RiverRenew Stakeholder Advisory Group Meeting No. 1

February 27, 2019

ALEXANDRIA renew ENTERPRISES®

RiverRenew is a program owned and implemented by Alexandria Renew Enterprises, with support from the City of Alexandria.

1800 Limerick Street | Alexandria, VA 22314

Tonight's Speakers

Caitlin Feehan

RiverRenew Program Manager

Justin Carl

RiverRenew Program Advisor

Kelvin Coles

RiverRenew Civil/ Hydraulics Lead

Sheeva Noshirvan

RiverRenew Community Outreach Specialist

Presentation Outline

- Welcome and Introductions
- RiverRenew SAG Roles and Responsibilities
- RiverRenew Overview
- Technical Update
- Performance, Schedule, and Cost
- Rate Schedule
- RiverRenew SAG Toolkit
- Next Steps
- Public Questions

Welcome and Introductions

RiverRenew

RiverRenew Stakeholder Advisory Group (SAG) Introductions

1. Why did you want to be a part of this SAG?
2. What do you expect to come out of this group?

Area of Representation	# of Members	Description	Nominee
Outfall 001	1 1	• Nominated by the North Old Town Independent Citizens' Association • Resident or business near Tobacco Quay, Oronoco Waterfront Residences or Rivergate	• Erik Olson • Bill Hillner
Outfall 002	1 1	• Nominated by the Old Town Civic Association • Resident, business, or non-profit near South Royal/Green Streets	• Yvonne Callahan • Kate Mackenzie
Outfalls 003/4	2	• Nominated by the Eisenhower Partnership • Resident or business of the Carlyle community or Duke Street corridor	• No formal nominee • Andy Duncan (Chair) • Kathy Dismukes
AlexRenew Customer	2	• At-large residents with interest in RiverRenew	• Dan Bradfield • Ivy Whitlatch
City-wide Organizations	1 1 1	• Nominated by Environmental Policy Commission • Nominated by an Alexandria business group • Nominated by the Park and Recreation Commission	• Geoff Goode • Mary Ann Burstein • Liz Birnbaum
At-large	2	• Resident with engineering, environmental, financial or related experience	• Ron LaFond • Karen Halbrecht
Total	**13**		

RiverRenew SAG Roles and Responsibilities

RiverRenew

Understanding Your Role as RiverRenew Ambassadors

REVIEW AND MONITOR PROGRAM PROGRESS

Gain awareness and understanding for RiverRenew.

COMMUNICATE PROGRESS AND SERVE AS SPOKESPEOPLE FOR PROGRAM

Be a RiverRenew advocate. Disseminate information to networks on progress and increase community awareness of RiverRenew and the benefits it will have for Alexandria.

RECEIVE INPUT FROM THE PUBLIC

Solicit feedback on RiverRenew as we advance toward construction.

ASSIST IN MINIMIZING COMMUNITY IMPACTS

Provide feedback on approaches to minimize community impacts.

Ground Rules for the RiverRenew SAG Meetings

1. Every person in the group gets a chance to speak once before anyone speaks twice.

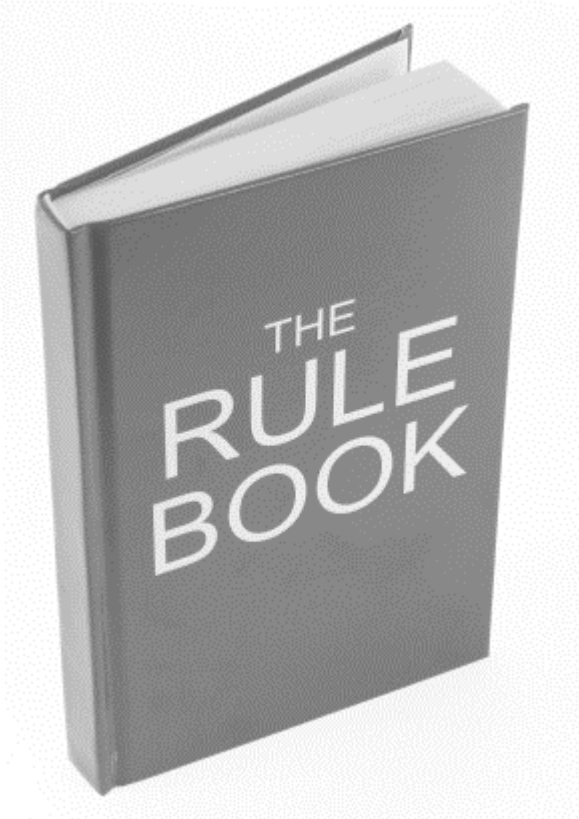
2. Be explicit when you speak whether you are speaking for yourself, or sharing input provided by those you represent.

3. Be aware of assumptions, especially your own. Talk about them.

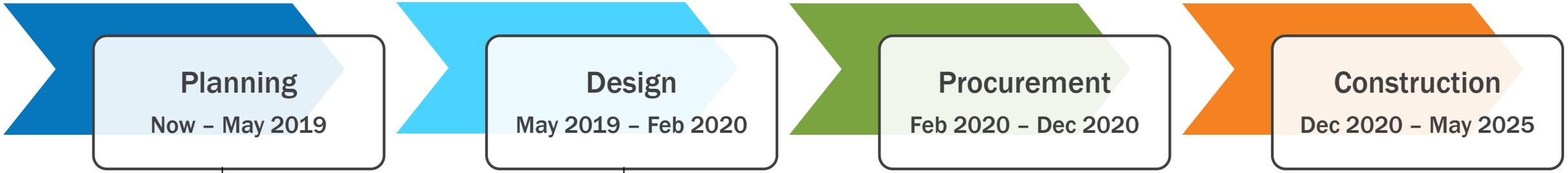
4. Suspend judgment, even when you disagree.

5. Avoid repeating what was just said; instead build on previous comments or identify new thoughts to contribute.

6. Finally, help the facilitator enforce these ground rules.



RiverRenew SAG Meeting Topics through 2019



Meeting #1: SAG Role, Program Overview, and SAG Toolkit– February 2019

Meeting #2: Approach to Minimize Community Impacts and Rate Review– March/April 2019

Meeting #3: Listening Sessions No. 2 Preparation– May 2019*

Meeting #4: Environmental Assessment Comment Overview– June/July 2019*

Meeting #5: Public Art and Community Give Backs– September 2019

Meeting #6: Procurement Process and Next Steps– November 2019

**Note: Dependent on NPS schedule for Environmental Assessment issuance*

RiverRenew Overview

RiverRenew

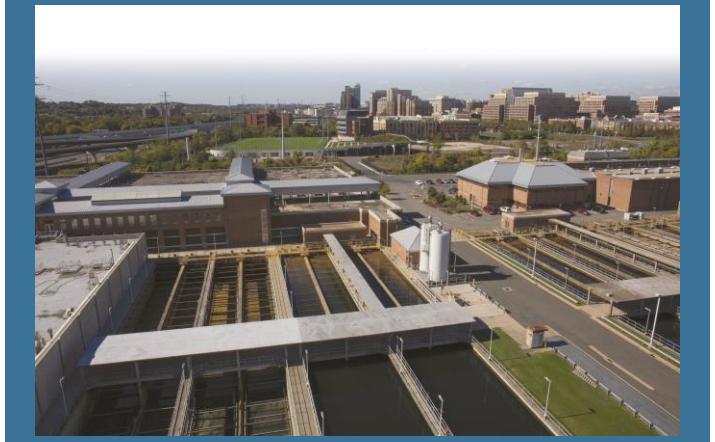
Background

RiverRenew is owned and implemented by Alexandria Renew Enterprises, with support from the City of Alexandria.

In July 2018, the ownership of the four outfalls and regulatory compliance responsibilities to remediate the outfalls were transferred from the City of Alexandria to AlexRenew.

- Single entity efficiency
- AlexRenew Water Resource Recovery Facility central to the solution
- Experience and technological expertise
- Leverage planned projects at AlexRenew Water Resource Recovery Facility
- Simplified permitting

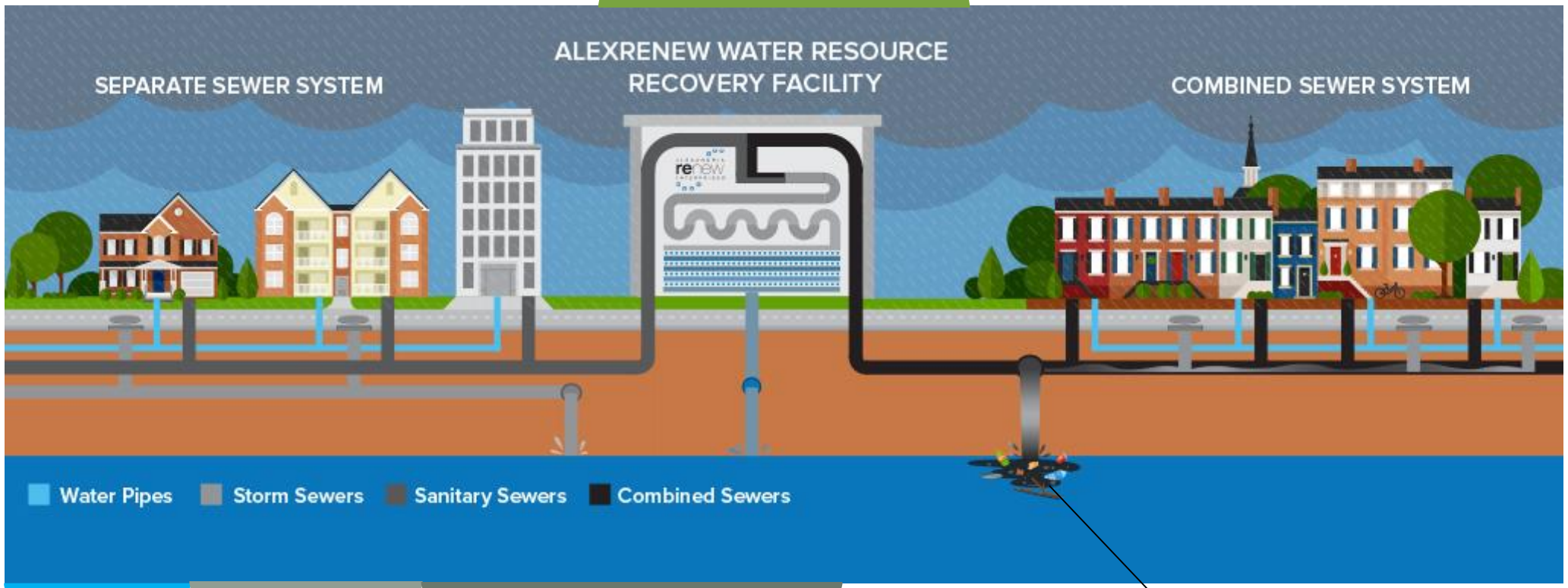
Led by a five-member citizen board, Alexandria Renew Enterprises (AlexRenew) is a special-purpose wastewater authority. AlexRenew treats an average of 35 million gallons of wastewater per day at their Water Resource Recovery Facility (WRRF).



AlexRenew WRRF

Alexandria's One Water System

AlexRenew
(Wastewater Treatment and Base Charges)



Virginia American Water
(Drinking Water Fee)

City of Alexandria
(Stormwater Utility Fee)

City of Alexandria
(Capital Investment & Maintenance Fee)

AlexRenew
(Outfall Only)

Alexandria's Combined Sewer System and 2017 Virginia Law

544

total acres of combined sewer system owned by City of Alexandria

390

acres of impervious area

4

outfalls owned by AlexRenew as of July 2018

Outfall	Requirement
001	4-6 overflows per year
002	80% bacteria reduction
003	99% bacteria reduction
004	99% bacteria reduction

New controls in place by July 1, 2025

Approved Plan to Address Discharges from Outfalls

- **Storage/conveyance tunnel** to control overflows from Outfalls 001 and 002
- **Conveyance tunnel/sewer** to control overflows from Outfalls 003 and 004
- **Wet weather treatment facility** at AlexRenew's Water Resource Recovery Facility
- **Upgrades** to AlexRenew's Water Resource Recovery Facility

Approved by Virginia Department of Environmental Quality on June 29, 2018

The project requires many levels of agency coordination.

Federal Agency Approvals

- NEPA
- Special Use Permit
- Construction and Right of Way Permit
- ARPA Permit

- Clean Water Act Permit

Consulting Federal Agencies

State Agency Approvals

- Clean Water Act Permit
- Construction General Permit
- VPDES Permit(s)

- Submerged Lands Permit

- Land Use Permit

- Consent for Encroachment

Consulting State Agencies

City Approvals

- DSUP
- Excavation Permit
- Grading Permit
- Building Permit
- Right-of-Way Permit

- Archaeology
- Landowner Easements
- Hauling Permit
- Demolition Permit
- Mechanical Permit

Environmental Assessment Overview and Status

Proposed Tunnel Routes and Facility Locations

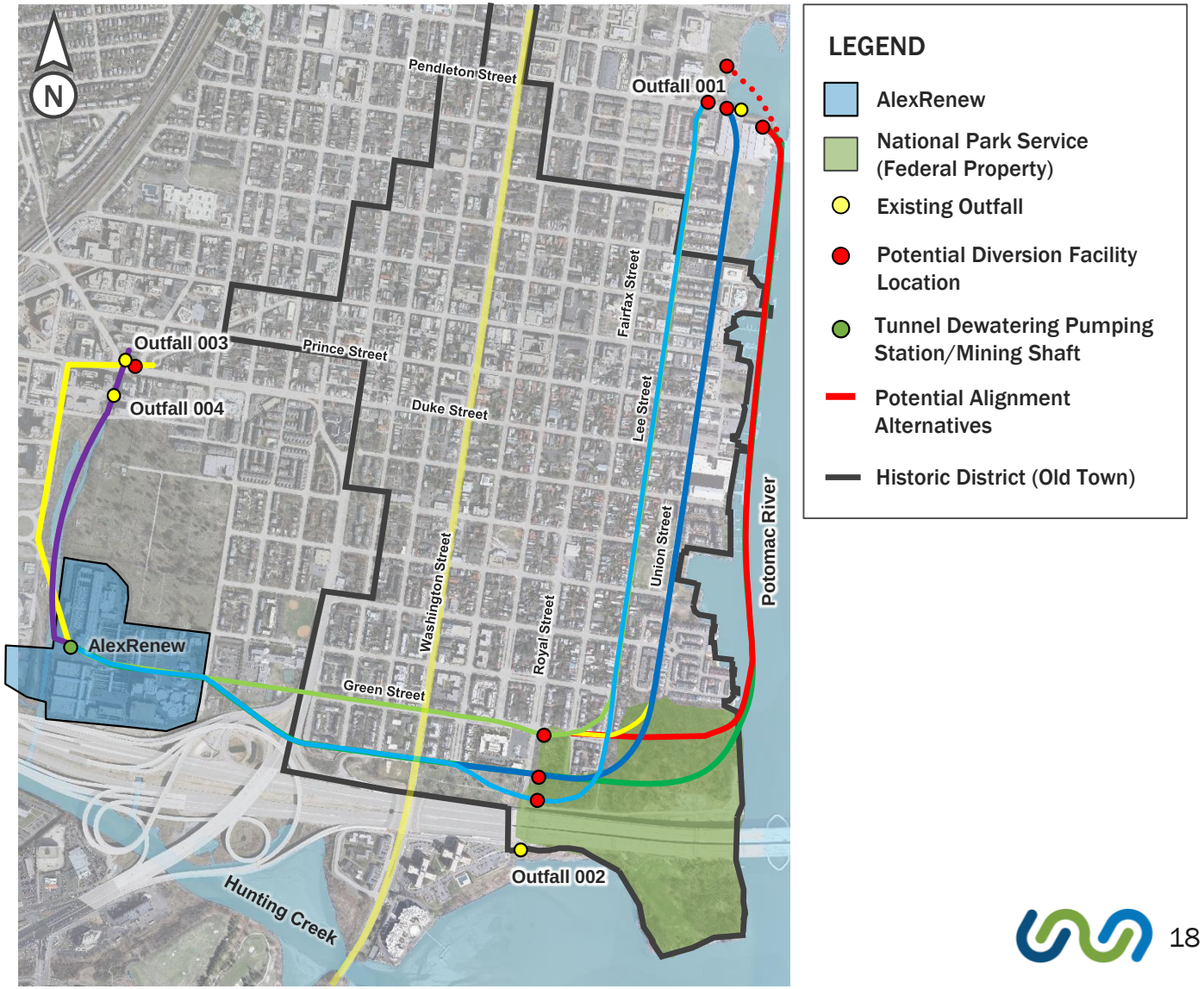
001/2 Tunnel Routes*

East-West	North-South
Green Street	Lee Street
Church Street	Union Street
	Potomac River

*over 100 feet deep

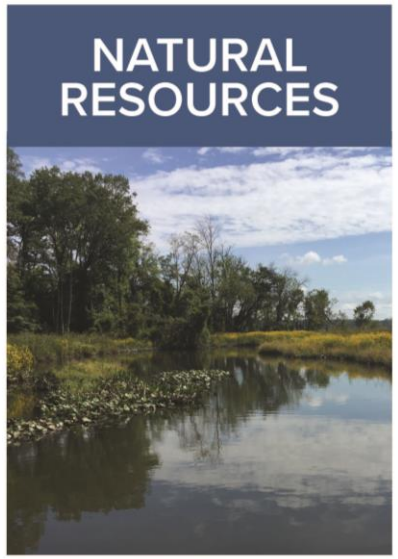
003/4 Tunnel Routes

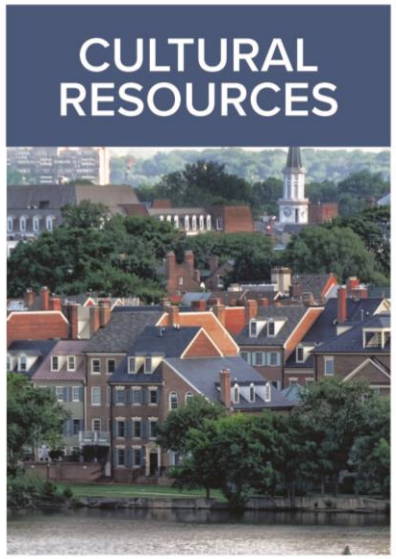
Option	Approx. Depth
Deep	100 feet
Trenchless	20 to 40 feet
Open-Cut	10 to 20 feet

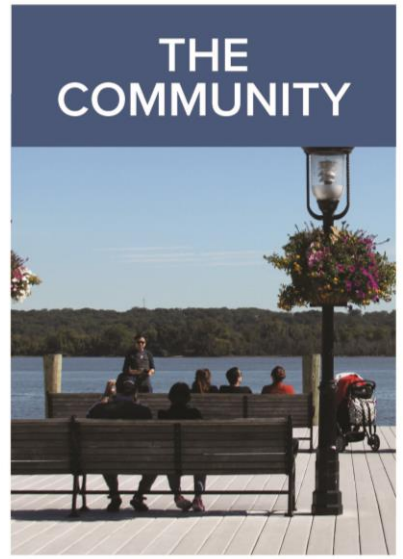


Tunnel routes and facility locations are being evaluated through the development of an Environmental Assessment to comply with the National Environmental Policy Act.

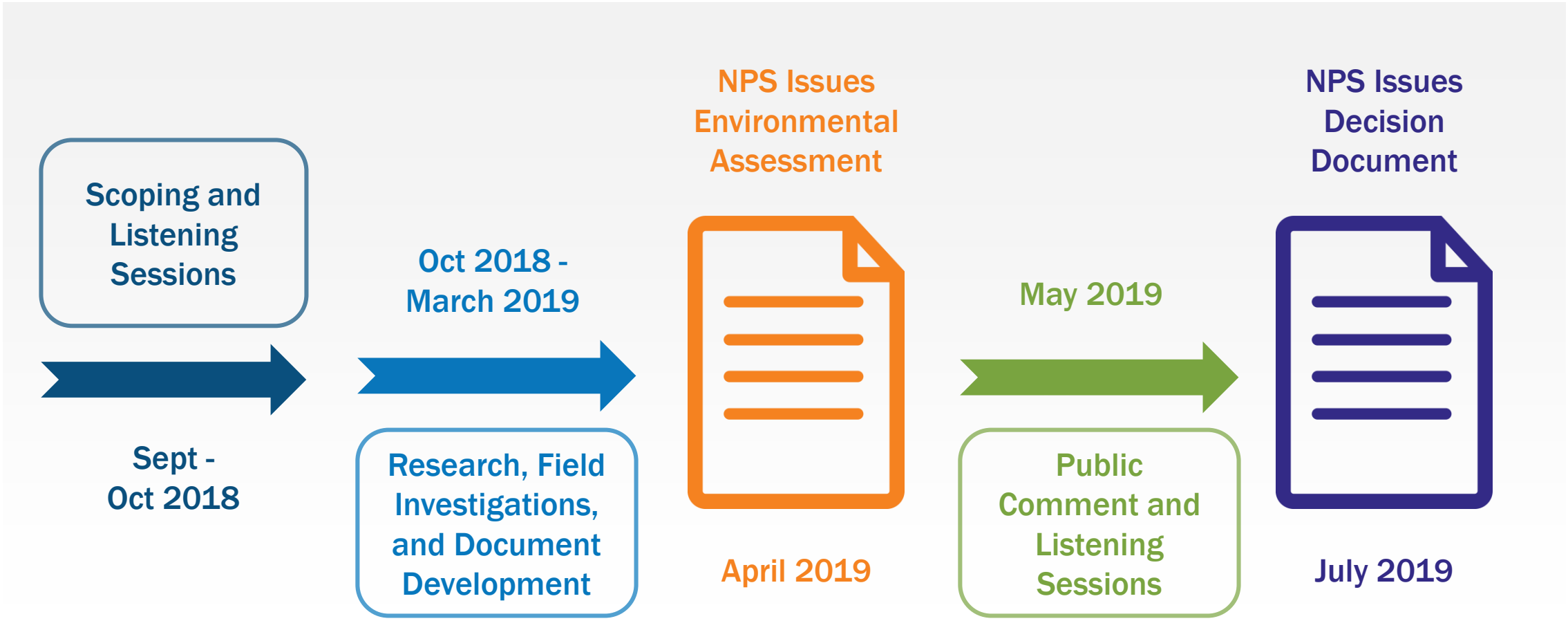
- National Park Service (NPS) requires permits from RiverRenew due to tunnel routes and locations running through NPS land, which triggers the National Environmental Policy Act
- NPS determined an Environmental Assessment is required
- Consideration of historic resources (Section 106) will be completed in conjunction with the Environmental Assessment and Clean Water Act permitting







Projected Environmental Assessment Timeline*



*Note: Dependent on NPS schedule for Environmental Assessment finalization

In October 2018, we received 150 comments with similar themes from the community.

001/2 Tunnel System

- Minimize community impacts
- Community preference toward Potomac-Church alignment

Outfall 001 Diversion Facility

- Minimize community/park impacts
- Strong community preference toward RTN and/or Oronoco Bay Park East

Outfall 002 Diversion Facility

- Minimize residential/garden impacts
- Strong community preference for southernmost alternatives (Royal Street or Royal Street South)

Outfall 003/4

- Community support for shallow options with preference toward open-cut along Hooffs Run
- Business owners along Duke Street strongly oppose deep tunnel alternative

General Comments

- Concerns regarding truck haul routes and contaminated soil/groundwater
- Minimize impacts to historic structures and resources

Community Engagement Process

Community Engagement Look-Ahead for All Program Phases

	PLANNING	DESIGN	PROCUREMENT	CONSTRUCTION	ONGOING
	Nov 2018-May 2019	May 2019-Feb 2020	Feb 2020-Dec 2020	Dec 2020-May 2025	
ACTIONS	Gain acceptance of preferred alternative	Ensure design plans mitigate impacts	Prepare public for construction	Mitigate impacts	Program updates to RiverRenew website
	Engage residents at community meetings and online	Expand efforts to connect with residents citywide	Build community partnerships	Host milestone events	Updates to outreach collateral materials
	Introduce rate increase	Create learning opportunities	Launch social platform for daily engagement	Leave a legacy	Civic association outreach
EXAMPLE	**Launch e-newsletter; hold Listening Sessions**	**Host hands-on booths at schools and weekend events**	**Partner with Archaeological Commission to create multi-media display featuring sewer artifacts**	**Tour construction sites with VIPs, student groups, and adults interested in engineering feats**	**Ensuring program information is up to date on both internal and external materials and channels**

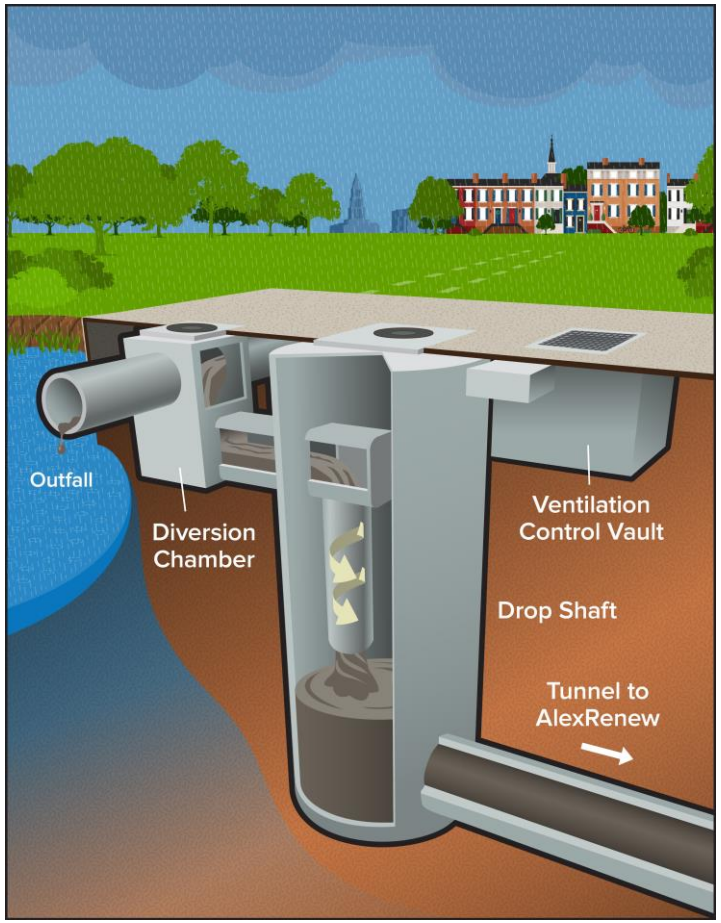
Technical Update

RiverRenew

Tunnel System Overview

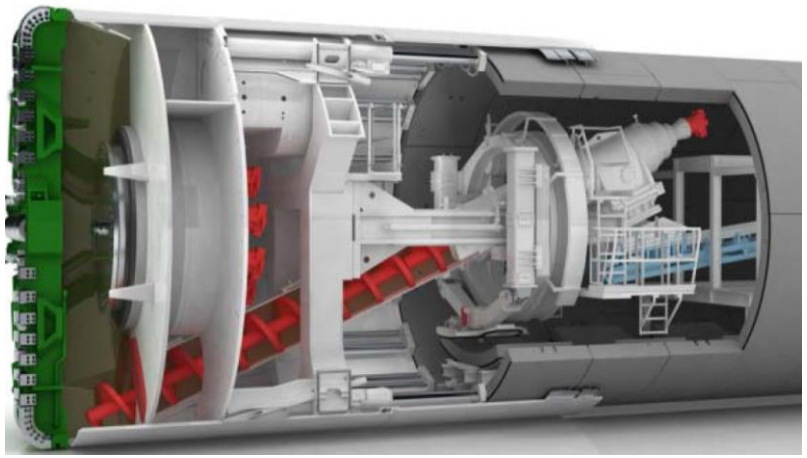
Major Tunnel System Components

Diversion Facility



Hooffs Run Tunnel (open-cut)

Waterfront Tunnel



Soil Layers in Alexandria

Soil samples collected as part of the RiverRenew Boring Program

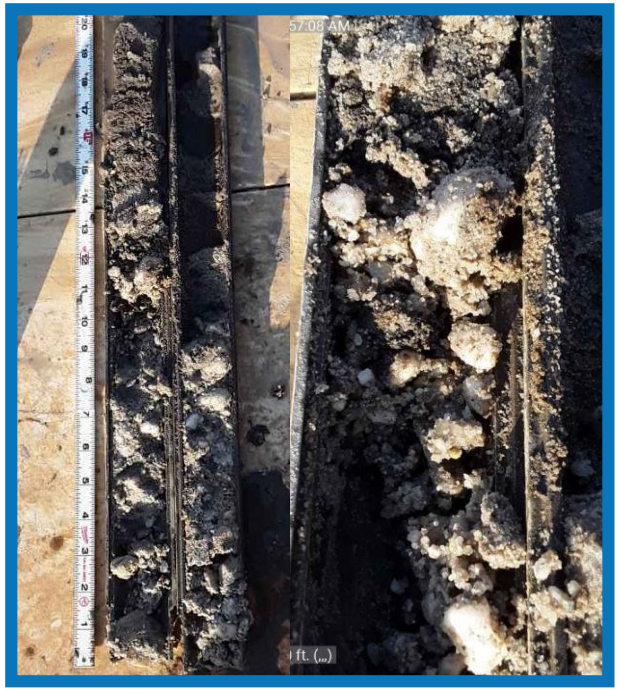
Fill

Silty sand with gravel and can contain signs of humans (bricks, newspaper, wood, wire, debris, etc.)

Alluvium

Loose soil that has been eroded, reshaped by water, and redeposited. Can contain silt, sand, clay, and gravel

Terrace



Dense sand and gravel that can contain cobbles and boulders

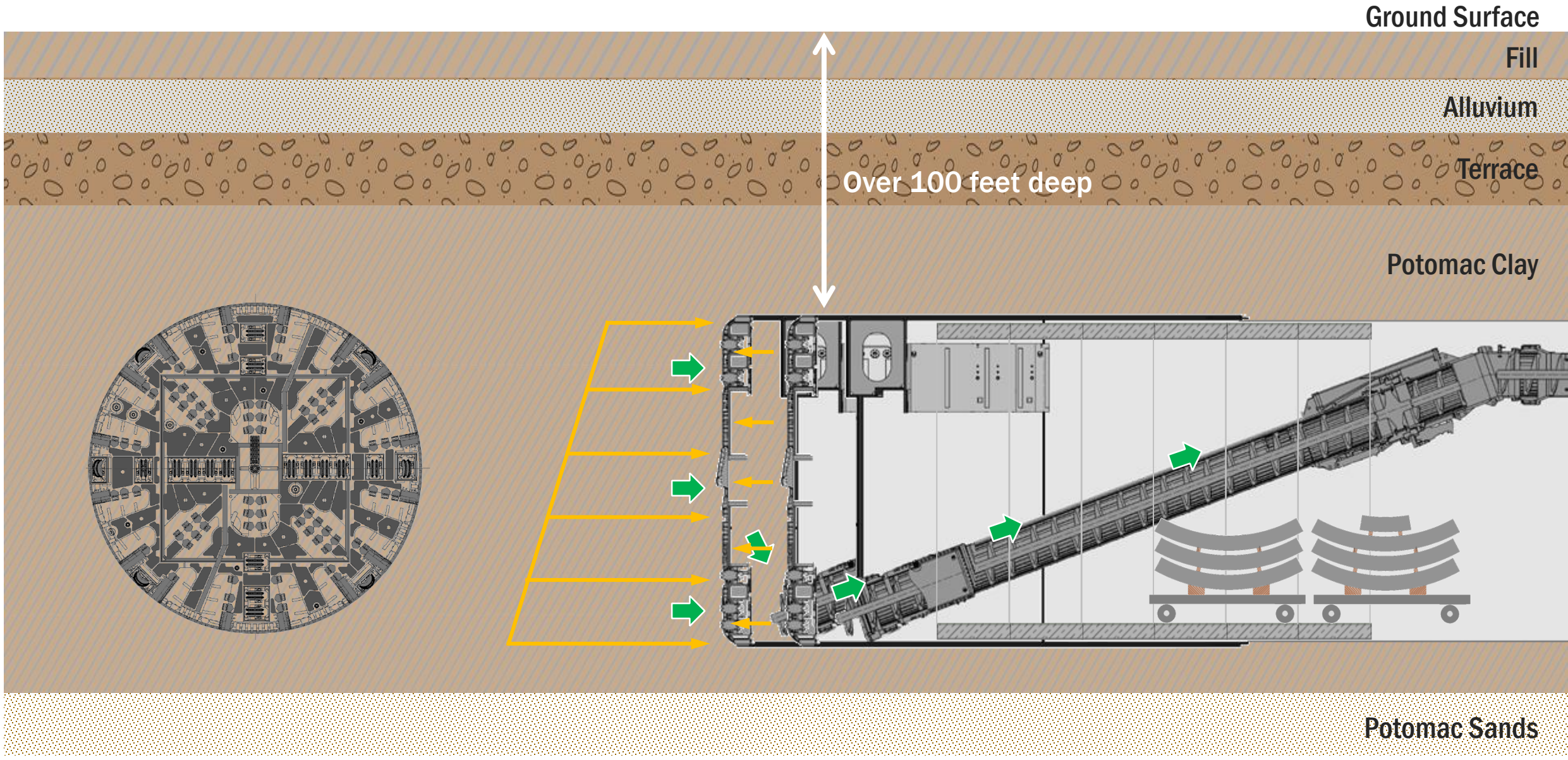
Potomac Clay

Very stiff clay that can contain layers and lenses of sand

Potomac Sands

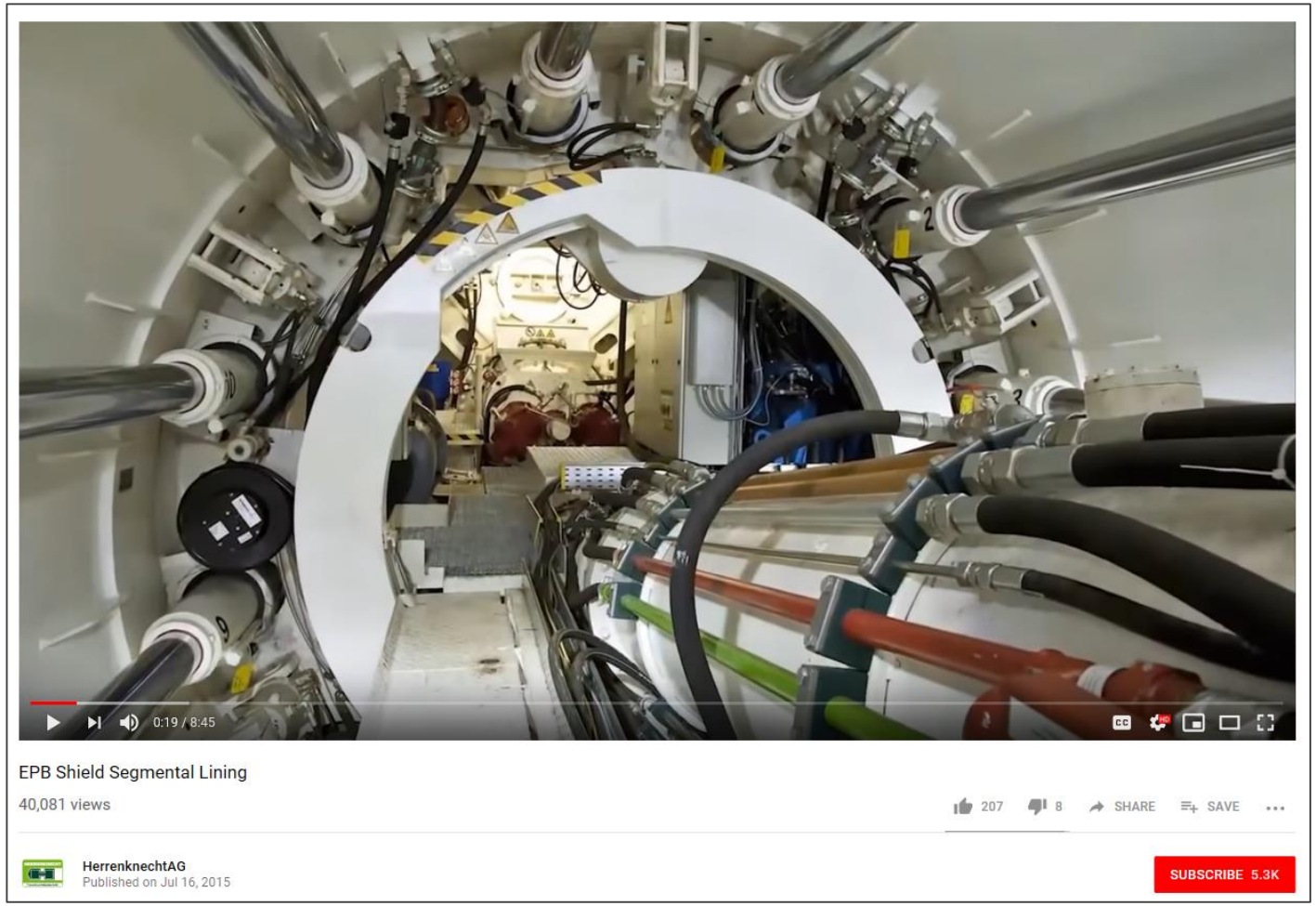
Dense sands of varying particle sizes and distributions that can contain varying amounts of fines

Waterfront Tunnel will be constructed using a TBM.



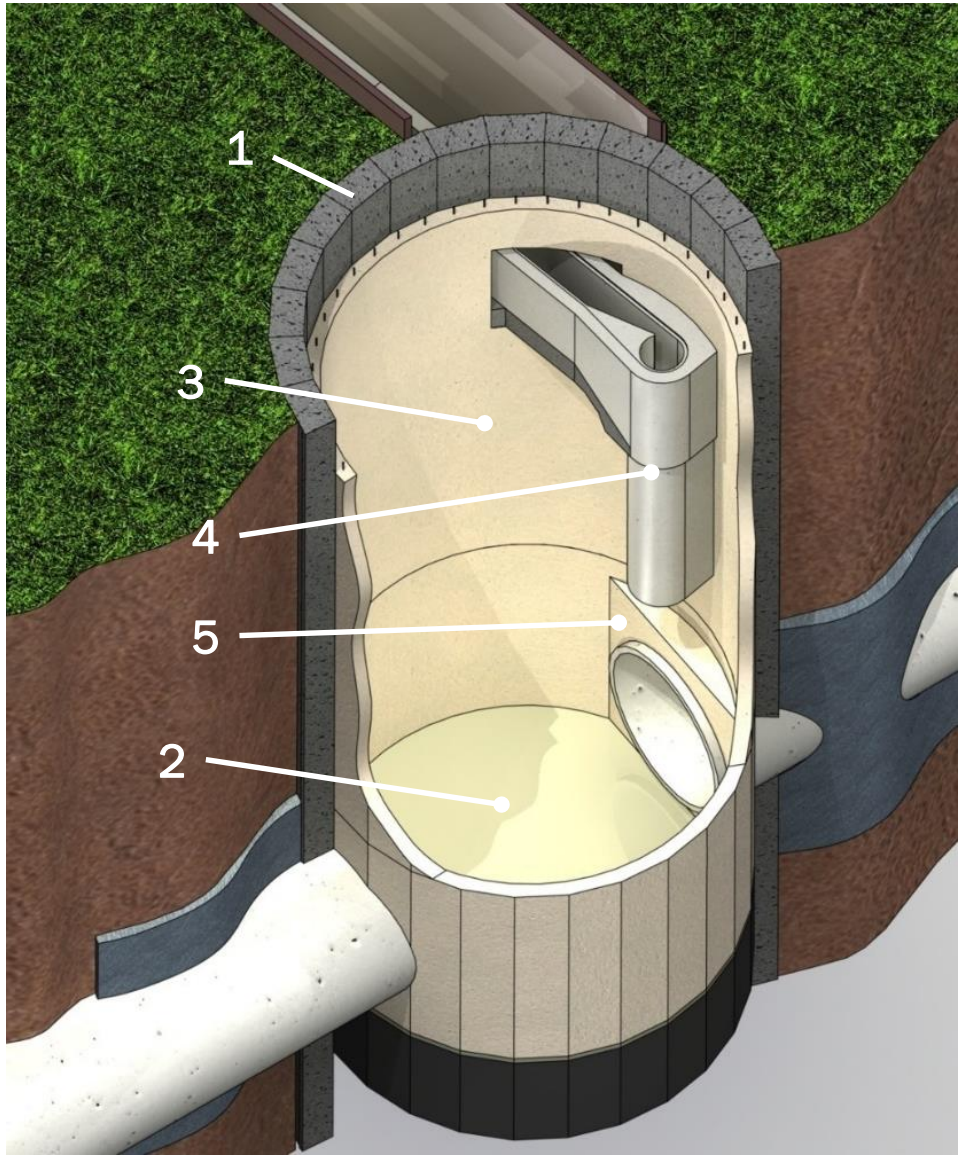
Herrenknecht Video on Tunnel Construction (9 min)

https://www.youtube.com/watch?v=fVidVJ30ob4



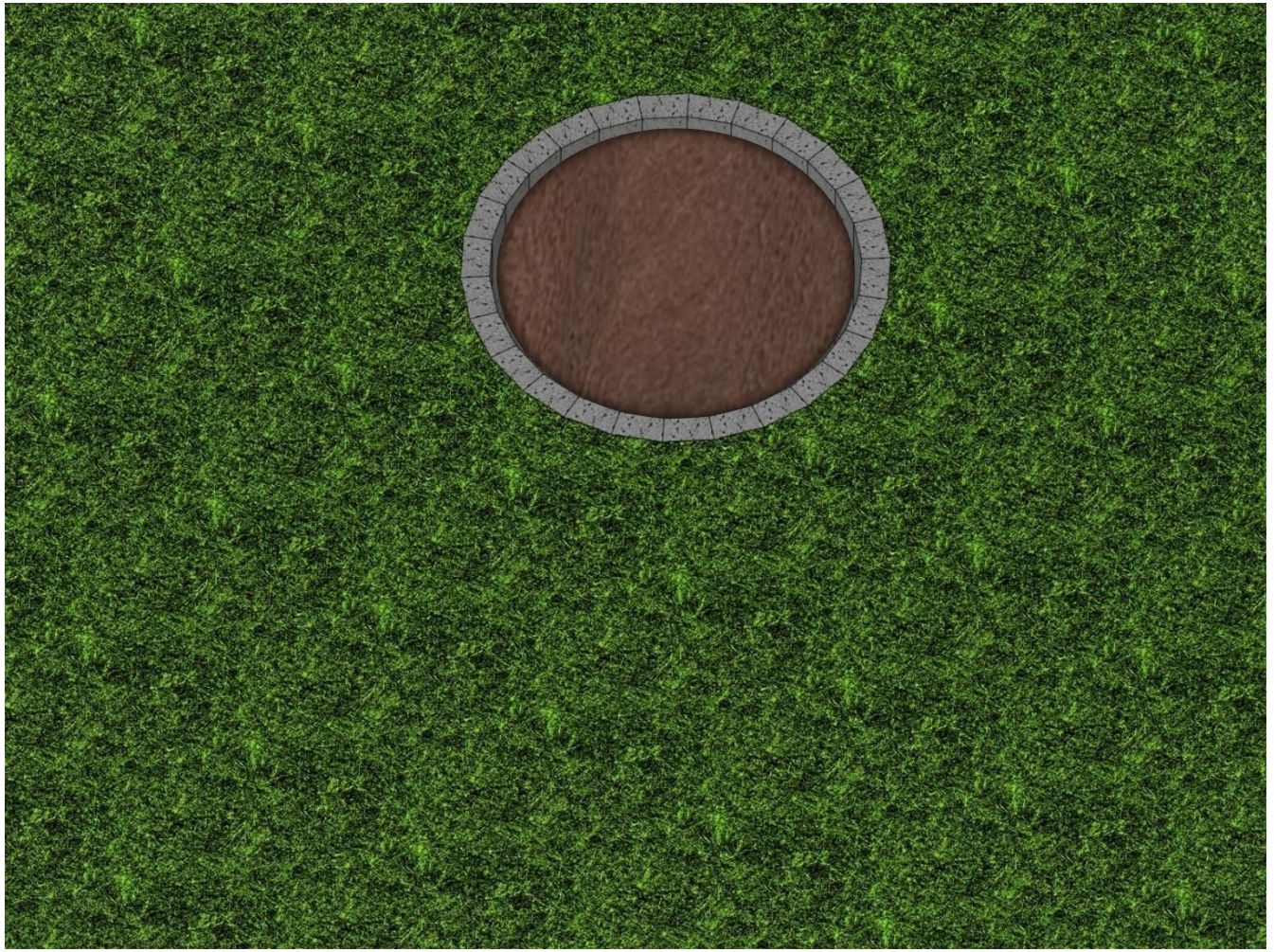
Drop Shaft Components

1. Temporary Support Walls
2. Temporary Bottom Stability Element (ground improvement or structural slab)
3. Permanent Liner
4. Internals
5. Tunnel Penetration Reinforcement
6. Cover (not shown)



Drop Shaft – Construction Sequence

- **Temporary Support Walls**
- Excavate
- Ground Improvement
- Install a Base Slab or Working Slab
- Cast a Break-Out Collar for Reinforcing Future Tunnel Openings
- Install Cast-In Place Liner
- Tunnel Into and/or out of shaft
- Build Internals (e.g., hydraulic structures to drop flows from near surface to tunnel level)
- Finished Shaft can be covered and out of sight



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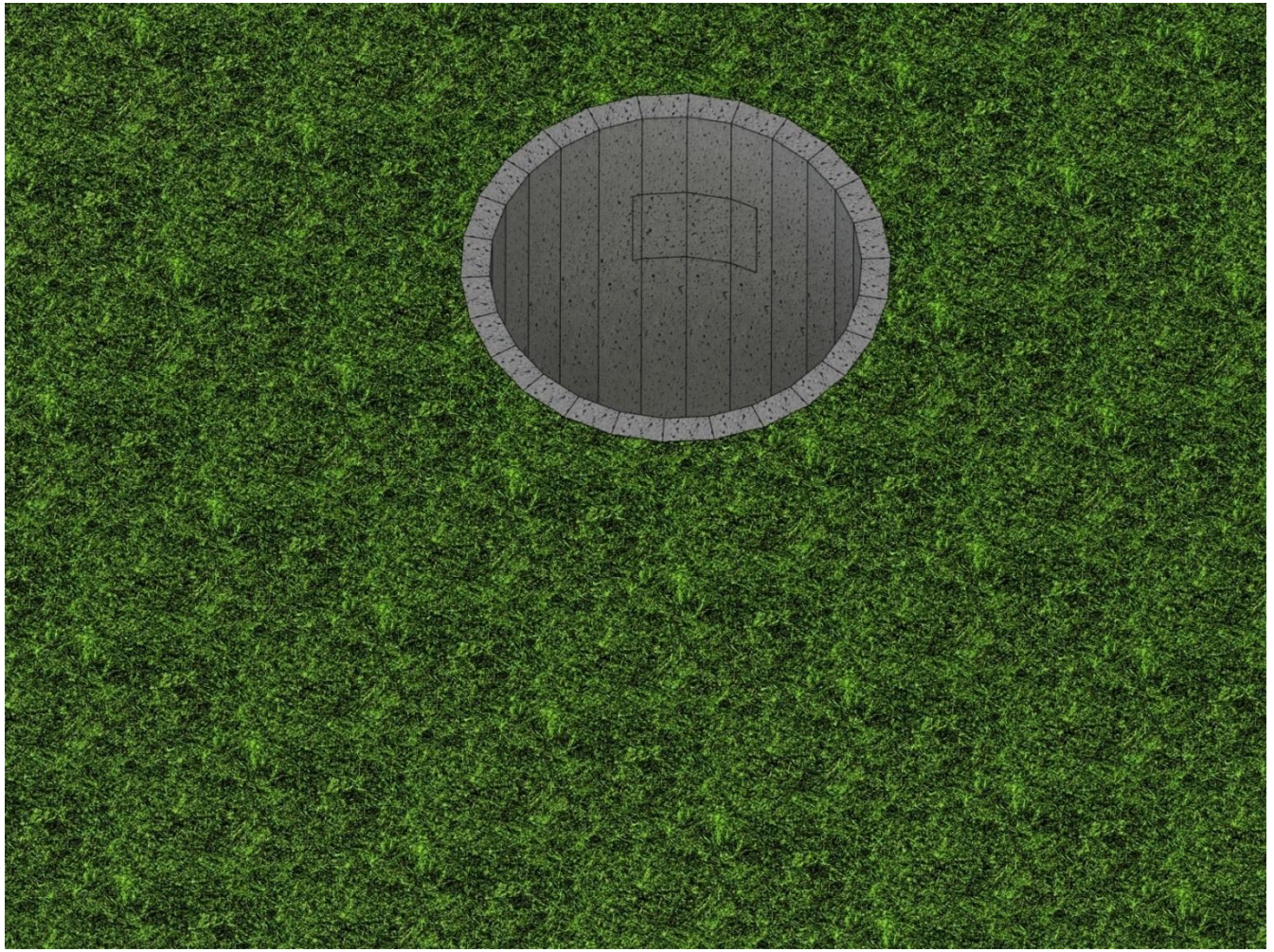

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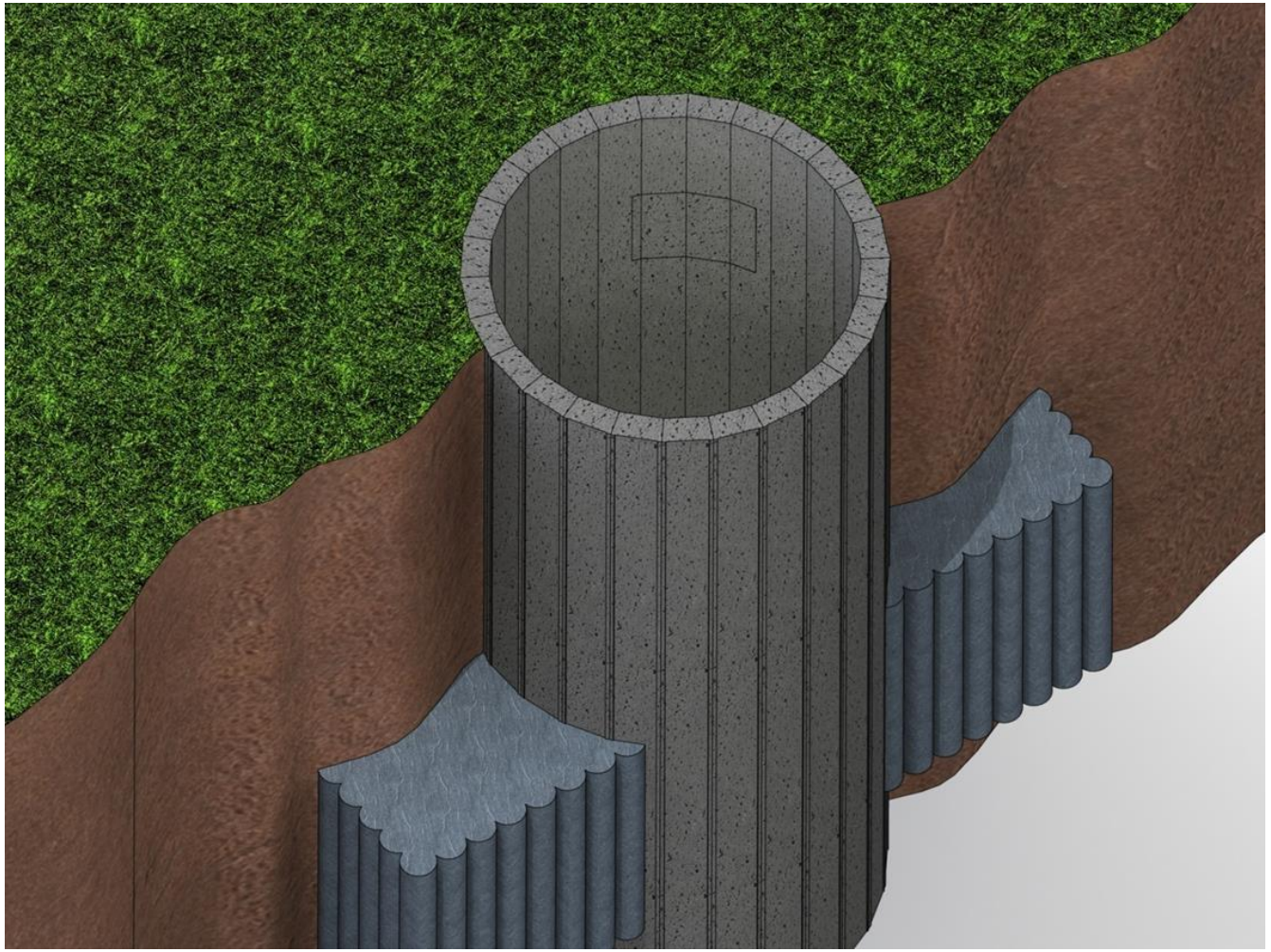

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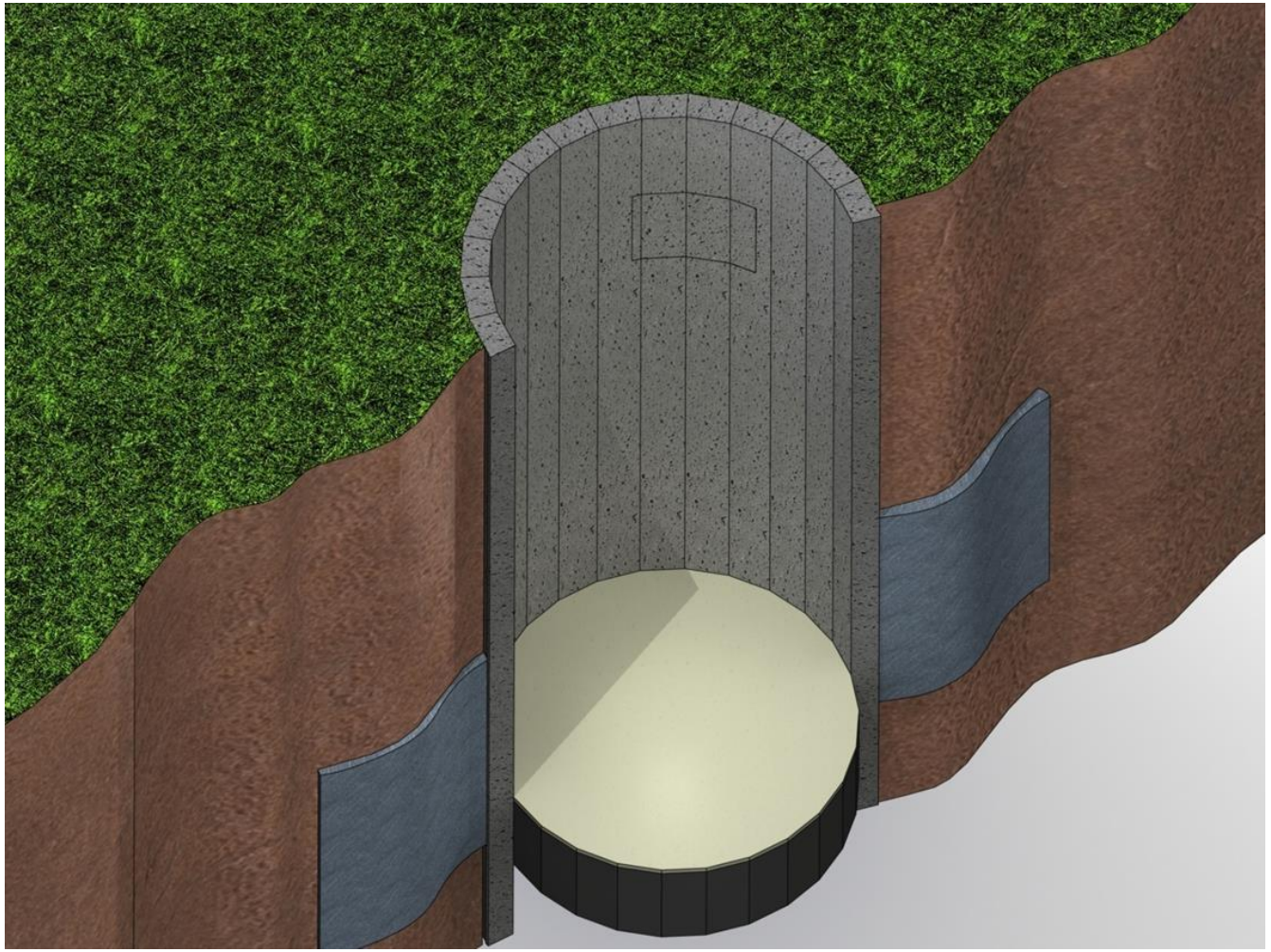

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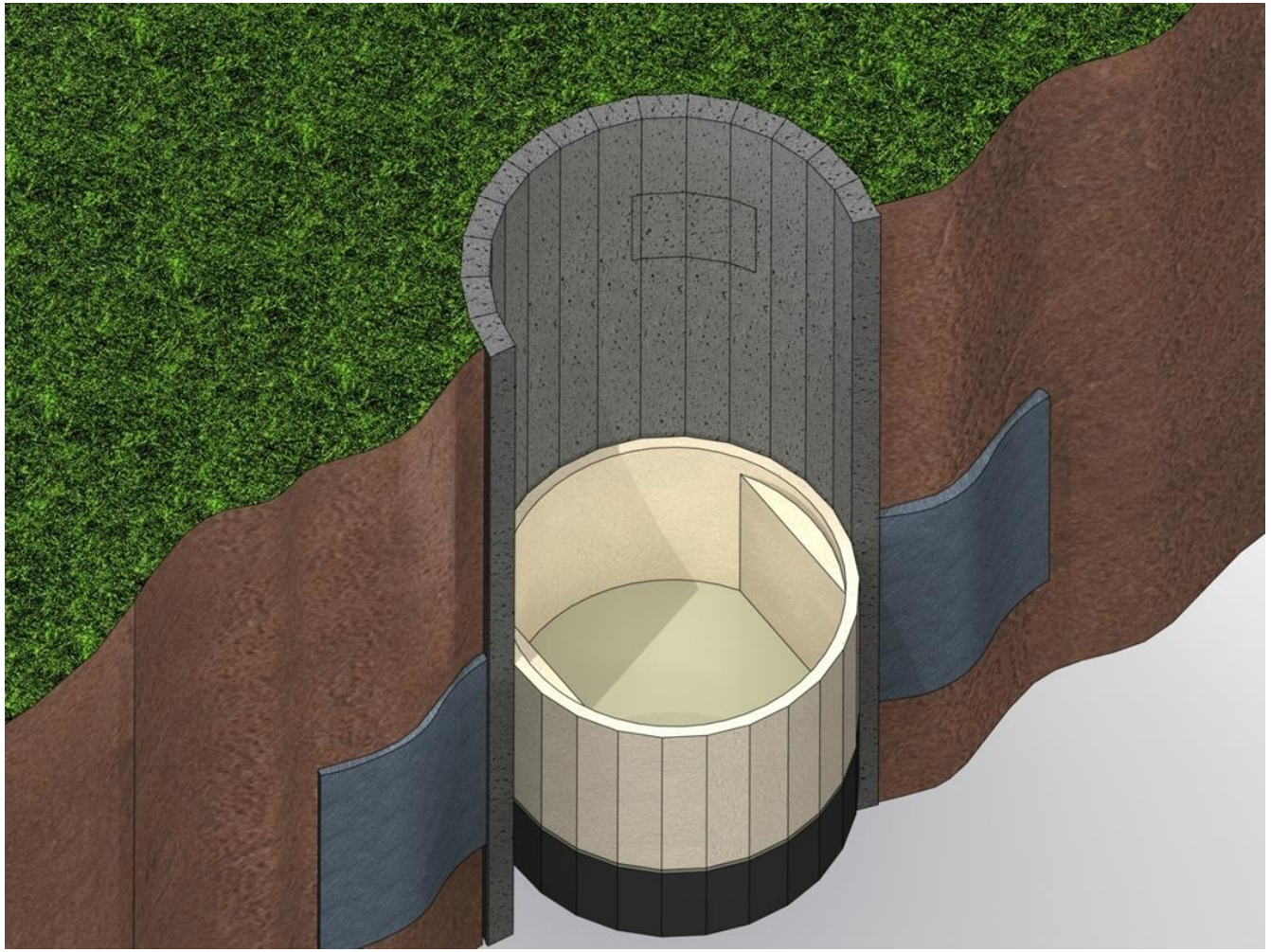

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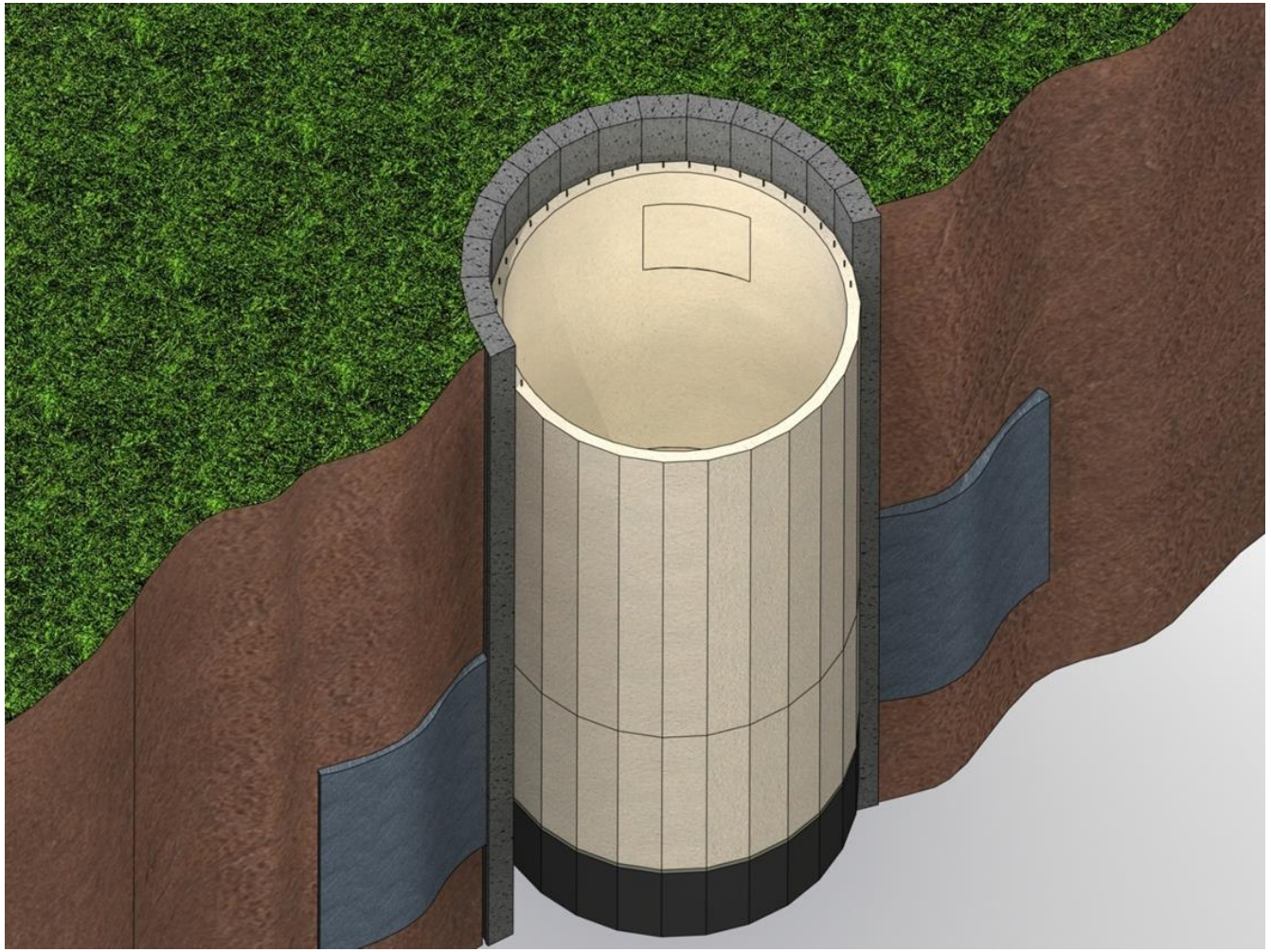

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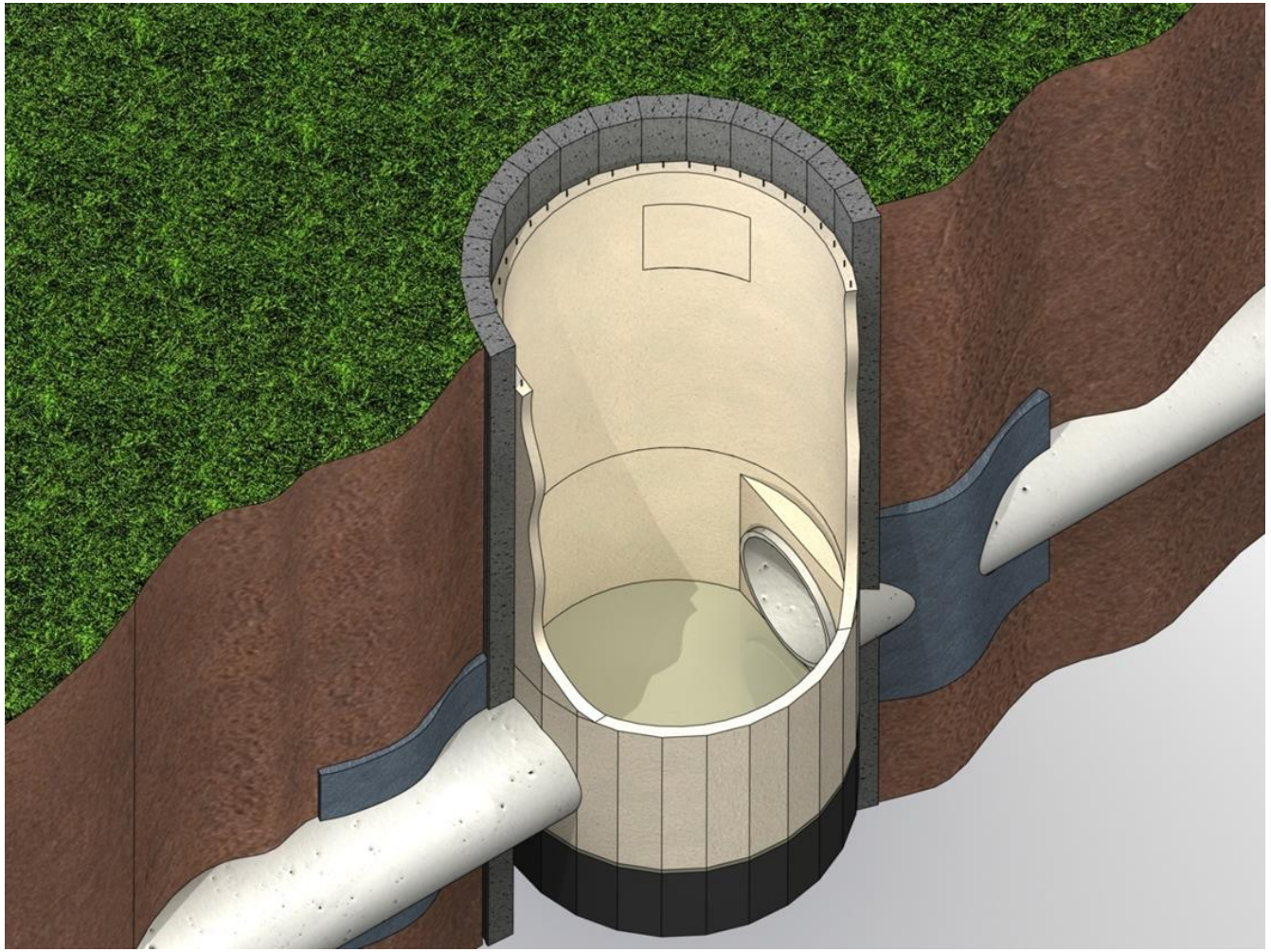

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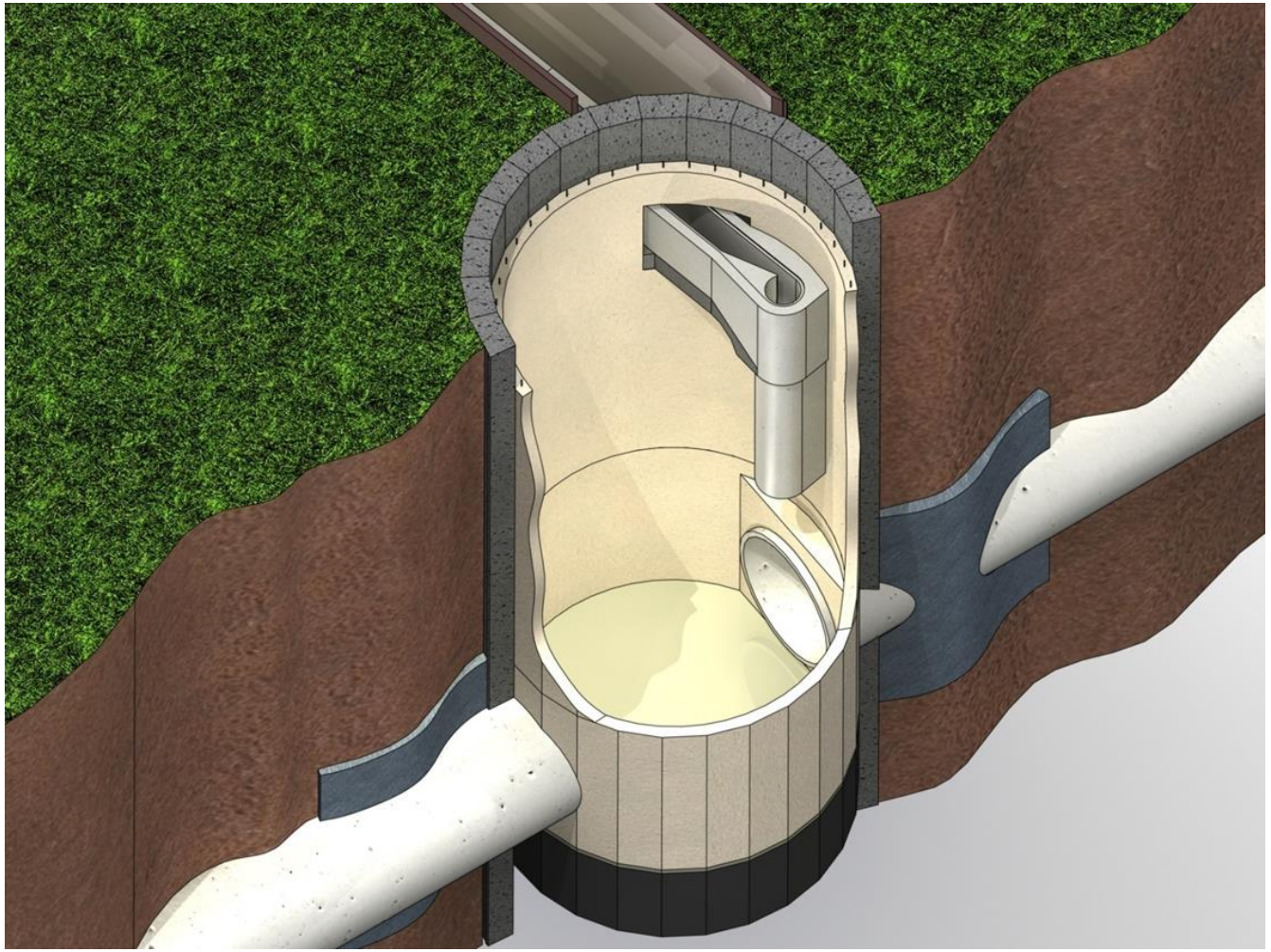

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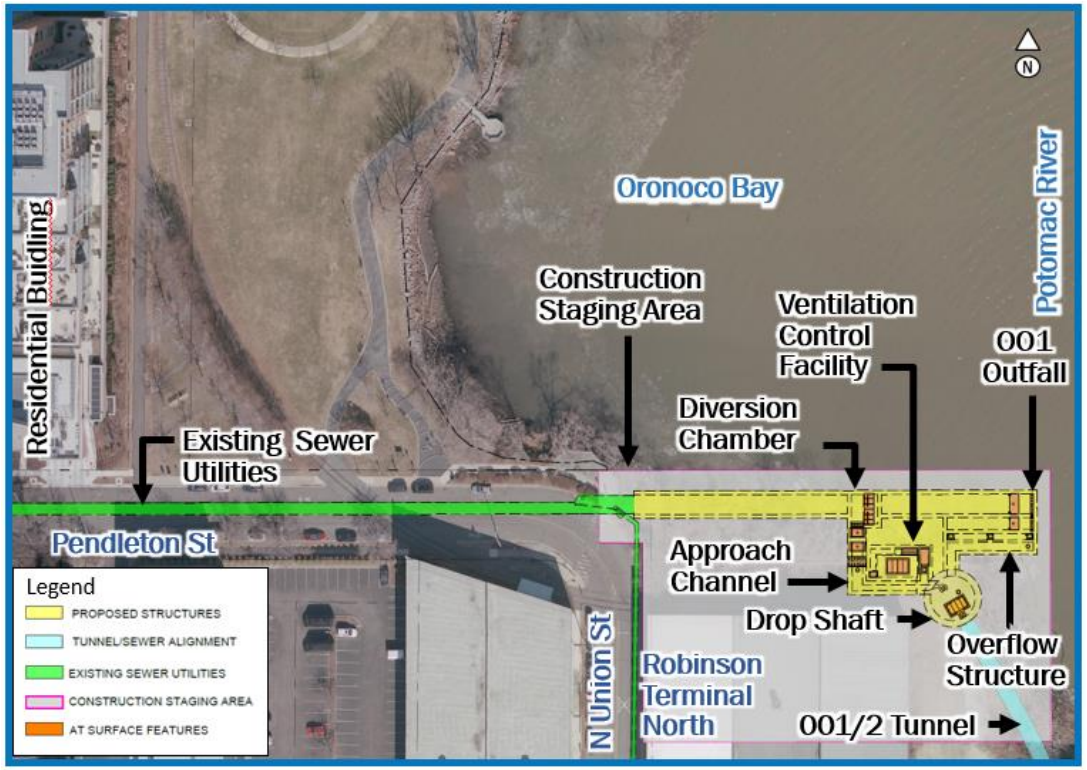
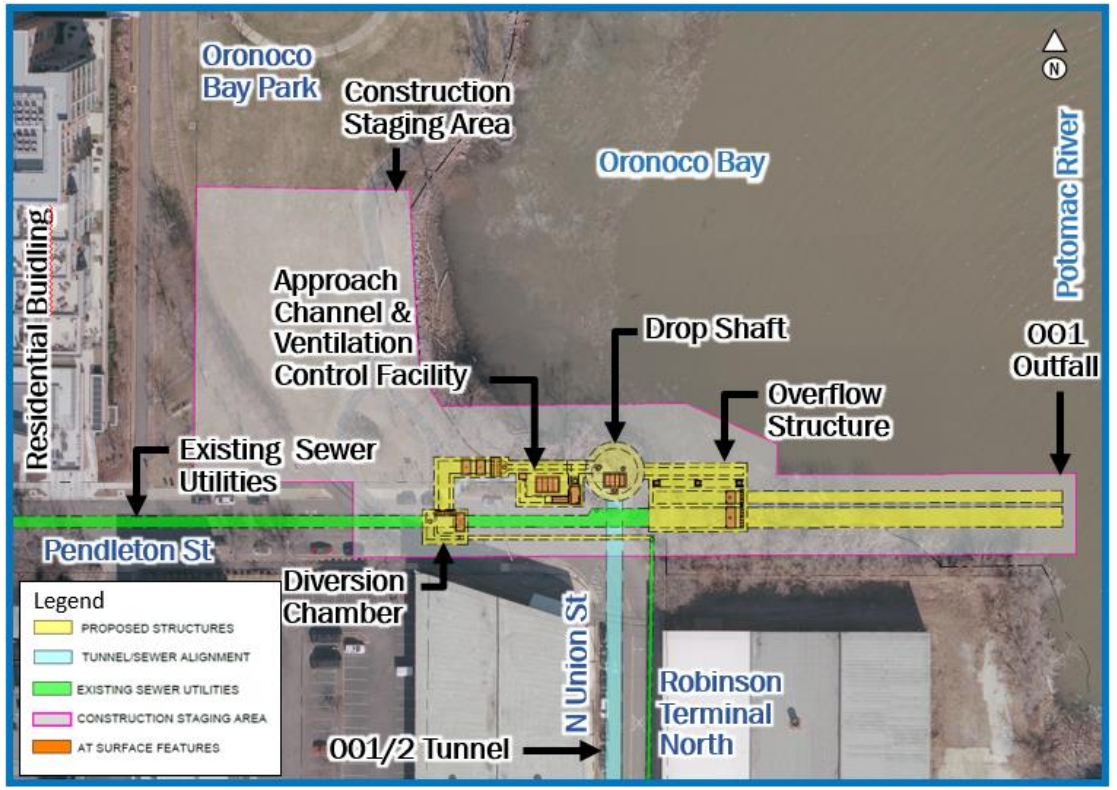
Outfall 001 Construction Sequence Example

Outfall 001 Diversion Facility Alternatives (1 of 2)

Robinson Terminal North

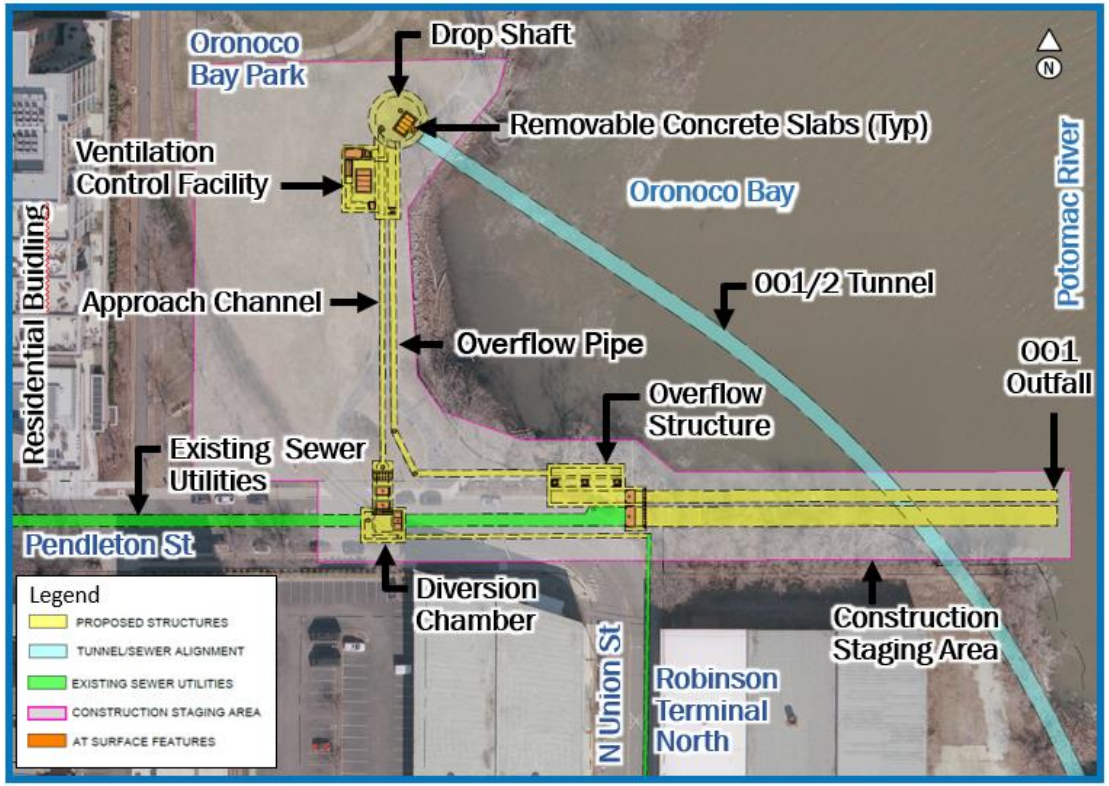


Oronoco Bay Park East

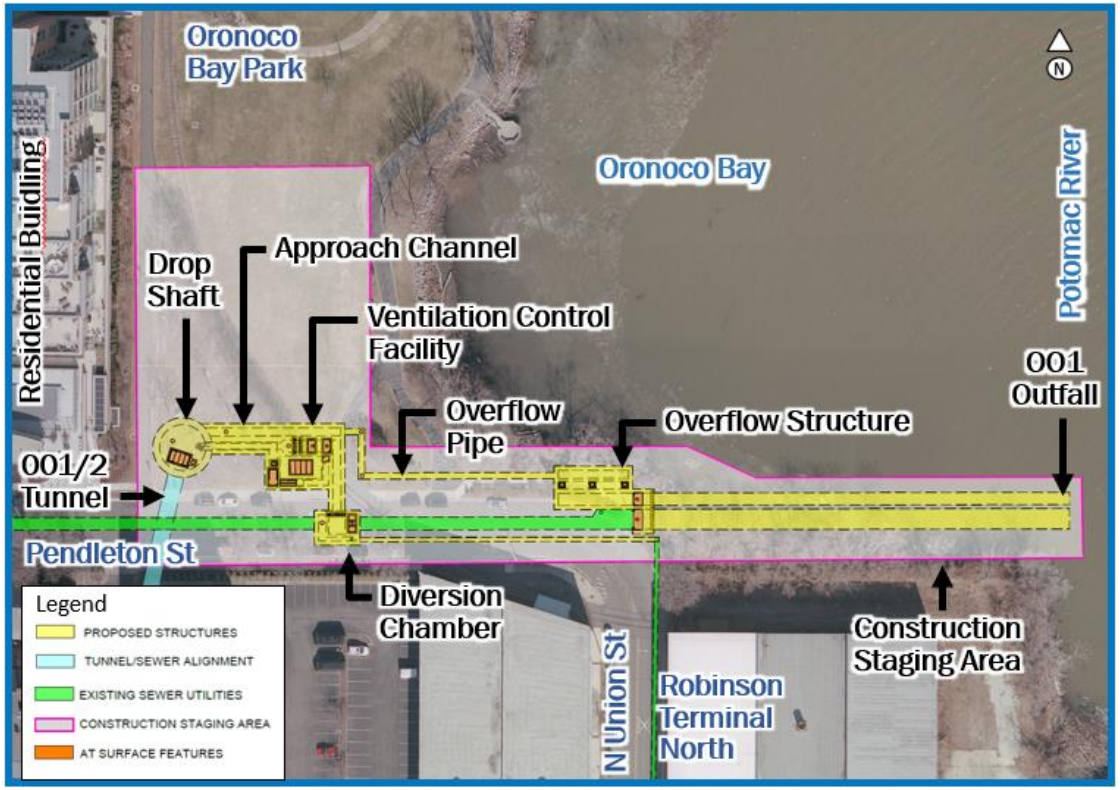


Outfall 001 Diversion Facility Alternatives (2 of 2)

Oronoco Bay Park North

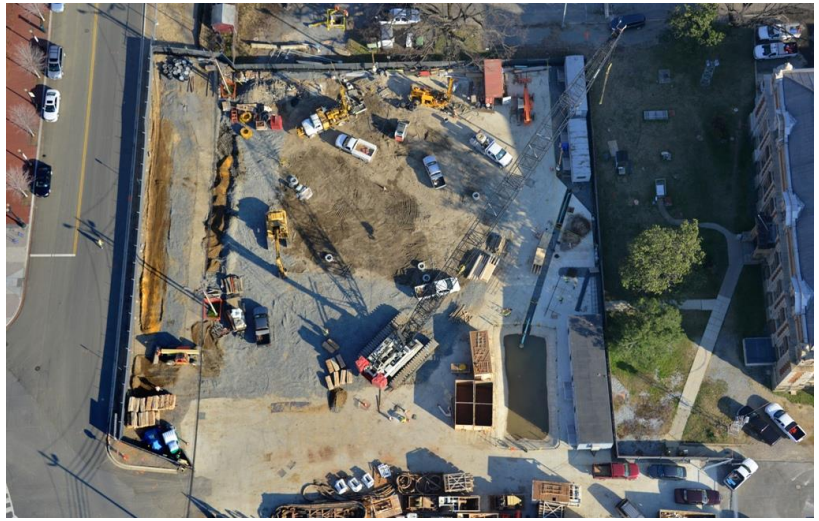


Oronoco Bay Park South



Phase 1: Site Mobilization

3 months



Phase 2: Cofferdam Installation

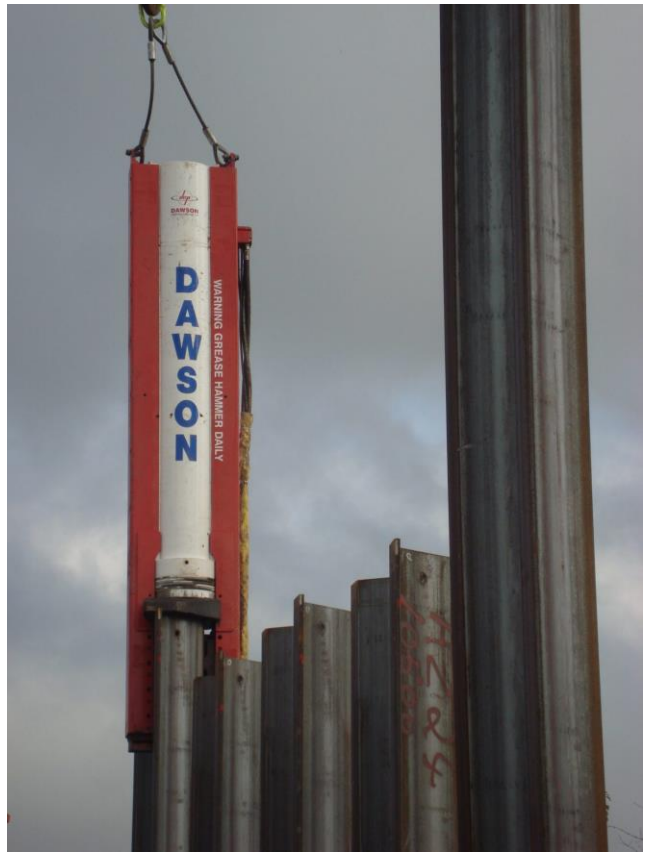
8 months

Sheet pile installation

Finished sheet pile wall

Work within sheet pile wall

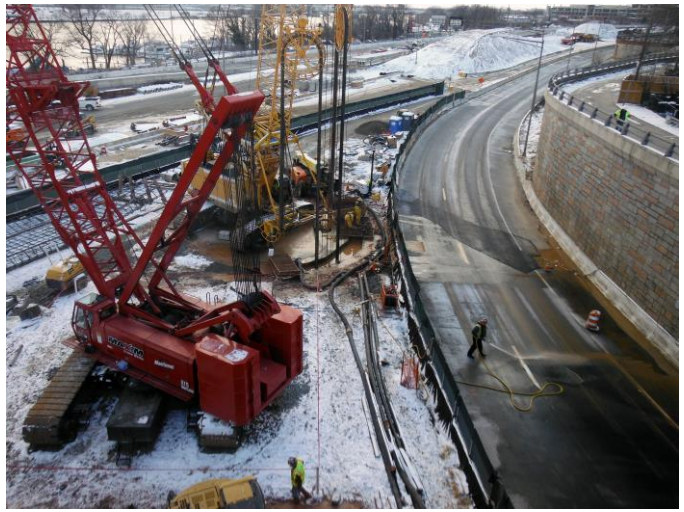
Braced sheet pile wall



Sheet pile hammer

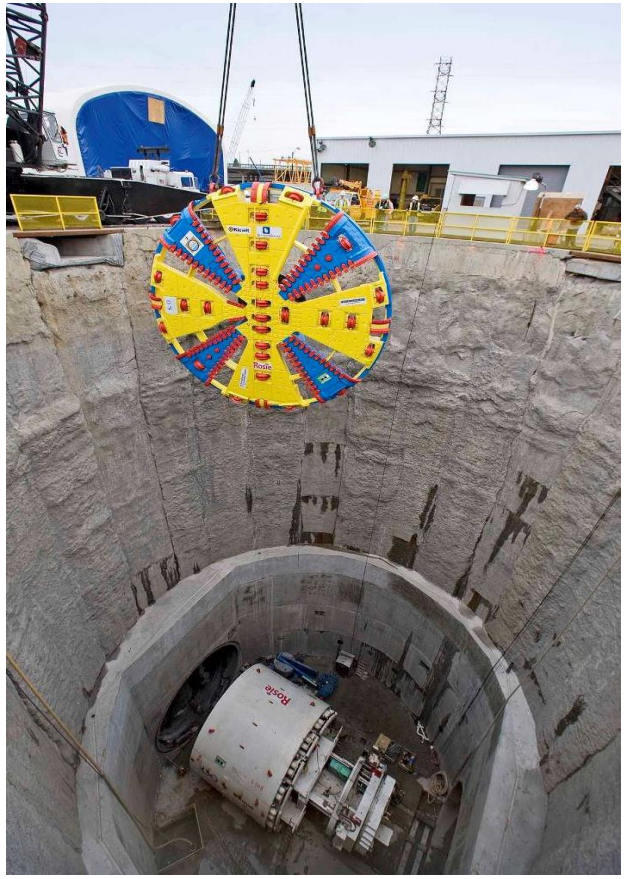
Phase 3: Shaft Construction

10 months



Shaft excavation support installation

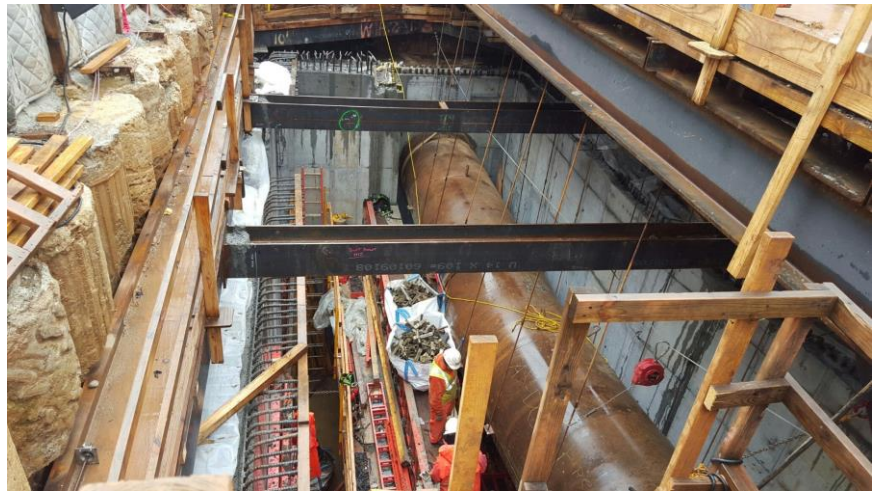
Shaft excavation



Finished shaft excavation support

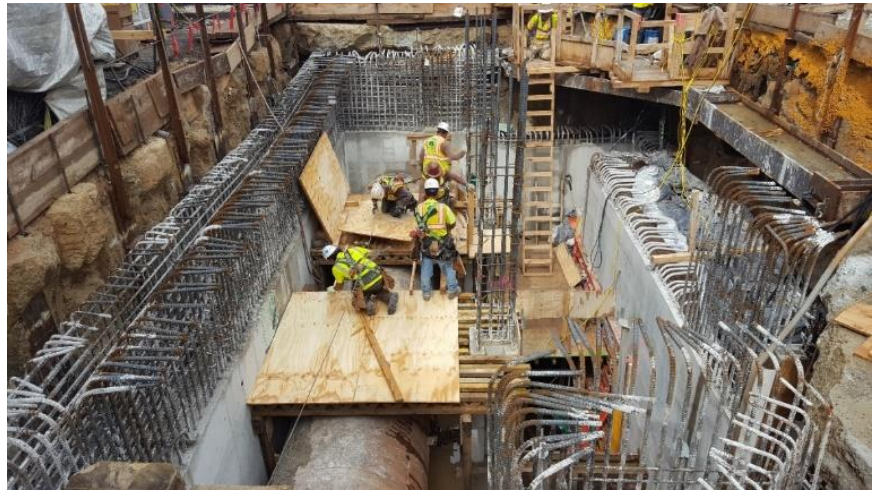
Phase 4: Near Surface Structures

9 months



Excavation support and flume

Concrete formwork and pours



Reinforcing installation

Equipment installation (where necessary)

Phase 5: TBM Removal & Shaft Fit-out

4 months

TBM removal

Shaft internal concrete (upper shaft)

Shaft internal concrete (lower shaft)

Shaft cover and backfill

Phase 6: Site Restoration

2 months

Outfall 002 Conceptual Restoration

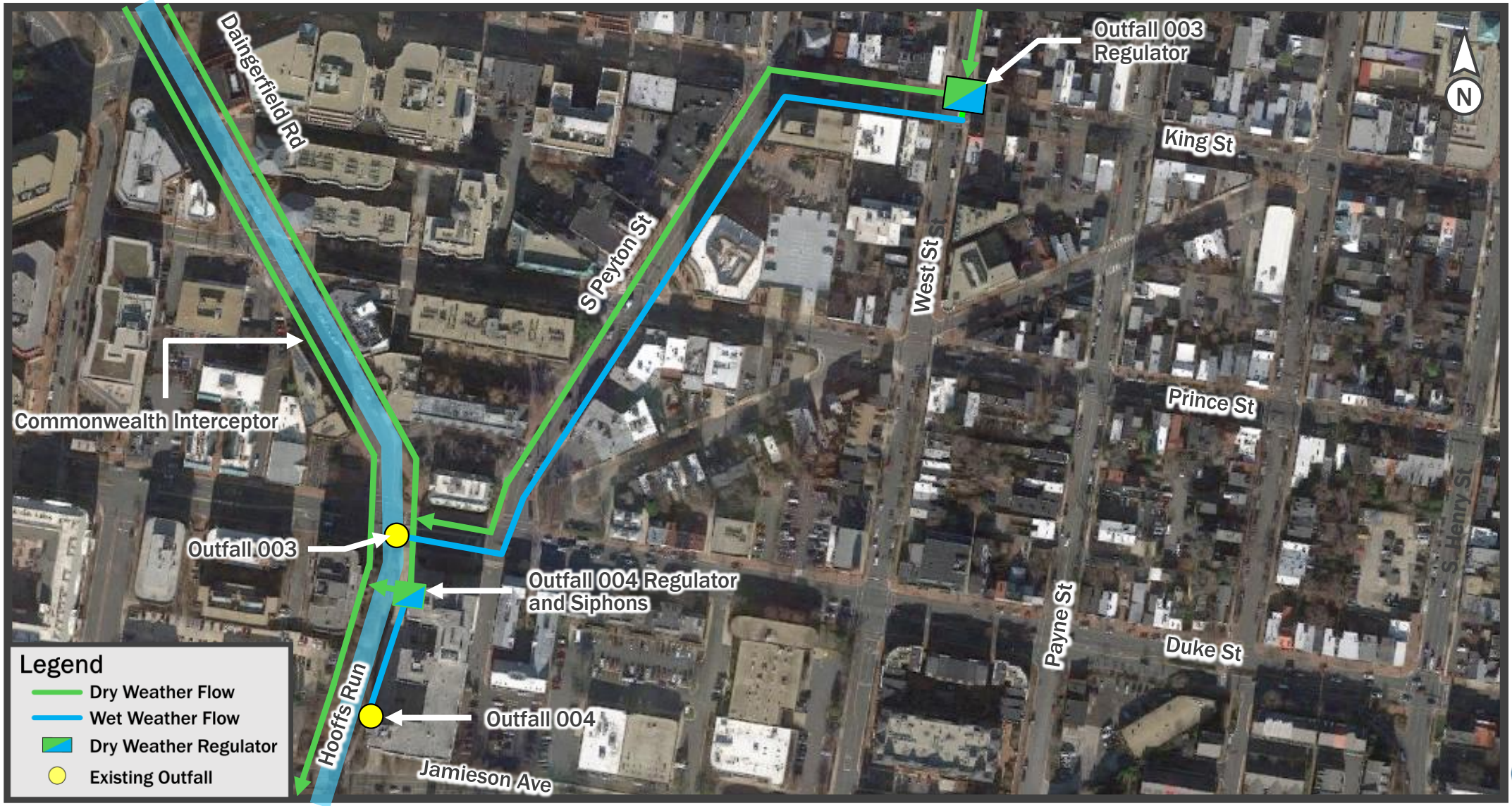
Outfall 002 Existing Conditions

Royal Street North Diversion Facility Conceptual Landscape Plan

Note: National Park Service Jurisdiction

Hooffs Run Tunnel Conceptual Restoration

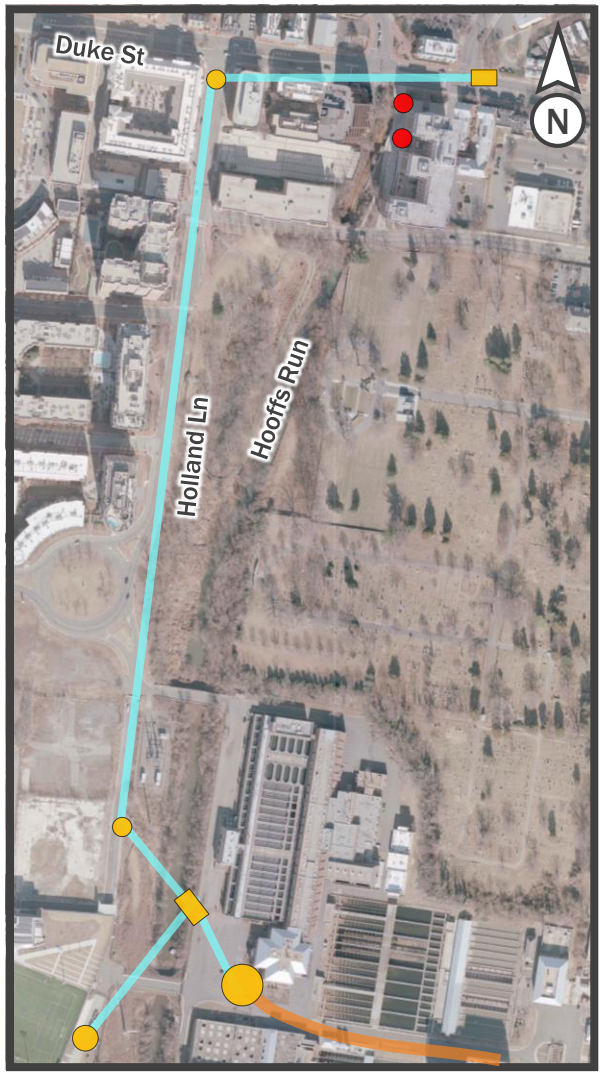
Outfall 003/4 Existing Conditions



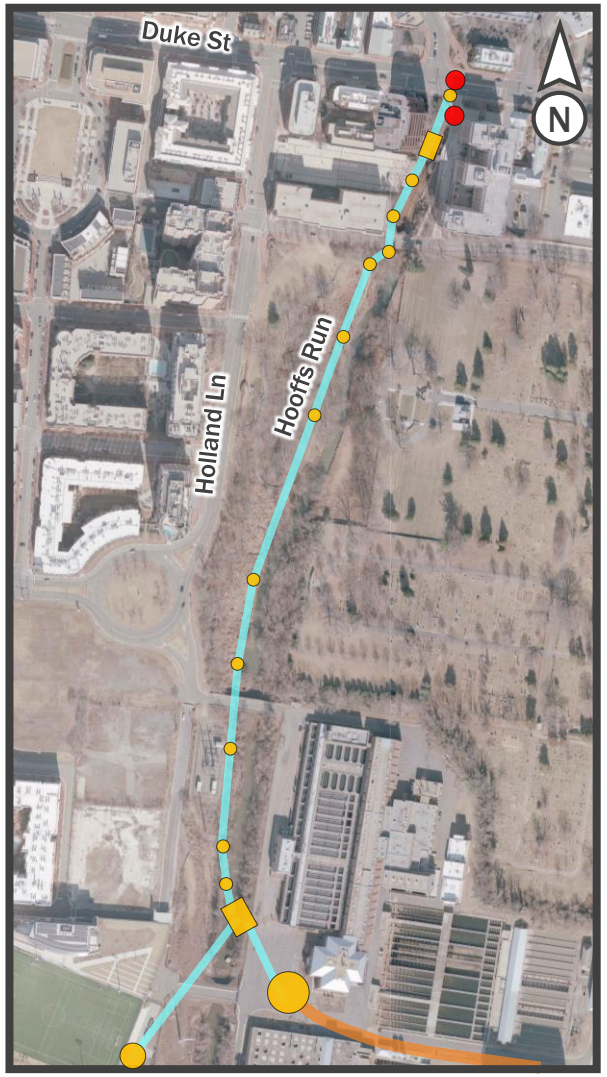
Hooffs Run Tunnel Alternatives Under Consideration

Tunnel
(100-ft deep)

Microtunnel
(40-ft deep)



Open-cut
(10 to 20-ft deep)

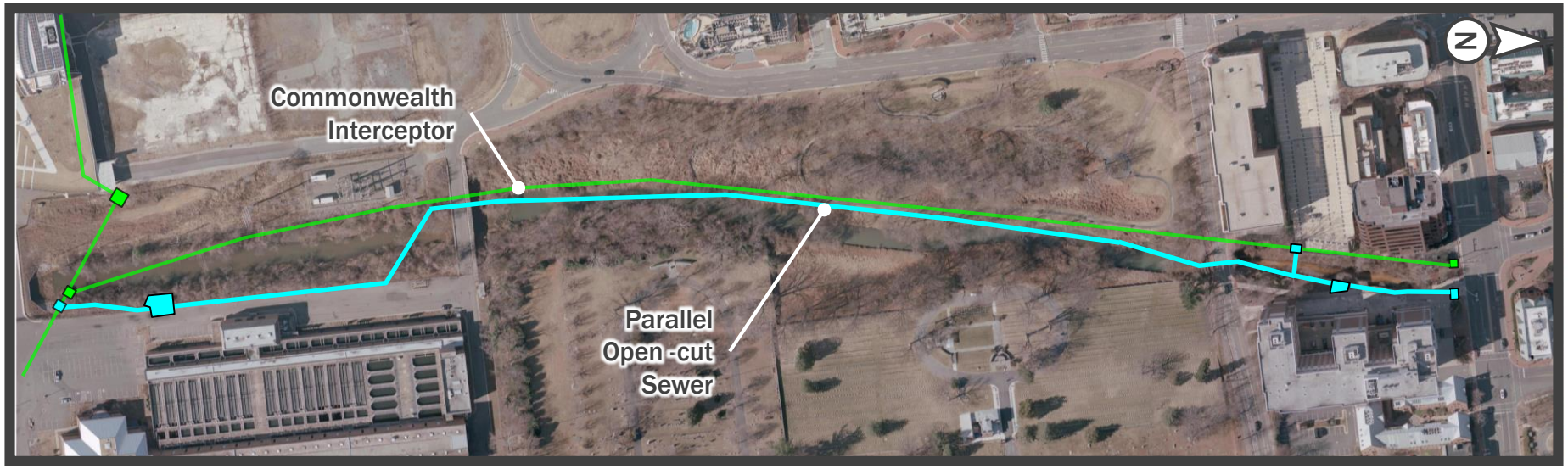


LEGEND

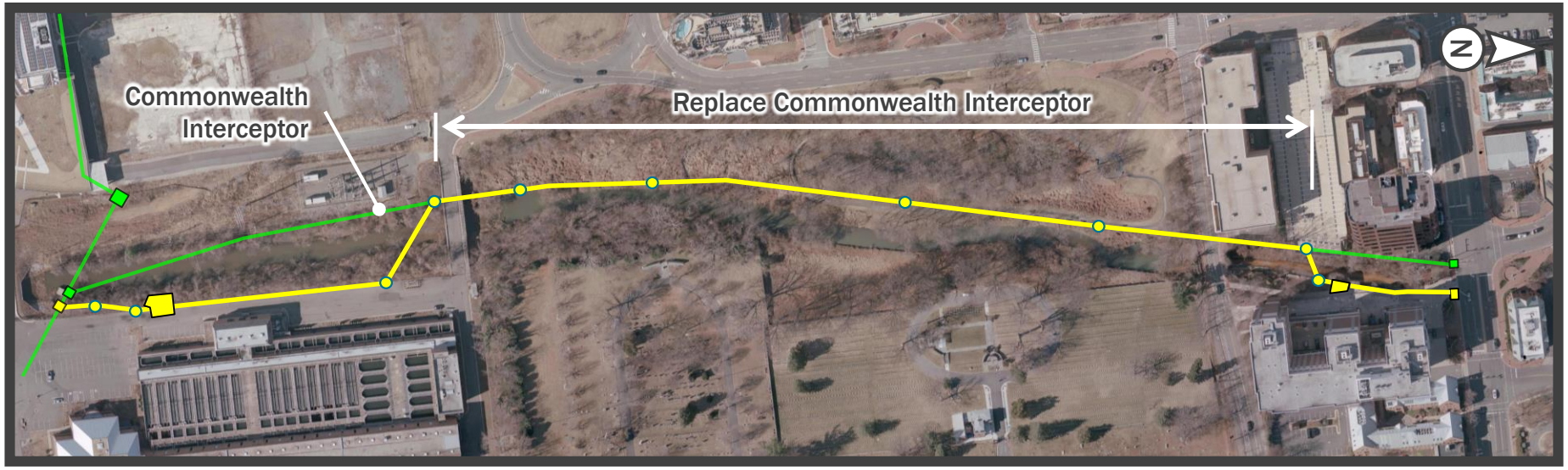
- Manhole
- Existing Outfall
- Potential Alignment Alternatives
- Shaft

Open-cut: Parallel vs. Replace Commonwealth Interceptor

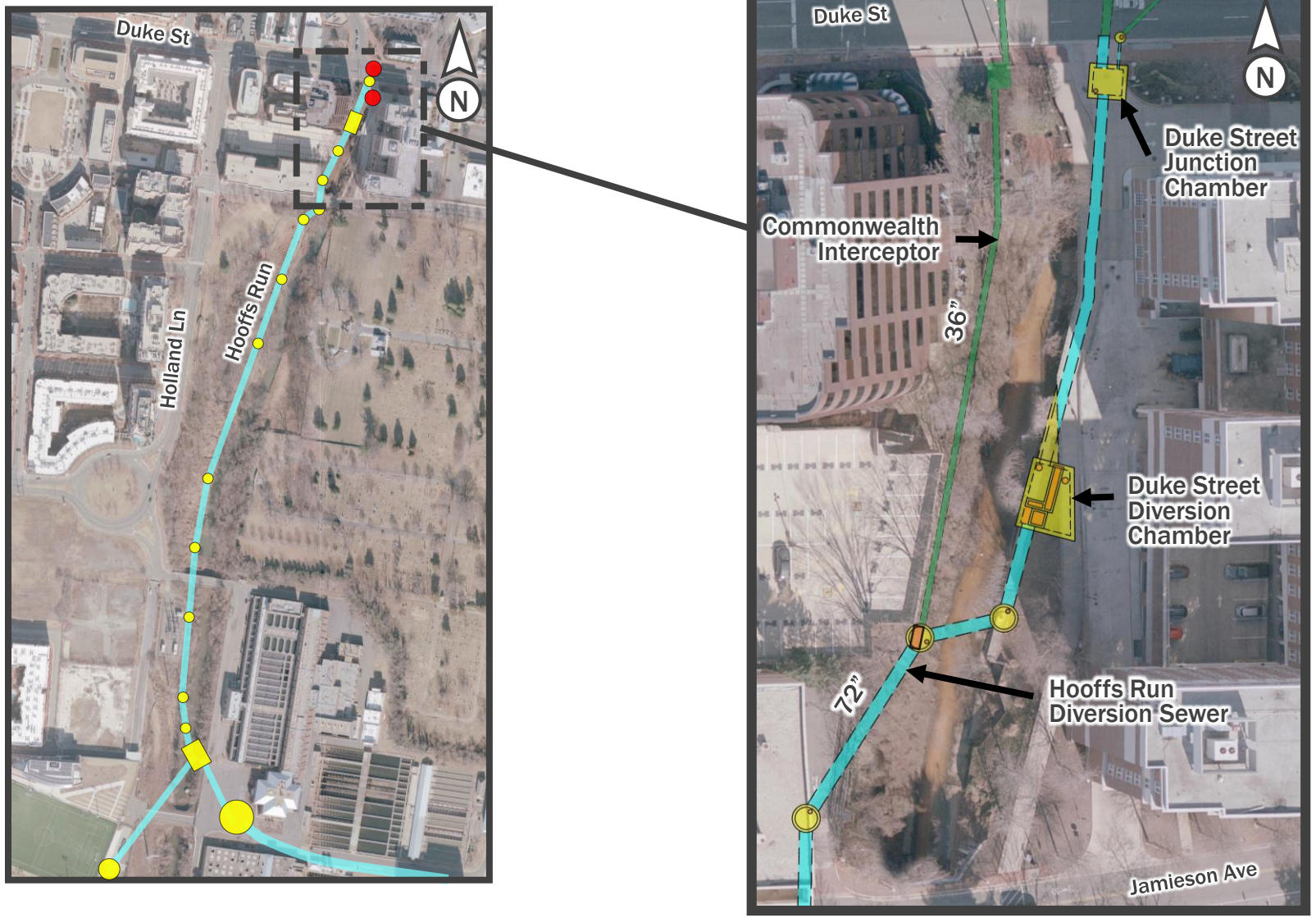
Parallel



Replacement

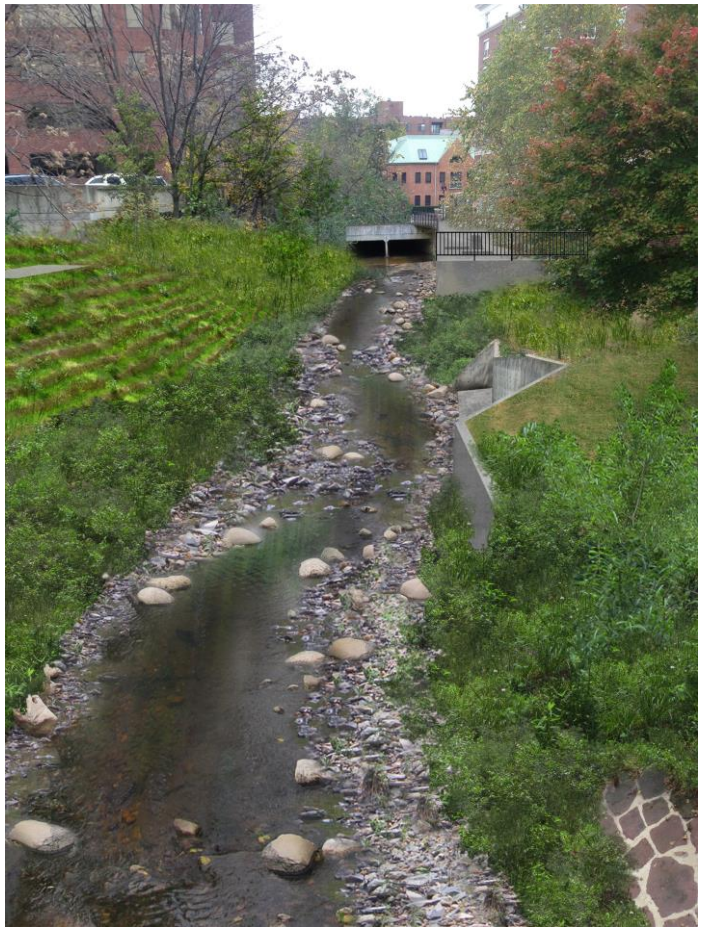


Proposed Structures Near Duke Street for Open-cut Option



Hooffs Run Renderings – Potential Stream Restoration Option

Jamieson Avenue to Duke Street



Rendering, Looking North from Jamieson Avenue

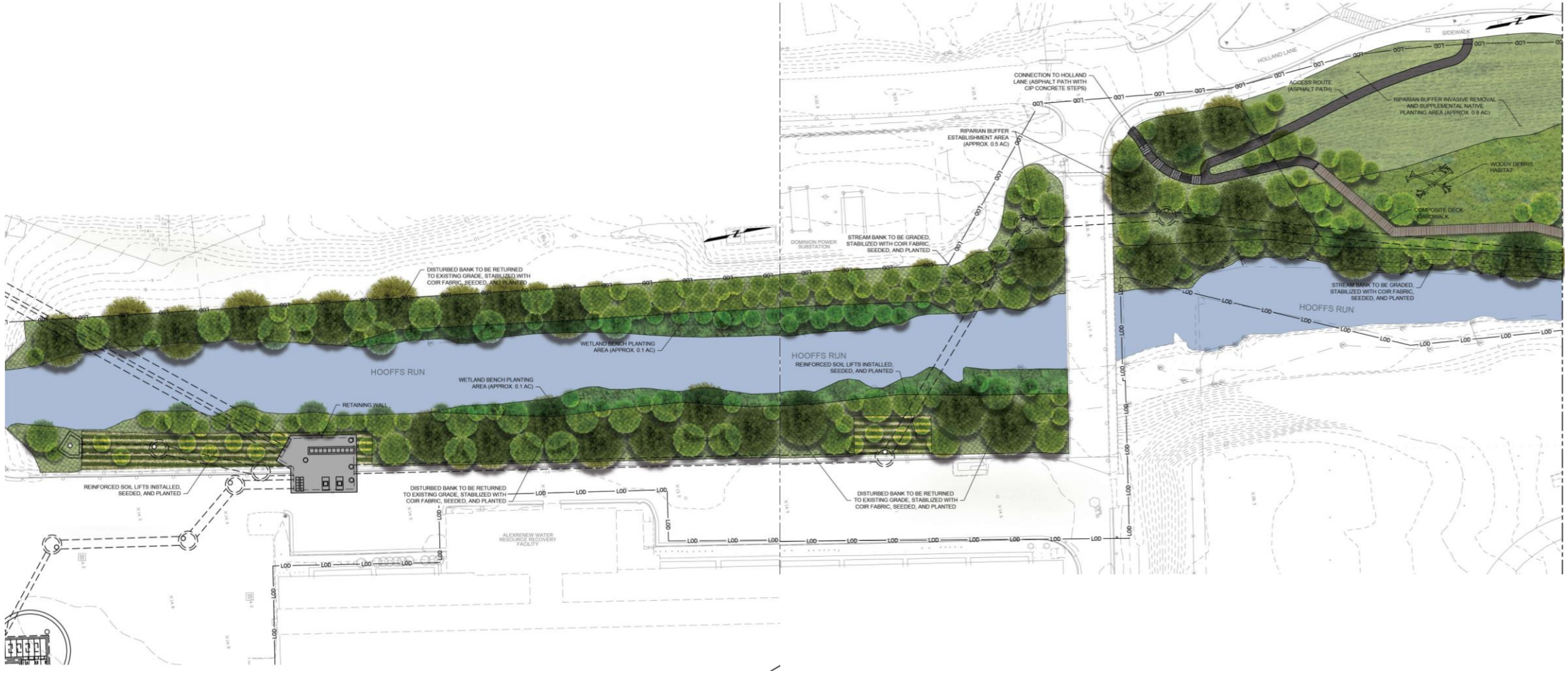
Hooffs Run Renderings – Potential Stream Restoration Option

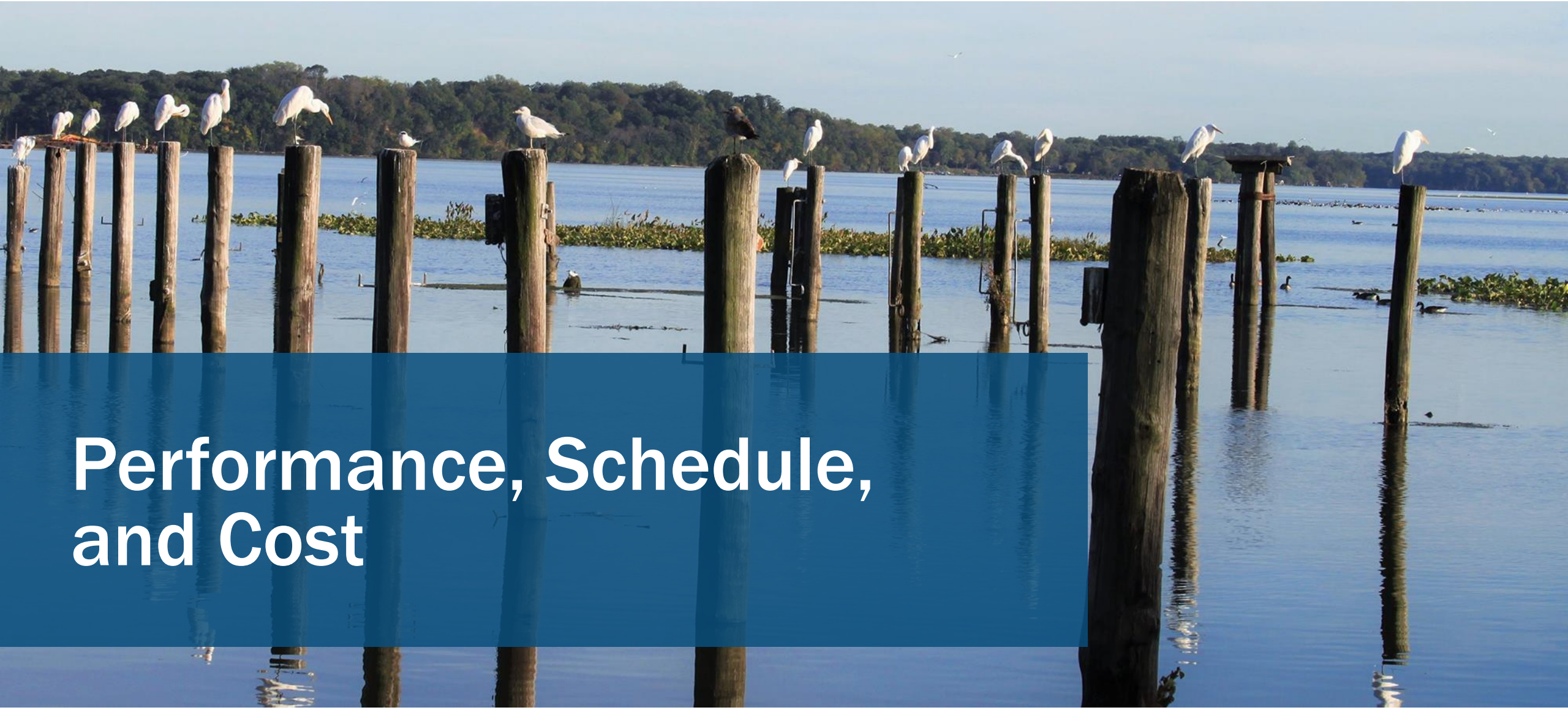
Eisenhower Avenue to Jamieson Avenue

Rendering, Looking South from Jamieson Avenue

Hooffs Run Renderings – Potential Stream Restoration Option

AlexRenew to Eisenhower Avenue





Performance, Schedule, and Cost

RiverRenew

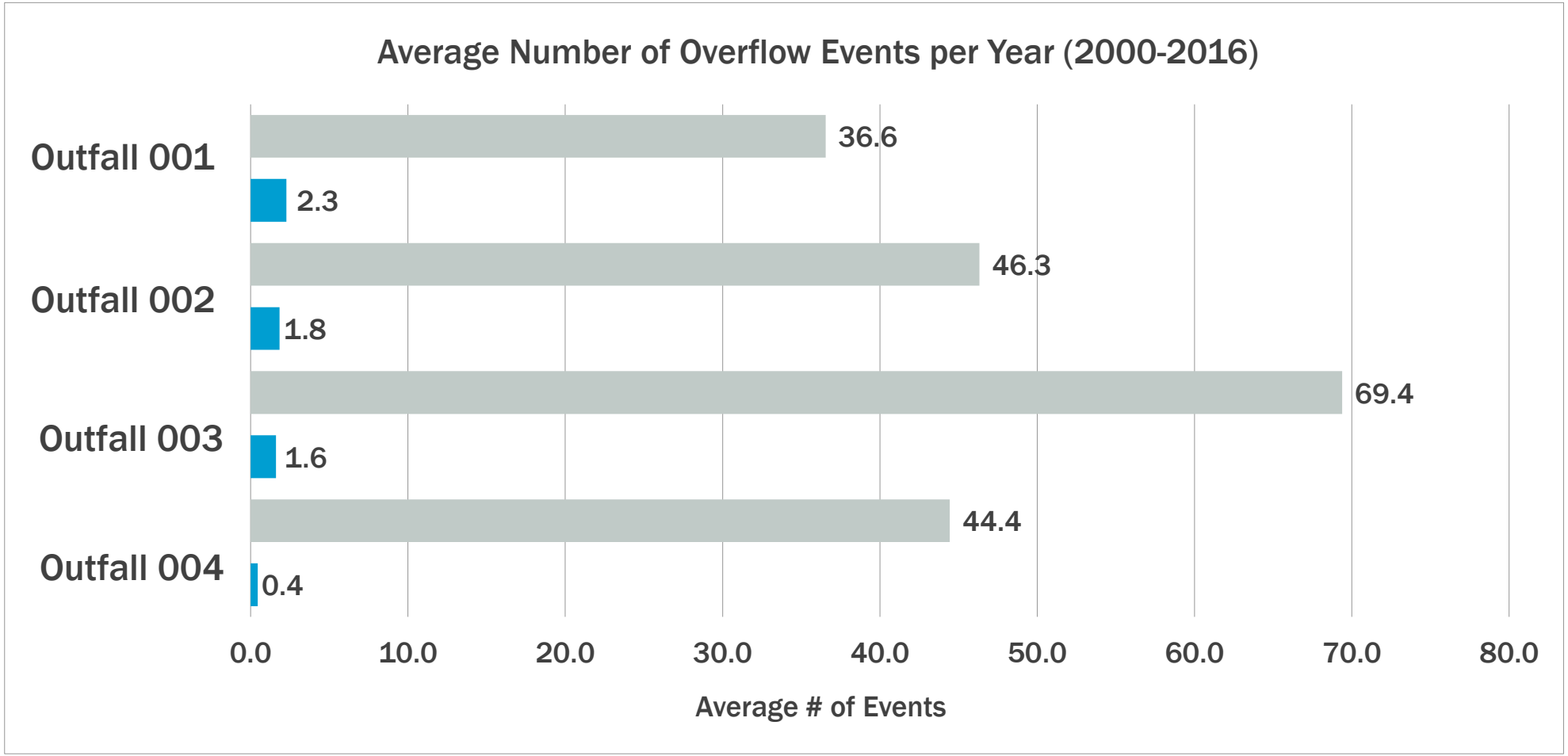
Summary of Performance Requirements per 2017 Virginia Law

Outfall	Requirement
001	4-6 overflows per year
002	80% bacteria reduction
003	99% bacteria reduction
004	99% bacteria reduction

New controls in place by July 1, 2025

Summary of Performance Data

Average Number of Overflow Events per Year (2000-2016)

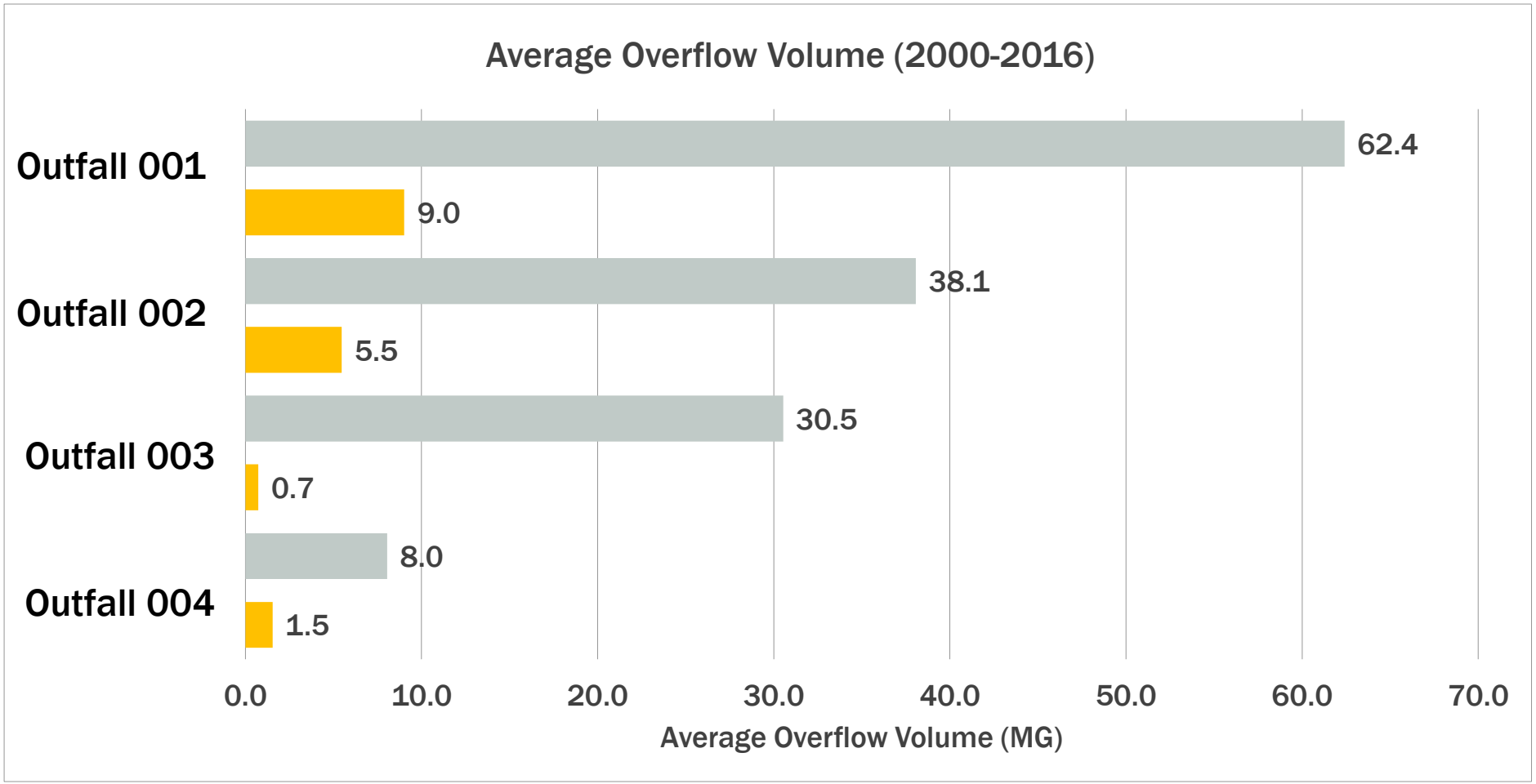


Notes:

1. Based on 15-minute rainfall data from Ronald Reagan Airport
2. Assumes Water Resource Recovery Facility (WRRF) dry weather flow of 54 MGD

Summary of Performance Data

Average Overflow Volume per Year (2000-2016)



Legend

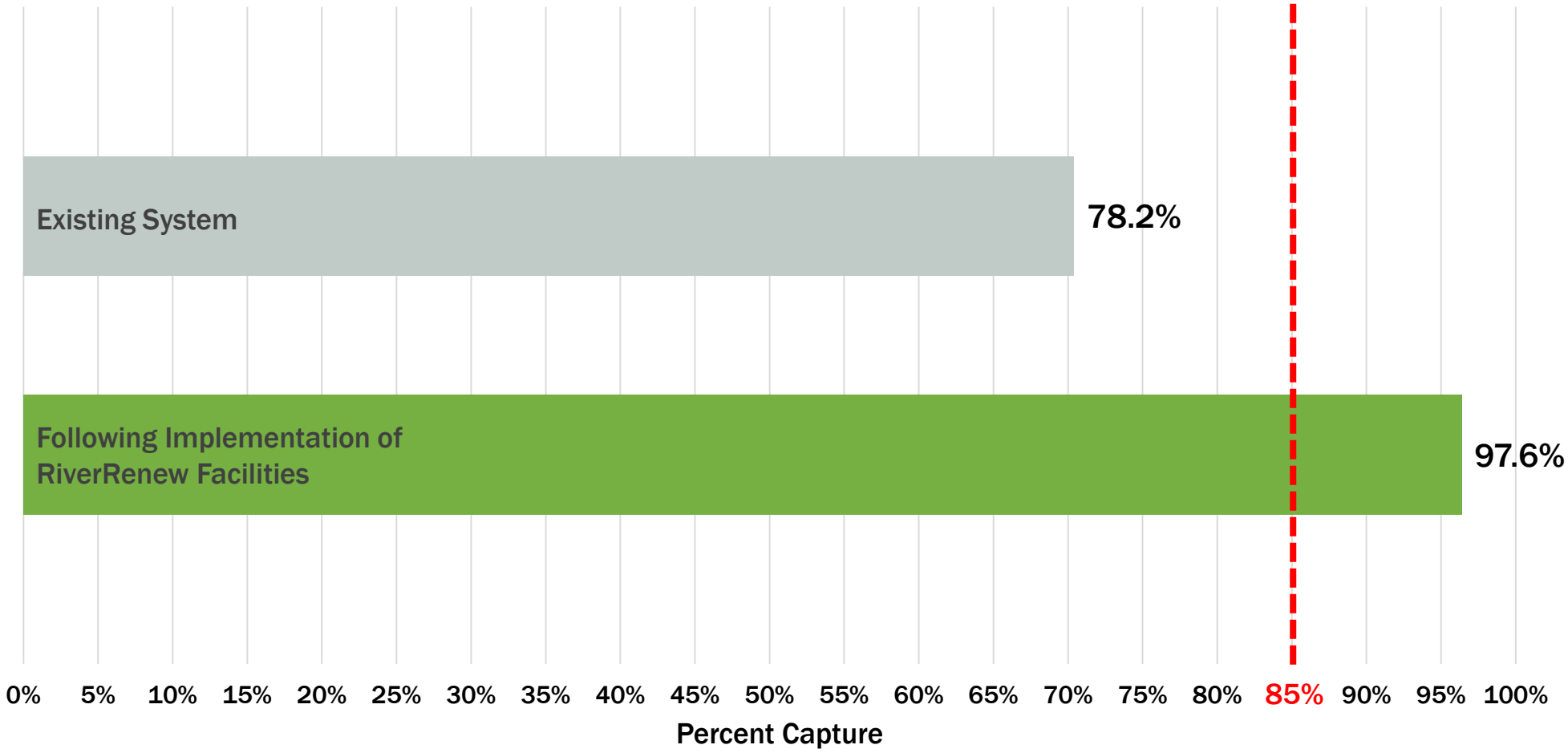
- Existing Conditions
- Following Implementation of RiverRenew Facilities

Notes:

1. Based on 15-minute rainfall data from Ronald Reagan Airport
2. Assumes Water Resource Recovery Facility (WRRF) dry weather flow of 54 MGD

Summary of Performance Data

Average Systemwide Percent Capture (2000-2016)

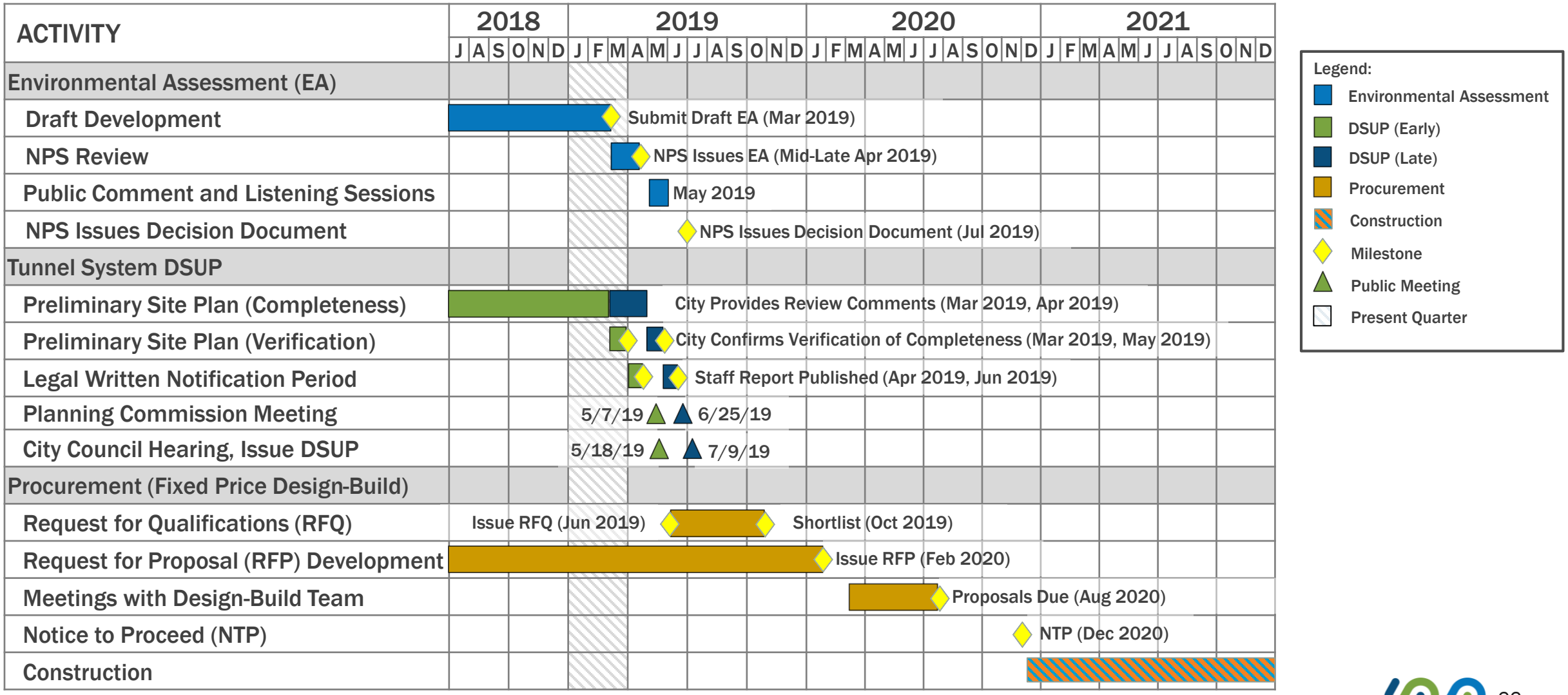


How would RiverRenew have performed in the wettest year on record (2018)?

Parameter	Existing Conditions		Following Implementation of RiverRenew Facilities
	Average (Years 2000-2016)	Year 2018	Year 2018
Annual Overflow Volume (MG)	140	332	59
Percent Capture	78%	76%	96%
Number of Overflows			
Outfall 001	37	58	4
Outfall 002	46	77	4
Outfall 003	69	77	4
Outfall 004	44	63	3

Notes:
1. Based on 15-minute rainfall data from Ronald Reagan Airport
2. 2018 was the wettest year on record since 1871
3. Assumes Water Resource Recovery Facility (WRRF) dry weather flow of 54 MGD

RiverRenew Tunnel System Permit and Procurement Schedule



DSUP: Development Special Use Permit

Estimated Long Term Control Plan Update Capital Costs

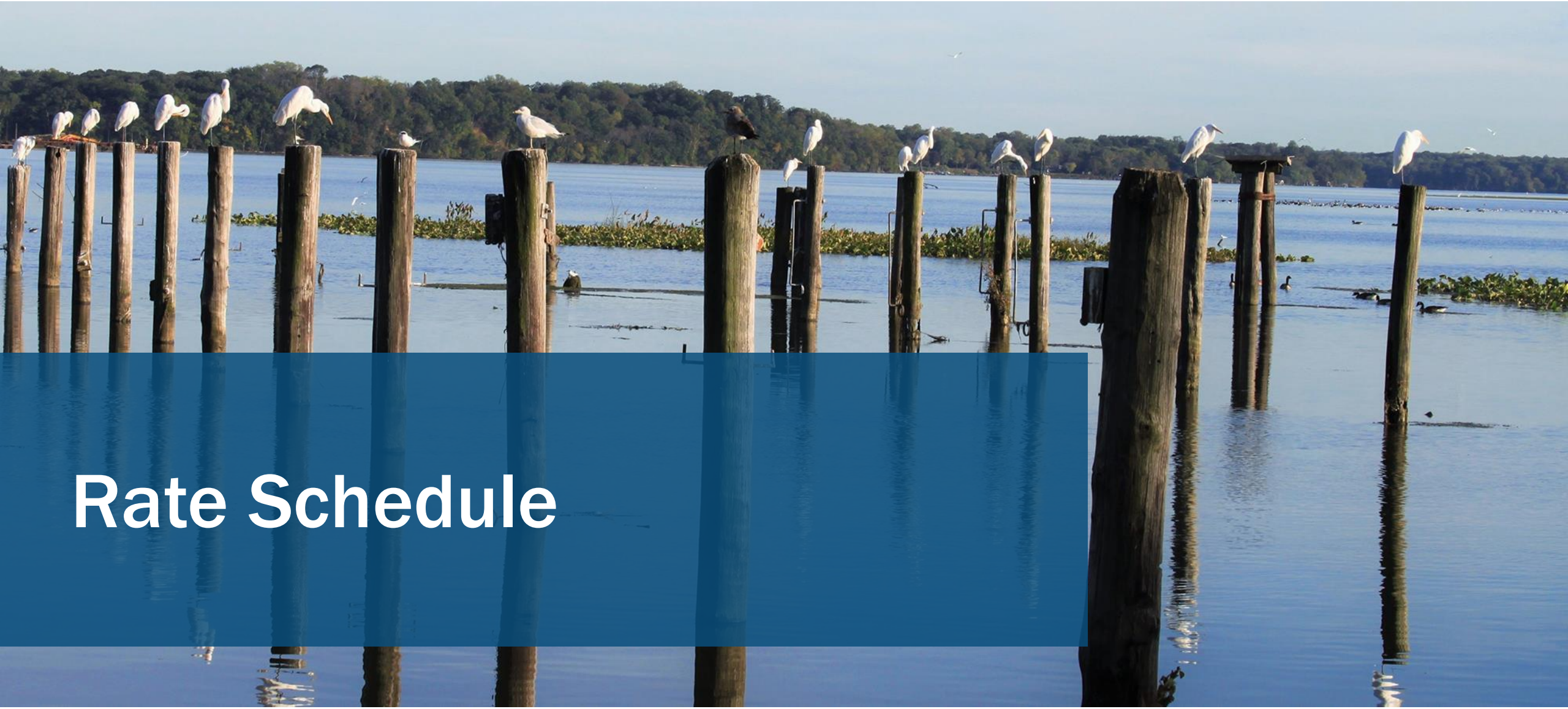
Cost presented in $Millions and escalated to the midpoint of construction

	Option A Separate Tunnels	Option B Unified Tunnels	Option B+ Unified Tunnels w/ Dual-use Facilities	Option C Tunnel and Tanks
WRRF Upgrades	2.7	2.7	2.7	2.7
CSO 003/4 Tunnel + Pumps	130	130	130	130
Wet Weather Facility	92	–	10	92
CSO 001/2 Tunnel	200	213	213	–
CSO 001/2 Tanks	–	–	–	147
Total Estimates	424	346	356	371
+50% Total Estimates	635	520	535	560

Estimated RiverRenew Capital Costs

Cost presented in $Millions and escalated to the midpoint of construction

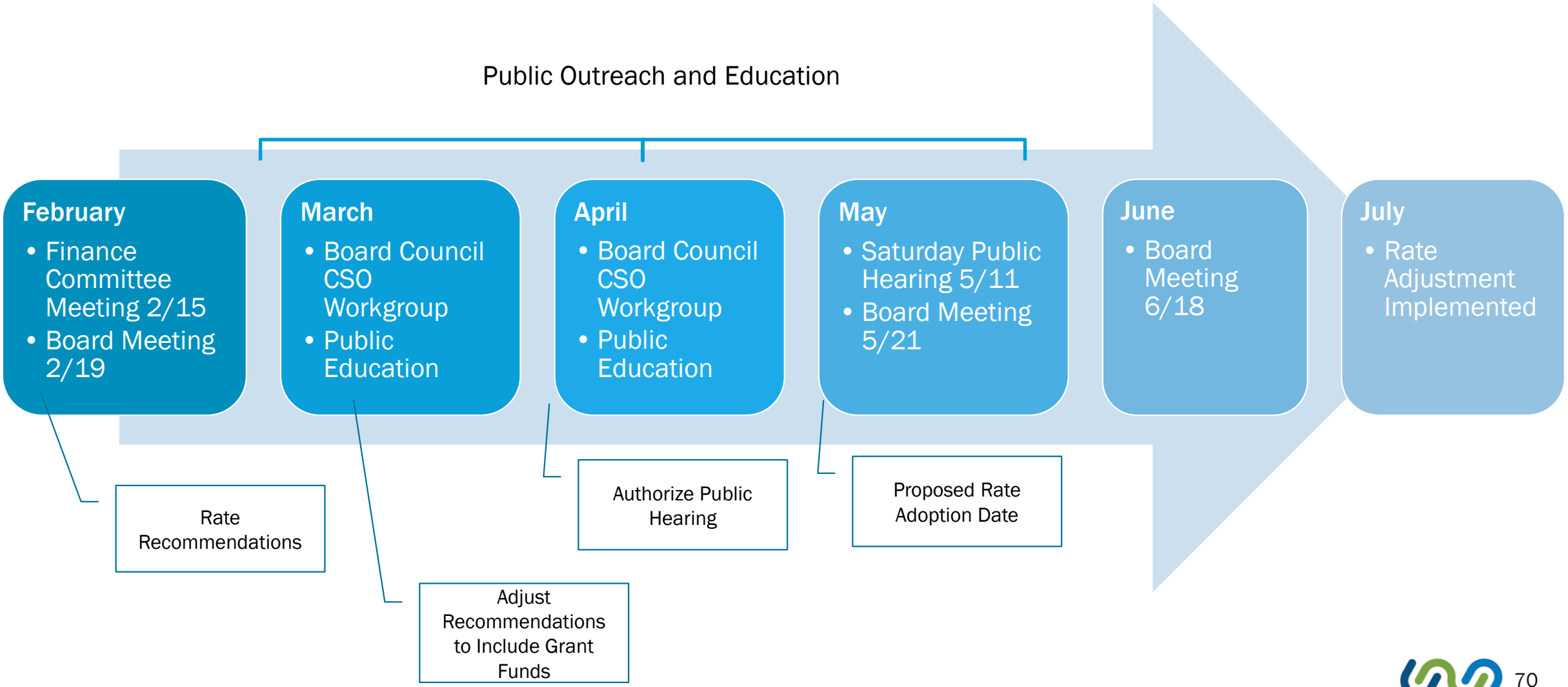
	RiverRenew	Option B+ Unified Tunnels w/ Dual-use Facilities	Notes
WRRF Upgrades	3	2.7	108 to 116 MGD Expansion project
CSO 003/4 Tunnel + Pumps	142	130	Includes Tunnel Dewatering and Wet Weather Pumping Stations
Wet Weather Facility	2	10	Tank modifications and disinfection only
CSO 001/2 Tunnel	202	213	Tunnel, Outfall 001 and 002 Diversion Facilities
New Scope ➡ Building J Project	21	–	New scope to provide space for tunnel construction at AlexRenew
Total Estimates	370	356	
+50% Total Estimates	555	535	



Rate Schedule

RiverRenew

AlexRenew Rate Implementation Timeline



Rate adjustment needs to include small increases for AlexRenew operations and renewals and larger increases for the RiverRenew program.

- AlexRenew has delayed increases in recent years as we defined needs for RiverRenew
- AlexRenew requires rate adjustments for:
  - Increased Costs of Operations and Maintenance
  - Renewals and Replacement of Existing AlexRenew Assets
- RiverRenew program is estimated to cost between $370M and $555M
  - The Commonwealth of Virginia General Assembly has approved a $25M grant in their FY2020 budget bill forwarded to the Governor
  - AlexRenew needs to incorporate this grant funding into its rate model to optimize its positive impact

AlexRenew Board of Directors Direction to Staff

- Educate the community about the proposed rate adjustments
- Propose increases for only two years, with effective dates of July 1, 2019 and July 1, 2020
- Plan for a Public Hearing on Saturday, May 11th, at 9:30 a.m. at AlexRenew
- Plan for adoption of a Rate Resolution at the May Board Meeting on Tuesday, May 21st

RiverRenew SAG Toolkit

RiverRenew

Resources for RiverRenew Ambassadors

RiverRenew.com is updated to keep the community informed with the latest Program developments.

Talking points are designed to help convey the important messages about RiverRenew.

Brochures and materials in your folder can be provided in bulk to share at meetings and events.

The RiverRenew Team has extensive knowledge and expertise – please reach out to us!

Encourage residents to learn more about RiverRenew.

Join the RiverRenew email list

Visit RiverRenew.com for program updates and events

Subscribe to City eNews announcements

Check calendar listings in local newspapers

Read the local news for RiverRenew news advisories

Attend the monthly meetings of the Council/Board Workgroup and RiverRenew Stakeholder Advisory Group

Come to the next round of Community Listening Sessions

Invite RiverRenew to speak at your next community event

Next Steps

RiverRenew

Next Steps

- Get familiar with your role, toolkit, and share information
- Schedule next meeting: March 25 – April 5

Public Questions