



CITY OF RICHMOND
DEPARTMENT OF
PUBLIC UTILITIES

Canoe Run Park Storage Tank Project

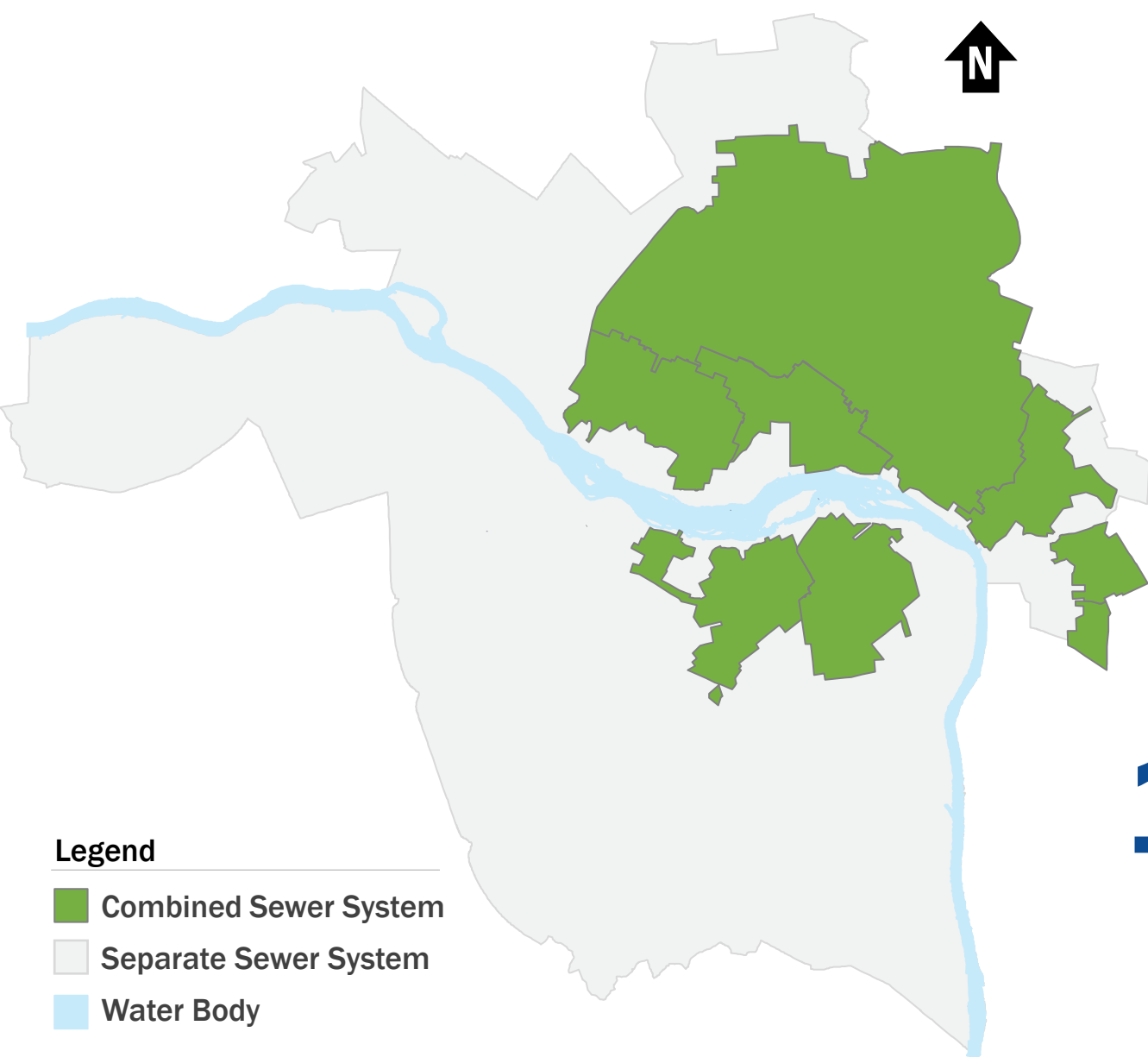
Community Meeting

July 9, 2025

Discussion Topics

- Richmond's Combined Sewer System
- Richmond's Combined Sewer Overflow Program
- Canoe Run Park Storage Tank Project Overview
- Project Related Site Investigations
- Anticipated Construction Sequence
- Potential Community Impacts and Mitigations

Richmond DPU Wastewater Systems at-a-Glance



- Legend
- Combined Sewer System
 - Separate Sewer System
 - Water Body

8 wastewater
pumping stations

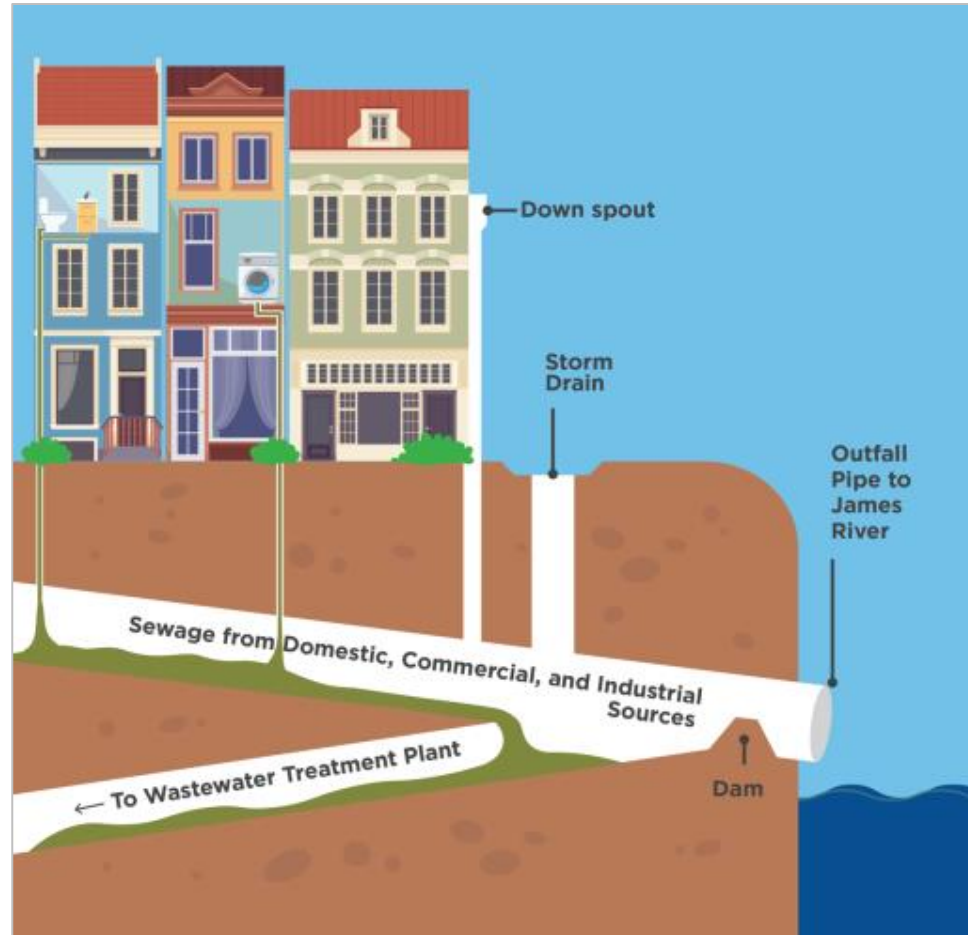
25 combined sewer outfalls

140 million gallons per day of
wastewater treatment
capacity

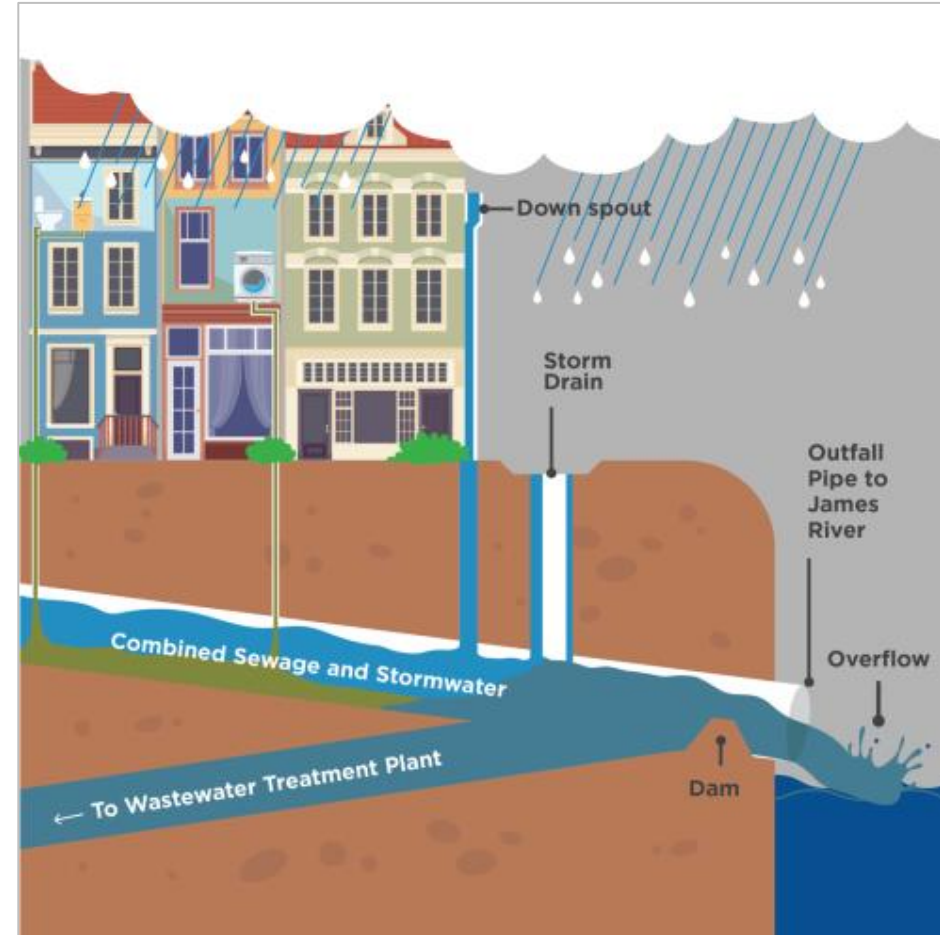
1,000 miles of sewer
interceptors and mains

How Richmond's legacy combined sewer system works

Dry Weather Conditions



Wet Weather Conditions



The Interim and Final Plans are required by 2020 State Mandate (SB1064)

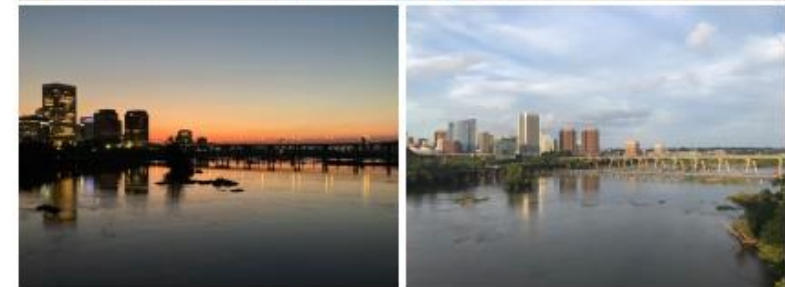
	Plan Due Date	Initiate Construction and related activities	Complete Construction
Interim Plan	✓ July 1, 2021	✓ July 1, 2022	July 1, 2027
Final Plan	✓ July 1, 2024	✓ July 1, 2025	July 1, 2035

The Final Plan was approved by DEQ on August 8, 2024

- Developed in close coordination with DEQ and our Public Stakeholder Group
- Project Selection Criteria
 - Performance
 - Cost
 - Schedule
 - Qualitative Factors

City of Richmond, Virginia
Department of Public Utilities
Final Plan Report

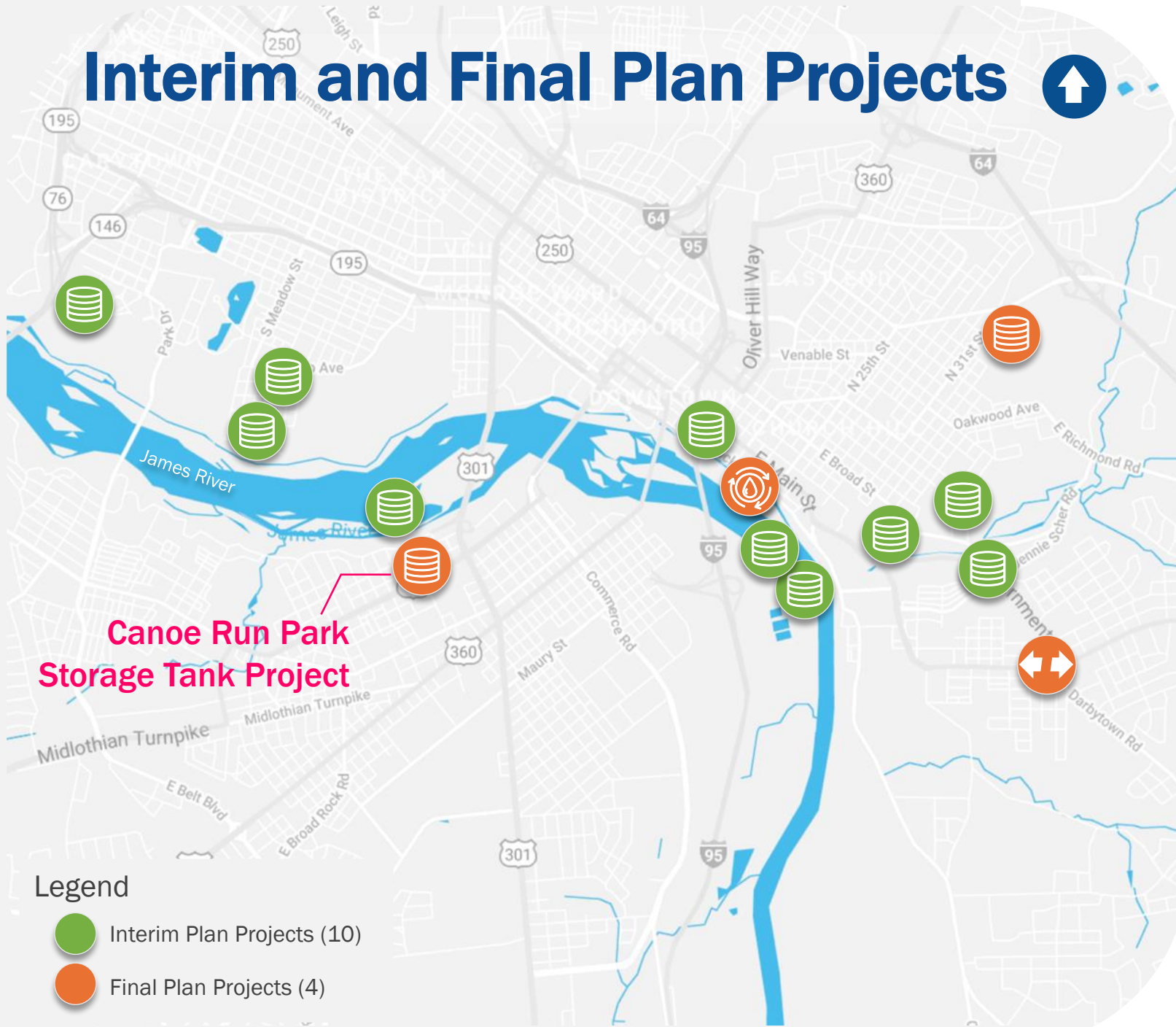
May 30, 2024



Prepared by Brown and Caldwell



Interim and Final Plan Projects



Canoe Run Park
Storage Tank Project

- Legend
- Interim Plan Projects (10)
 - Final Plan Projects (4)

CSO Control Methods



Storage

Optimization of existing facilities and new tanks that capture CSO volume



Treatment

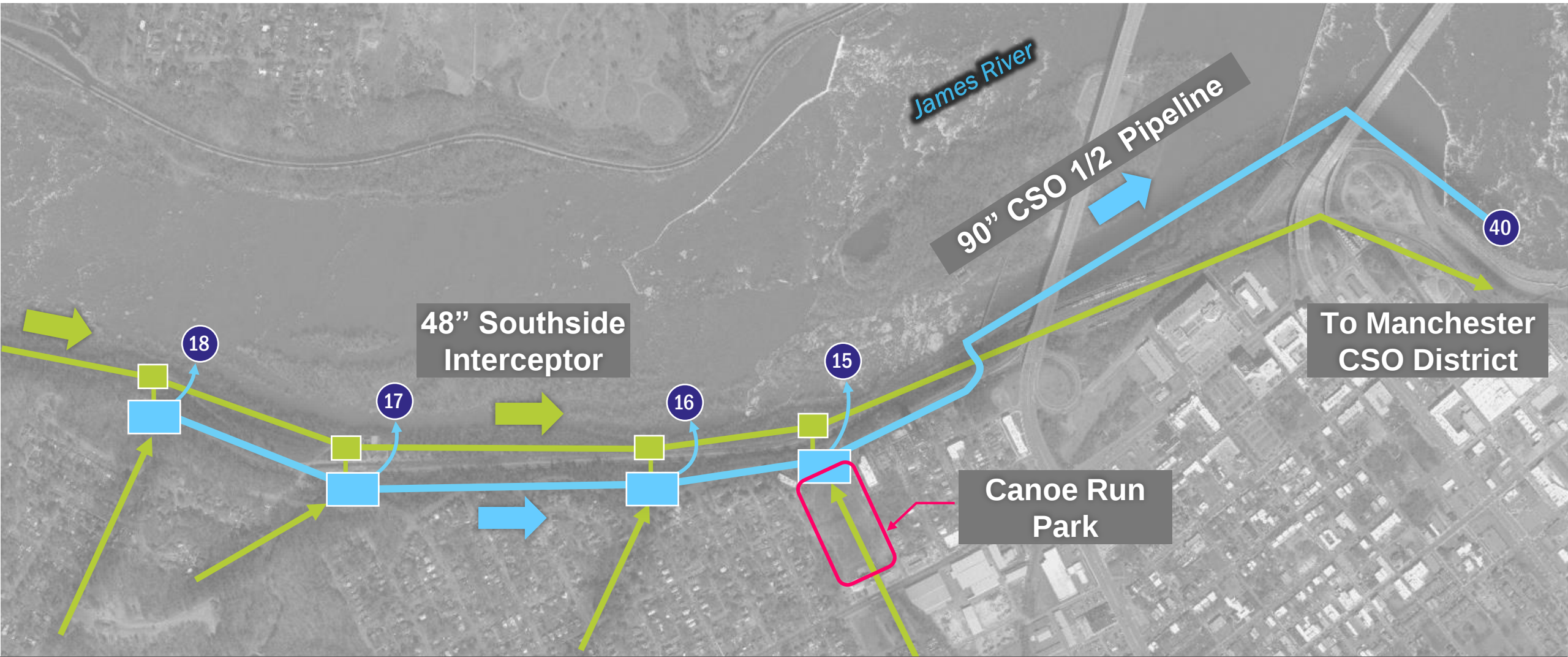
Disinfect CSO before it is discharged to receiving water bodies



Separation

Replace the CSS with separate sanitary and stormwater sewer systems

Existing Sewers and Outfalls Near Canoe Run Park



Legend



Dry Weather Flow Regulator



Dry Weather Flow Interceptor System



Wet Weather Flow Regulator



Wet Weather Flow Conveyance



CSO Outfall

The Project will Improve Water Quality

Now

37	115
Overflow Events	Millions Gallons

After

10	32
Overflow Events	Millions Gallons

Annual average over 2011 – 2013 study period

Bacteria Load Reduction

335,000

Billion CFU/year

Project Snapshot

Project Overview

The project consists of a new CSO storage tank and diversion structure to divert combined sewer flow during wet weather events to ultimately be conveyed to Richmond's Wastewater Treatment Plant

Schedule

Approx. 3 years of construction (2027-2029)

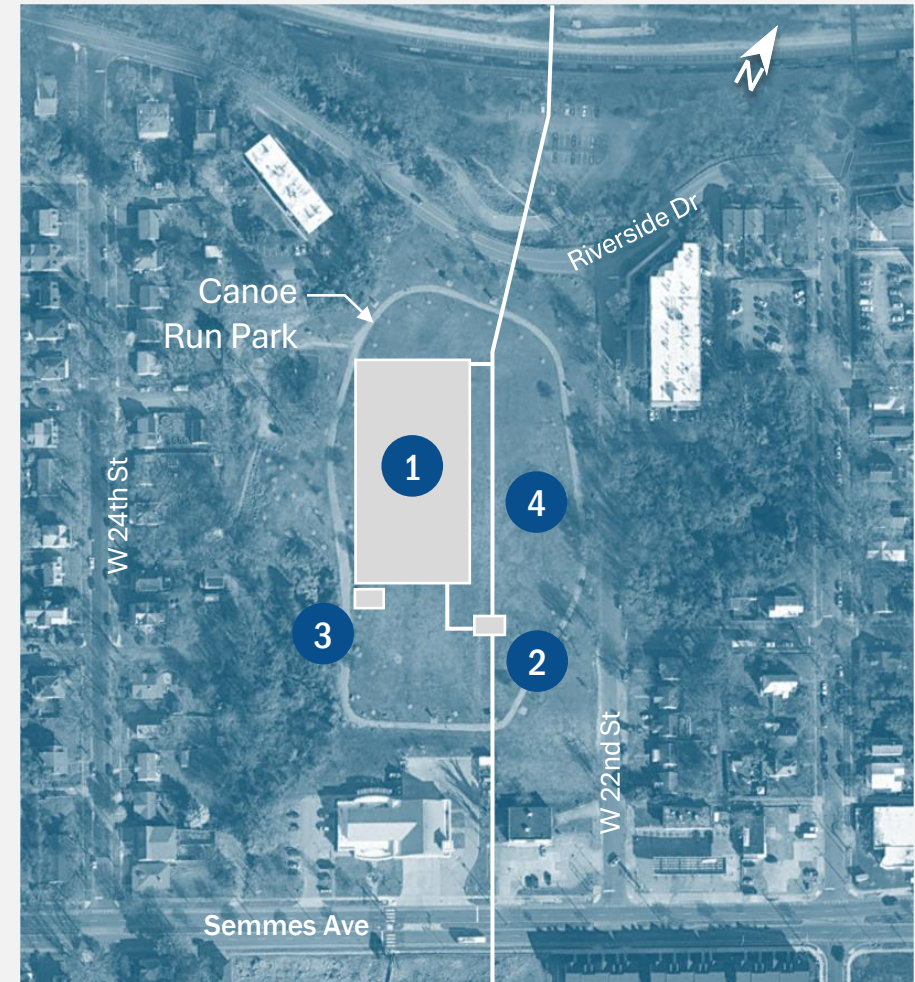
Cost

\$100M - \$140M

Funding

\$100M in State Grant Funds

Project Location Map



- 1 6-Million-Gallon CSO Storage Tank
- 2 CSO Diversion Structure
- 3 Odor Control Facility
- 4 Park Restoration

Project Activities and Schedule

Site Investigations	• Utility Survey • Topographic Survey	• Environmental Study • Geotechnical Investigations	Summer 2025– Fall 2025
Preliminary Engineering	• Alternatives Evaluation • Preliminary Design Criteria	• Cost Estimate • Construction Schedule	Summer 2025 – Winter 2025
Contractor Procurement	• Request for Qualifications	• Request for Proposals	Fall 2025 – Summer 2026
Final Design & Construction	• Storage Tank • Diversion Structure	• Odor Control Facility • Site Restoration	Summer 2026– Fall 2029

Agency Coordination and Permitting

Consulting Federal & State Agencies



**US Army Corps
of Engineers®**



Virginia Department of Conservation & Recreation



City Approvals



- Land Disturbance Permit
- Special Use Permit
- Stormwater Permit
- Building Permit
- Mechanical Permit
- Electrical Permit
- Work-in-Streets Permit
- Hauling Permits
- Temporary Flow Control
- Discharge Permit

State Agency Approval



Topographic and Utility Surveys



Topographic Survey



Utility Marking



Utility Survey

Geotechnical Investigations



Row #	City of Richmond	CSO-40	ATS-08	60760900	7/1/15
Row #	Depth	Recovery	RQD	Notes	
RC-1	29.0 - 34.0	60" / 100%	45" / 75%	316" not recovered off	
RC-2	34.0 - 39.0	60" / 100%	52" / 87%		
RC-3	39.0 - 44.0	60" / 100%	44" / 73%		
RC-4	44.0 - 49.0	60" / 100%	58" / 97%	456-496 was left in the hole; collected in row RC-5	
				Box 1 of	

Soil Layers in Canoe Run Park



Topsoil & Fill

- 6 to 25 feet thick
- Mix of gravel, brick, concrete and asphalt fragments



Silty Sand (Residuum)

- 8 to 12 feet below ground surface



Disintegrated Rock

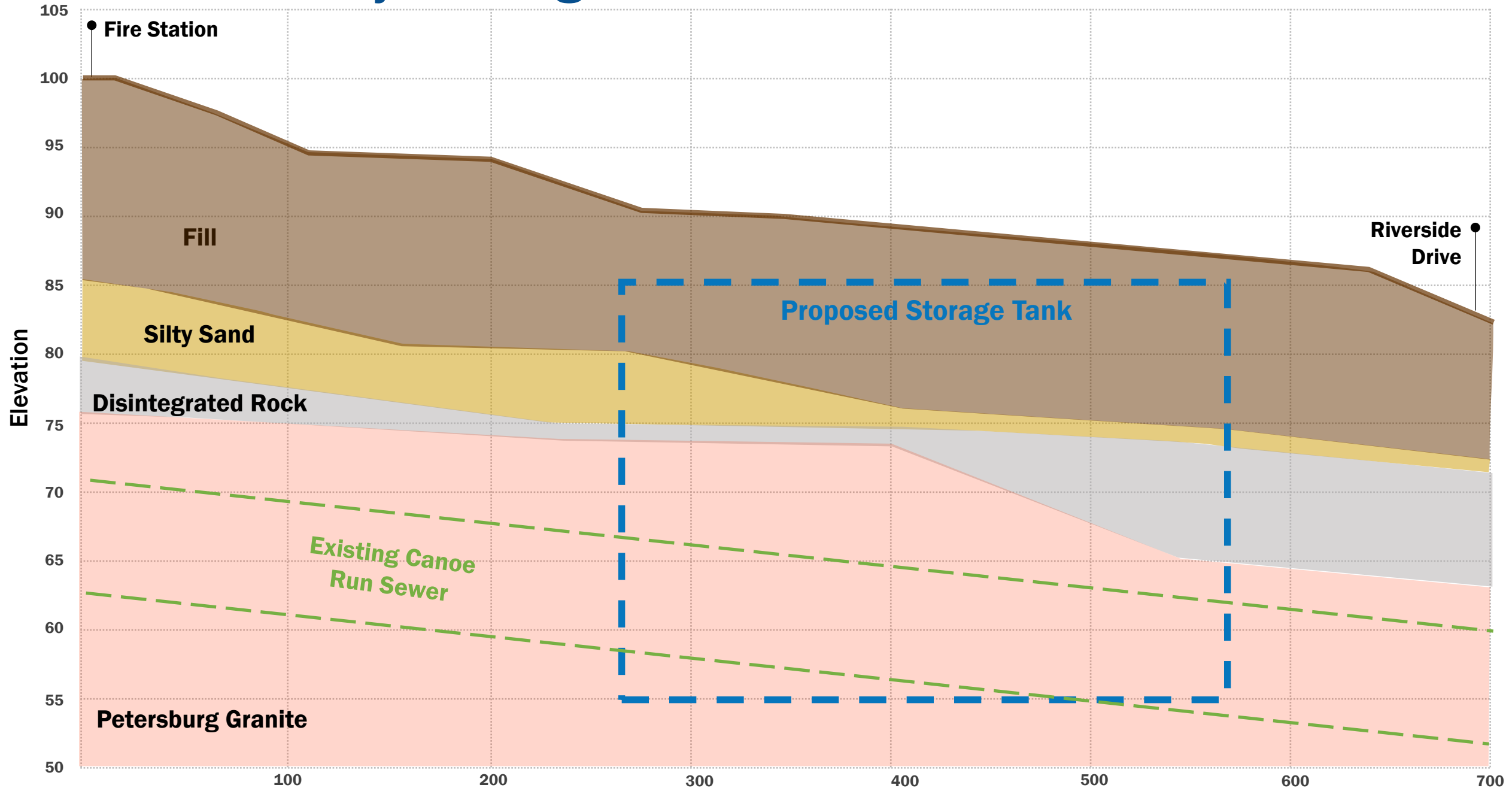
- Clayey sand and silty sand
- Varying amounts of mica and rock fragments



Petersburg Granite

- At depths greater than 18 feet
- Medium to strong density

Preliminary Geologic Profile within Canoe Run Park



Construction Sequence

- ▶ Temporary Support Walls
 - Excavation
 - Base Slab
 - Vertical Walls
 - Structure Internals
 - Top Slab
 - Backfill
 - Restoration



*Photos of
Davis Brook CSO Storage Tank | Bangor, ME*

Construction Sequence

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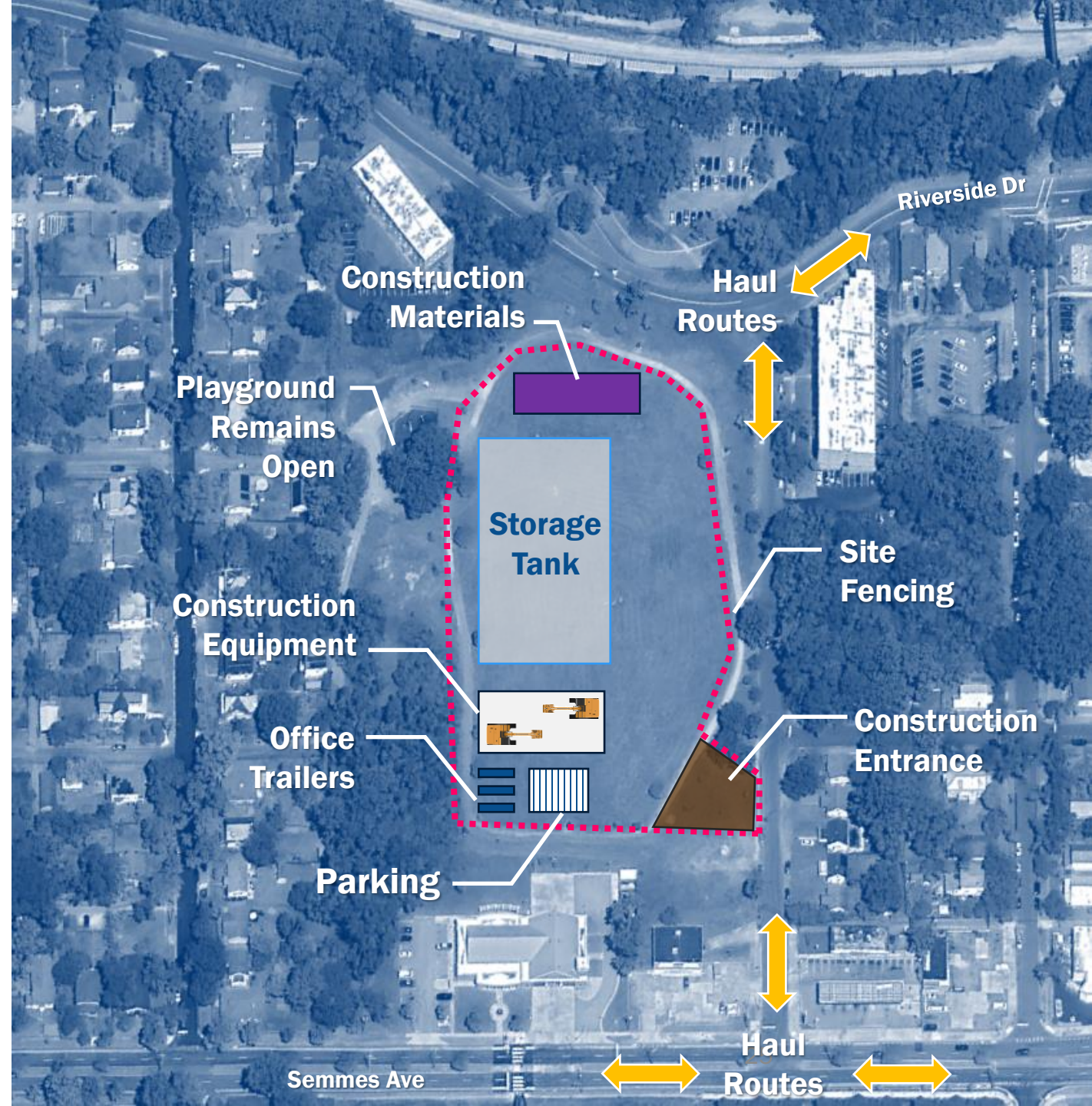
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- ▶ Restoration



What to expect during construction

- Site Fencing
- Construction Entrance
- Haul Routes
- Office Trailers & Parking
- Construction Equipment
- Construction Materials



Potential Community Impacts during Construction



Noise and Vibrations



Dust and Emissions



Walking Path



Parking and Traffic



Utility Disruptions



Trees Removal

Approach for Hauling Excavated Material

Excavated Material

Soil & Rock



Excavated Volume

100,000 CY



Excavated Volume

10,000 trucks



Wheel Wash



Tarping



Street Sweeping



Hauling Inspector



Community Impact Mitigation Practices

Excavation Best Management Practices



Excavate Soil in Saturated Conditions

Site Security and Safety Measures



Site Fencing, Cameras and Security

Engineering Controls



Dust Suppression



No Stockpiling of Excavated Materials



Standard PPE



Erosion & Sediment Control

Nearby alternatives during closure of Canoe Run Park





Thank you

Contact Info

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