PINEY BRANCH TUNNEL

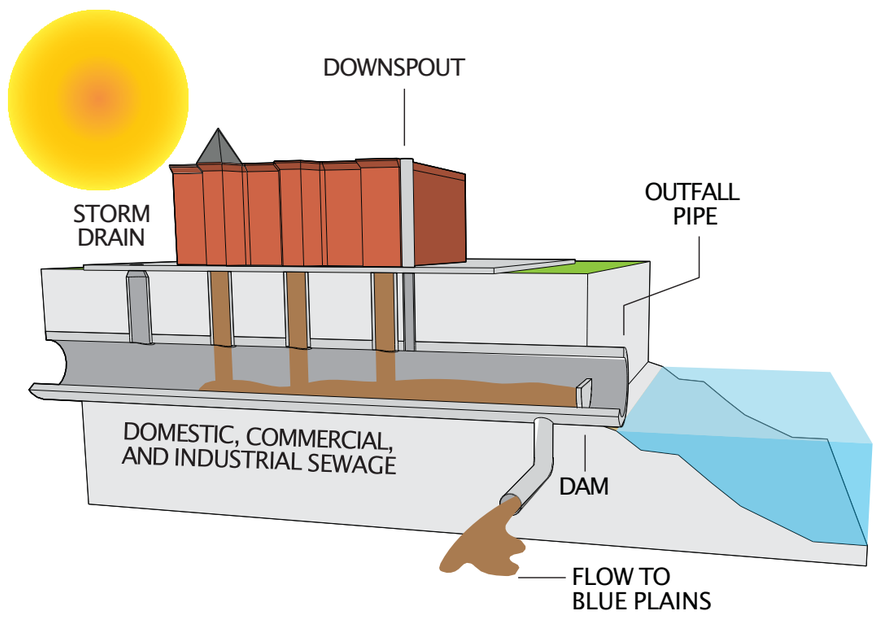
The Problem – Combined Sewage Overflows

PINEY BRANCH TUNNEL

What Is the Challenge?

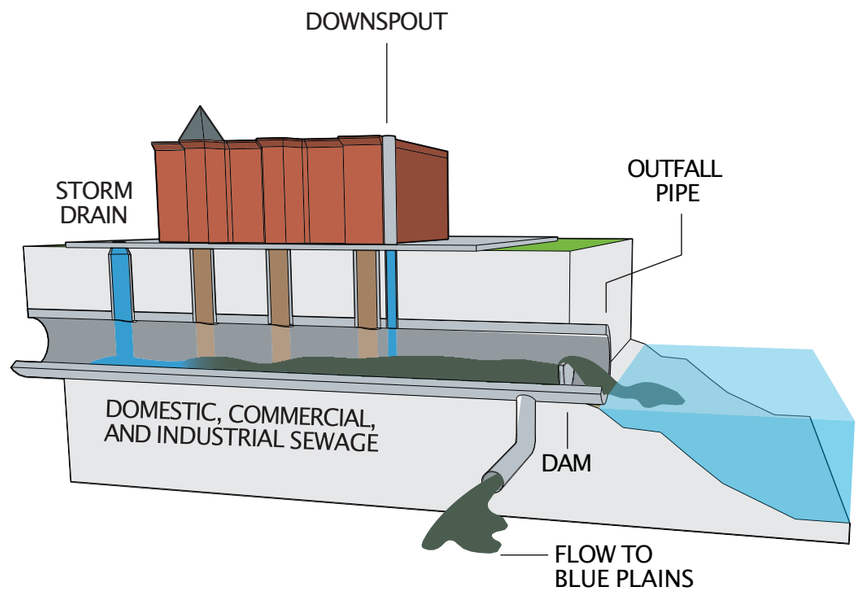
What is a Combined Sewer?

A combined sewer is a single pipe that carries both sanitary wastewater and stormwater runoff. In the District, the combined sewer system was designed and built by the U.S. Army Corps of Engineers.



DRY CONDITIONS

During dry weather, sanitary sewage is collected in the combined sewer system, diverted by regulators, and carried to the Blue Plains Advanced Wastewater Treatment Plant.



RAINY CONDITIONS

During storm events the combined system overflows and a mixture of sanitary sewage and stormwater is discharged directly into the District's receiving waterbodies (Anacostia River, Potomac River, and Rock Creek). This is called a *combined sewer overflow.*

CSO Highlights

- One third of District of Columbia is served by the combined sewer system.
- Serves a majority of federal government facilities in the District.
- Serves millions of visitors to the Nation's Capital annually.
- Prior to the Clean Rivers Project, 49 million gallons of untreated sewage and stormwater runoff (combined sewage) were discharged to the Rock Creek in an average rainfall year.

Combined sewer overflow discharge to the Piney Branch.

Piney Branch outfall CSO 049 during dry weather

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What Is the Solution?

The DC Clean Rivers Project

The Clean Rivers Project is DC Water's ongoing program to reduce combined sewer overflows (CSO's) into the District's waterways – the Anacostia and Potomac Rivers and Rock Creek. The Project is a massive infrastructure and support program designed to capture and clean wastewater during rainfalls before it ever reaches our rivers.

What Are We Building?

Tunnel System	Status	Operation Date
First St Tunnel	In operation	2016
Blue Plains Tunnel	In operation	2018
Anacostia River Tunnel	In operation	2018
Northeast Boundary Tunnel	In operation	2023
Potomac River Tunnel	Construction Started 2024	2030
Piney Branch Tunnel	Design	2029
Green Infrastructure	Design and Construction	2030

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Project Requirements

Why is the Project Required?

- To control combined sewer overflows and bring them into compliance with the District's water quality standards.
- The project is required by a consent decree signed by EPA, the Department of Justice, the District of Columbia, and DC Water.
- To provide equalization for wet weather flows to facilitate nutrient removal at the Blue Plains Advanced Wastewater Treatment Plant to meet the goals of improving the Chesapeake Bay.

Consent Decree Requirements

- Min 4.2-million-gallon storage facility to control CSO 049 to Piney Branch.
- Warning lights operating from representative CSO as follows:
  - Red during CSO event
  - Yellow for 24 hours after event
- Deadlines:
  - Place in operation: November 23, 2029

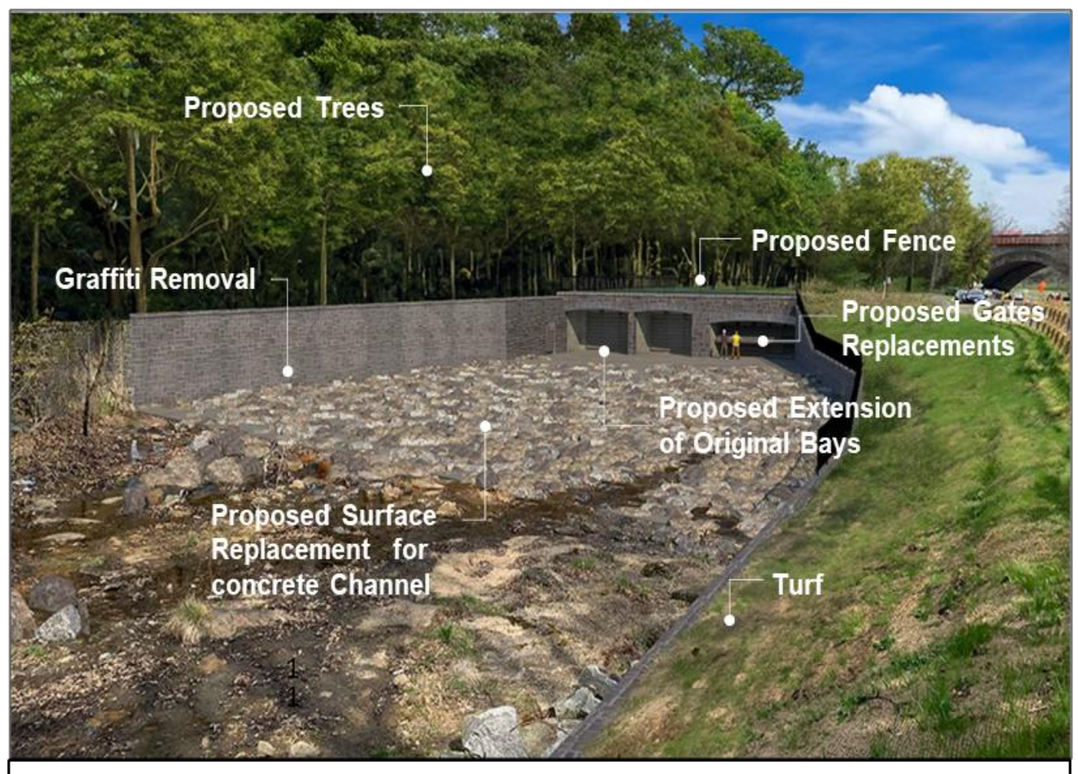
PINEY BRANCH TUNNEL

Benefits of the Piney Branch Tunnel

What are the Benefits?

- Improve water quality by greatly reducing combined sewer overflows to the Piney Branch, Rock Creek and eventually the Potomac River.
- The Piney Branch Tunnel will reduce CSOs by 96 percent in an average year of rain.
- Reduce trash, debris and improve aesthetics of the Piney Branch and Rock Creek Park.
- Reduce risks to human health.
- Improve habitat for fish, wildlife and plants throughout the river environment.

EXISTING CONDITION



PROPOSED CONDITION

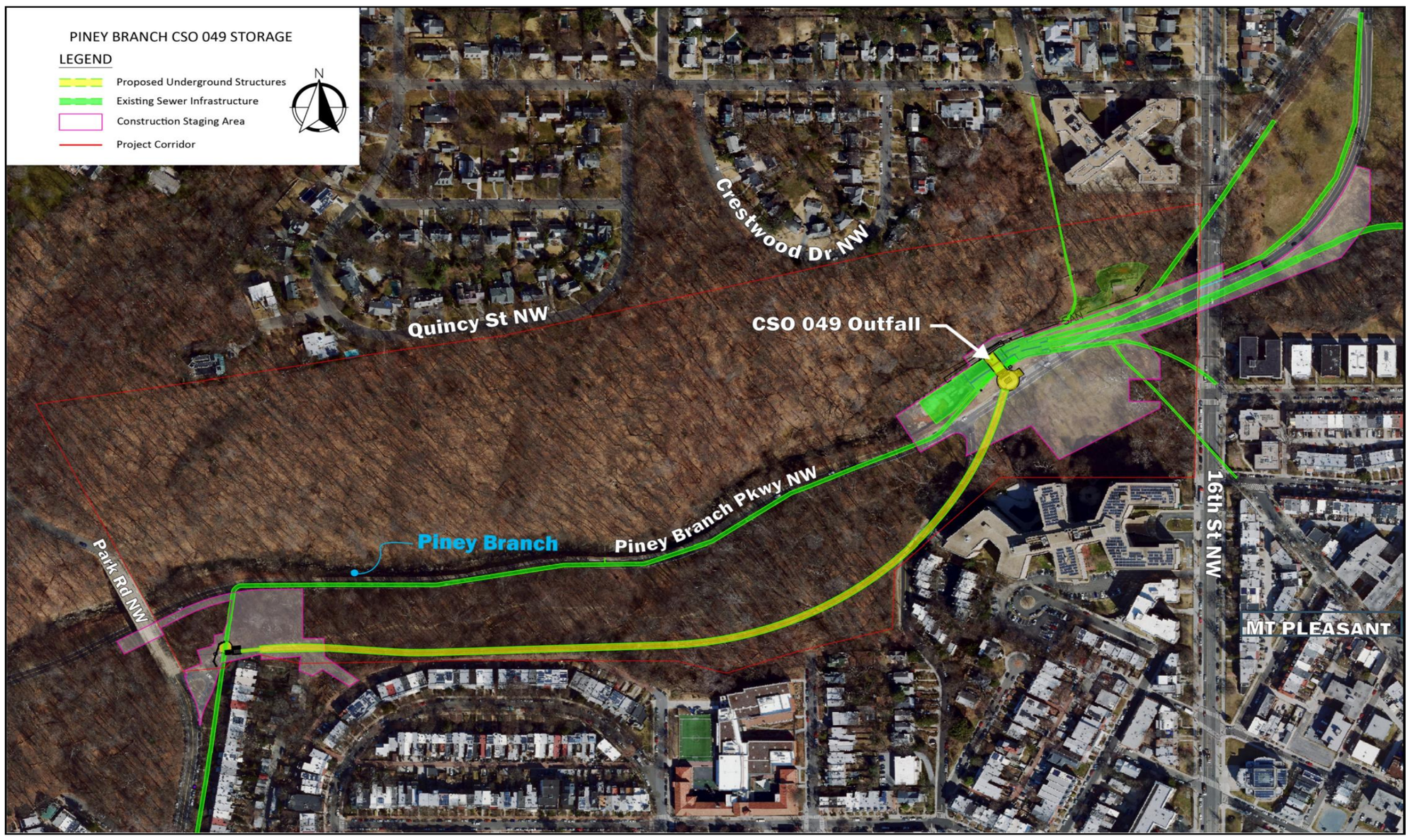
Performance in Average Year Rainfall

Parameter	Before Clean Rivers	After Clean Rivers
No. Overflows (#/avg yr)	25	1
Overflow Volume (mil. gal./avg yr)	39.7	1.4
% Reduction	--	96%

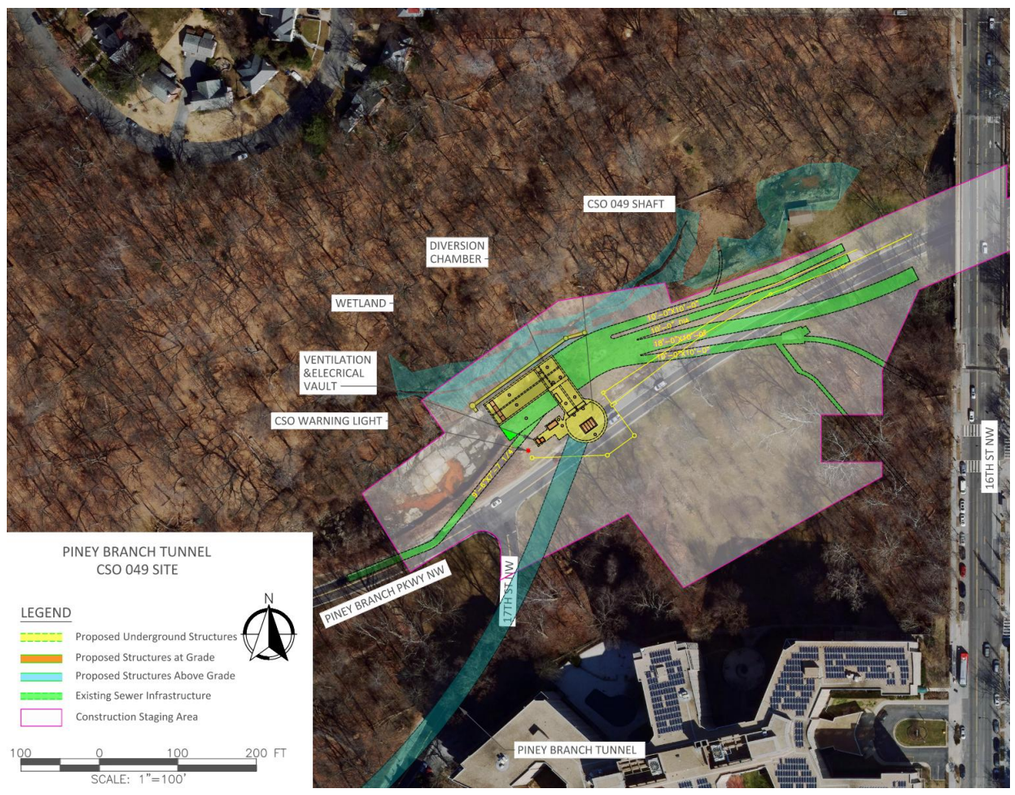
Tunnel Alignment and Key Projects

Piney Branch Tunnel

The Piney Branch Tunnel will capture combined sewer overflows (CSOs) from the largest sewer outfall CSO 049 and convey them to the Blue Plains Advanced Wastewater Treatment Plant prior to discharging to the Potomac River. The Piney Branch Tunnel will reduce CSO overflow volume to by 96% in an average year of rainfall.



PINEY BRANCH TUNNEL ALIGNMENT



CSO 049 DIVERSION STRUCTURE

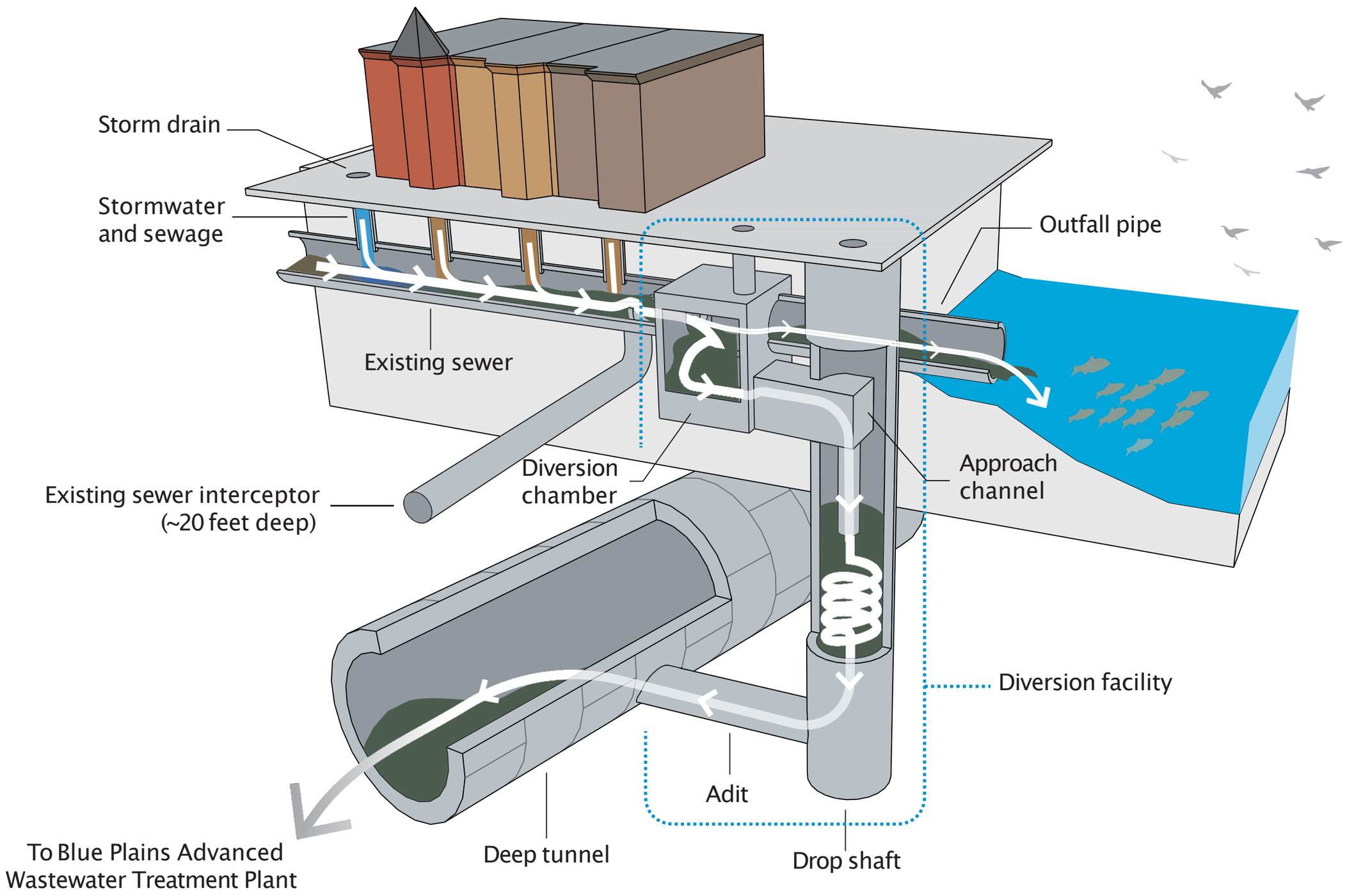
PARK ROAD CONNECTION SHAFT

PINEY BRANCH TUNNEL

How Does It Flow?

How Does the Tunnel System Work?

DC Water's Clean Rivers Project has built a series of tunnels and diversion facilities that move sewage and stormwater from the existing sewer to the tunnel during a storm event.



Diversion Facility Components

Diversion chamber: constructed along the existing sewer to divert flow from the combined system when capacity is exceeded.

Diversion sewer/approach channel: constructed to convey flows away from the existing sewer.

Drop shaft: constructed to convey flows from the diversion sewer to tunnel depth.

Adit: connects the drop shaft to the tunnel.

PINEY BRANCH TUNNEL

Schedule Overview

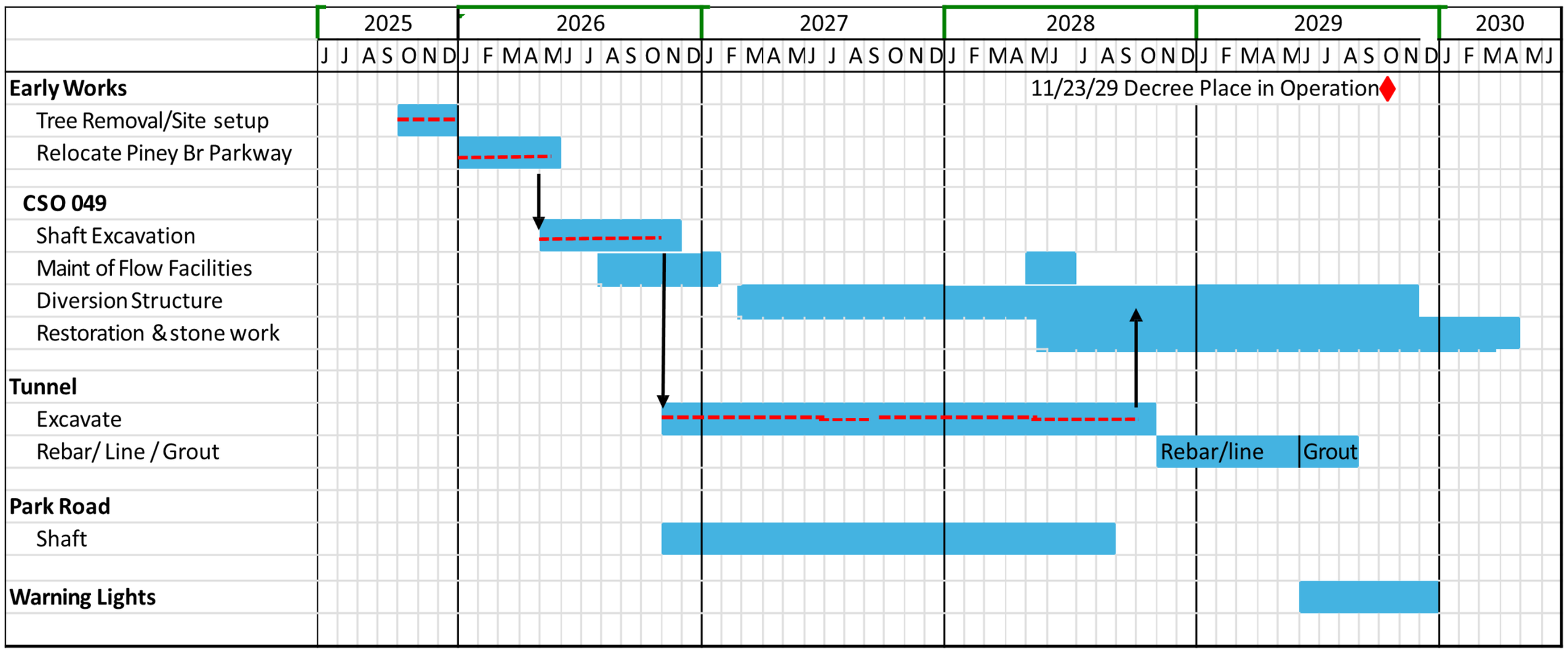
Work Hours:

- Surface: Monday – Friday 7 am – 7 pm.
- Hauling: Monday – Friday 7 am – 7 pm.
  Saturday – Sunday 9 am – 5 pm.
- Below Grade (Mining): 24 hours, 7 Days

Early Work:

- Oct – Nov 2025: security fence, sediment and erosion
- Nov 15 – Dec 2025: tree removal (within allowable window of Nov. 15 – March 30)
- Jan 2026 and later
  - Relocate Piney Branch Parkway
  - Temp construction offices
  - Temp utilities
  - Design of temporary support of excavation

Schedule:



PINEY BRANCH TUNNEL

Mitigations and Work Limits

Impacts	Mitigation
Work Days/Hours	Surface Work: Monday – Friday: 7am – 7pm Hauling: Monday – Friday: 7am – 7pm Saturday – Sunday: 9am – 5pm Tunneling Work: 24 hours/day, 7 days a week
Pedestrian Impacts	**CSO 049** • Maintain pedestrian path along Piney Branch Parkway for the duration of the project **Park Road** • Maintain pedestrian path along Park Road adjacent to the construction site • Piney Branch Trail closed at the construction site, detour will be in place to redirect pedestrians
Traffic Impacts	**CSO 049** • Piney Branch Parkway, between the 16th Street Bridge and the 17th Street intersection, to be closed for up to 1 month both at the beginning and end of the project to facilitate the temporary roadway relocation • During construction, one lane each direction will be maintained along Piney Branch Parkway **Park Road** • The roadway circle will be closed while construction is ongoing at the Park Road construction site • Travel lanes on Park Road will be maintained throughout construction
Noise & Vibration Monitoring	• Noise and Vibration levels will be monitored to meet DC Municipal & Regulations (DCMR) noise regulations during construction • Implement noise and vibration mitigation measures as needed
Site Maintenance	• Implement site security measures • Placement of dust and rodent control measures • Install tree protections for trees identified to remain
Pre-Construction Surveys	• Residents may request a confidential pre-construction survey of their property to document baseline conditions prior to construction
Post-Construction Surveys	• DC Water will conduct confidential post-construction surveys for residents with pre-construction surveys to document the condition of the structures after construction

PINEY BRANCH TUNNEL

Site Utilization (Draft)

Keynotes

1. Muck Excavation Trucks and Excavator
2. Temporary Power
3. Lattice Boom Crawler Crane
4. Hydraulic Crane
5. Ladder Access for Tunnel Shaft

Legend

- Site Entrance
- Construction Fencing
- Crew vehicles
- Tree Protection Fence
- Permanent Equipment Laydown
- Rebar and formwork staging
- Utility pipe and conduit staging
- Steel pile Laydown
- Crew break area
- Truck wash
- Loading and unloading zone
- Vehicle movement zone
- Water and Electrical Utilities
- Short Term Material Storage and Prep

PINEY BRANCH TUNNEL

Tree Impacts

CSO 049 Site

- The removal of trees is necessary to construct the new facility at the CSO 049 outfall.
- Estimated 242 of the 465 individual trees surveyed at the CSO 049 site would be removed during construction
- Trees range from 3” to 35.5” DBH, avg DBH = 9.5”

Park Road Site

- The removal of trees is necessary to construct the new facility at the Park Road construction site.
- Estimated 51 of the 120 individual trees surveyed at the Park Road site would be removed during construction
- Trees range from 3” to 35.5” DBH, avg DBH = 10.5”

Trees removed during construction will be replaced within the construction staging/disturbed areas with native plantings up to 2.5-inches caliper size tree, and the quantity of replacement trees will be determined by NPS resource managers in accordance with Park objectives and **NCPC Tree Preservation and Replacement Policy**

PINEY BRANCH TUNNEL

Facts & Profile

Tunnel Facts:

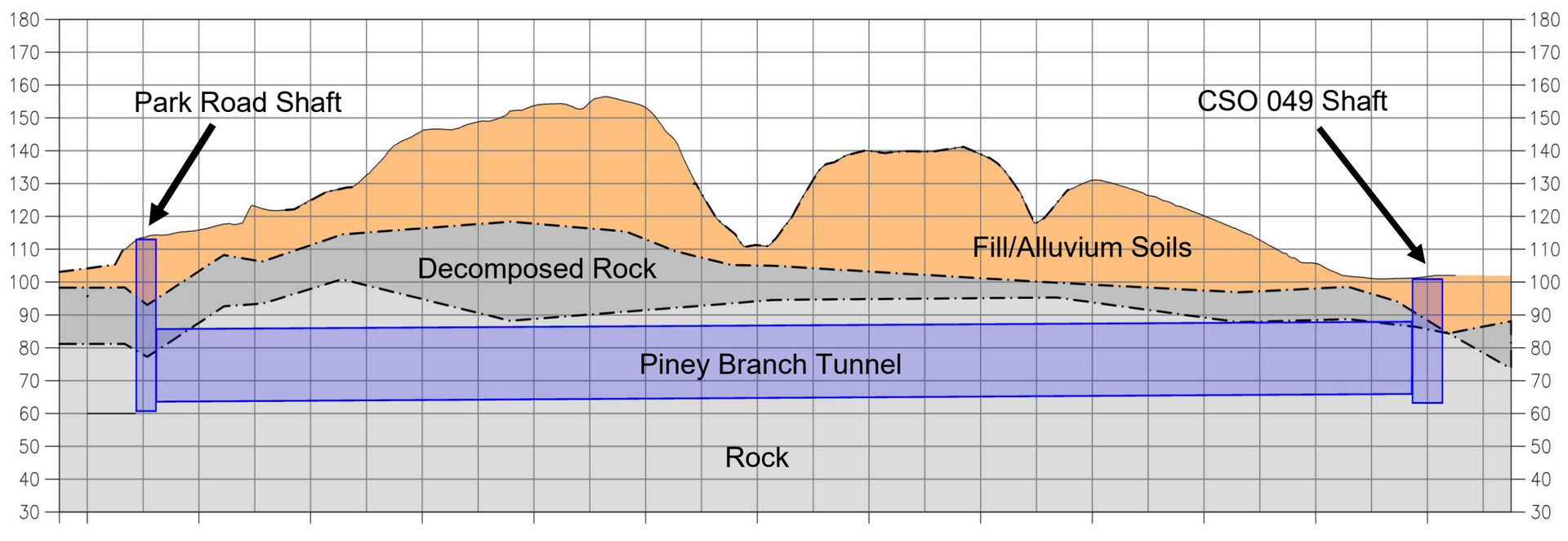
- ❑ Approximately 0.5 miles of 22-foot finished diameter reinforced concrete tunnel

- ❑ Drill and Shoot Mining Method

- ❑ Two Shafts:
  - CSO 049
  - Park Road

- ❑ Connection to existing wastewater conveyance system

Geotechnical Profile:



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Drill and Shoot

CSO 049 Shaft Blasting (Draft)

- Monday – Saturday
  - Daylight hours between sunrise and sunset
- No shaft blasting on Sunday
- No shaft blasting during rush hour times / within 30 minutes before and after Bancroft Elementary School start time and end times
- Anticipating blasting to start Spring 2026
  - 1 to 2 blasts per week
  - 4 to 6 total blasts
  - 6 to 8 weeks of work

Tunnel Blasting (Draft)

- Monday – Saturday
  - 7am – 7pm
- Sunday
  - 12pm – 6pm
- Anticipate blasting to start Summer of 2026
  - 1 blast per day
  - Approximately 300 blasts
  - 12 to 18 months of work depending on advance rate and allowable days for blasting

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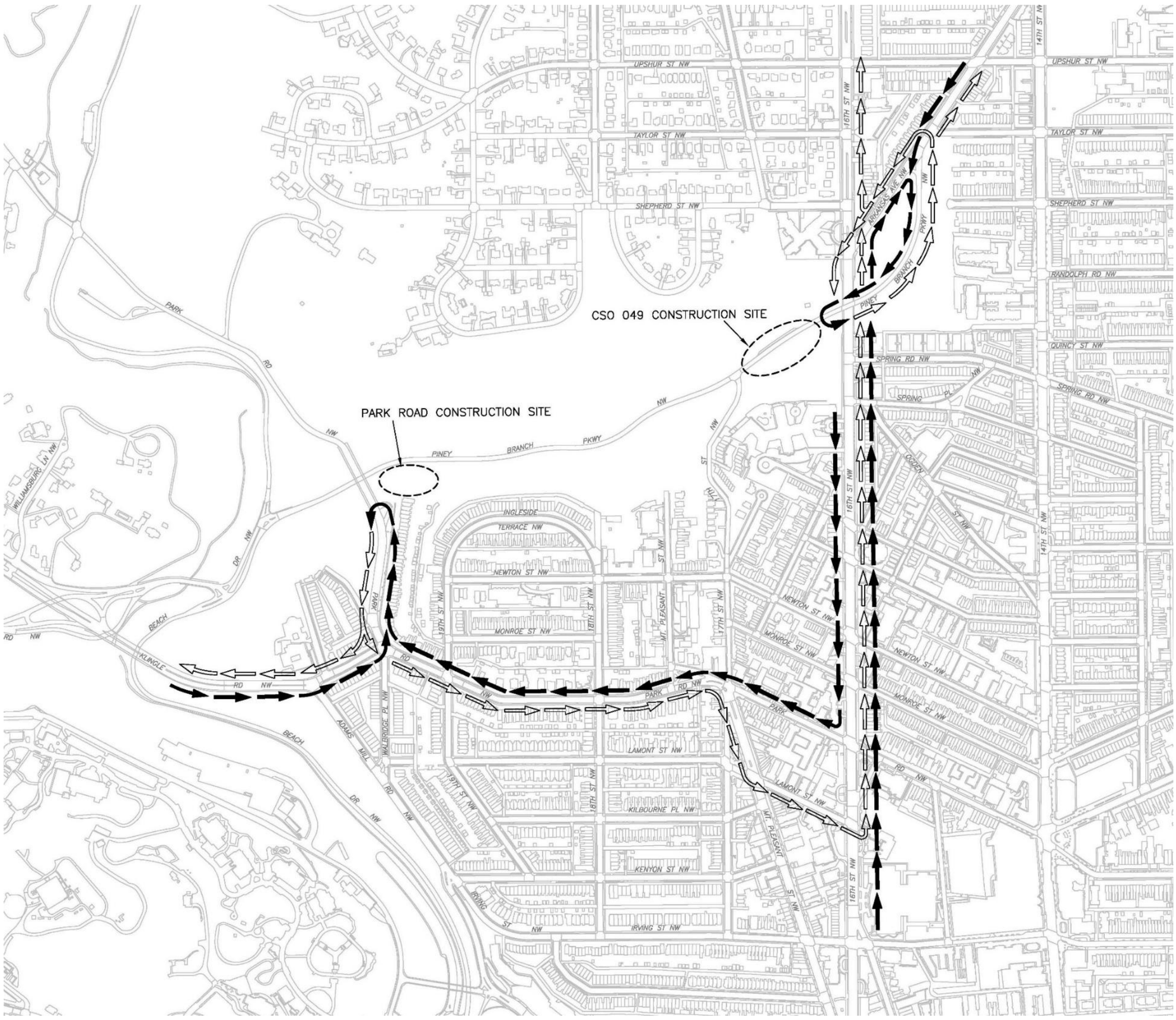
Project Hauling

Piney Branch Tunnel Project Work/Haul Hours

Site	MOT Stage	MOT Set-Up & Removal Hours	Work/Haul Hours
CSO 049	1	9:30 AM – 3:30 PM MON-FRI, 7:00 PM – 5:00 AM MON-FRI	7:00 AM – 7:00 PM MON-FRI; 9:00 AM – 5:00 PM SAT-SUN
	2	9:30 AM – 3:30 PM MON-FRI 7:00 PM – 5:00 AM MON-FRI	7:00 AM – 7:00 PM MON-FRI; 9:00 AM – 5:00 PM SAT-SUN
	Detour	9:30 AM – 3:30 PM MON-FRI 7:00 PM – 5:00 AM MON-FRI	7:00 AM – 7:00 PM MON-FRI; 9:00 AM – 5:00 PM SAT-SUN
Park Road NW	1	9:30 AM – 3:30 PM MON-FRI 7:00 PM – 5:00 AM MON-FRI	7:00 AM – 7:00 PM MON-FRI; 9:00 AM – 5:00 PM SAT-SUN



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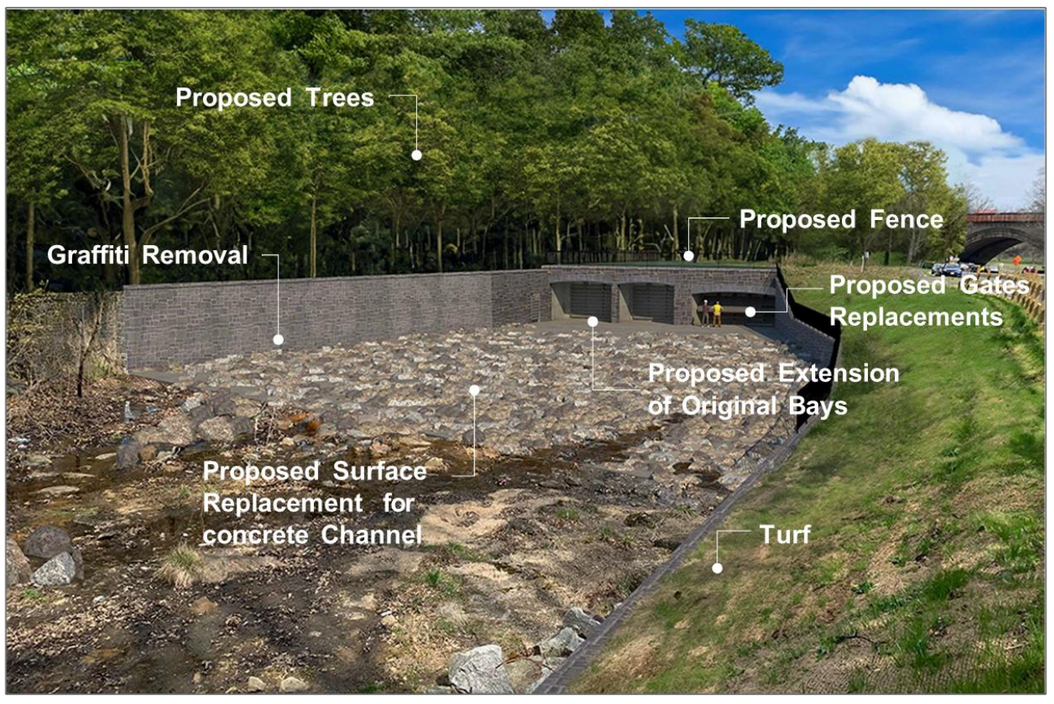
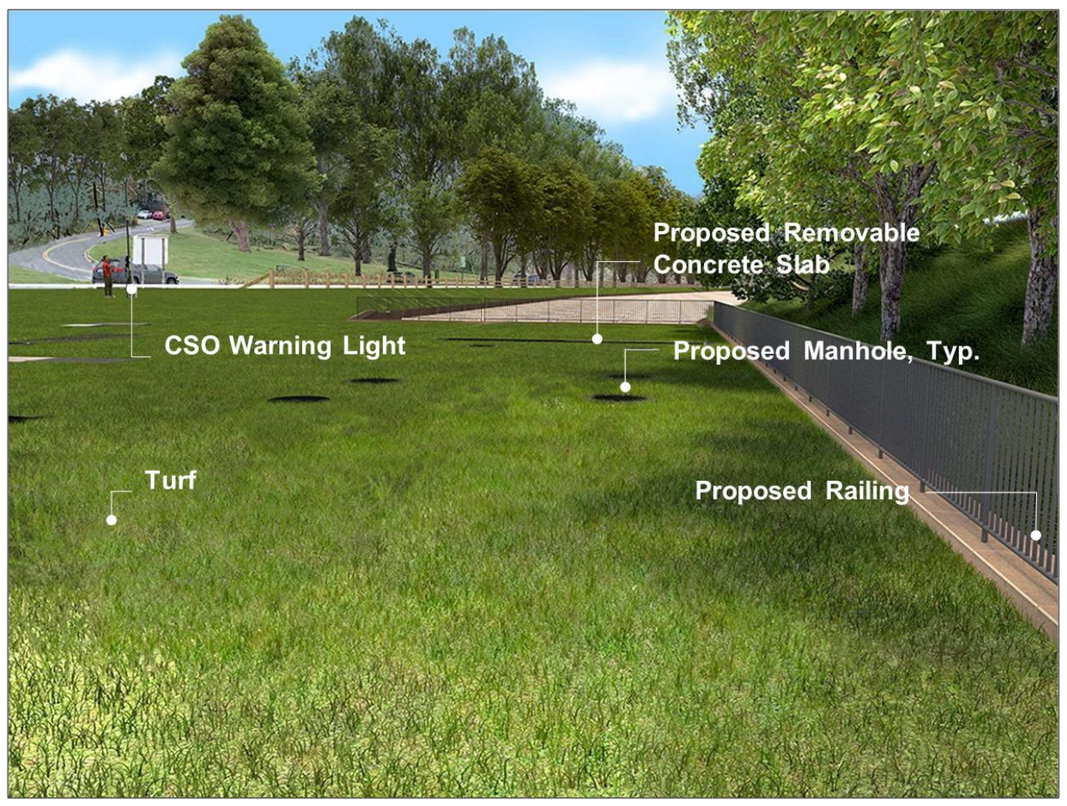
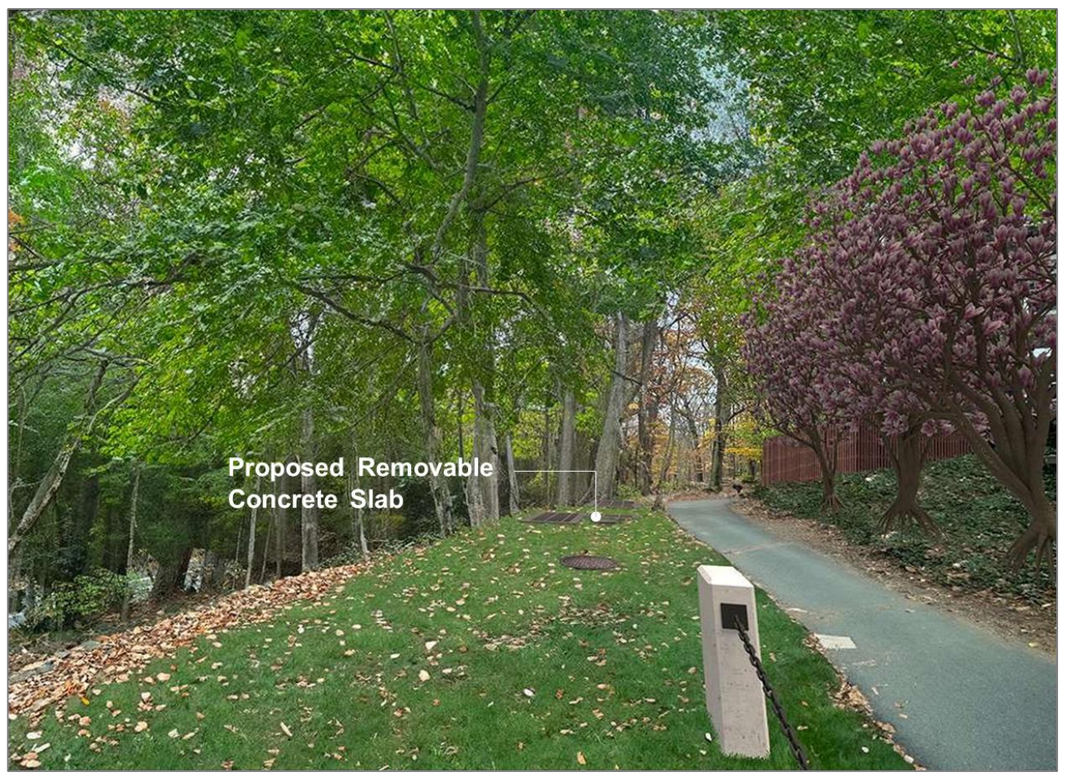
Area Restoration







EXISTING CONDITIONS

PROPOSED CONDITIONS

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