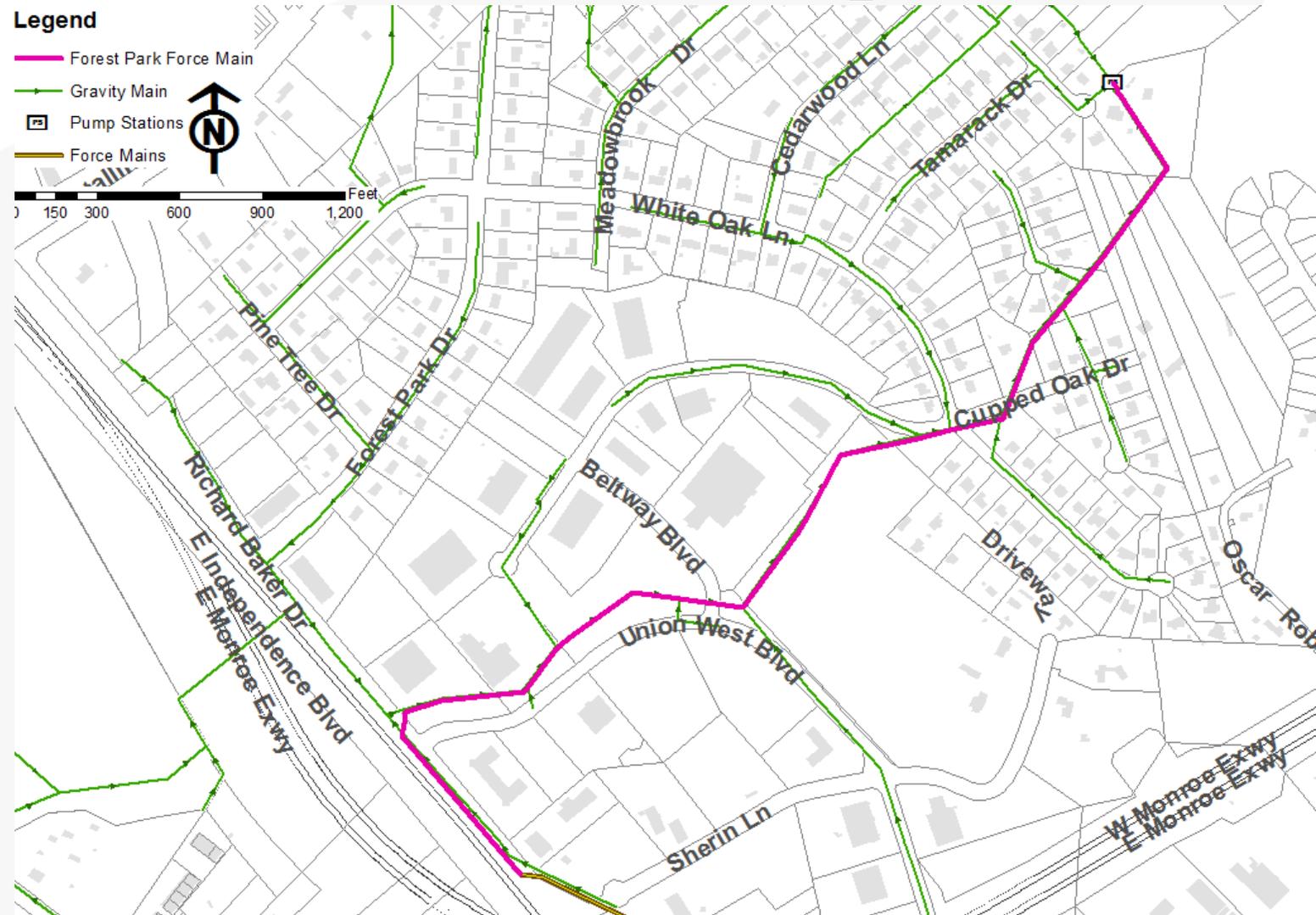
- Project Includes:
 - Improvements include approximately 12,800 feet of 12 to 21-inch gravity sewer replacement (Ph. 4 & 5)
 - Budget: \$16.0M
 - Timeframe: 2023-2027



Wastewater Projects – Collections & Conveyance

Forest Park Pump Station and Forcemain Improvements

- Project Includes:
 - Improvements include upgrading the Forest Park Pump Station and upsizing ~4,900 feet of forcemain piping
- Budget: \$5.2M
- Timeframe: 2022-2025



Rehab and Replacement Allocations

- Why do we do it?
 - Assess, plan, and implement to achieve the greatest level of service and efficiency for the lowest life cycle cost.
 - If assets are not maintained, operational costs increase exponentially; level of service degrades; and overall cost of service increases over time.
 - Once operational costs become unsustainable, the utility must invest significant capital dollars to overcome the deficiencies in the system creating a spike in rates with cascade effects on ability to grow and financial stability.
- Programmatic Approach
 - Water Distribution
 - Water Tanks
 - Wastewater Collections
 - Pump Stations
 - WRF's

Rehab and Replacement Allocations – Water Distribution

- Annual program geared toward asset management of existing water infrastructure
- Investment of \$27.9M for FY23-FY32



Rehab and Replacement Allocations – Water Tanks

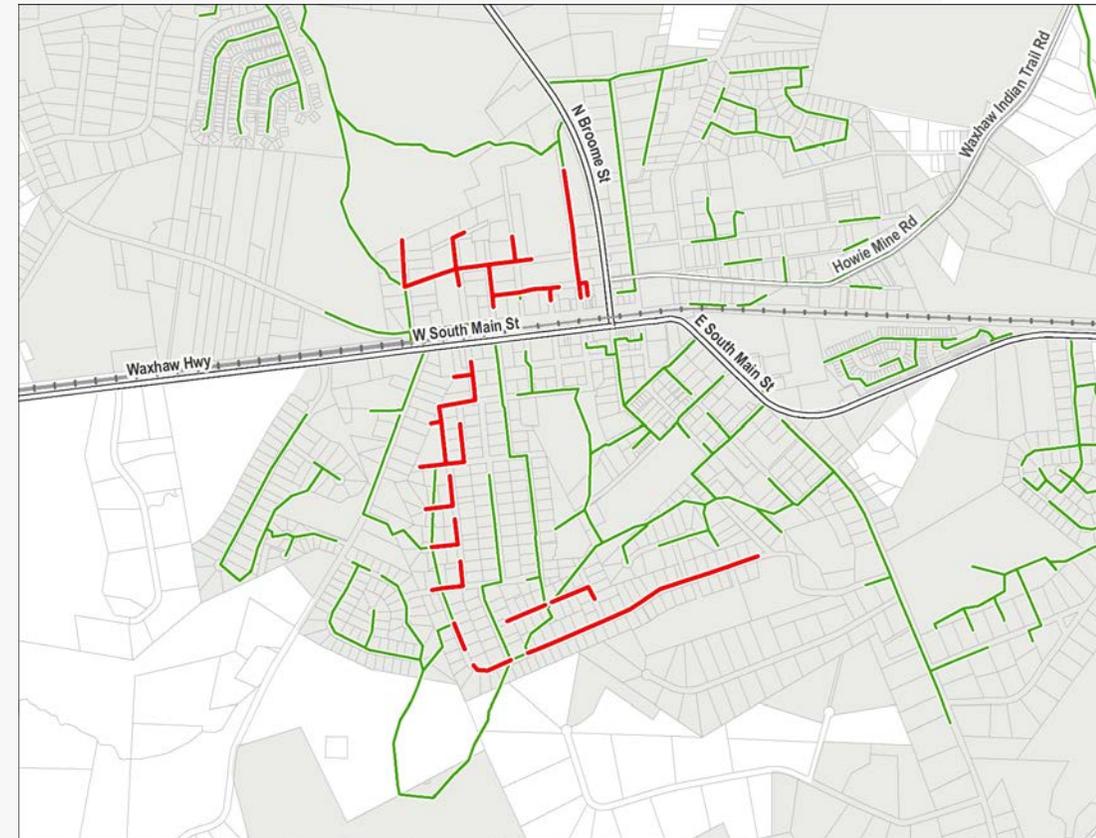
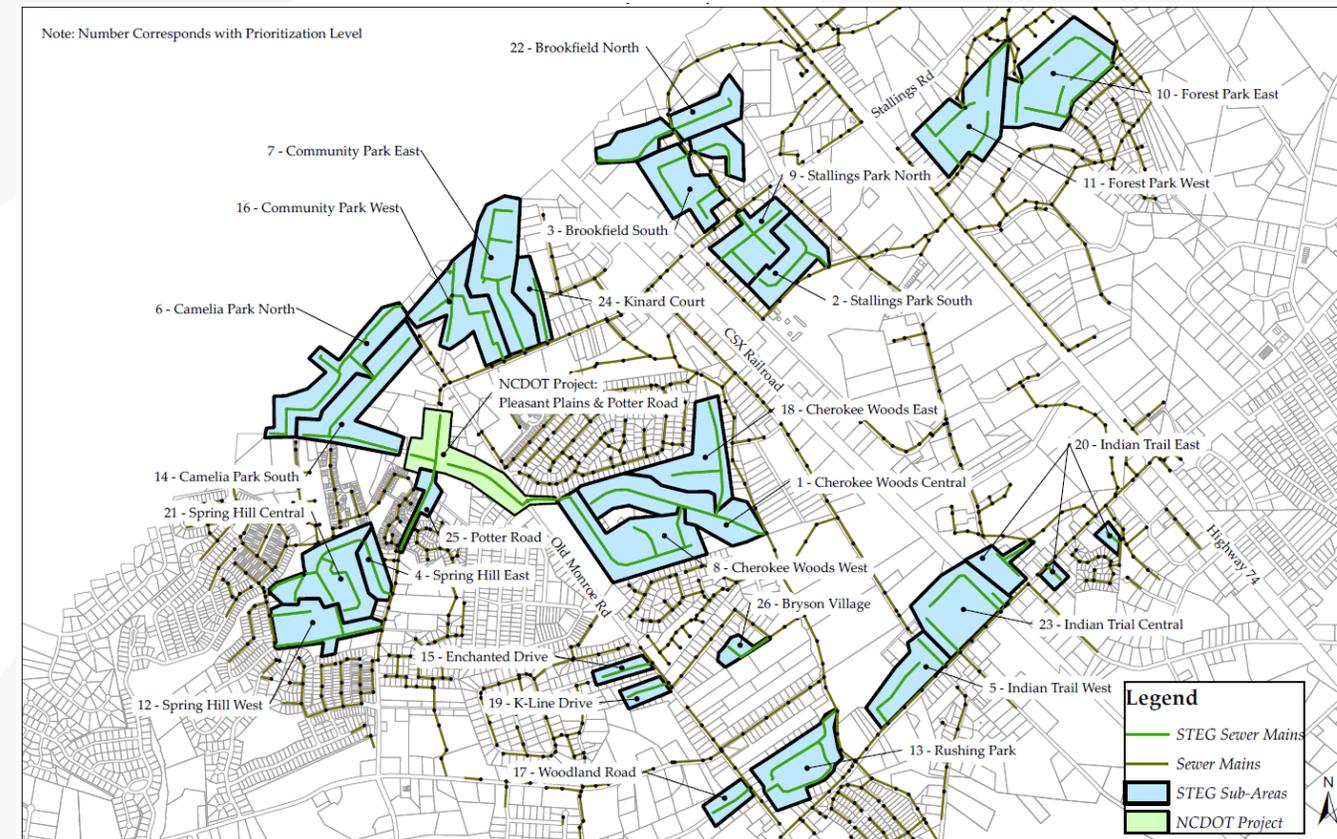
- Annual program geared toward asset management of existing elevated storage facilities
- Investment of \$1.7M for FY23-FY33



Rehab and Replacement Allocations

Wastewater Collections

- Annual program geared toward asset management of existing wastewater infrastructure
- Investment of \$37.2M for FY23-FY32



Rehab and Replacement Allocations – Pump Stations

- Annual program geared toward asset management of existing wastewater pump stations
- Investment of \$9.0M for FY23-FY32



Rehab and Replacement Allocations – WRF's

- Annual program geared toward asset management of existing Water Reclamation Facilities
- Investment of \$18.3M for FY23-FY32



Facilities Projects

- Operations Center Expansion

Facilities Projects

Operations Center Expansion

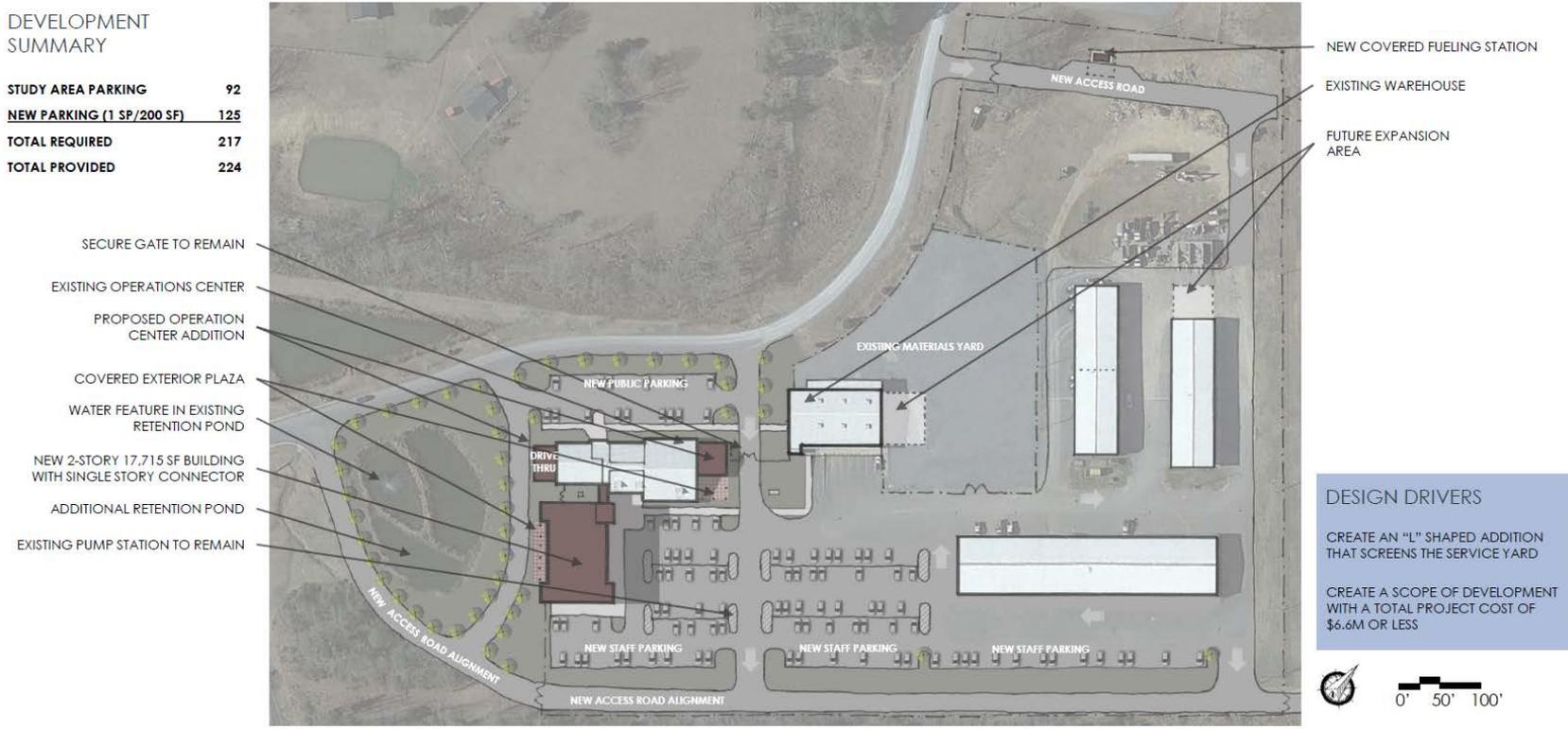
- Project includes:
 - Office, warehouse, and storage space for current and future needs
 - Relocates all UCW Government Center staff to the Operations Center
- Budget: \$11.6M
- Timeframe: TBD

PROPOSED OPS CENTER MASTER PLAN



DEVELOPMENT SUMMARY

STUDY AREA PARKING	92
NEW PARKING (1 SP/200 SF)	125
TOTAL REQUIRED	217
TOTAL PROVIDED	224



Possibilities – The Bookends



Minimum investment to maintain existing infrastructure and meet current commitments

All recommendations from the masterplan

Questions?



UNIONCOUNTY
north carolina