

Department of Public Utilities **EMERGENCY** Sanitary Sewer Replacement Project - Forest Hill Avenue

Public Meeting | June 17, 2024

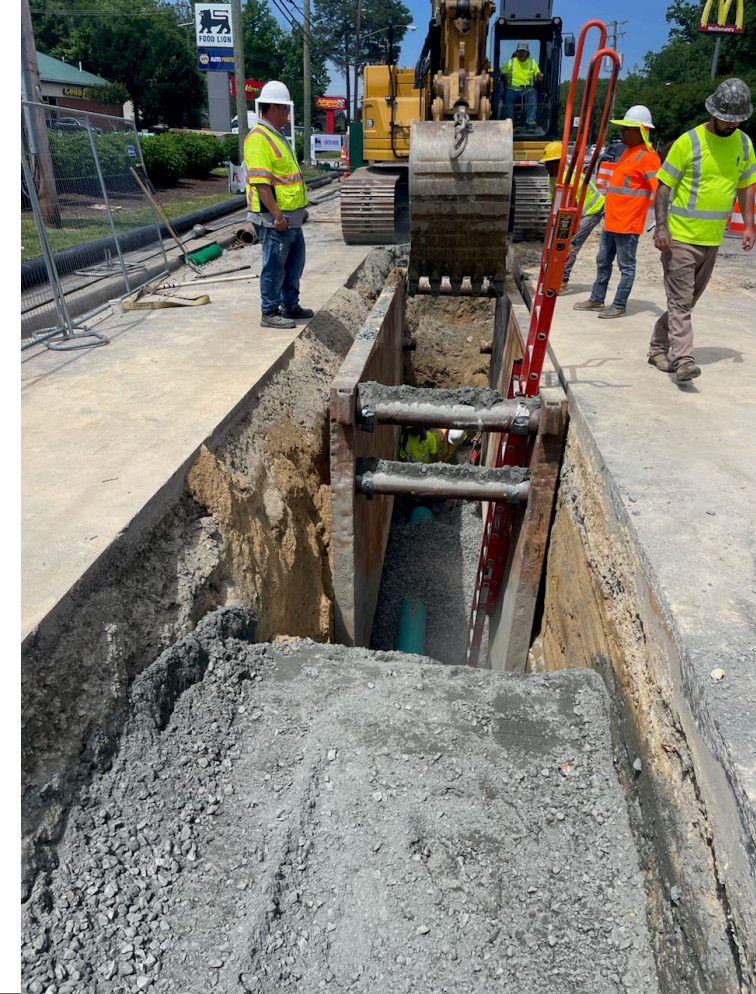


DEPARTMENT OF
**PUBLIC
UTILITIES**

Forest Hill Avenue Emergency Sewer Replacement/Rehab - Timeline

- Timeline of Events

- **April 2, 2024**
 - Water Utility notified of a possible water main break
 - Impacted lanes closed for safety. Issue identified as a sewer overflow.
- **April 4, 2024**
 - Bypass Pumping operation installed to maintain sewer service.
- **April 5, 2024**
 - Crews working until 2am to maintain bypass pump due to debris/sand clogging the lines.
 - Significant volume of sand removed from sewer system was evidence that sewer trench fill was being pulled into the sewer and undermining the roadway.
- **April 8, 2024**
 - Rehab contractor mobilized
- **April 15, 2024**
 - Long Term Bypass system installed
- **May 16, 2024**
 - Rehab contractor demobilized
- **May 17, 2024**
 - Long Term Maintenance Of Traffic (MOT) installed
- **May 20, 2024**
 - Sewer replacement work began



Forest Hill Avenue Emergency Sewer Replacement - Risks

- Risks Associated with Sewer Failure
 - Continued sewer discharges.
 - Sewer backups for all businesses fronting Forest Hill Avenue from Hathaway Road west to Chippenham Parkway
 - Collapse of two eastbound travel lanes and center turn lane from Hathaway to Joe Brooks Boulevard
 - Undermining of 16" water main resulting in failure and disruption of service to larger area

16" watermain undermined in sinkhole beneath road

Sinkhole uncovered during investigatory digs along LS 9

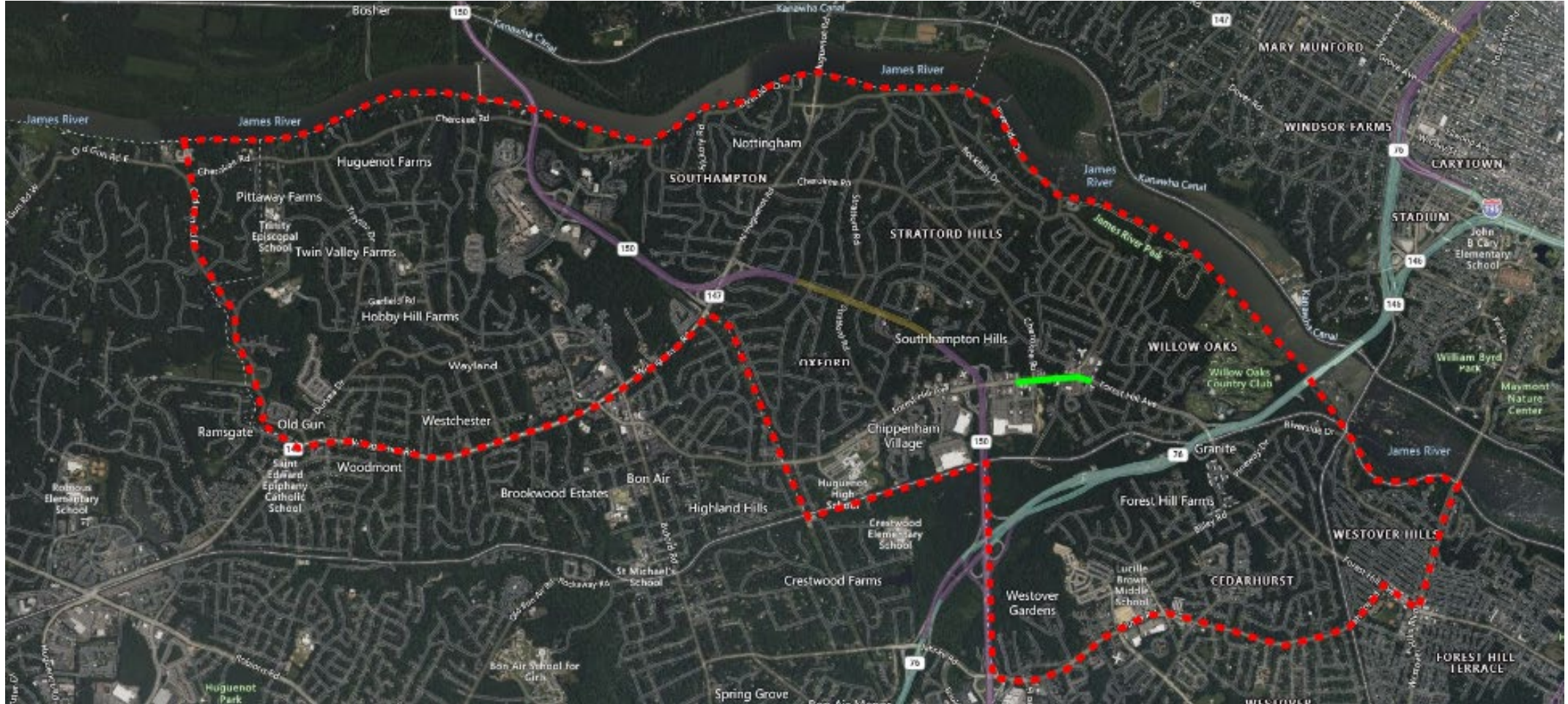


Forest Hill Avenue Emergency Sewer Replacement – Risks



Roadway collapsed under loader with bucket of stone along LS 10 and uncovered second sinkhole

Forest Hill Avenue Emergency Sewer Replacement - Risks



Area where water service will be disrupted in event 16" water main fails

Forest Hill Avenue Emergency Sewer Replacement – Strategy

- Actions taken by City
 - The City investigated sewer mains from Chippenham Parkway to Powhite Parkway.
 - Closed Circuit Television (CCTV) operations identify deteriorated sewers that can be rehabilitated prior to replacement as well as sewers that are blocked, collapsed, or deteriorated to the point that replacement is necessary
 - Traffic analysis completed to determine baseline traffic conditions and to develop a concept for the maintenance of traffic (MOT) plan for sewer replacement construction
 - Sewer Rehab Work Order issued to rehabilitate approximately 3,400 linear feet (LF) of sewer main and laterals along Forest Hill Avenue from Melbourne Drive to the Powhite Parkway
 - Project to replace approximately 1,200 linear feet (LF) of sewer began on May 20, 2024



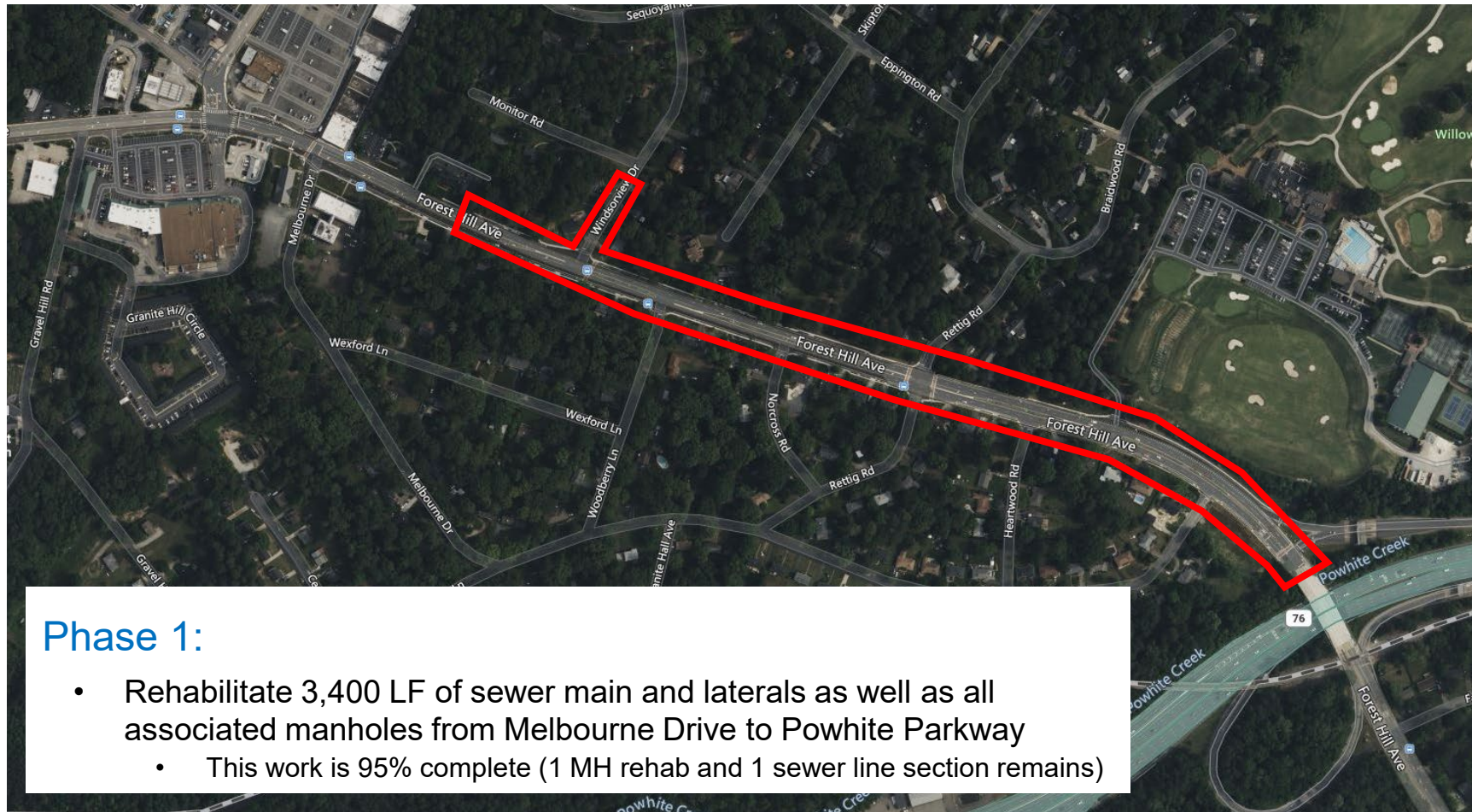
Forest Hill Avenue Sewer/Utility Scope of Work

- Primary risks of protecting the traveling public and maintaining sewer and water service to all City residents are being mitigated
- Approximately 5,500 LF of sewer main rehab and replacement was determined to be necessary along this corridor.
 - For context, over the lifetime of the sewer rehab program (since FY 2009) 366,448 LF of sewer has been rehabilitated and 30,076 LF of sewer has been repaired or replaced.
 - 3,400 LF of sewer was proactively rehabilitated saving an estimated 1-yr of open cut construction work in the public ROW.
- Current work anticipated to be complete 2nd half 2024. Future work will be required.
 - There are ongoing efforts to expedite schedule and complete other utility work within the sewer project site limits.
 - i.e. rehabilitate all sewer laterals to north side of Forest Hill Avenue expedite water main be replacement work already planned for the 6800 block of Forest Hill Avenue to take place during sewer project impacts

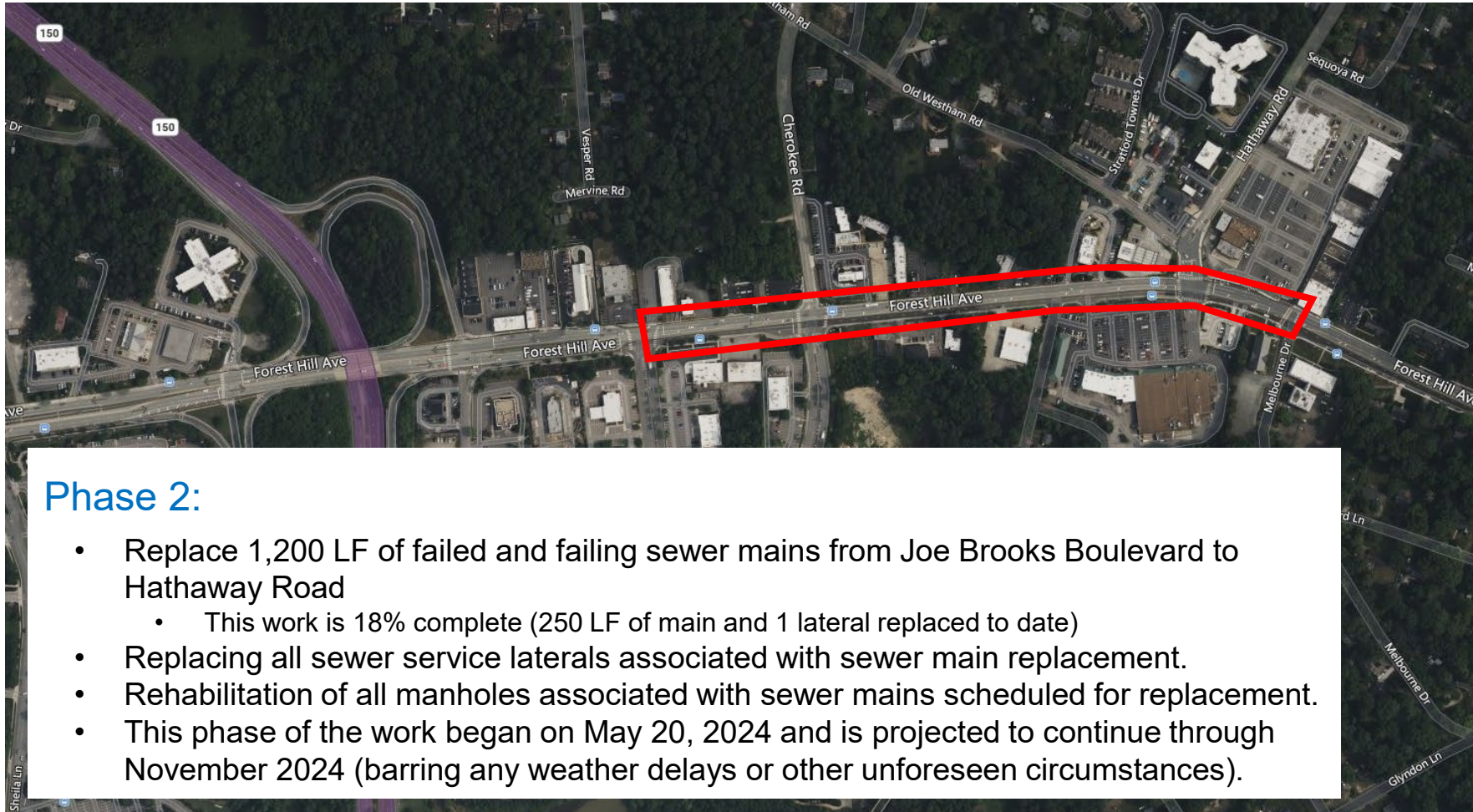
Project Sequencing

Project Phase	Status	Description
Phase 1 In Construction	95% Complete NTP: April 8, 2024	CIPP Lining of sanitary sewer from west of Windsorview Drive to Powhite Parkway.
Phase 2 In Construction	Duration: 6 months NTP: May 20, 2024	Replacement of ~1,800 LF of sewer along the eastbound lanes of the 6800 thru 7000 blocks of Forest Hill Avenue.

Forest Hill Avenue Emergency Sewer Rehabilitation (Phase 1) Limits of Construction



Forest Hill Avenue Emergency Sewer Replacement (Phase 2) Limits of Construction



Phase 2:

- Replace 1,200 LF of failed and failing sewer mains from Joe Brooks Boulevard to Hathaway Road
 - This work is 18% complete (250 LF of main and 1 lateral replaced to date)
- Replacing all sewer service laterals associated with sewer main replacement.
- Rehabilitation of all manholes associated with sewer mains scheduled for replacement.
- This phase of the work began on May 20, 2024 and is projected to continue through November 2024 (barring any weather delays or other unforeseen circumstances).

Phase 2 Sequence of Construction

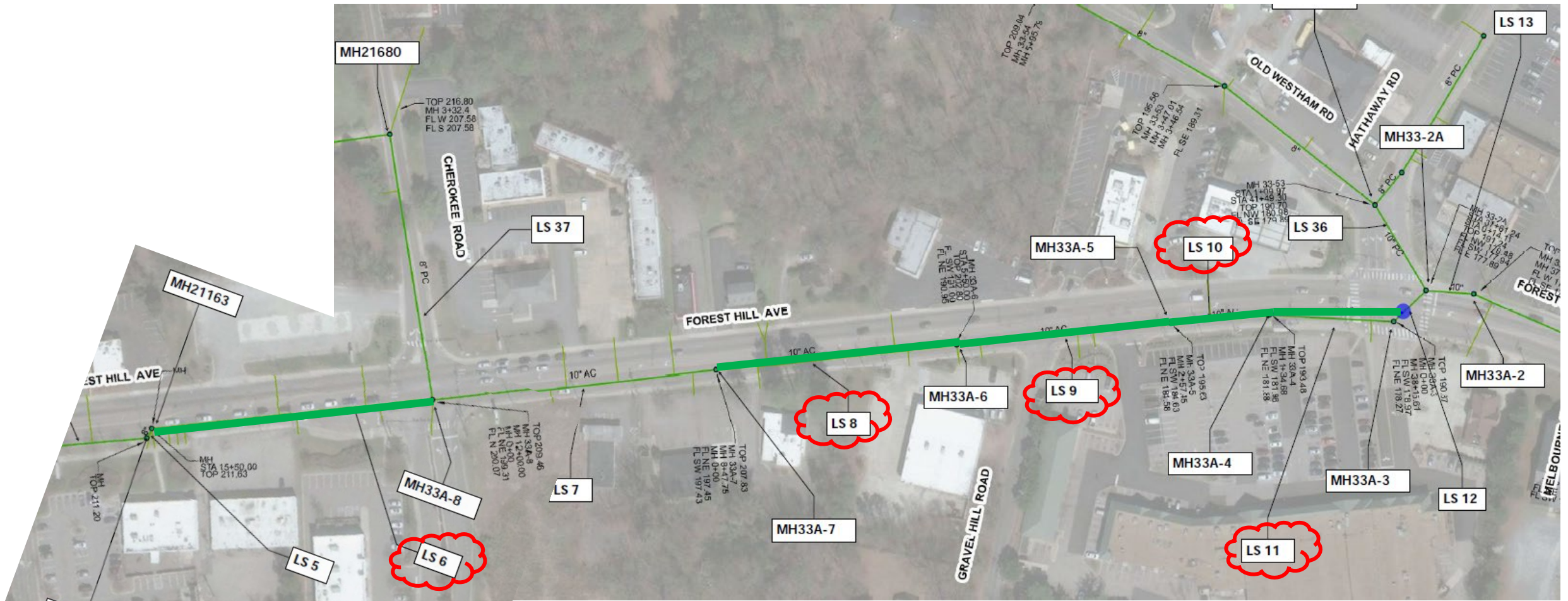
Phase 2:

- Secure travel lanes with MOT layout
- Install bypass system
- Replace sewer main for LSs 10, 9, & 8
- Adjust bypass operation for LS 6 replacement
- Replace LS 6
- Adjust bypass operation for LS 11 replacement
- Replace LS 11
- Replace all laterals associated with the sewer main after main install is completed

Benefits of this work:

* All sewer services/laterals will be evaluated for rehabilitation when uncovered in the main trench to minimize impact to public. Lateral for 6800 Forest Hill Avenue (7-Eleven) was already rehabilitated while main trench was open.

** Manholes will be rehabilitated concurrent with sewer replacement scope to eliminate the need to offset the 16" water main saving the project cost and schedule impacts as well as residents water service disruptions



Phase 2 Sewer Replacement – Project Map

Traffic Analysis and MOT Concept

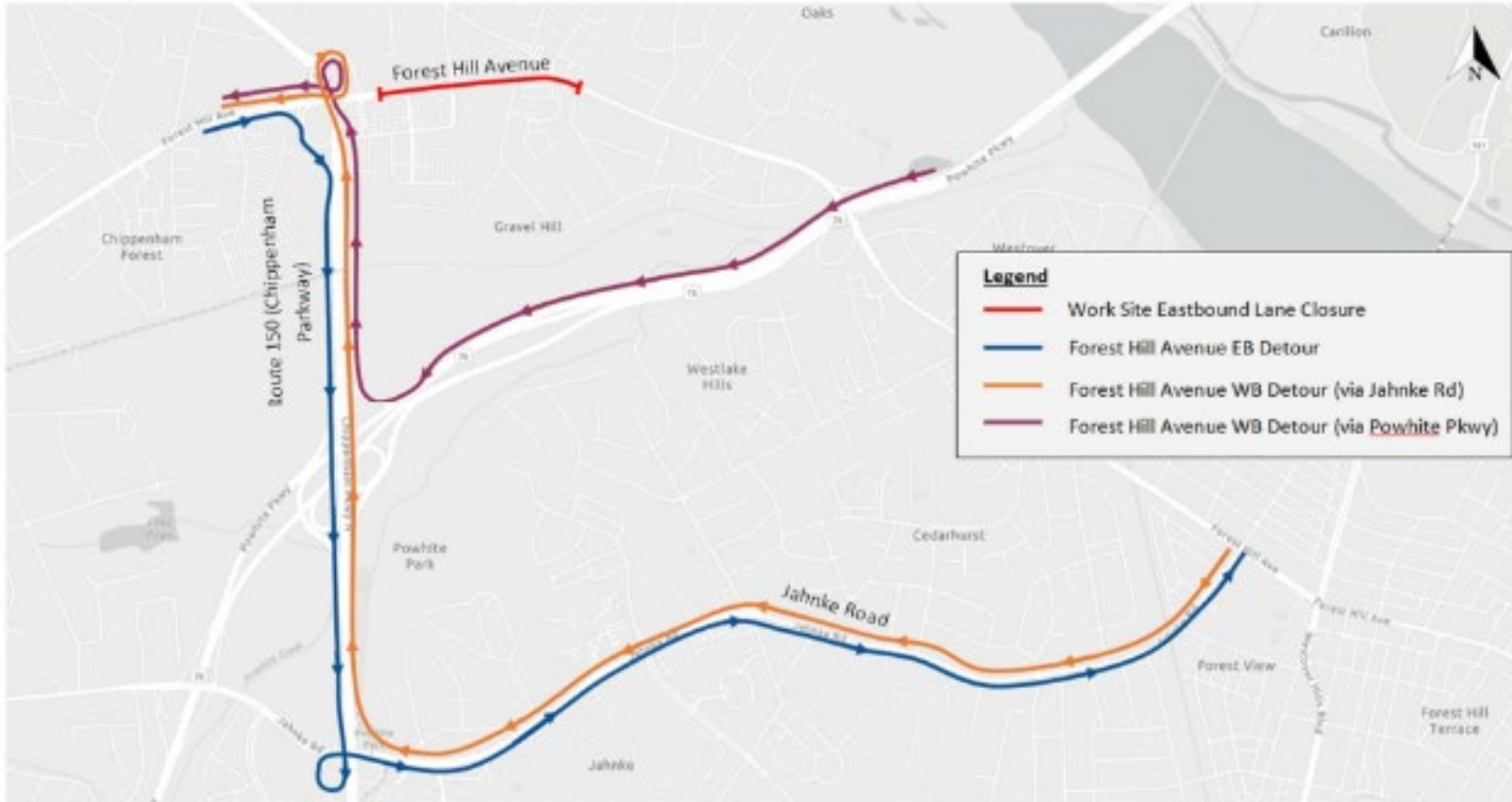


Figure 2: Proposed Detour Map

Traffic Analysis and MOT Concept



MOT – Continuous Monitoring & Improvement

- April 3, 2024 - Temporary traffic control installed for safety of travelling public
- April through mid-May – Traffic/Trip Analysis completed, and MOT Concept developed in collaboration with DPW Traffic Engineering, Right-of-Way, Chesterfield County, GRTC, RMTA, and the DPU Sewer Collections team.
- May 17, 2024 - Long term traffic control installed
- May 22, 2024 - Site walk with DPW Right of Way, Traffic Engineering, & DPU Sewer Collections Team
- May 30, 2024 – Traffic light adjusted exiting Galley shopping center/Melbourne Drive intersection in response to commuter feedback
- May 31, 2024 - Punchlist items completed

Forest Hill Avenue Project Information

Project Email Address: foresthilldpu@gmail.com

Project Website

Project Voicemail: 804-215-1268

