

Downtown Water & Wastewater System Improvements Project

Phase I – Buffalo St.



Phase II – E. Market St.



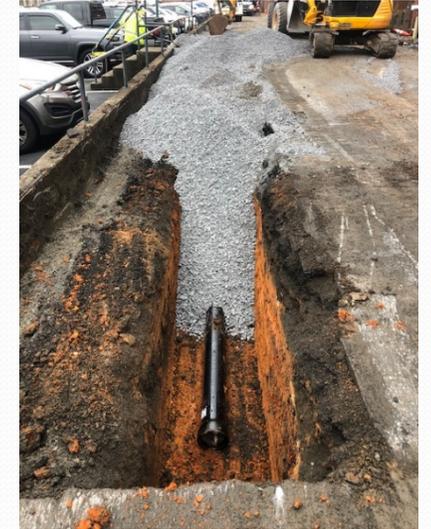
Water and Sewer Downtown Infrastructure

- Most water and sewer lines are approximately 100 years old in downtown Johnson City.
- Important for a redeveloping area that we provide reliable service for the next 100 years.
- Increased streetscape replacement and beautification make utility work necessary to avoid premature failure.
- Increase in the number of downtown festivals requires project construction to occur during low utilization periods to avoid impacting scheduled events.
- Increased downtown residency reduces the ability to work at night.



Water and Sewer Downtown Infrastructure

- Other water & sewer utility reinvestment locations in downtown Johnson City area:
 - S. Roan St.
 - Cherry St.
 - Upper Brush Creek (present location of Founders Park)
 - Proposed replacement project for Walnut St. Corridor



Challenge is maintaining uninterrupted service while performing the work.



Existing Buffalo St. Sewerline

- The existing sewer line under Buffalo St. was installed around 1970 using both cast iron and concrete as the pipe materials.
- The existing line ranges in pipe size from 18” diameter near the Cherry St. intersection to 30” diameter near the S. Roan St. Intersection.
- The existing structural condition of the pipe under Buffalo St. is good.
- There is groundwater that is coming into several of the pipe joints for the sewer line under Buffalo St.
- Groundwater and rainwater making it into the sanitary sewer system is called infiltration & inflow (I/I).



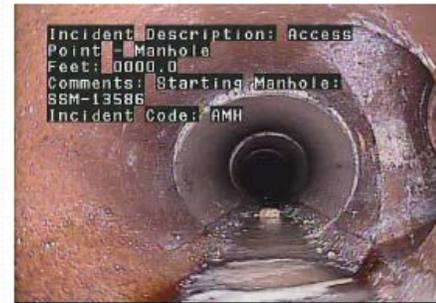
IG - Infiltration - Gusher @ 37.3 ft.



IG - Infiltration - Gusher @ 69.9 ft.

Existing E. Market St. Water and Sewerlines

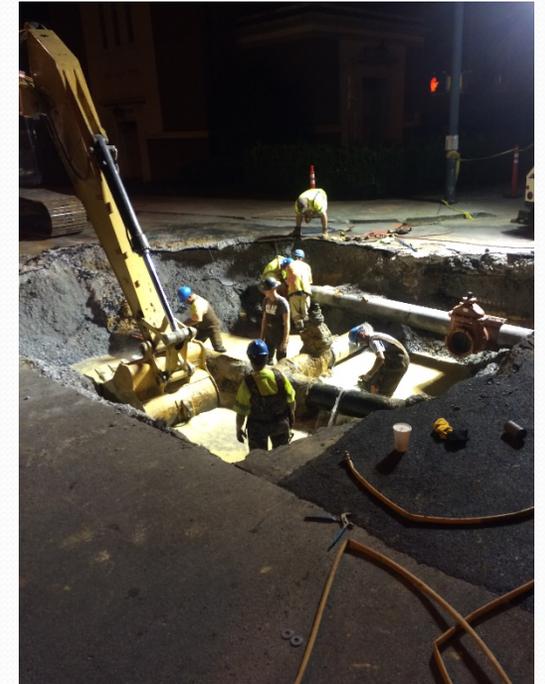
- The existing 8" diameter sewerline under E. Market St. was installed around 1900 using clay as the pipe material.
- The existing sewerline needs to be rehabbed in order for the line to provide reliable service for the next 100 years.
- The existing 6" diameter waterline under E. Market St. was installed around 1910 using cast iron as the pipe material.
- The existing waterline needs to be replaced in order for the line to provide increased capacity and reliable service for the next 100 years.



AMH - Access Point - Manhole @ 0.0 ft.
Starting Manhole: SSM-13586



CL - Crack Longitudinal @ 190.9 ft.



Downtown Water & Wastewater System Improvements Project

- Project involves over 2,600 ft. of sewer lining and over 550 ft. of waterline installation.
- Project includes Appalachian Regional Commission (ARC) funding.
- LDA Engineering has completed the engineering design for the project.
- City of Johnson City Project Representatives
 - Tom Witherspoon, Water & Sewer Services Director
 - Jon Lane, Assistant Director – Capital Planning
 - Kevin McMillan, Field Inspector
- Project is over \$ 1.5 million in reinvestment.

WATER & SEWER SERVICES DEPARTMENT
CAPITAL IMPROVEMENTS PLAN
APPALACHIAN REGIONAL COMMISSION GRANT
DOWNTOWN WATER & WASTEWATER SYSTEM
IMPROVEMENTS

BOARD OF COMMISSIONERS

Jenny Brock - Mayor
Joe Wise - Vice Mayor
Dr. Larry Calhoun - Commissioner
Dr. Todd Fowler - Commissioner
John Hunter - Commissioner

CITY STAFF

M. Denis Peterson - City Manager
Tom Witherspoon - Director WSS
Sunny R. Sandos - Staff Attorney

Project Cost: \$

CONTRACTOR'S
LOGO HERE

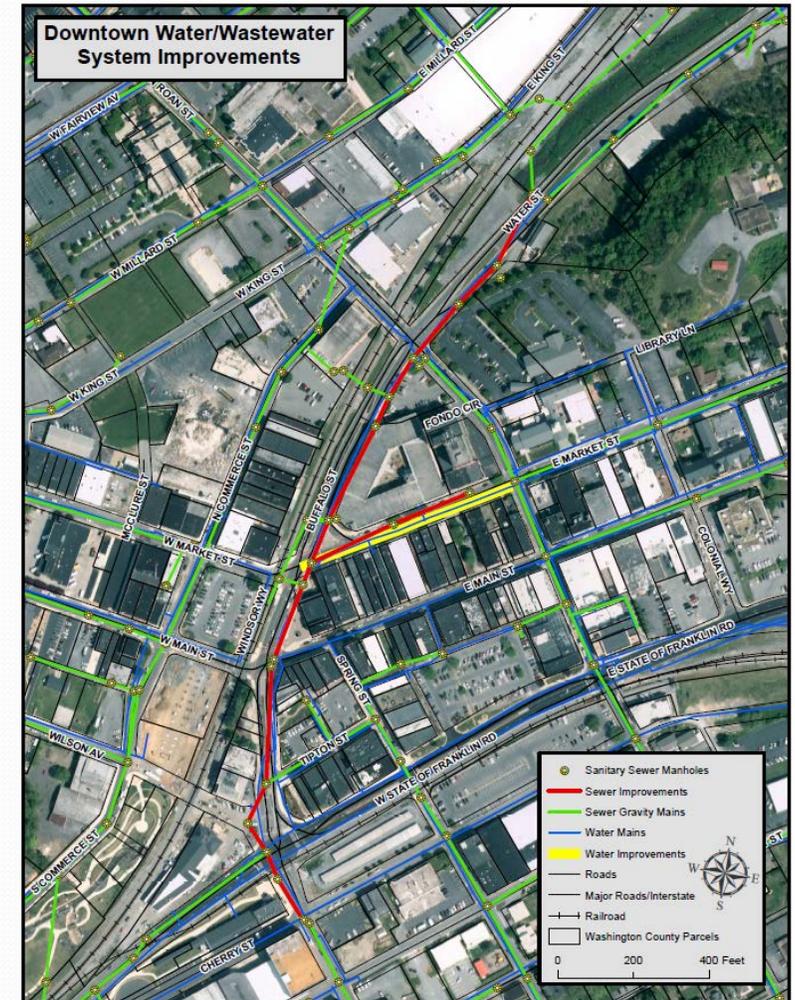
Contractor:

Engineer:
LDA Engineering
Johnson City, TN


LDA ENGINEERING

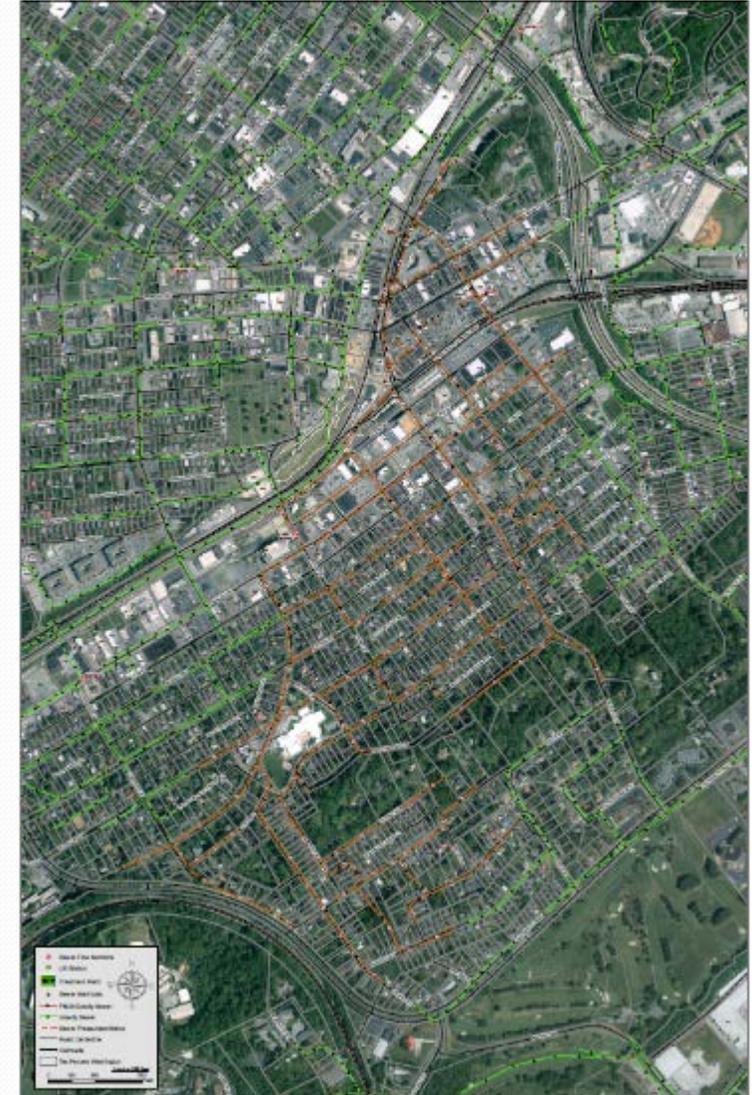
Downtown Water & Wastewater System Improvements Project

- Project is presently advertised for potential bidders.
- Contractor to begin work on October 5th 2020.
- Project is planned to be completed in 210 calendar days once contractor begins work.
- Project has 2 Main Phases:
 - Phase I:
 - Work along Buffalo St. from Cherry St. intersection to near S. Roan St. Intersection.
 - Projected to occur from October 5th to approx. December 31, 2020
 - Phase II:
 - Work on E. Market St. from Buffalo St. to S. Roan St.
 - Projected to occur from January 1st to March 31, 2021



Phase I: Sewer Rehabilitation along Buffalo St.

- Projected from October 5th to December 31, 2020 for large sanitary sewerline along Buffalo St.
- Phase I of project will involve installing pipe-within-a-pipe construction called Cured-in-Place pipe (CIPP) as well as sewer manhole lining and sewer lateral lining.
- Phase I will begin near Cherry St. intersection and project will advance past S. Roan St. intersection on Buffalo St.
- Possible Phase I downtown impacts:
 - Road ramp across Buffalo Street
 - Sewer cleanout installation
 - Parking impact along Buffalo Street
 - Temporary road closures and sidewalk closures
 - Noise during construction activities
 - Night and/or weekend work during pipe lining



Phase I: Sewer Rehabilitation along Buffalo St.

- 3 Main Pipe-Within-a-Pipe Technologies:
 - Hot Water Curing
 - Steam Curing
 - Ultraviolet Light (UV) Curing



Phase I: Sewer Rehabilitation along Buffalo St.



Phase I: Sewer Rehabilitation along Buffalo St.

Example Sewerline before Rehab



Example Sewerline after CIPP Rehab



Sewer Bypass Pumping



- In order to rehabilitate or replace an existing sewerline, the existing sewer flow going through the pipeline must be temporarily pumped around so that construction activities can occur.
- This temporary pump system diverting the existing sewer flow is called “Sewer bypass pumping.”
- Sewer bypass pumping involves the temporary installation of a set of pumps as well as hose or pipe collecting the flow from the pumps and sending the sewer flow to downstream of the construction area.

Sewer Bypass Pumping Area near Cherry St. Intersection

- Plan to temporarily install bypass pump equipment near Buffalo St. and Cherry St. intersection.
- Sewer bypass hose may be temporarily installed between Johnson's Depot (old Tupelo Honey) building and Summers Hardware building during sewer lining activities.
- Area could have temporary lane or road closure for a few nights during work.



Sewer Bypass Pumping Area near State of Franklin Road Intersection

- Plan to temporarily install bypass pump equipment near State of Franklin Road and Buffalo St. intersection.
- Sewer bypass hose will be temporarily installed down State of Franklin Road during sewer lining activities.
- State of Franklin Road traveling westbound (towards ETSU campus) near Yee Haw Brewery could have temporary lane closures for a few nights during work.



Sewer Bypass Pumping Area near Tipton St. Intersection

- Plan to temporarily install bypass pump equipment in median of Buffalo St. near Tipton St. intersection.
- Area would have concrete barricade walls up around sewer bypass pumping equipment during Phase I construction activities.
- Barricaded area in median of Tipton St. would be closed to thru traffic for up to 2 months.



Phase II: E Market St. Waterline Construction

- Projected Time Period – January to March 2021
- Waterline replacement on E Market St.
- E Market St. from Buffalo St. to S. Roan St. will be closed to thru traffic during construction for up to 3 months.
- Waterline construction will be open cut and completed in 2 phases.
- Project will involve the installation of a new mainline, new water service lines, and new fire sprinkler connections.
- Pedestrian access will be impacted at times on sidewalks along E. Market St.



Phase II: E Market St. Sewerline Construction

- Projected Time Period – January to March 2021
- Sewerline construction on E Market St. from Buffalo St. to S. Roan St. will be completed while road is closed during waterline construction.
- Sewer Phase II of project will involve installing pipe-within-a-pipe construction called Cured-in-Place pipe (CIPP) for sewerlines in E. Market St. as well as sewer manhole lining and sewer lateral lining.
- Sewer cleanouts will be also be required to be installed for all businesses that presently do not have one available for access.



- Questions?

