RiverRenew

RFQ-19-079 Information Session – Tunnel System Project (Design-Build)

June 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

Today's Speakers

Liliana Maldonado

AlexRenew
Deputy General Manager

Caitlin Feehan

RiverRenew
Program Manager

Justin Carl

RiverRenew
Owner's Advisor

Presentation Outline

- Introduction to Alexandria Renew Enterprises
- AlexRenew CIP and RiverRenew Contracts Update
- Overview of RiverRenew Tunnel System Components
- Tunnel System Project Procurement Process
- Next Steps
- Questions and Answers

RiverRenew

Introduction to Alexandria Renew Enterprises (AlexRenew)

Liliana Maldonado

Who We Are and Who We Serve

- Special-purpose entity
- Created in 1952 by Alexandria City Council
- Led by a 5-member citizen board
- Treats an average of 35 MGD of wastewater daily to near drinking water standards
- Serves more than 300,000 customers in Alexandria and Fairfax County
- Located in Alexandria's southwest quadrant

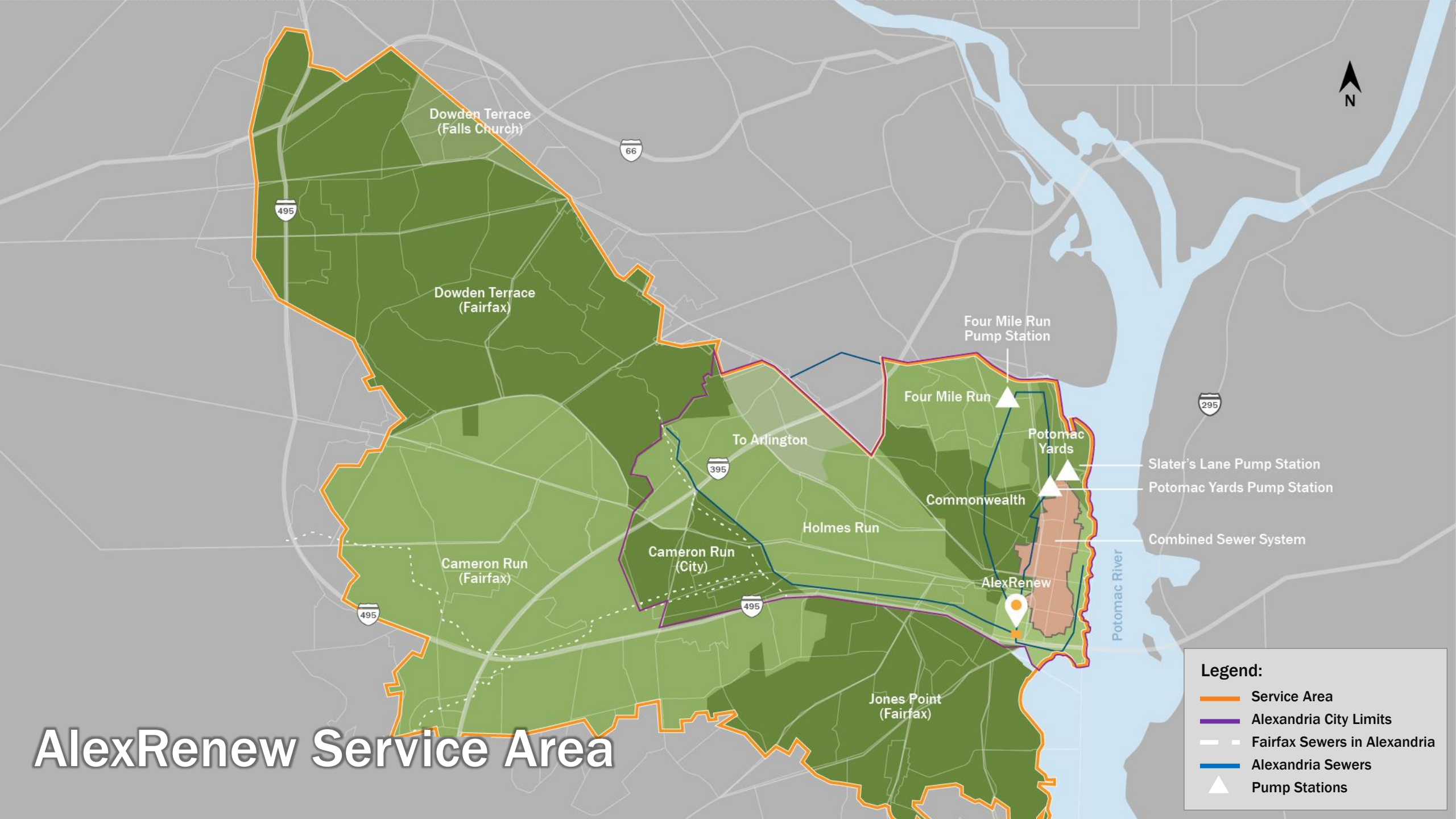
2040 AlexRenew Vision

By 2040, we have effectively partnered with all watershed stakeholders to:

- Enable local citizens to **embrace the best use of water resources and establish a personal connection with local waterways**.
- Sustainably manage water as a single resource through the entire water cycle.
- **Create a healthy environment and improve our quality of life** through the exceptional reclamation of used water resources.
- Maximize use of multiple financial options to continue our fiscal stability.

AlexRenew's Strategic Outcomes

Operational Excellence	Public Engagement and Trust	Watershed Stewardship	Adaptive Culture	Effective Financial Stewardship
Continually enhance water resource and recovery procedures to provide cleaner water more efficiently.	Engage our community to help them to become informed consumers and supporters of clean water.	Work collaboratively with the people we serve and other organizations in our watershed to manage and improve water resources for future generations.	Establish an organization-wide enthusiasm for learning, adapting, and problem solving to achieve clean water.	Maintain a financially resilient organization that contributes to the long-term economic health of our local communities.



AlexRenew Service Area

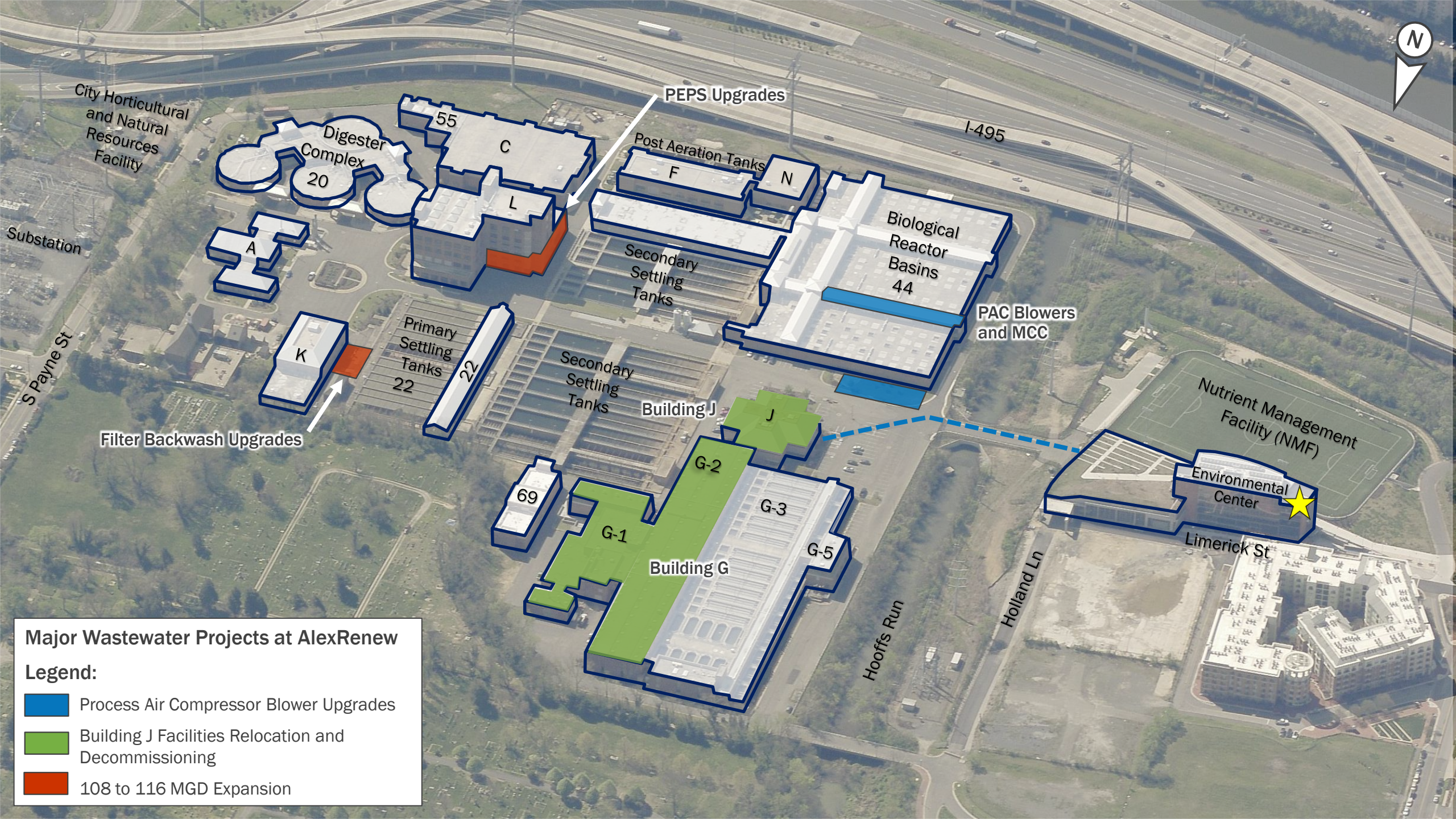
RiverRenew

AlexRenew CIP and RiverRenew Contracts Update

Liliana Maldonado

Major AlexRenew CIP and RiverRenew Contracts as of 6/27/19

Contract	Process Air Compressor Blower Upgrades	Building J Facilities Relocation and Decommissioning (RiverRenew)	108 to 116 MGD Expansion (RiverRenew)	Wastewater Services Resident Engineering and Inspection	Other Anticipated Contracts
Description	**Construction** to replace existing Biological Reactor Basin blowers with High Speed Turbos	**Construction** to relocate building uses and building demolition	**Construction** to upgrade the peak raw influent capacity of the WRRF	**Professional services** for wastewater resident engineering and inspection	**Professional Services** • SCADA System Integration Services • Basic Ordering Agreements **Construction** • Fiber Optic Backbone Replacement • Preliminary Primary Treatment Improvements • Other projects as needs arise
Schedule	June 2019 – December 2020	July 2019 – March 2021	August 2019 – September 2020	June 2019 – June 2020	
Contractor/ Designer	**ACE**	**Clark Construction**	Bids Opened 6/25/19 – **ACE** Apparent Low Bidder	**Hazen and Sawyer**	
Cost ($M)	$14.4	$19.5	$2.6	$3	


City Horticultural and Natural Resources Facility
PEPS Upgrades
I-495
Digester Complex
20
55
C
L
A
Substation
Post Aeration Tanks
F
N
Biological Reactor Basins
44
Secondary Settling Tanks
PAC Blowers and MCC
S Payne St
K
Primary Settling Tanks
22
22
Secondary Settling Tanks
Building J
J
Filter Backwash Upgrades
Nutrient Management Facility (NMF)
Environmental Center
Limerick St
69
G-2
G-3
G-1
G-5
Building G
Hooffs Run
Holland Ln
N
Major Wastewater Projects at AlexRenew
Legend:
Process Air Compressor Blower Upgrades
Building J Facilities Relocation and Decommissioning
108 to 116 MGD Expansion

RiverRenew

Overview of RiverRenew Tunnel System Components

Justin Carl

Summary of Major Changes to Tunnel System Project Since November 2018 Industry Outreach Event

	Waterfront Tunnel	Hooffs Run Interceptor	Tunnel Dewatering and Wet Weather Pumping Station
Associated Outfalls	• 001, 002	• 003, 004	• Relocated 004
Industry Outreach Approach Nov 2018	• 12-ft ID • Vertical alignment shown completely in Potomac Formation	• Parallel relief sewer • 5-ft and 6-ft diameter trenchless pipelines at AlexRenew WRRF	• **Tunnel Dewatering.** 40 MGD wet-pit submersible pumping station • **Wet Weather.** 130 MGD pumping station installed within an existing wet well below AlexRenew's Nutrient Management Facility
Current Approach June 2019	• 12-ft ID, 19-ft OD • Vertical alignment anticipated to be in mixed-face conditions between Alluvium and Potomac Formation	• Interceptor replacement • Trenchless portion removed	• Tunnel Dewatering and Wet Weather Pumping Station housed in a single shaft • Additional shaft for screen, clamshell, and vortex drop • (2) 20 MGD dry-pit submersible dewatering pumps – suction manifold • (4) 44 MGD wet weather pumps – suction manifold

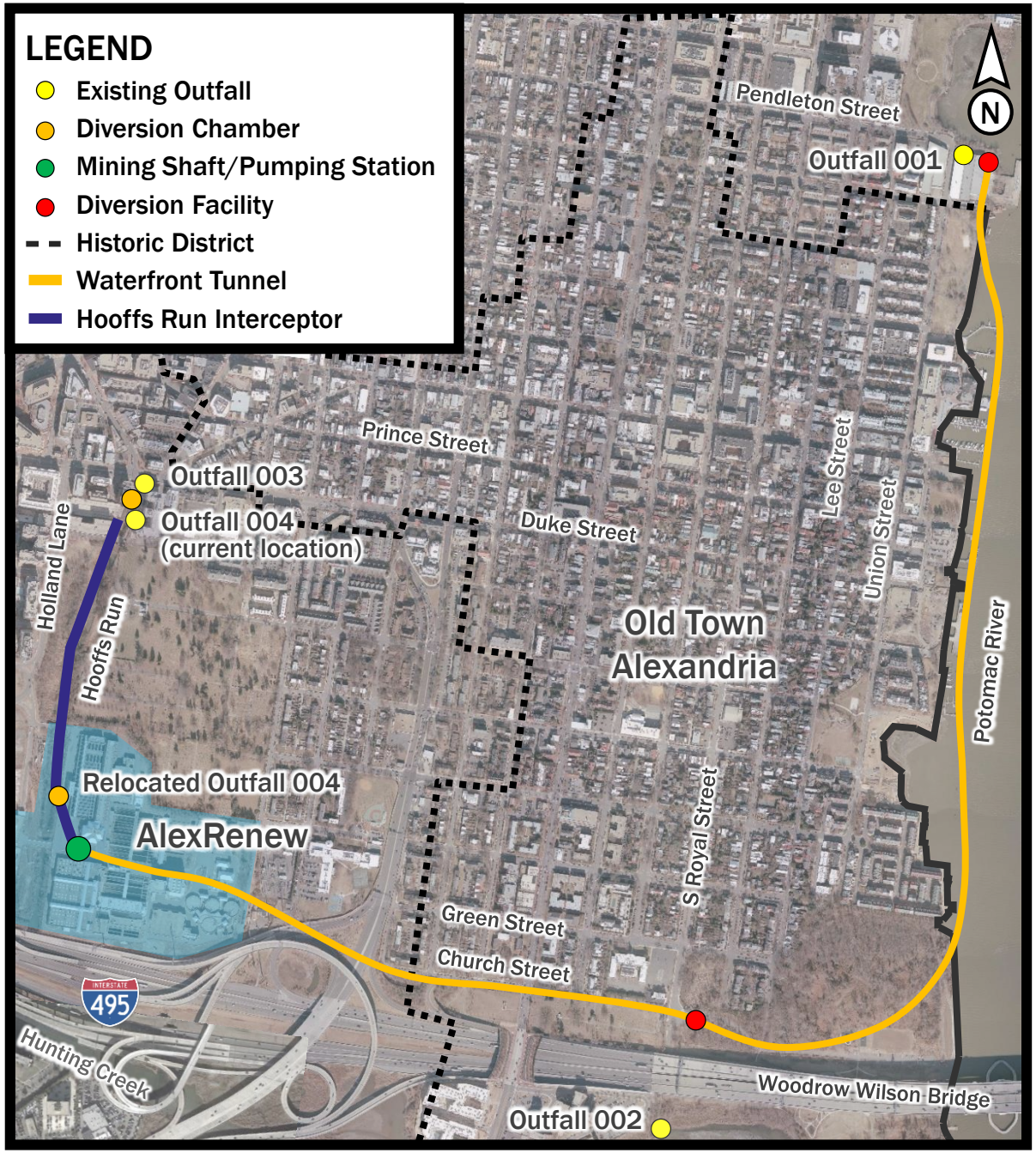
Environmental Assessment Released on June 19, 2019

Major RiverRenew Tunnel System Components (6/19)

Component	Diameter (feet)	Length (feet)	Depth (feet)
Waterfront Tunnel	12 ID/19 OD	11,500	115-160
001 Drop Shaft	40	--	115
002 Drop Shaft	40	--	125
Mining Shaft	75	--	135
Hooffs Run Interceptor	6	2,405	10-20

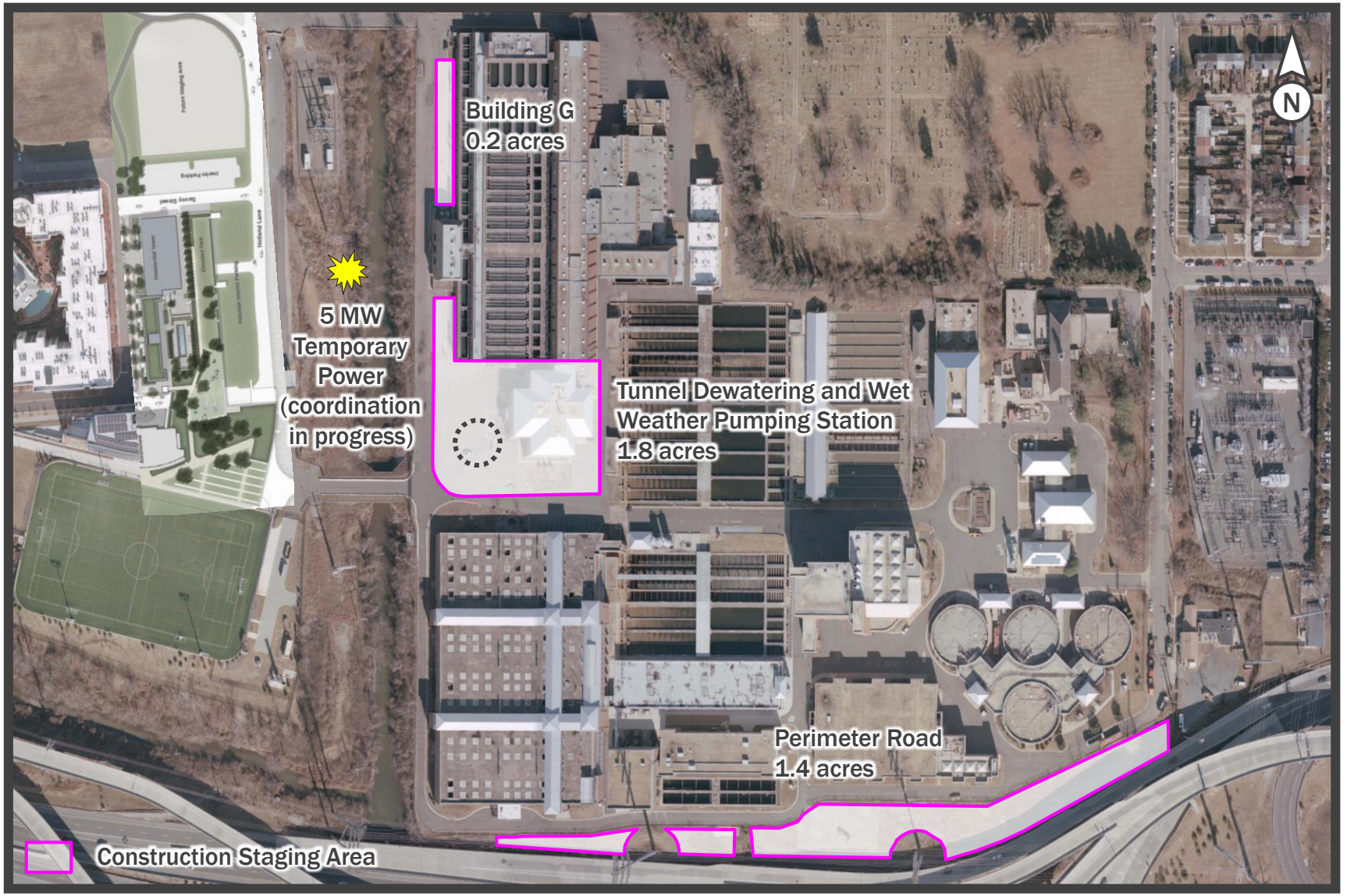
Other major components:

- Four diversion chambers
- Tunnel Dewatering (20 MGD) and Wet Weather (130 MGD) Pumping Station
- Connection into AlexRenew's Centralized Odor Control System
- Two 3,000 cfm odor control systems (at shafts)
- Mechanical, electrical, plumbing, instrumentation, and HVAC equipment
- Superstructure at AlexRenew

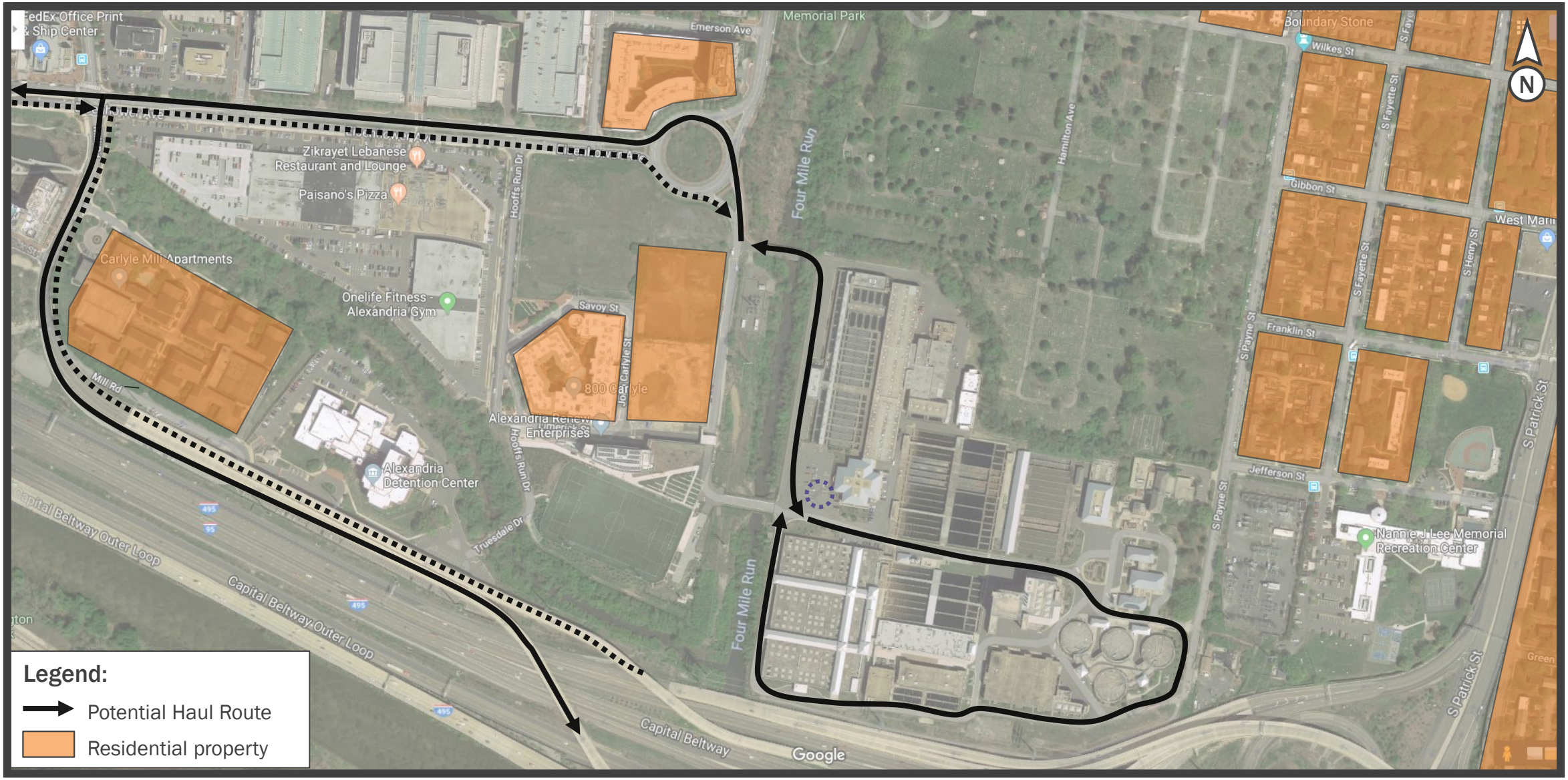


Waterfront Tunnel

Construction Staging Areas at AlexRenew's WRRF



Haul Routes to/from AlexRenew WRRF



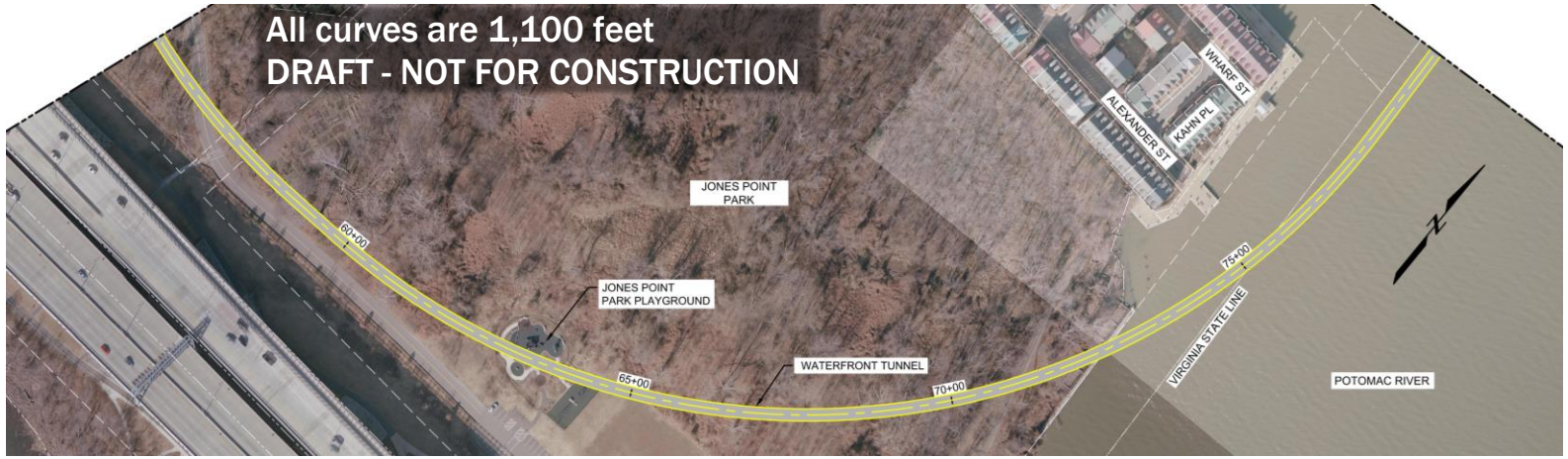
Reach 1: AlexRenew to Freedmen Cemetery (2,233-ft)

Key Map

Reach 2: Freedmen Cemetery to Jones Point Park (2,333-ft)

Key Map

Reach 3: Jones Point Park to Ford's Landing (2,333-ft)



Key Map

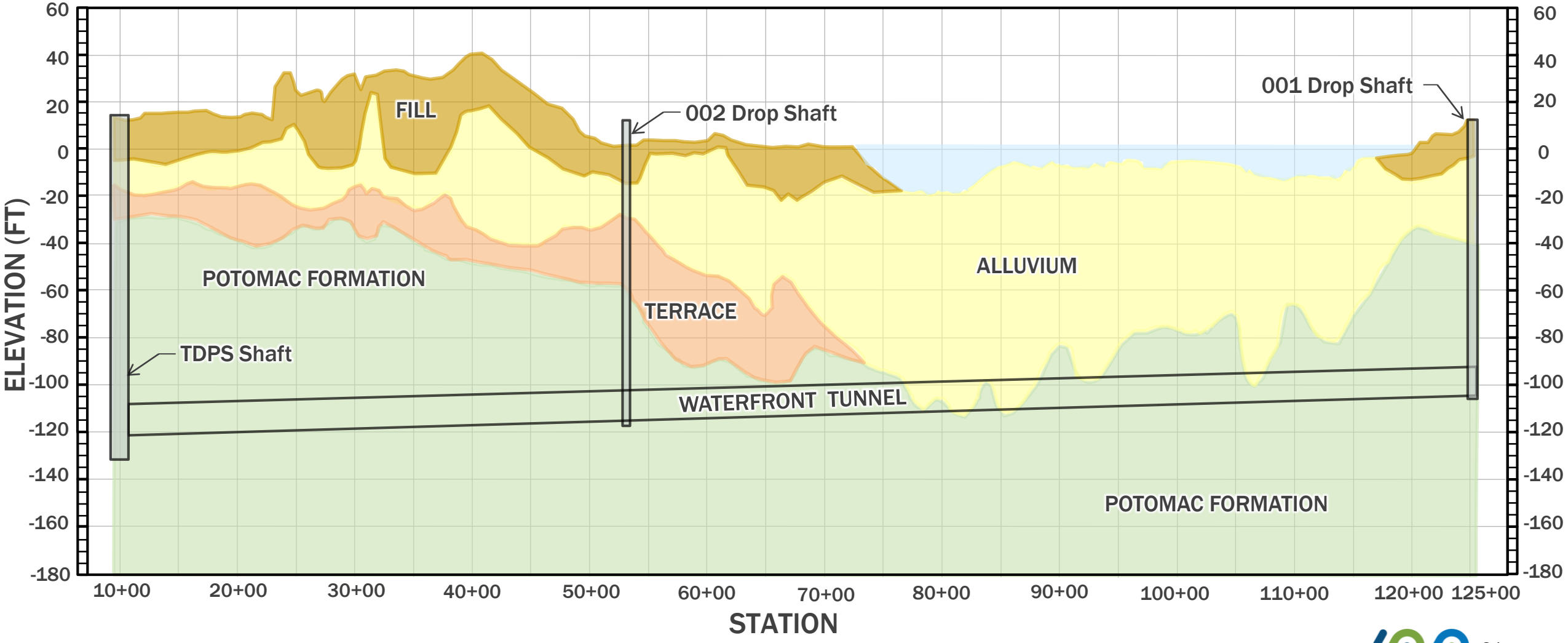
Reach 4: Ford's Landing to Waterfront Park (2,333-ft)

Key Map

Reach 5: Waterfront Park to Robinson Terminal North (2,281-ft)

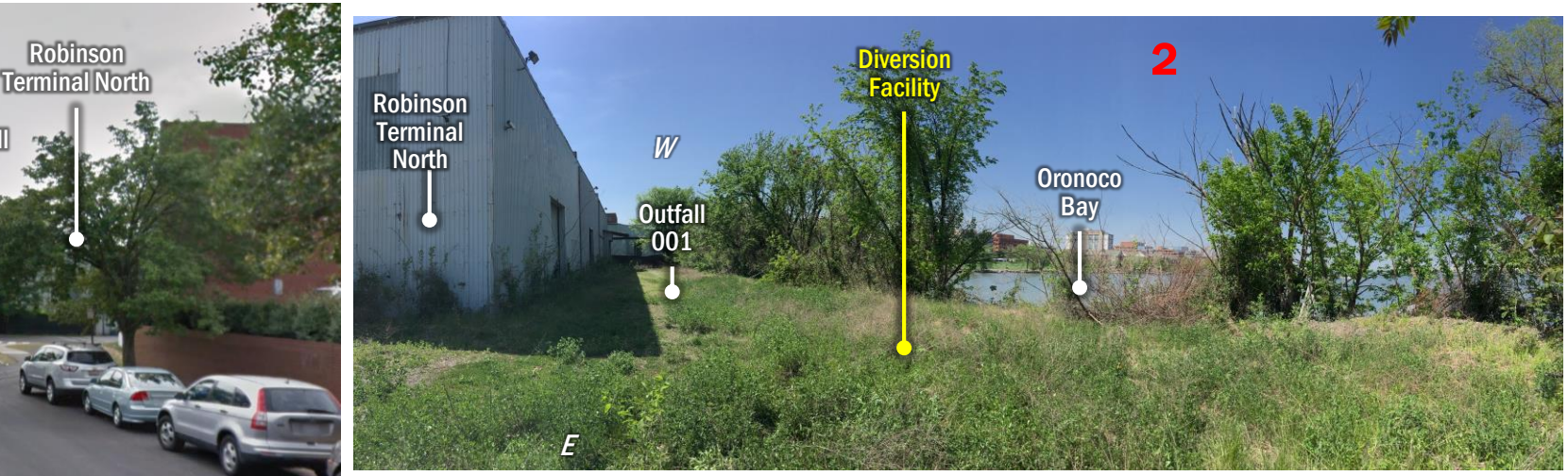
Key Map

Waterfront Tunnel Geologic Profile



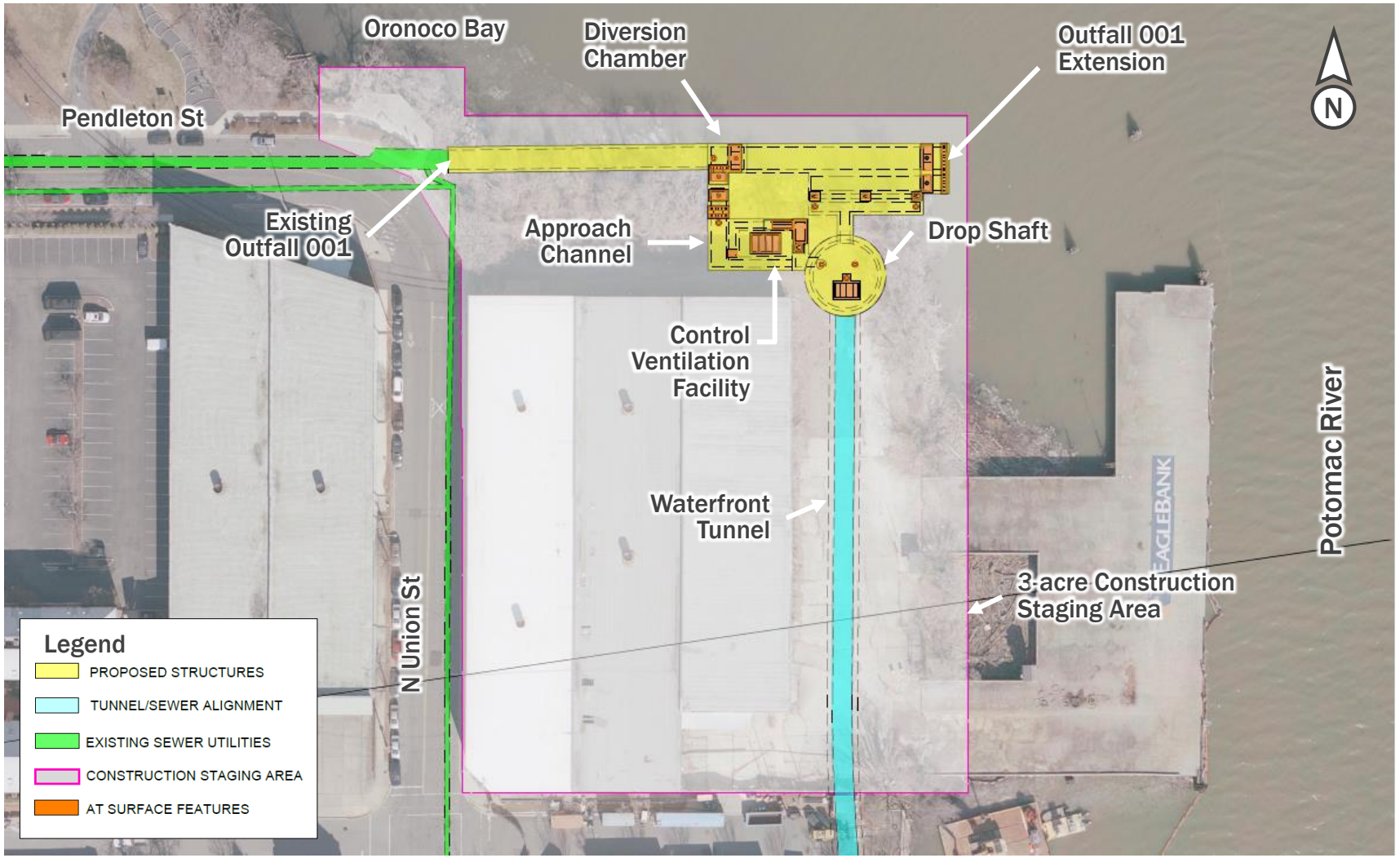
Outfall 001 Existing Conditions

Outfall 001 Diversion Facility Street View

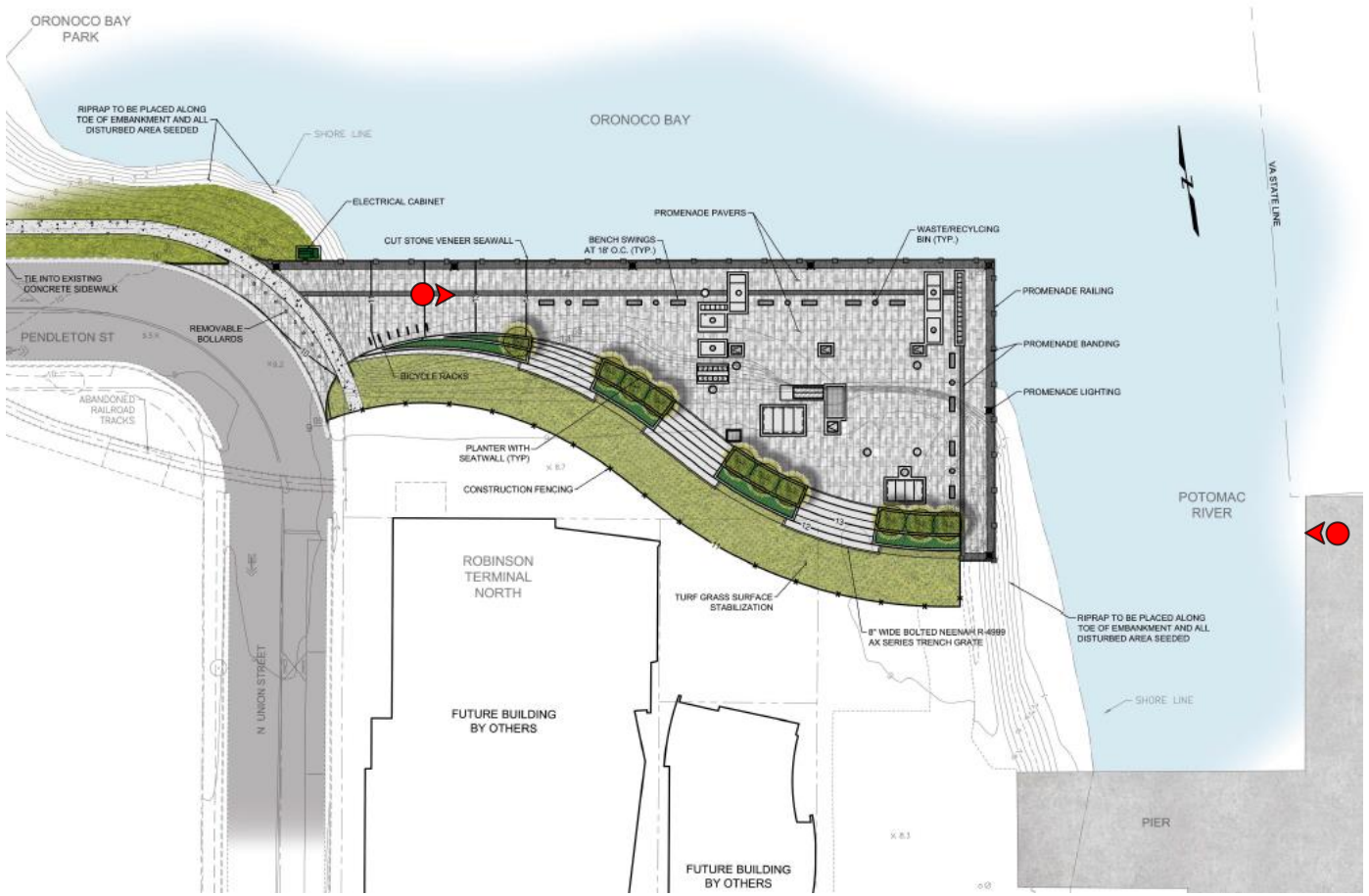


Outfall 001 Diversion Facility

Proposed in Environmental Assessment and City Permit Submittals



Outfall 001 Diversion Facility Restoration

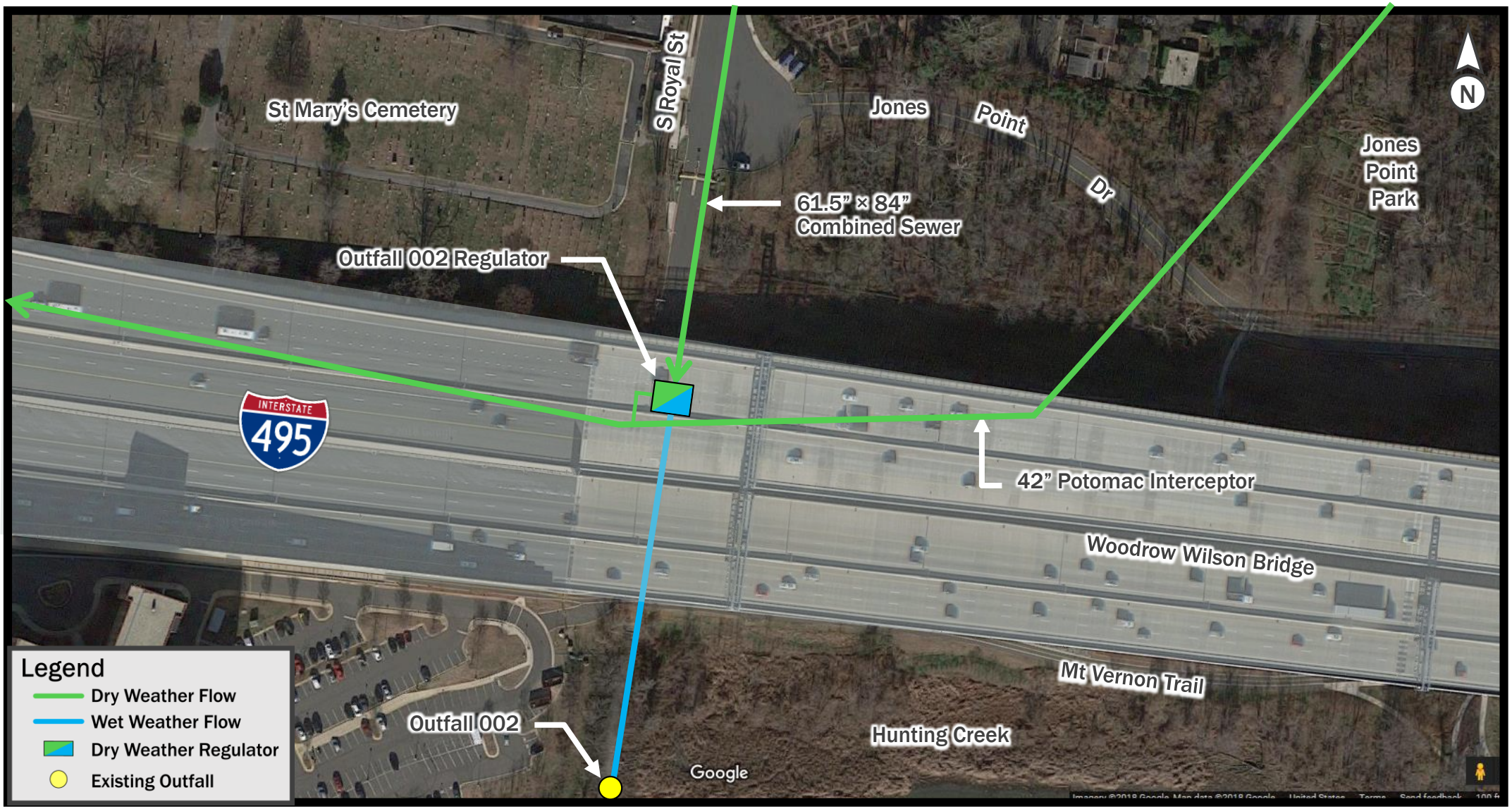


Illustrative Landscaping Plan

Rendering, looking east at Robinson Terminal North

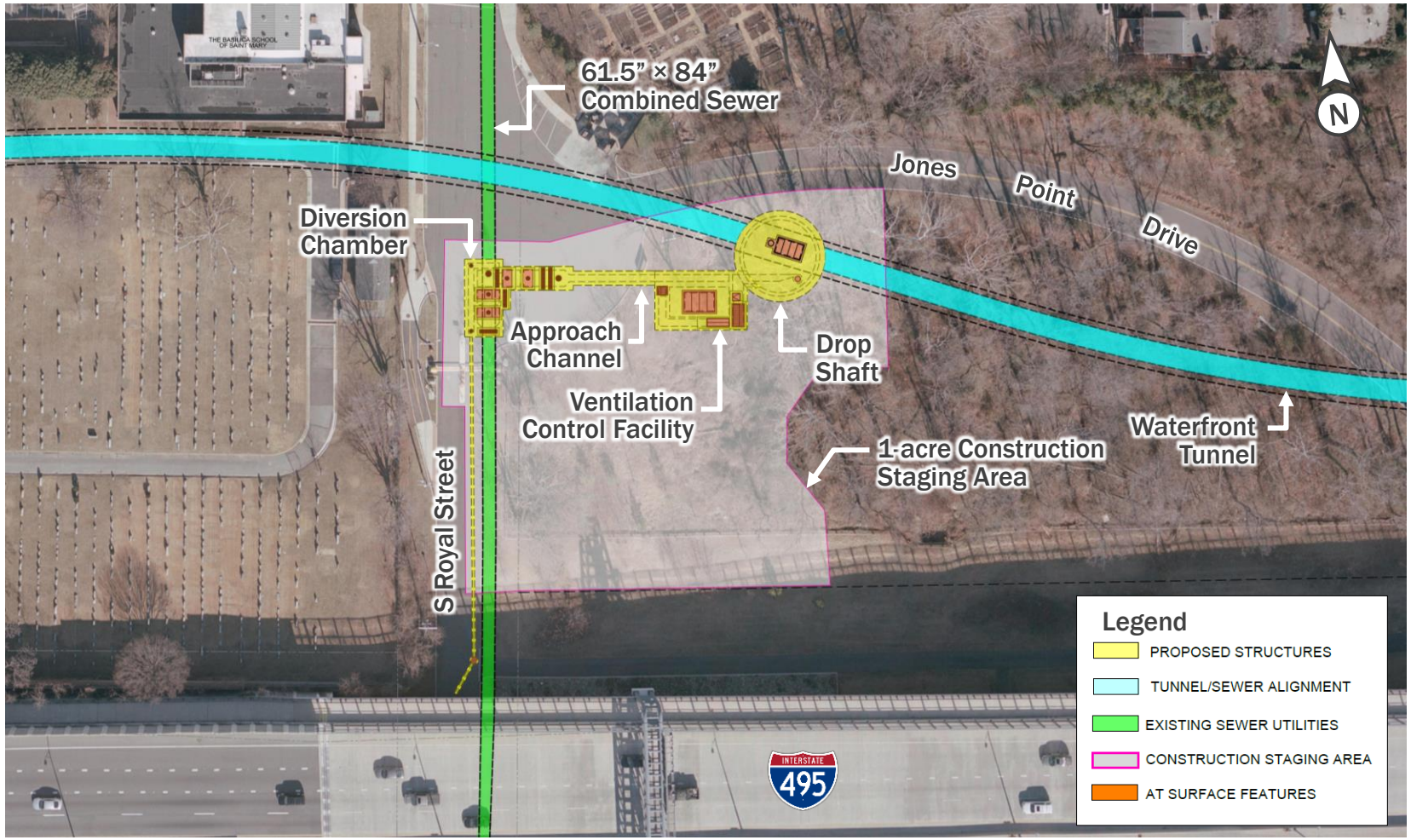
Rendering, looking west at Robinson Terminal North

Outfall 002 Existing Conditions



Outfall 002 Diversion Facility

Proposed in Environmental Assessment and City Permit Submittals



Outfall 002 Diversion Facility Restoration

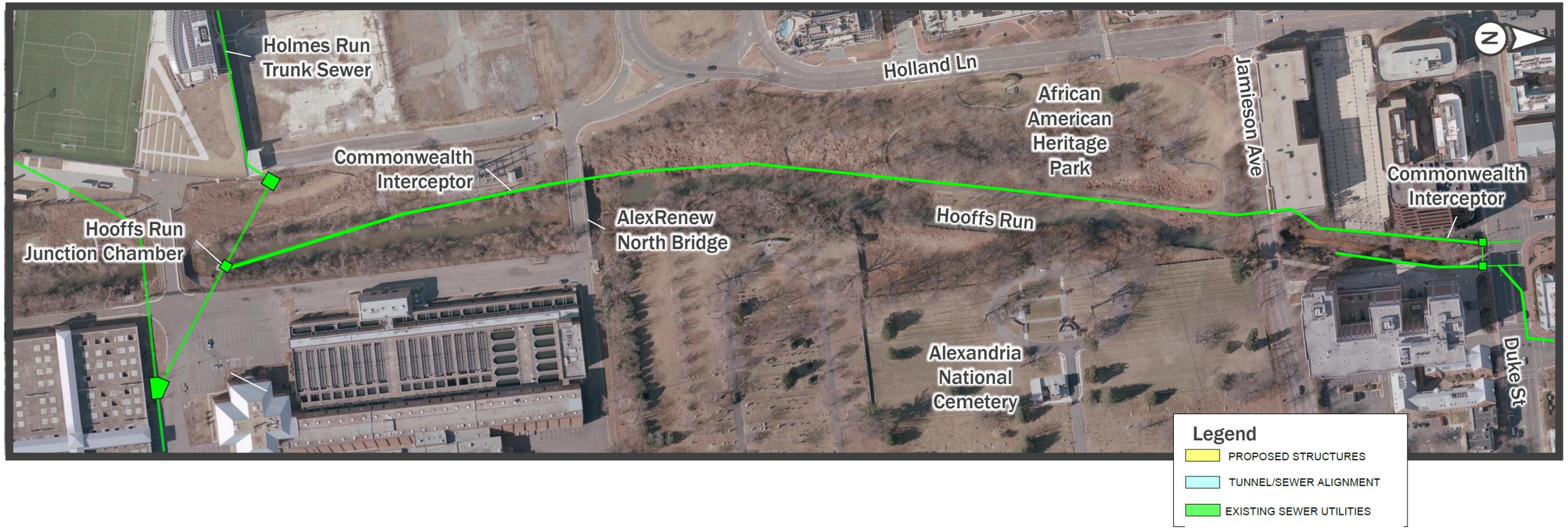
Illustrative Landscaping Plan

Rendering, looking southeast on South Royal Street

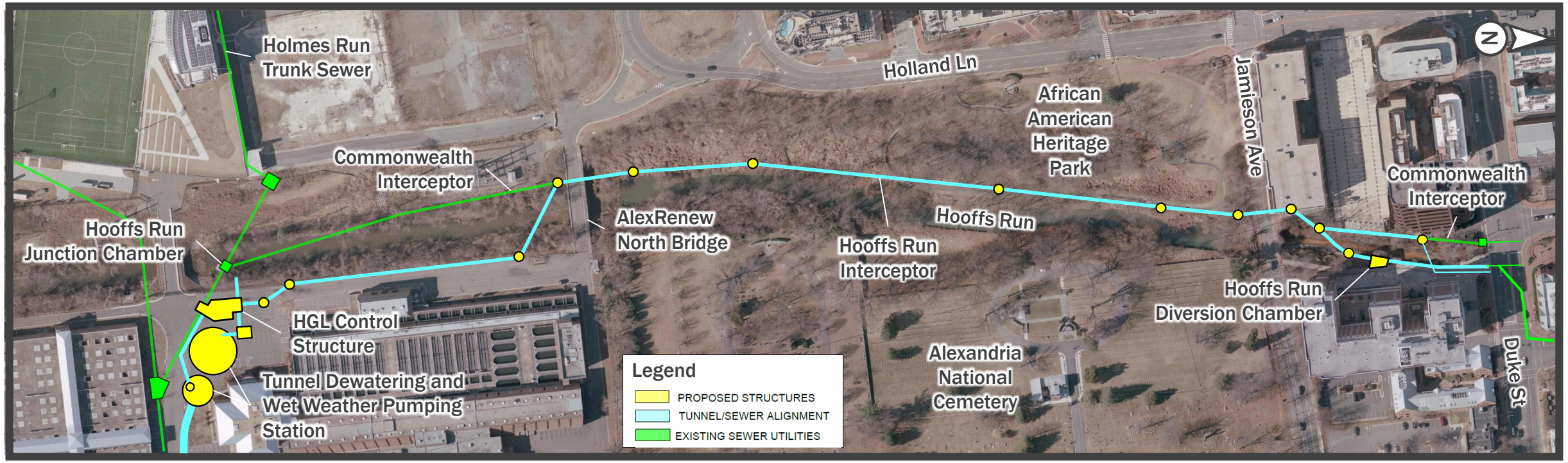
Hooffs Run Interceptor

Outfalls 003 and 004 Existing Conditions

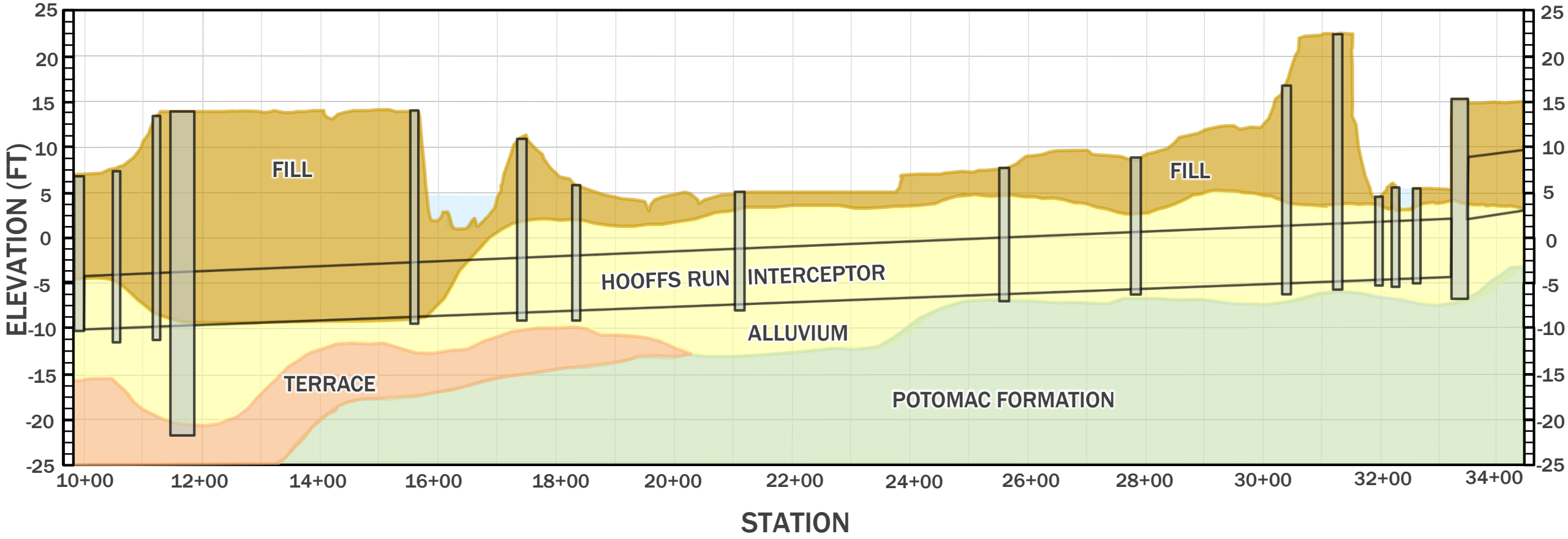
Existing Commonwealth Interceptor: Duke Street to AlexRenew WRRF



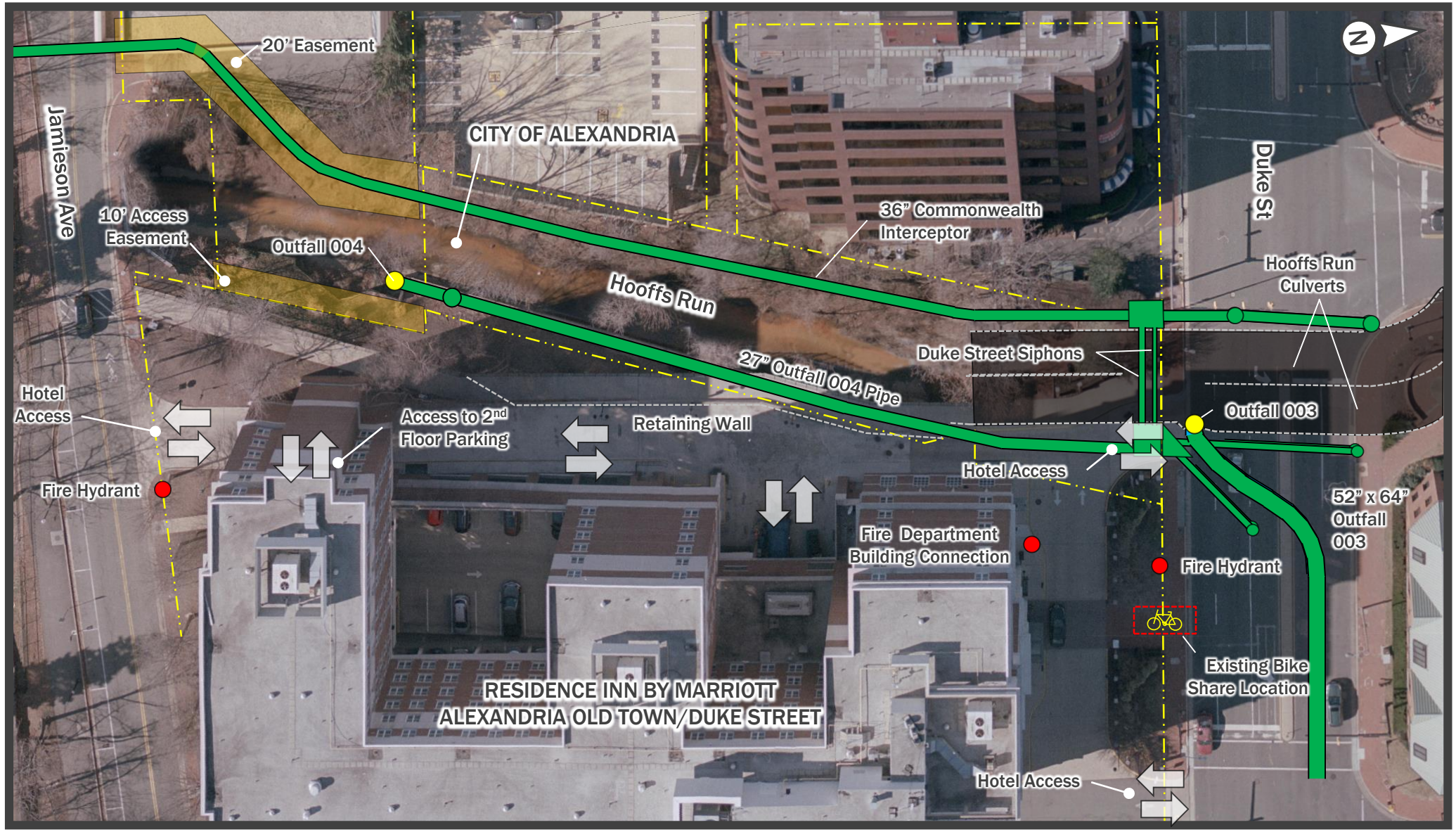
Proposed Hooffs Run Interceptor Alignment



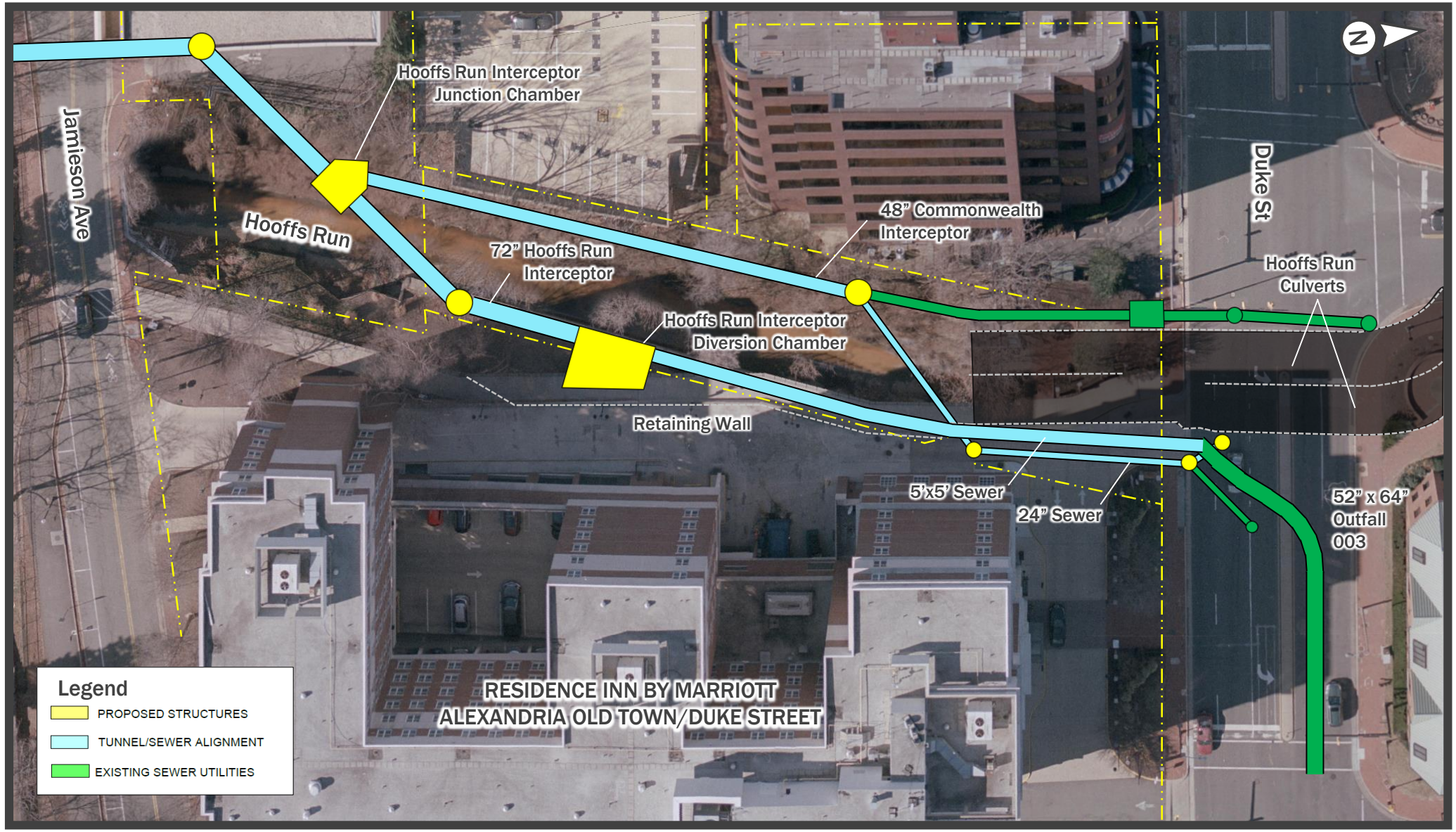
Hooffs Run Interceptor Geologic Profile



Existing Sewer Facilities Near Duke St and Daingerfield Rd

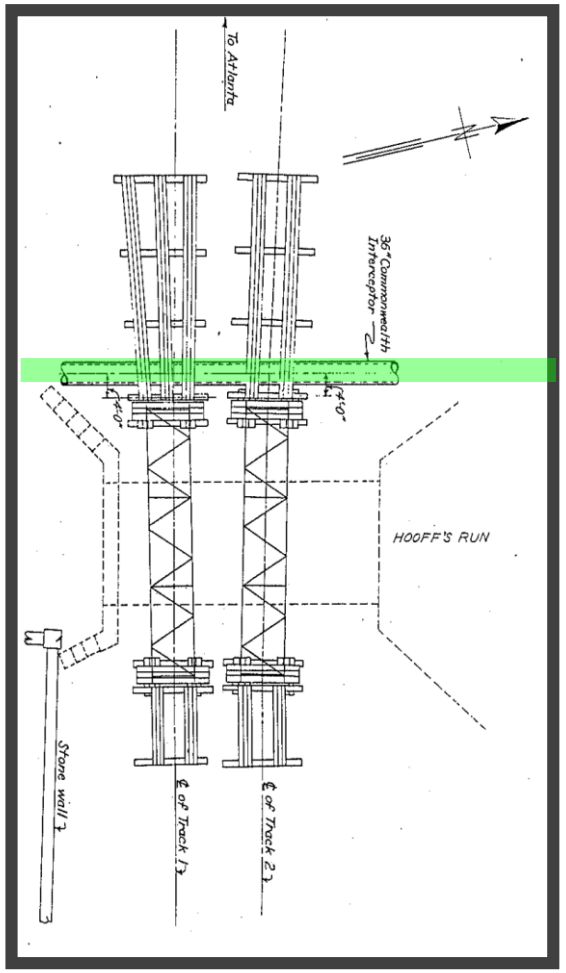


Proposed Sewer Facilities Near Duke St and Daingerfield Rd



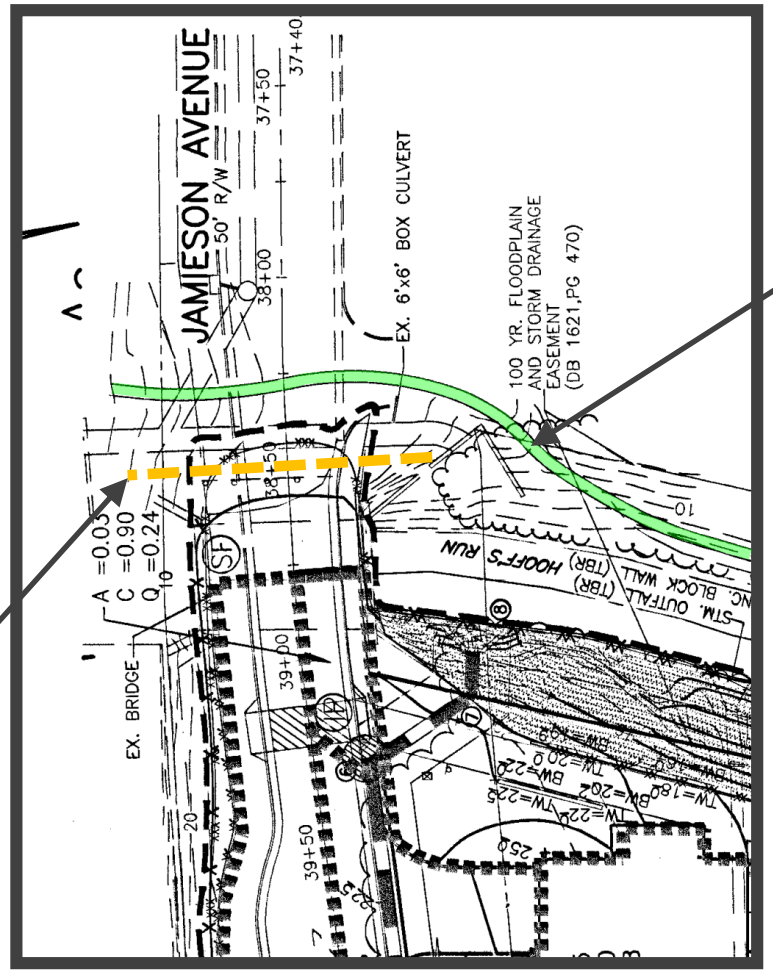
Record Drawings of Commonwealth Interceptor Crossing of Jamieson Avenue

Commonwealth Interceptor Record Drawings - 1954



Jamieson Avenue Bridge Replacement - 1994

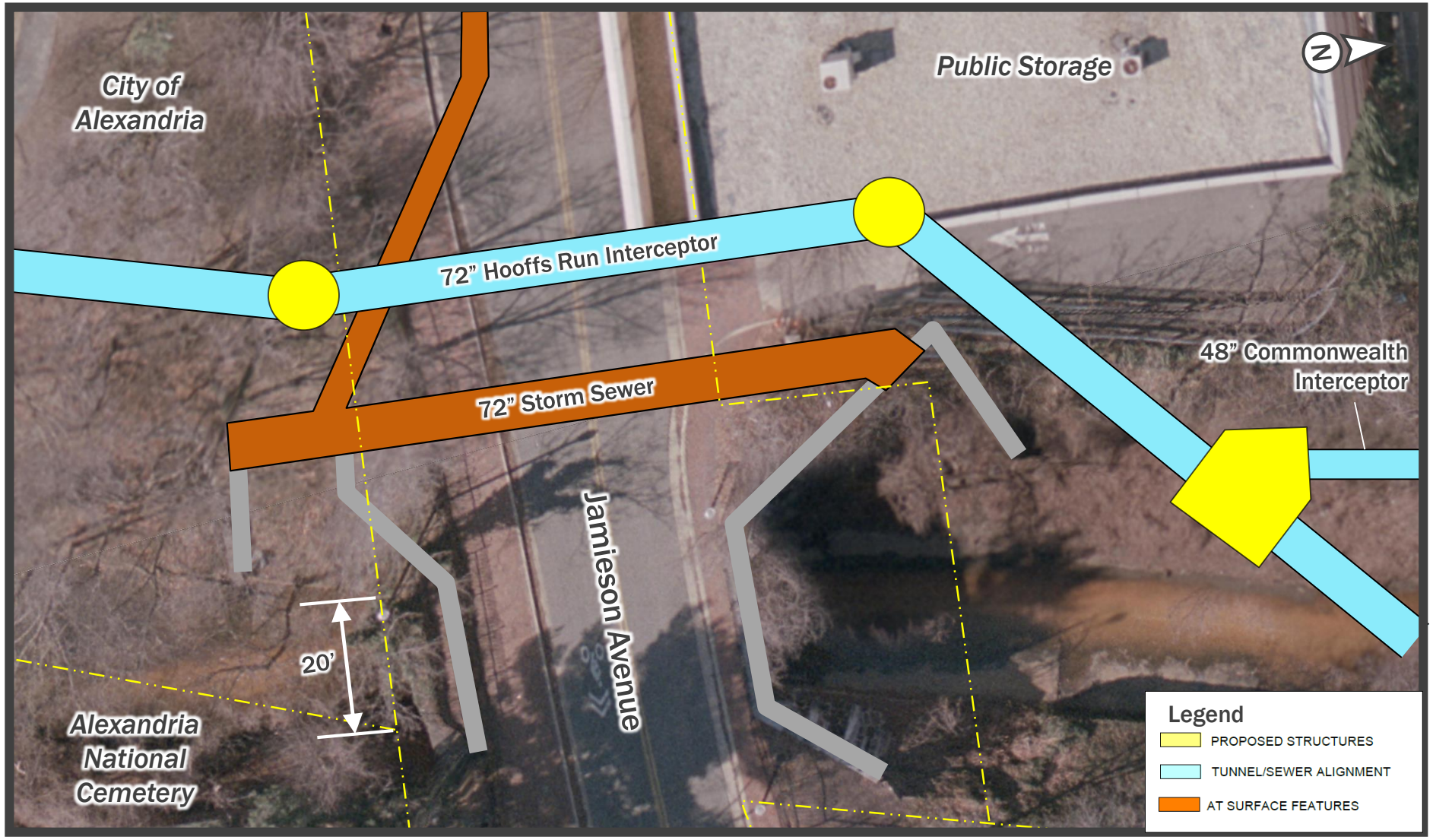
Marriot Hotel Drawings - 2000



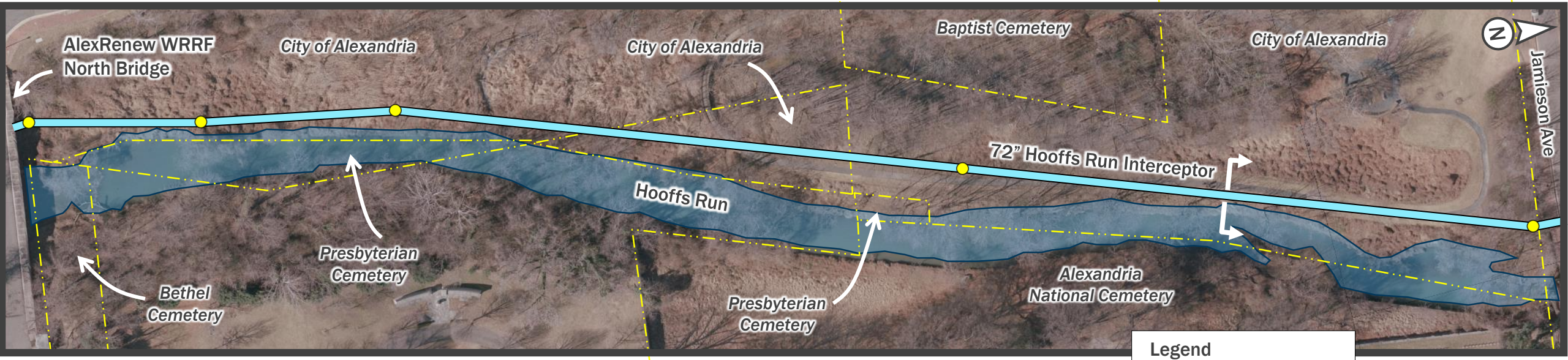
Relocated Alignment

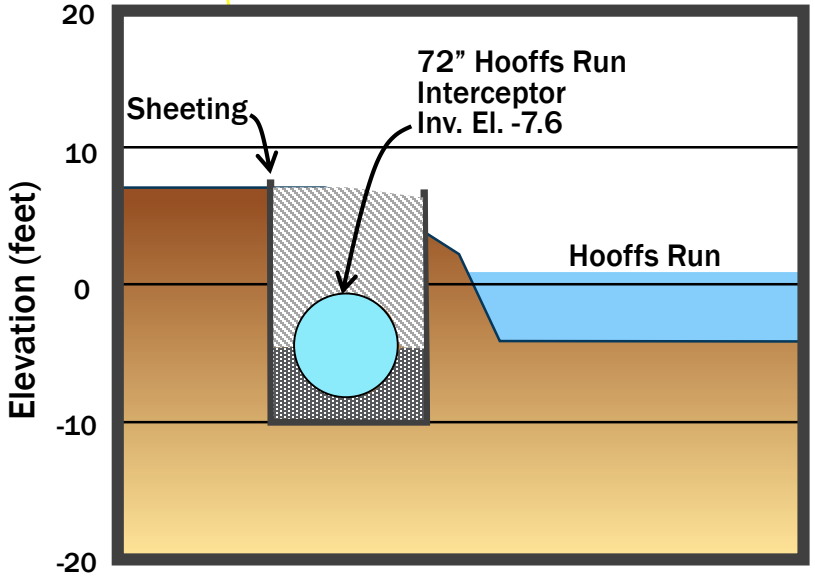
Previous Alignment (1954)

Hooffs Run Interceptor Crossing of Jamieson Avenue

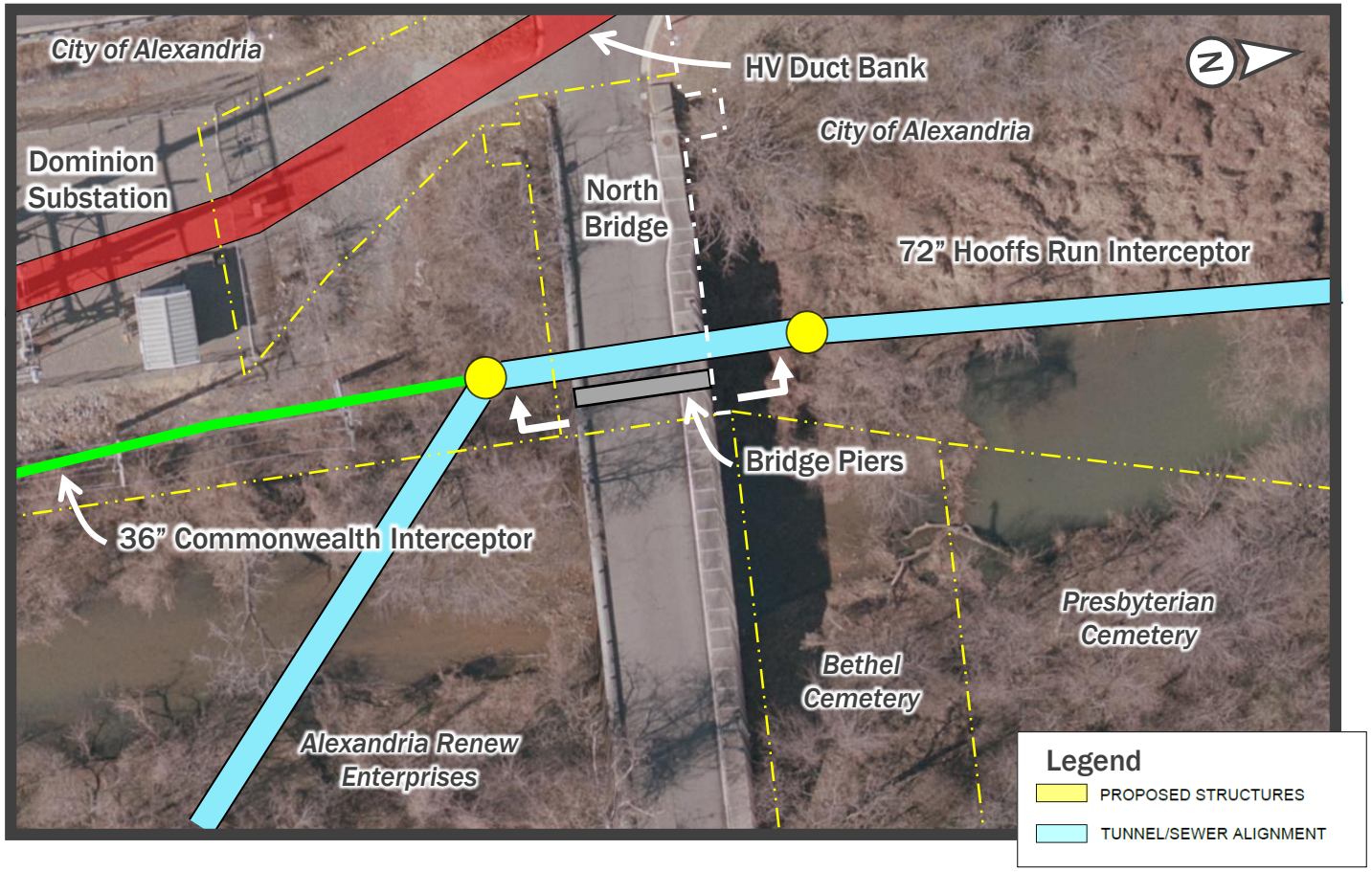


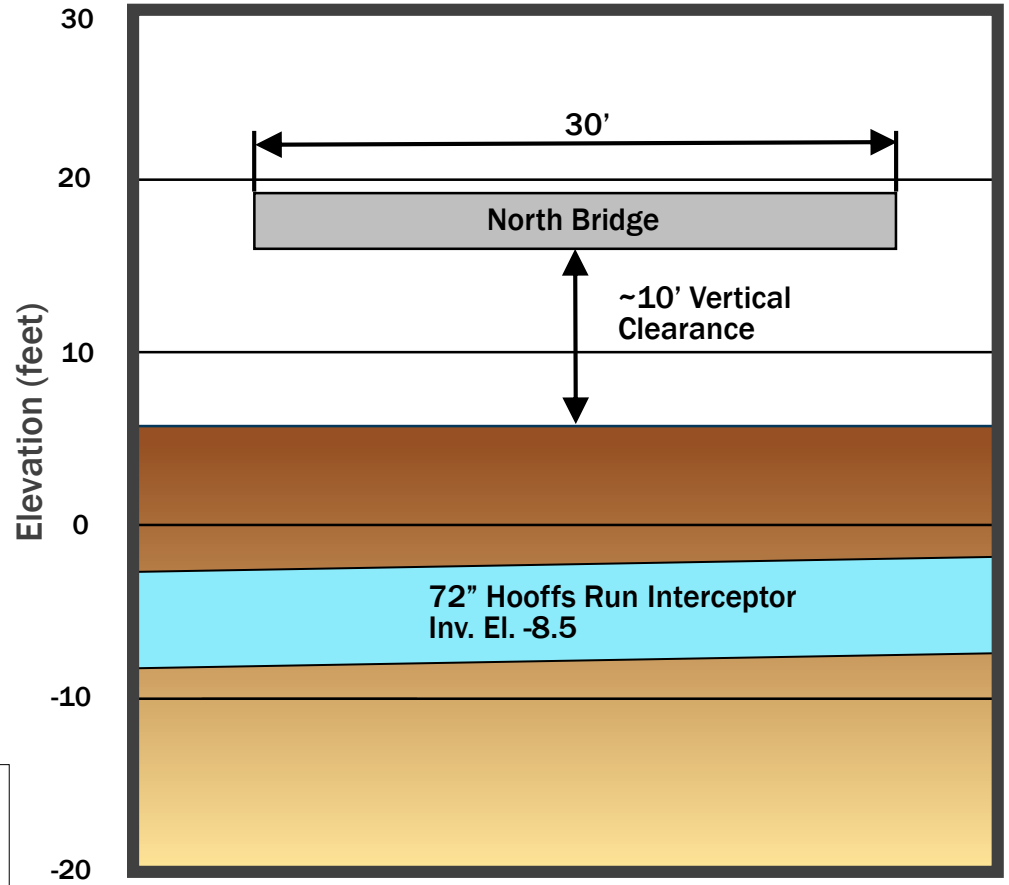
Hooffs Run Interceptor between Jamieson Ave and AlexRenew





Hooffs Run Interceptor Crossing of AlexRenew North Bridge

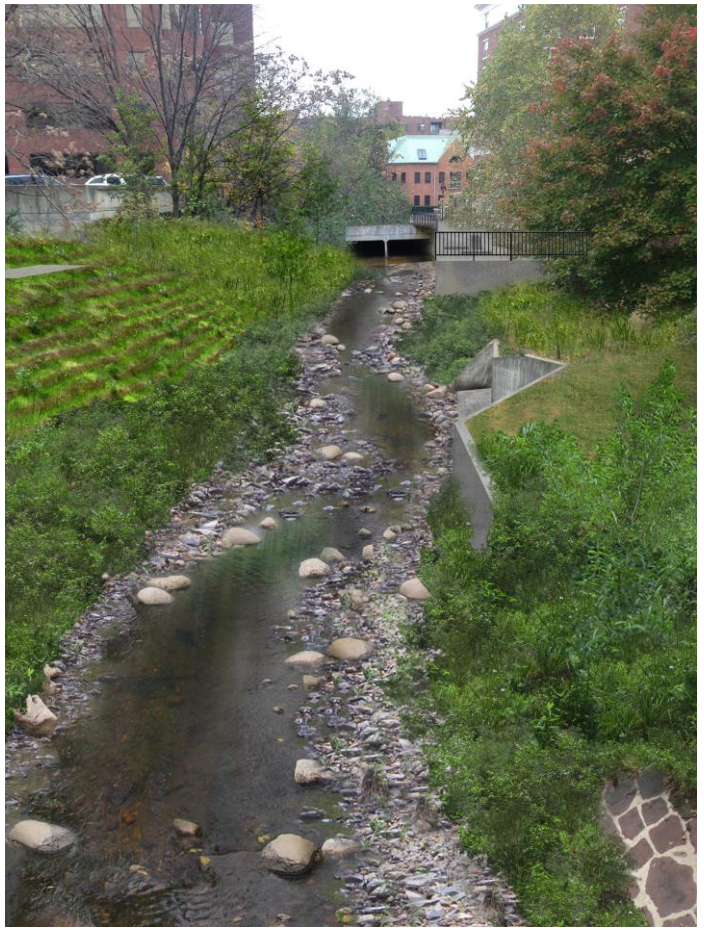




Hooffs Run Stream Restoration

Duke Street to Jamieson Avenue

Plan View, Duke Street to Jamieson Ave



Rendering, Looking North from Jamieson Avenue

Hooffs Run Stream Restoration

Jamieson Avenue to Eisenhower Avenue

Rendering, Looking South from Jamieson Avenue

Plan View, Jamieson Ave to Eisenhower Circle

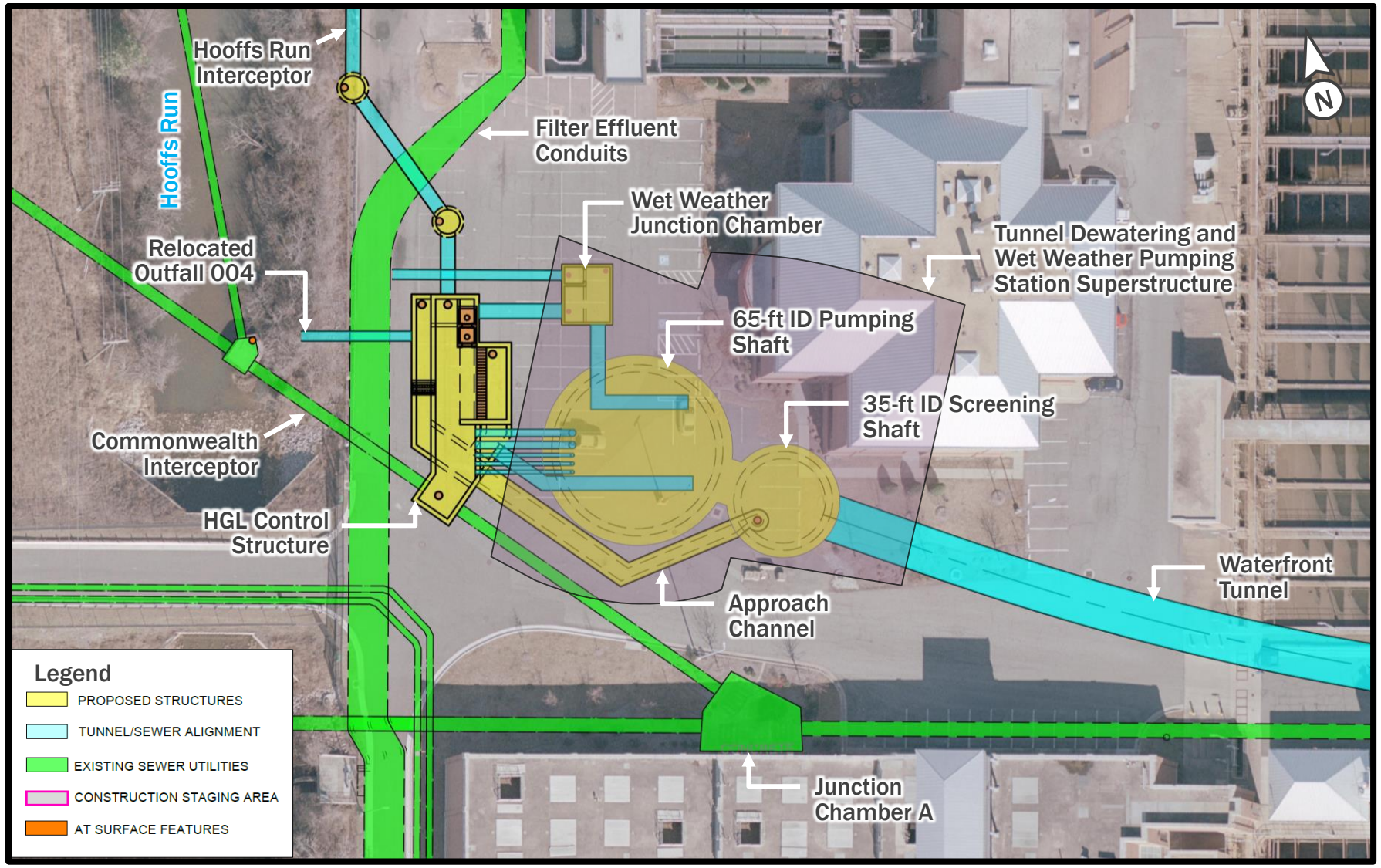
Hooffs Run Stream Restoration

Eisenhower Avenue to AlexRenew

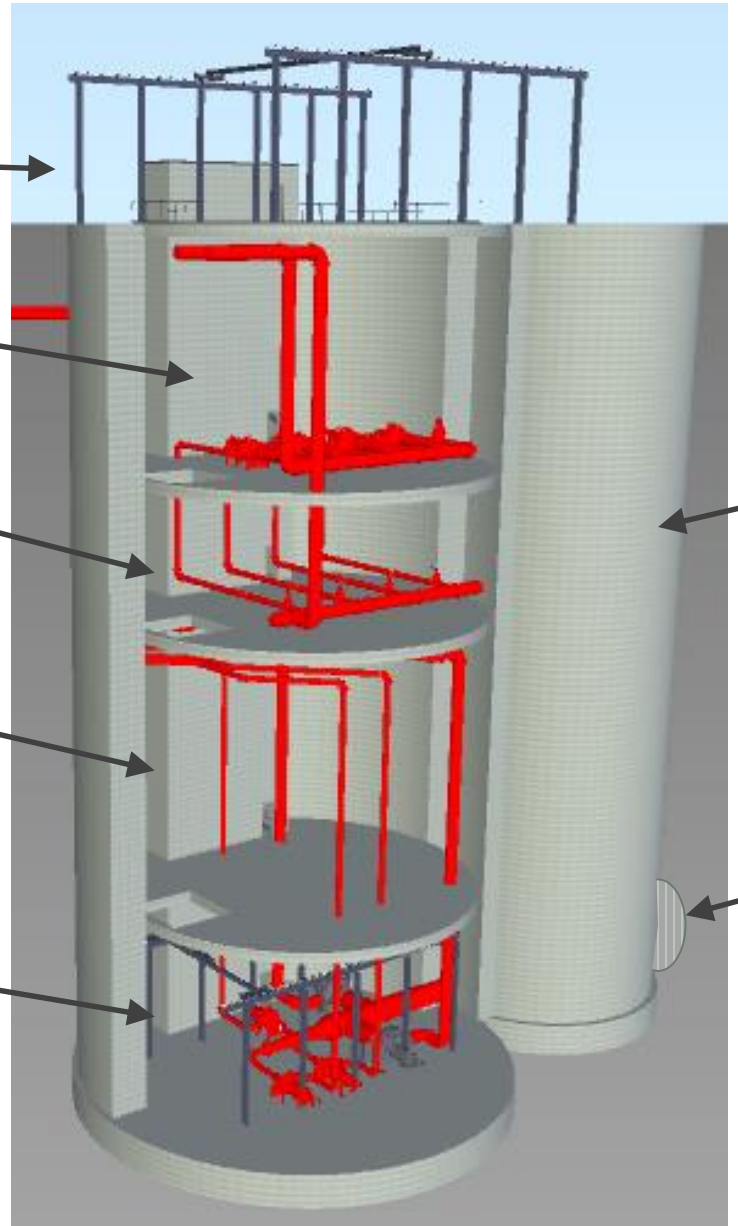
Plan View, Eisenhower Circle to AlexRenew

Tunnel Dewatering and Wet Weather Pumping Station (TD/WWPS)

Tunnel Dewatering and Wet Weather Pumping Station



Tunnel Dewatering and Wet Weather Pumping Station – 3D View



Crane Room

Wet Weather Pump Room
Suction Manifold
Four 45 MGD pumps

Wet Weather Force Main and Valving Room

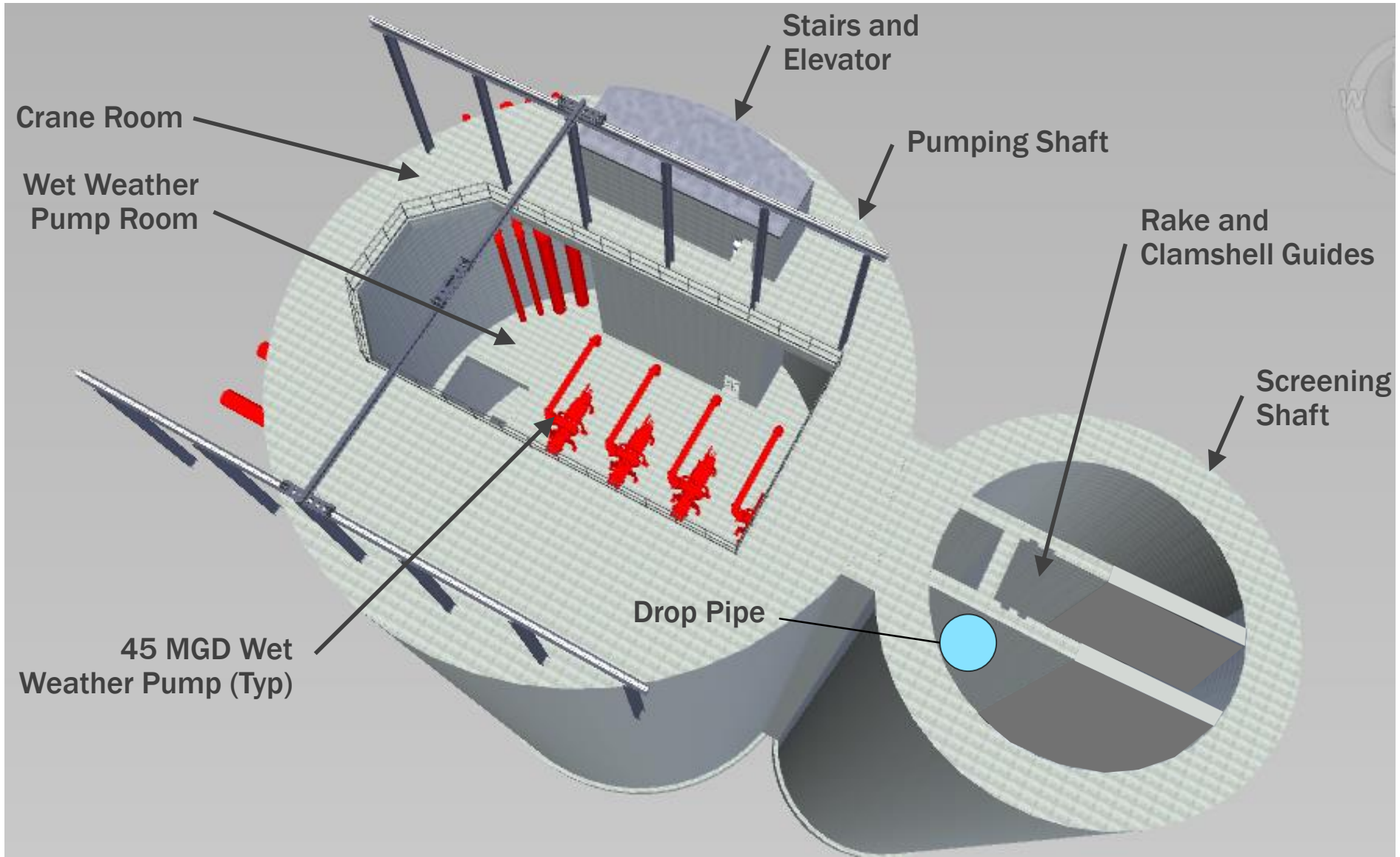
Tunnel Dewatering Force Main Room

Tunnel Dewatering Pump Room
Suction Manifold
Two 20 MGD dewatering pumps
Three 5 MGD solids pumps

Screening Shaft

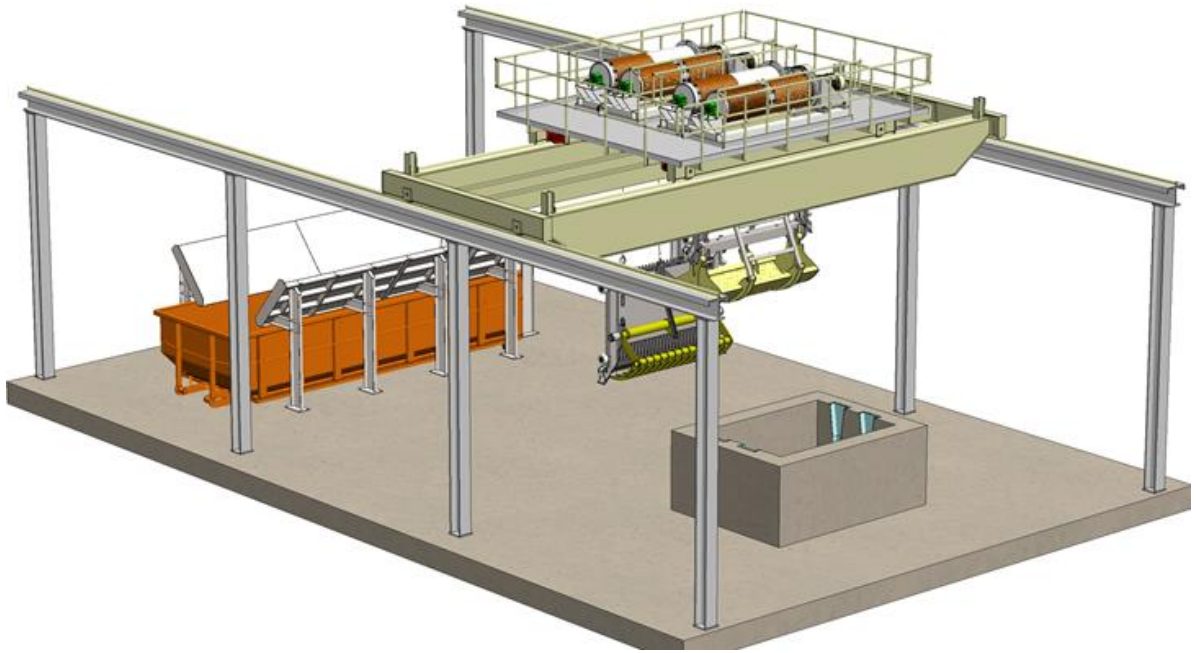
Waterfront Tunnel

Tunnel Dewatering and Wet Weather Pumping Station - Top View



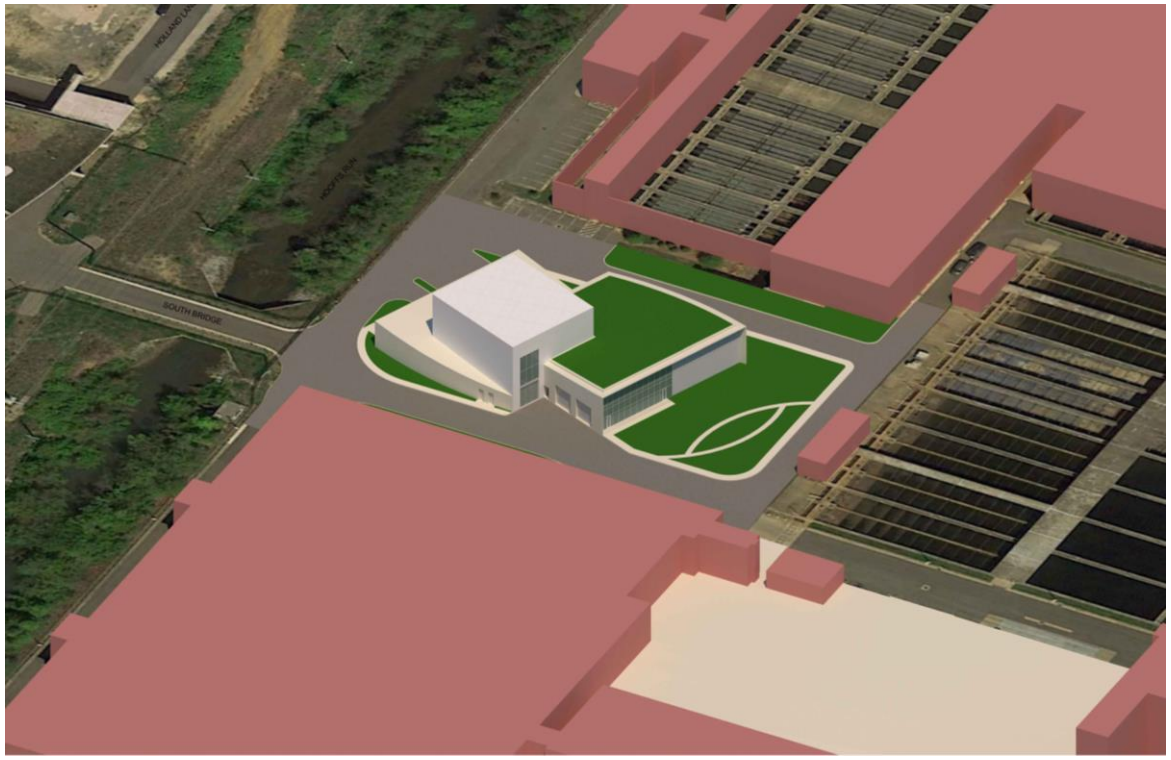
Other Major Process Components Associated with the TD/WWPS

- Tunnel Debris Removal System
  - Bar screen with rake
  - Clamshell
  - Dumpster
- Reclaimed Water Flushing System
- Odor Control Blowers
  - Tie into AlexRenew's centralized scrubber system
- Pumping Station HVAC System
- Electrical System
- Bridge cranes for pump and equipment removal
- Flow Meters



TD/WWPS Superstructure 3D Views

Rendering Looking Northeast

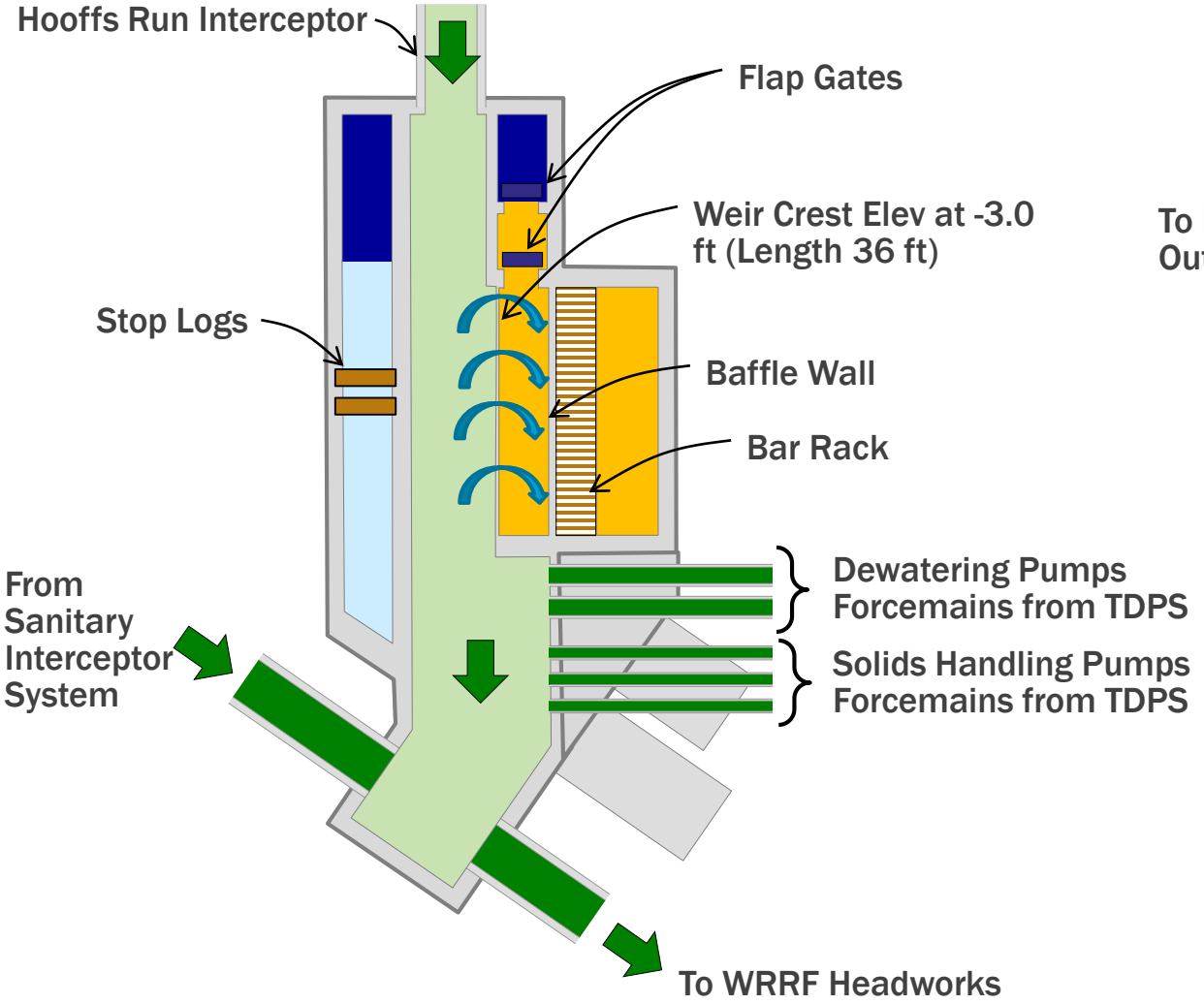


Rendering Looking Northwest

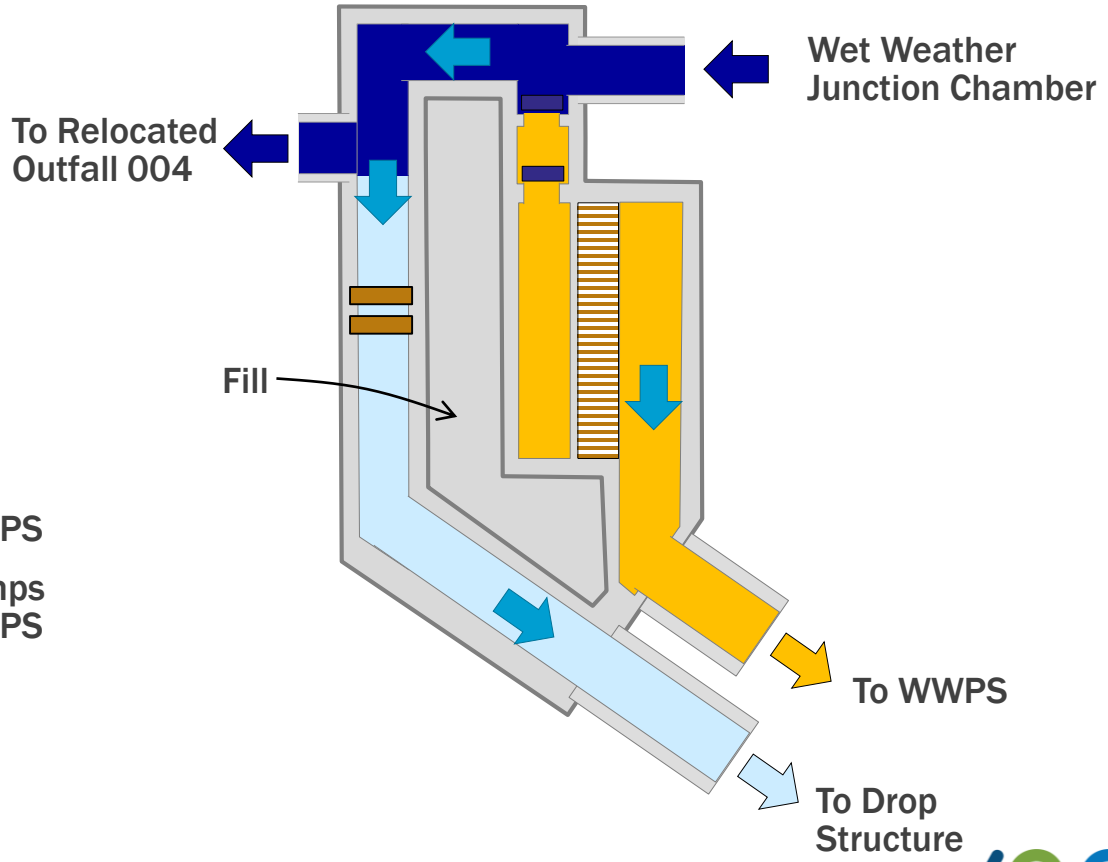
Tunnel System Operational Conditions

Plan View of Hydraulic Grade Line (HGL) Control Structure (CS)

Upper Level Plan (-9.0 ft)

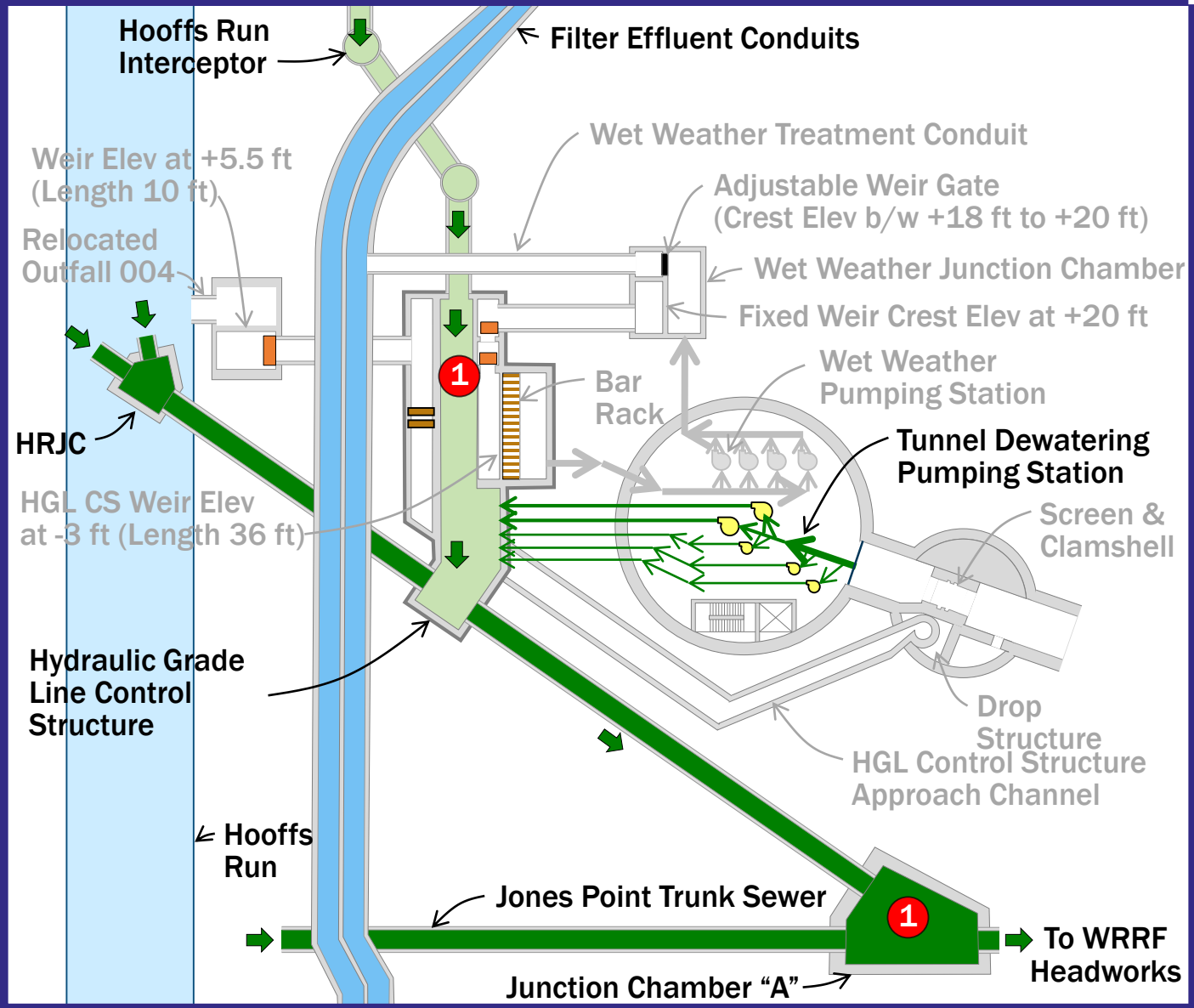


Lower Level Plan (-20.0 ft)

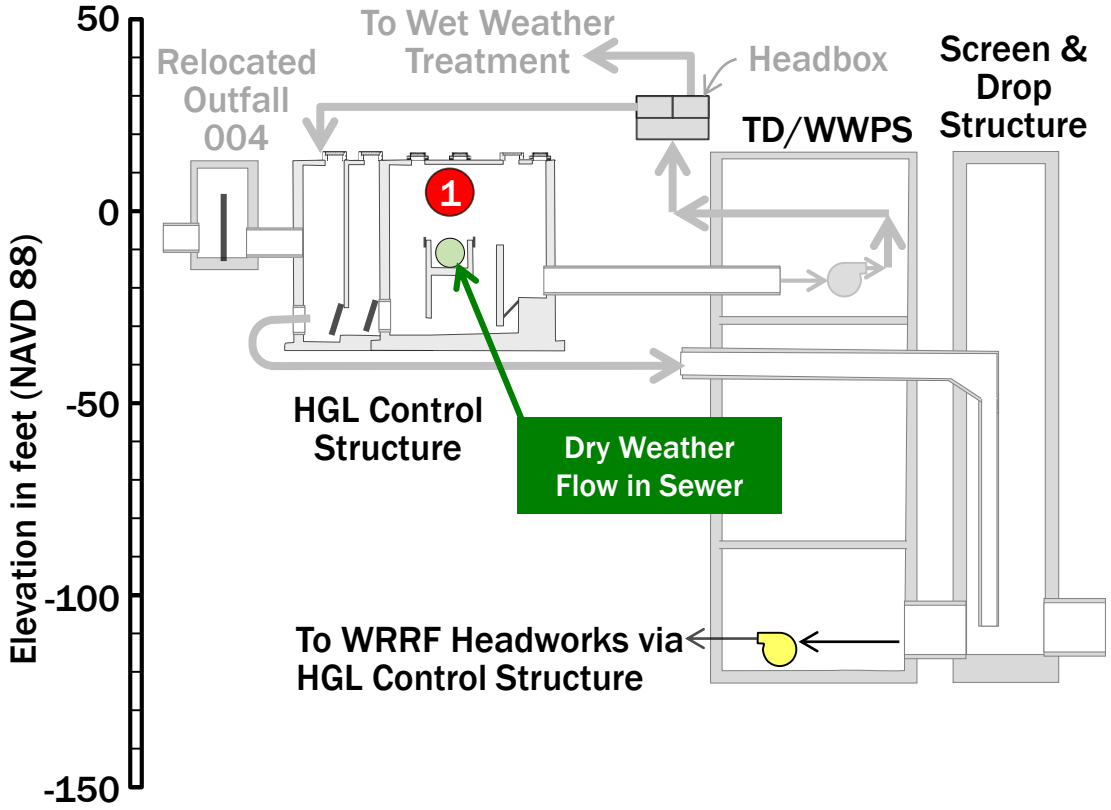


Dry Weather Flow

Plan View



Sectional View

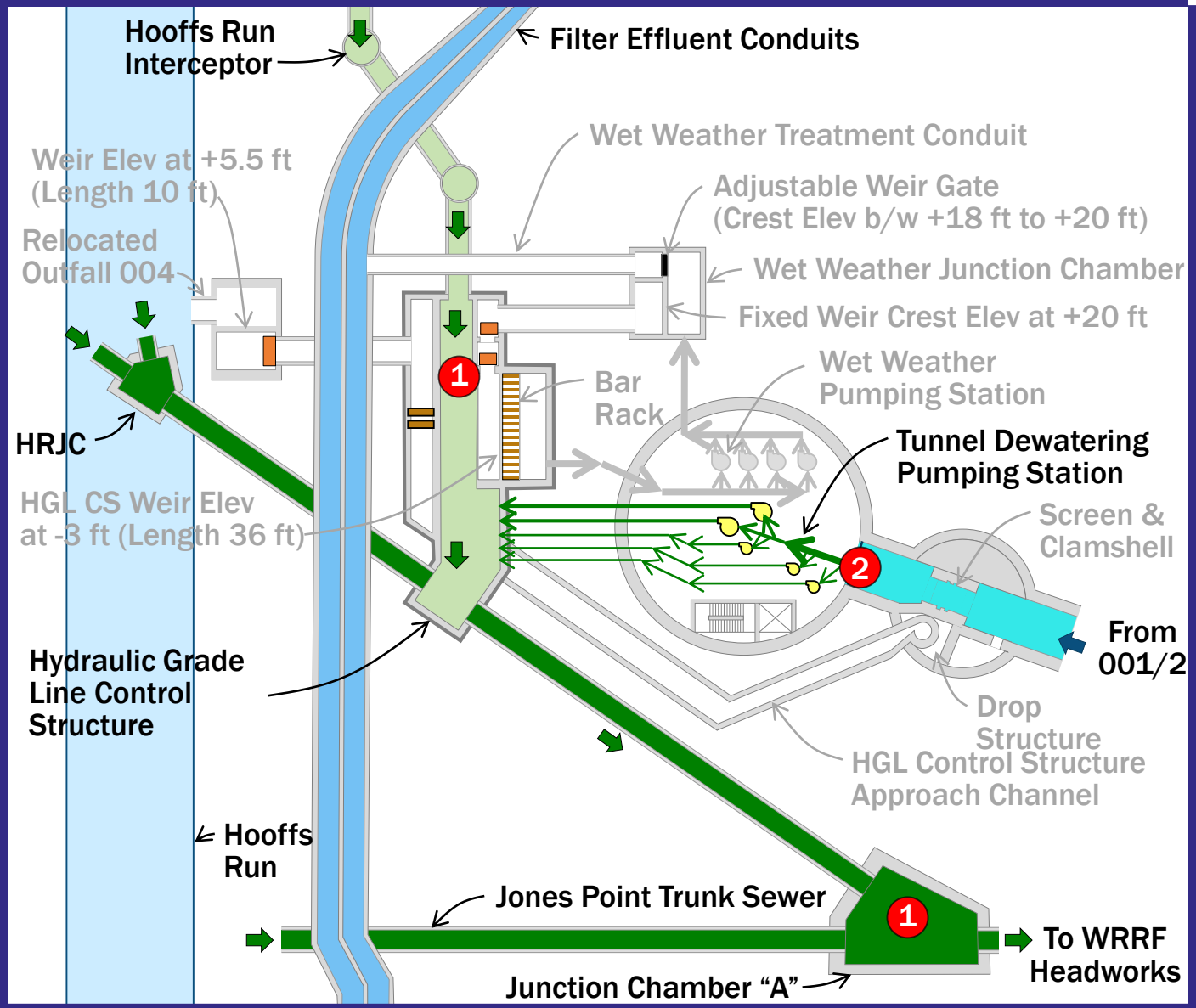


Notes:

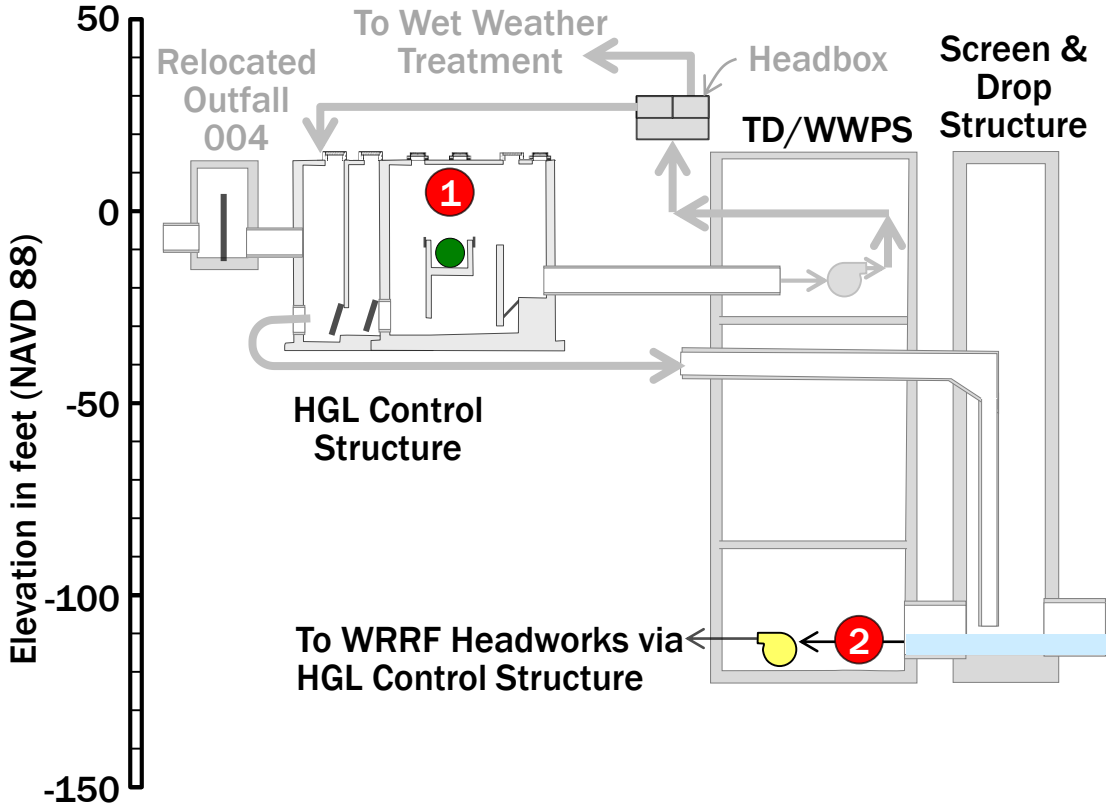
1 All flow contained in the sanitary interceptor system

Typical Wet Weather Flow: 40-50 storms/year

Plan View



Sectional View

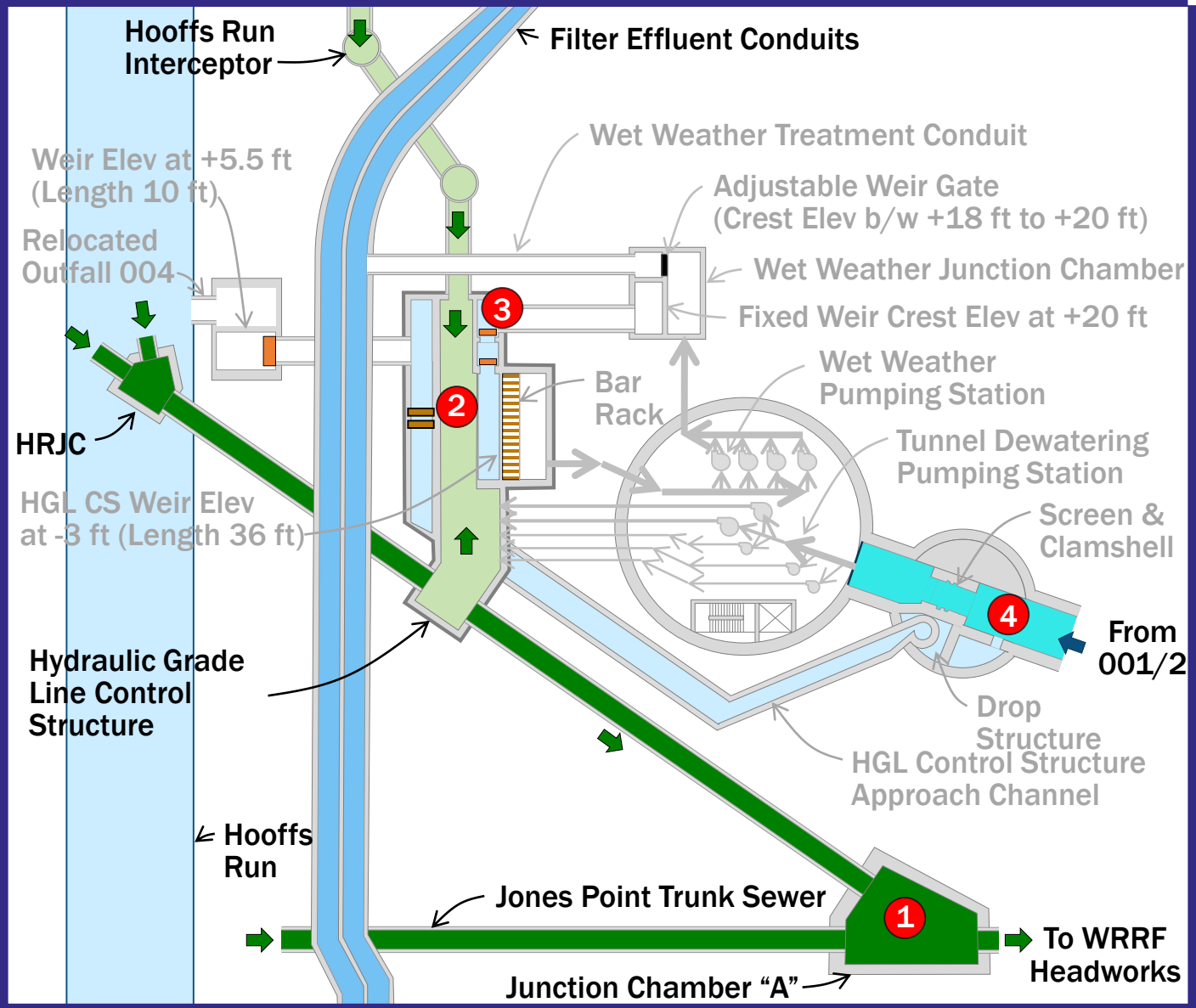


Notes:

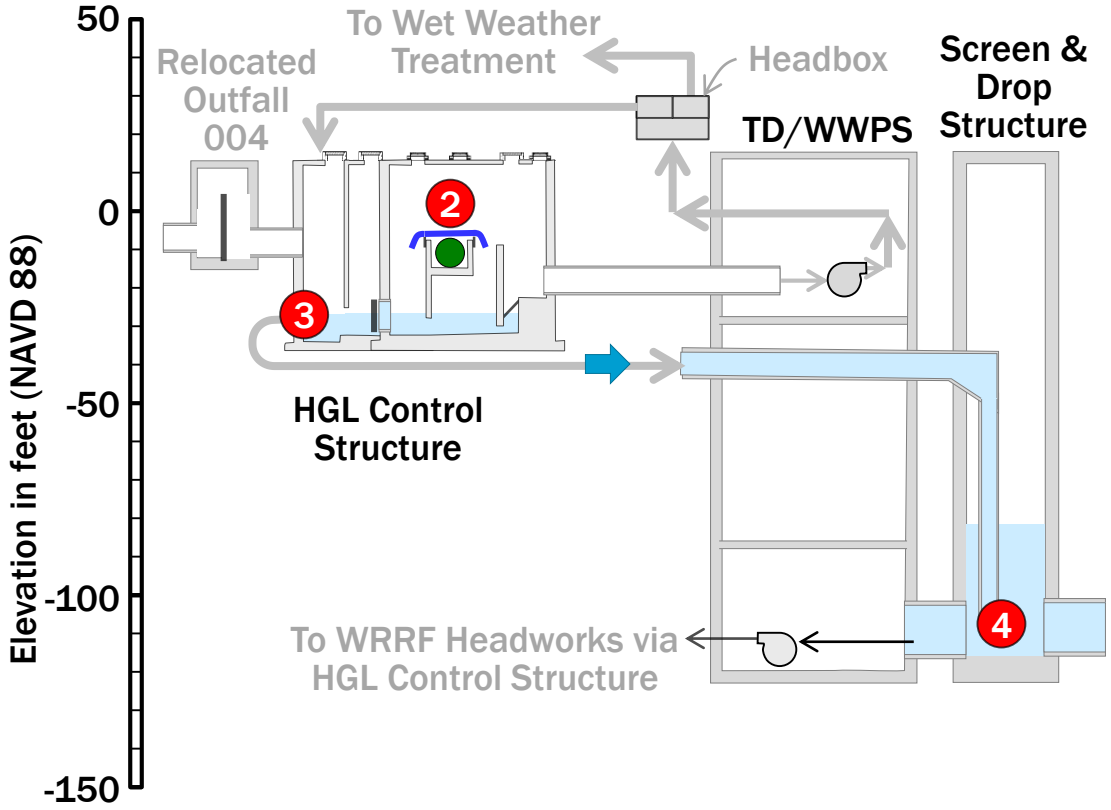
1. All 003/4 flows conveyed directly to WRRF Headworks
2. TD/WWPS pumps 001/2 flows to HGL CS to maximize flow to plant (i.e. pumps up to 20 mgd or until WRRF reaches 116 mgd)

Larger Wet Weather Flows: 6-8 storms/year

Plan View



Sectional View

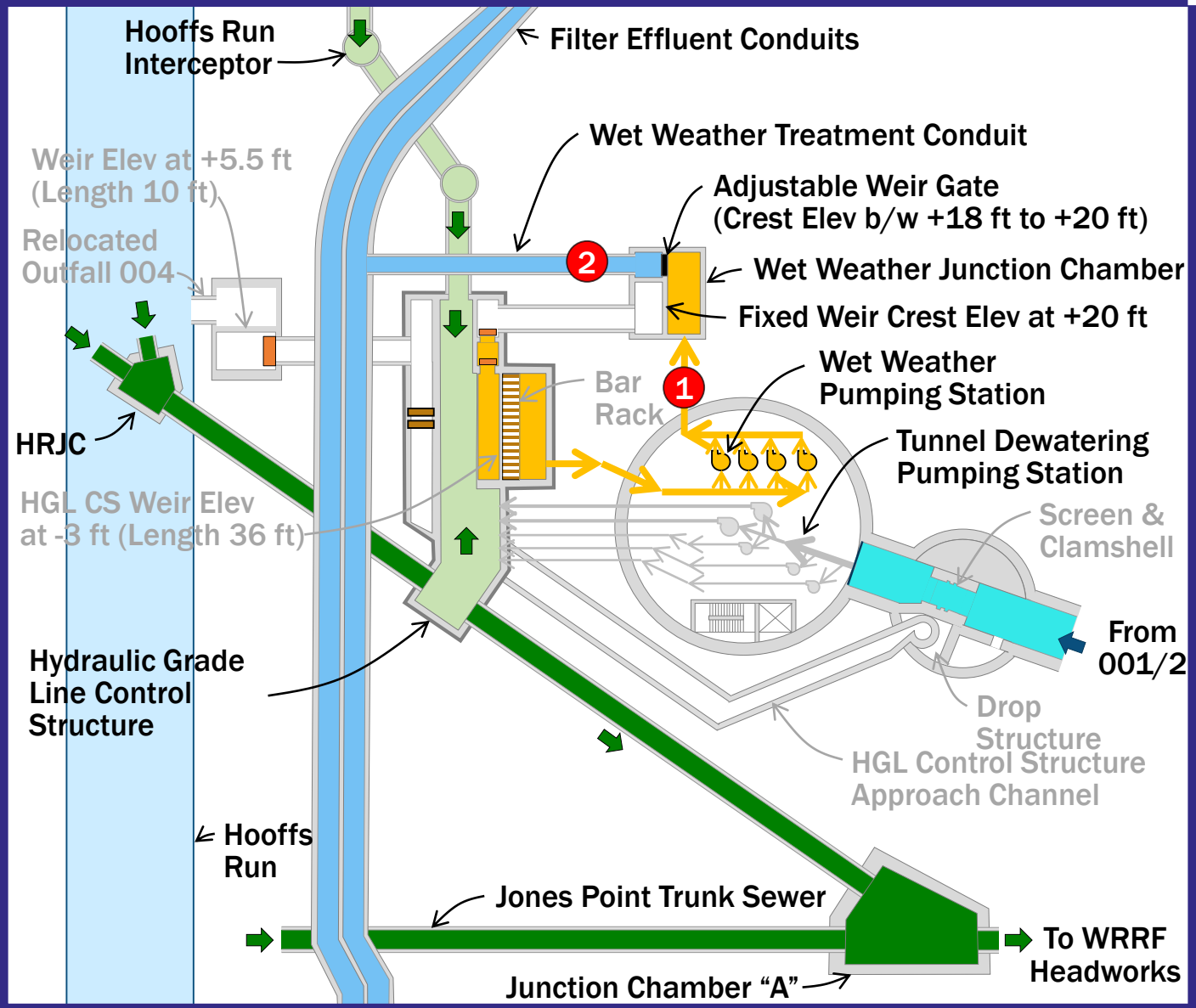


Notes:

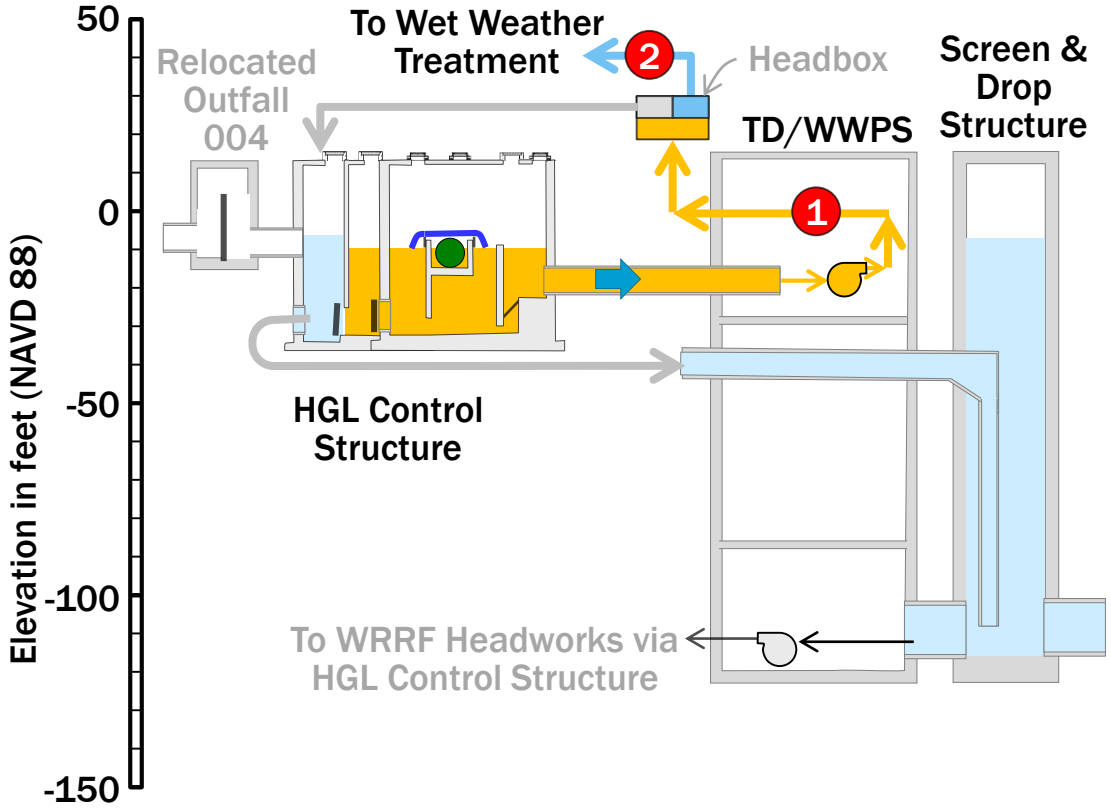
1. Maximize flow to WRRF up to 116 mgd
2. 003/4 flows stay in sanitary sewer until WRRF at 116 mgd, then 003/4 flows discharge over HGL CS weir
3. Gravity flow from 003/4 through flap gate to TDPS
4. Flows from 003/4 combine with flows from 001/2

Wet Weather Treatment Activation: 1-4 storms/year

Plan View



Sectional View

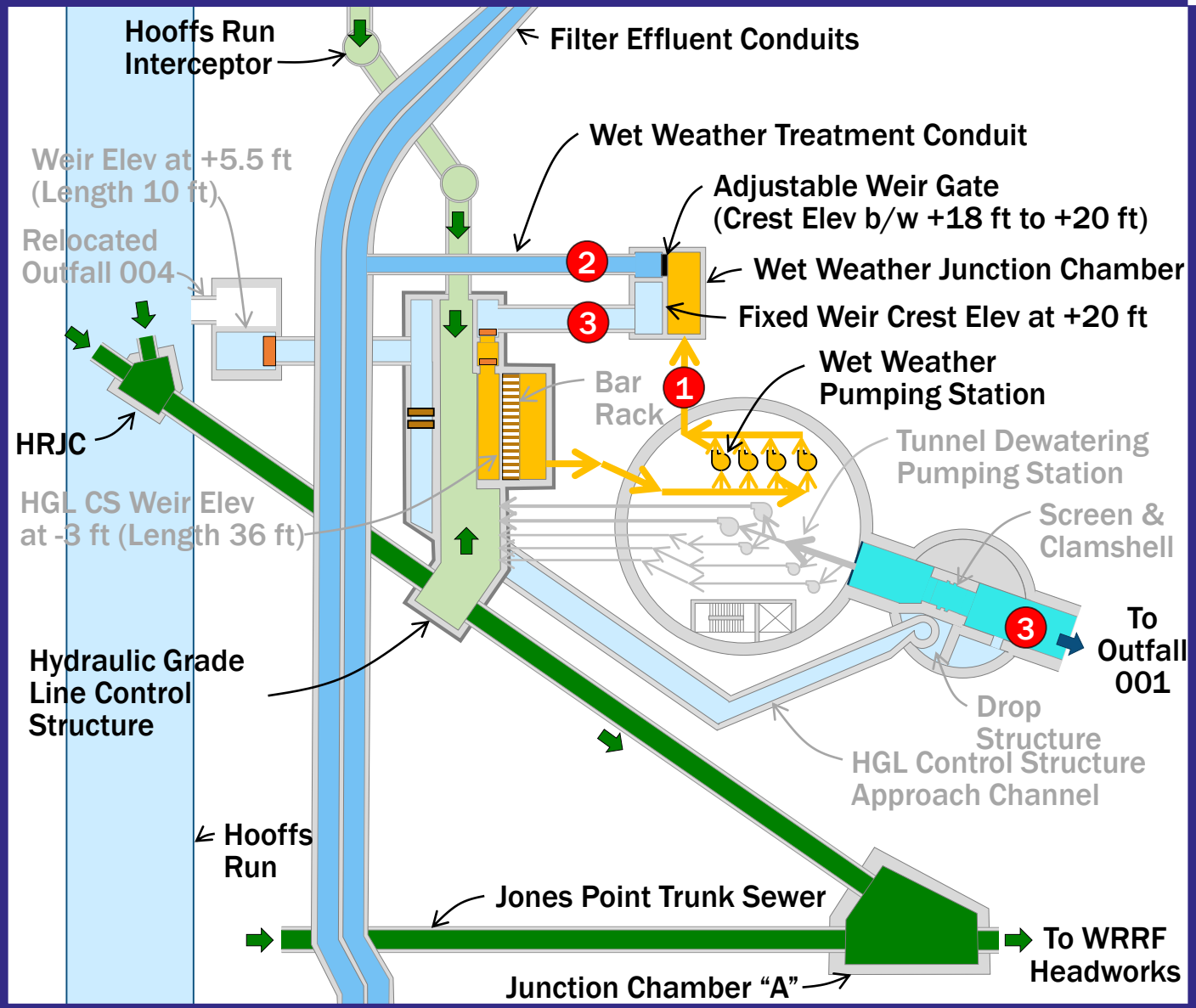


Notes:

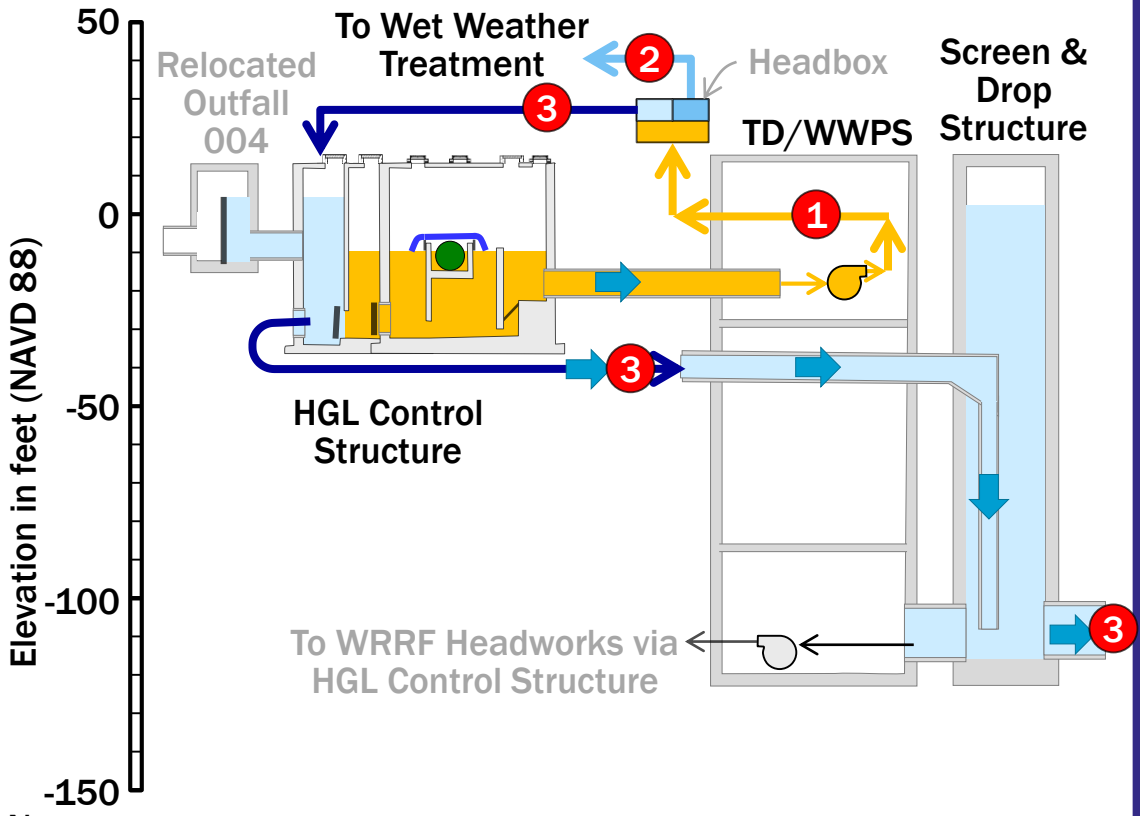
1. WWPS is operating and pumping flows at 40 mgd
2. 40 mgd of flow is sent to Wet Weather Treatment (WWT)

Transfer Flow to Outfall 001: 1-2 storms/year

Plan View



Sectional View

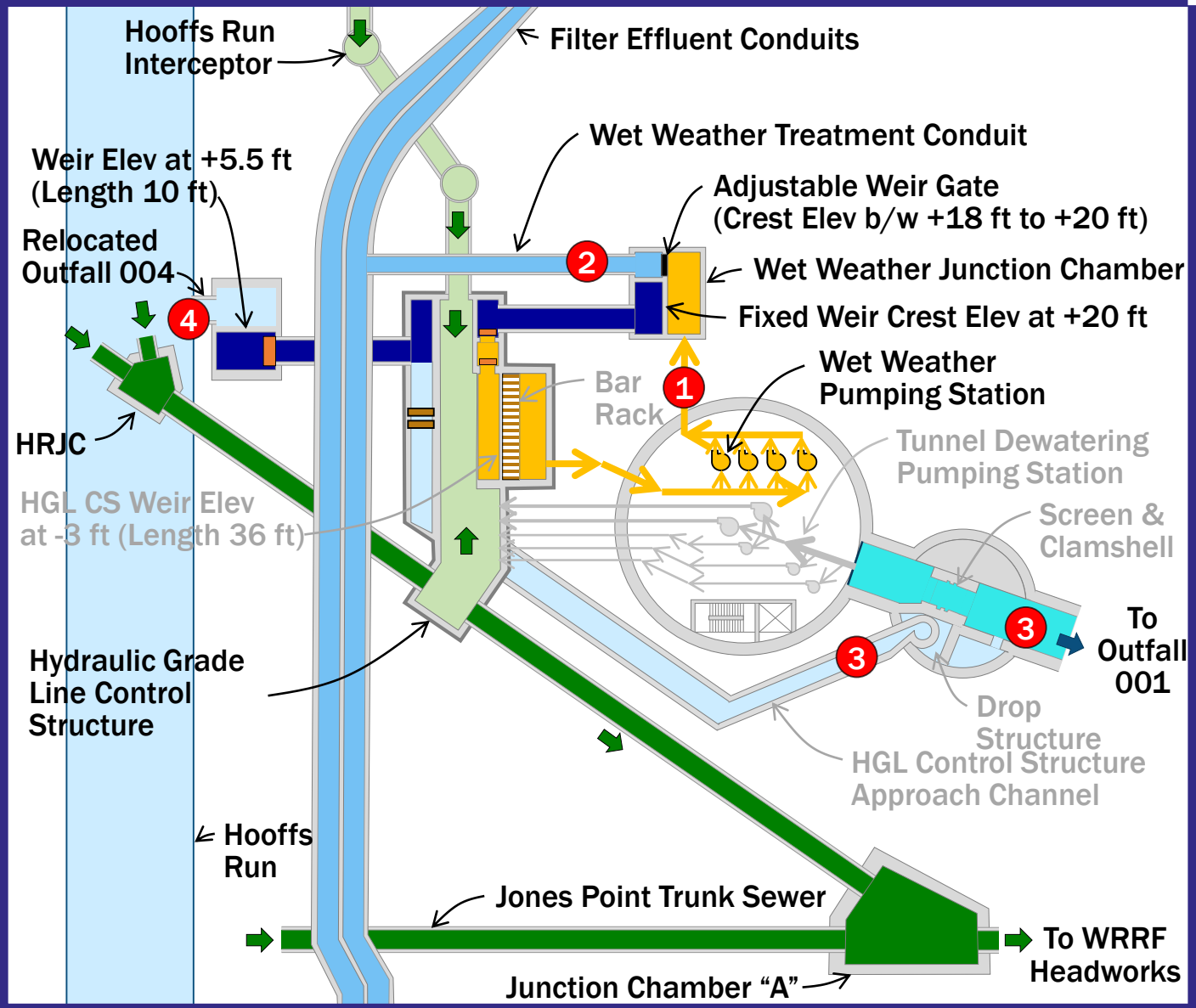


Notes:

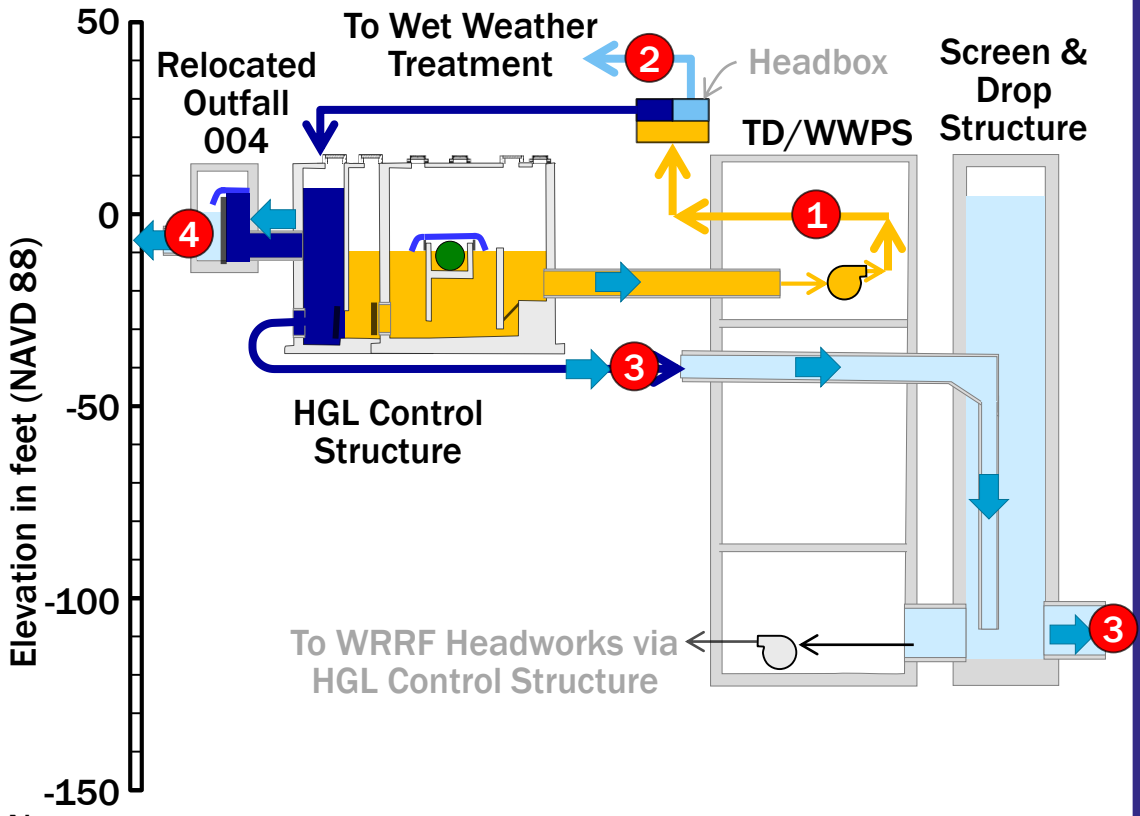
1. WWPS is operating and pumping flows at 80 mgd
2. 40 mgd of flow is sent to WWT
3. 40 mgd of flow sent to Outfall 001

Discharge from Outfall 004: Less than 1 storm/year

Plan View



Sectional View



Notes:

1. WWPS is operating and pumping flows at 130 mgd
2. 40 mgd of flow is sent to WWT
3. 40 mgd of flow sent to Outfall 001
4. Remaining flow (50 mgd) sent to Relocated Outfall 004

RiverRenew

Tunnel System Project Procurement Process

Caitlin Feehan

Design-Build Process for the Tunnel System Project

Request For Qualifications

A — Industry Outreach

Nov 2018

B — Request for Qualifications

RFQ Issued
June 7, 2019

SOQs Due
Aug 20, 2019

C — Shortlist

Notification of Shortlisted Teams
Oct 15, 2019

Request For Proposals

D — Issue Request for Proposal Documents

Feb 11, 2020

E — Proposal Period

Confidential Meetings
Mar–Jun 2020

Technical/ Management and Sealed Price Proposals Due
Aug 2020

F — Evaluation and Interviews

Interviews with Shortlisted Teams
Sept 2020

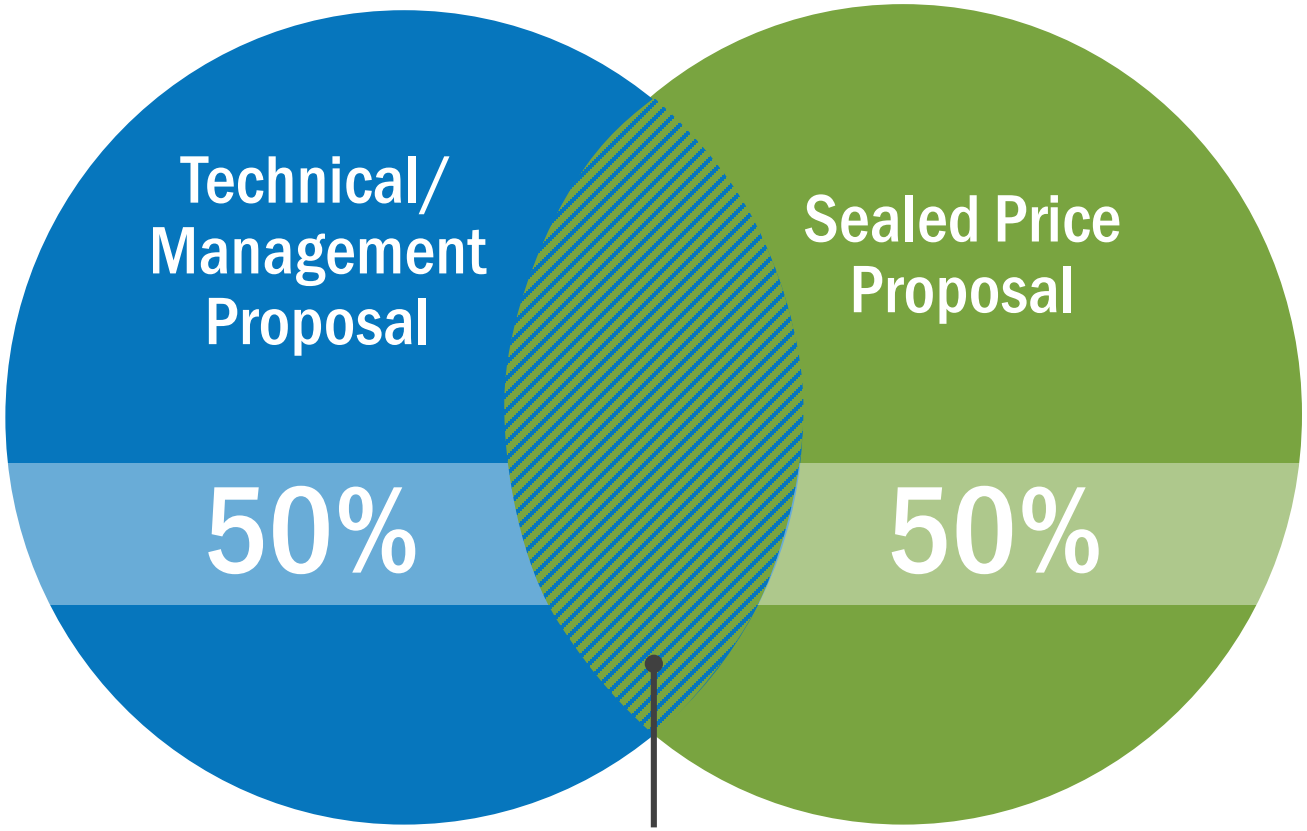
G — Best Value Selection

Design-Build Contract Notice to Proceed
Dec 2020

Anticipated Responsibilities for Tunnel System Design-Build Project (not a complete scope of work)

Project Element	AlexRenew	Design-Builder
Open Channel Hydraulics	✓	
Tunnel Dewatering and Wet Weather Pumping Station	Performing physical modeling	✓
Permanent Structures		✓
Mechanical, Electrical, and Instrumentation		✓
Support of Excavation		✓
Tunnel Excavation		✓
Ground Improvement		✓
Geotechnical Instrumentation		✓
Protection of Structures		✓
Utility Relocations		✓
Maintenance of Traffic		✓
Civil Design and Landscaping		✓
Stakeholder and Community Engagement	✓	
Major Federal and State Permits	✓	
Property Easements and Agreements	✓	
City of Alexandria Development Special Use Permit	✓	D-B will submit Final Site Plan
City of Alexandria Construction Permits		✓

Anticipated Technical/Management and Price Weighting for Second Step of Procurement Process



Proposal Payment provided to unsuccessful Shortlisted Teams that submit responsive proposals ($300 – $500k)

Anticipated Design-Build Contract Provisions for the Tunnel System Project

- Schedule Milestones and Liquidated Damages
- Escrow Bid Documents
- Mobilization Payment Items
- Mutual Waivers of Consequential Damages
- Design-Builder Provided Insurance
- Facilitated Partnering
- Dispute Resolution Board
- Allowance Payment Items
- Retainage at 5 percent
- Differing Site Conditions and the use of Geotechnical and Environmental Baseline Reports
- VCWRLF and WIFIA requirements for M/WBE, Davis-Bacon, and American Iron and Steel
- Alternative Technical Concept Process

Experience with the Following is Important to AlexRenew:

- Team members working together.
- Design-Build.
- Tunnel and shaft construction of similar diameter and depth in similar ground conditions.
- Pumping stations and wet weather facilities of similar function, capacity, and depth.
- Pipelines installed by open-cut methods with connections to live sewers.
- Constructing similar facilities and mitigating community impacts in congested residential and commercial urban environments.

Tunnel System Project Key Personnel

40%

Key Personnel	Project Manager	Construction Manager	Design Manager	Design Coordinator	Key Personnel Identified by Design-Builder		
					1	2	3
Description	Responsible for managing all aspects of the Project.	Responsible for the implementation of designs associated with all project components.	Responsible for managing design activities and ensuring coordination across all design disciplines.	Responsible for coordinating design and construction activities to ensure approaches are compatible and schedule is maintained.	To be identified by Design-Builder	To be identified by Design-Builder	To be identified by Design-Builder
Certifications			Virginia Licensed PE				

AlexRenew does not view a Permit Coordinator or a Community Outreach Specialist as Key Personnel

Related Project Experience

40%

Construction Reference Projects					Design Reference Projects		
1 – Tunnel	2 – Tunnel	3 – Pumping Station	4 – Pumping Station	5 – Open-cut	1	2	3
Tunnel and shaft construction of similar diameter and depth in similar ground conditions	Tunnel and shaft construction of similar diameter and depth in similar ground conditions	Pumping stations and wet weather facilities of similar function, capacity, and depth	Pumping stations and wet weather facilities of similar function, capacity, and depth	Pipelines installed by open-cut methods with connections to live sewers	Tunnel, Pumping Station, or Open-cut	Tunnel, Pumping Station, or Open-cut	Tunnel, Pumping Station, or Open-cut

Lead Contractor(s) and Lead Designer(s)

Project Risks and Mitigation

10%

3

Unique Risks

- Narrative
- Impact
- Mitigation
- Role
- Responsible Party

Safety Program and Record

10%

Other Forms and Required Documents

Virginia SCC Registration Form

Surety Letter

- Performance and Payment Bond value of $300 million
- Rating categorization

Audited Financial Reports and Net Worth

- 3 most recent fiscal years
- Prepared in accordance with U.S. GAAP
- Identification of contract default, criminal conviction, debarment for Lead Contractor(s) and Lead Designer(s)
- Demonstrated net worth of at least $30 million

AlexRenew will use the Virginia Clean Water Revolving Loan Fund (VCWRLF) and Water Infrastructure Finance and Innovation Act (WIFIA) to Assist with Funding for RiverRenew

- Equal Employment Opportunity Compliance
- Minority Business Enterprise (MBE)/ Women Business Enterprise (WBE) Fair Share Goals
- Davis-Bacon Compliance
- American Iron and Steel

VCWRLF M/WBE Goals in current AlexRenew construction contracts (may change by bid time)

	MBE%	WBE%
Construction	7.4	4.8
Equipment	5.0	3.2
Services	7.7	3.6
Supplies	1.6	2.5

Contractors must demonstrate a "good faith effort" in the solicitation and utilization of MBEs/WBEs during the bid process:

- *Public notice and/or direct solicitations must be undertaken*
- *Evidence of these efforts and anticipated MBE/WBE utilization must be presented and must demonstrate a "good faith effort"*

RiverRenew

Next Steps and Questions and Answers

Liliana Maldonado

Next Steps

Download the RFQ Information Session Presentation: alexrenew.com/riverrenew-tunnel-system-project-design-build

➡ Only email tunnelsystem@alexrenew.com for questions related to this RFQ

RFQ-19-079: Tunnel System Project (Design-Build)

- **August 1.** Last Day for Questions
- **August 13.** Last Date for Addenda
- **August 20.** SOQs Due
- **October 15.** Notify Shortlisted Teams

Tunnel System Resident Engineering and Inspection (RE&I) Contract

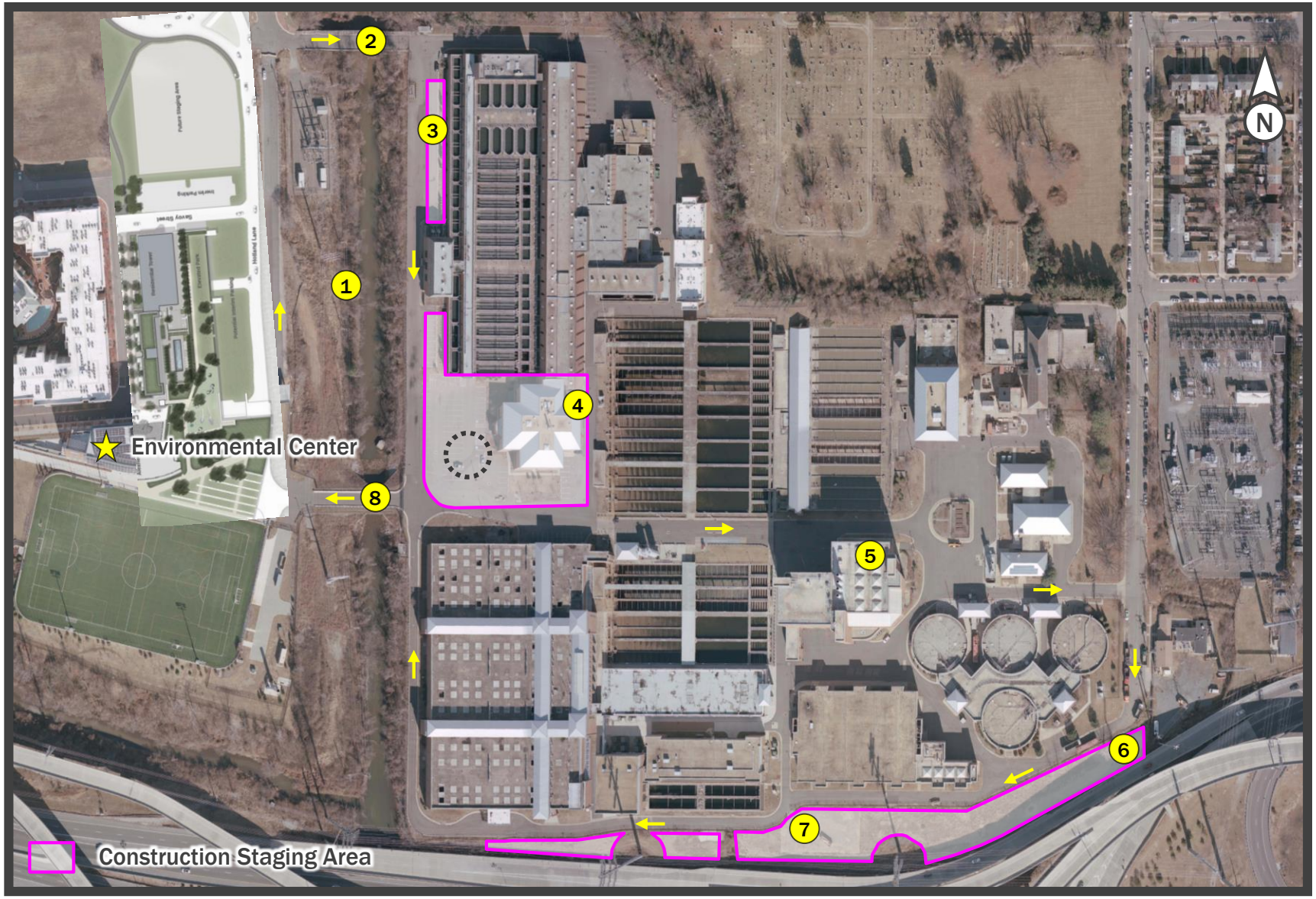
- **November 2019.** Issue Tunnel System RE&I Request for Proposals

RiverRenew

AlexRenew Water Resource Recovery Facility Site Tour

Justin Carl

AlexRenew WRRF Site Tour Map



★	**Environmental Center**
1	**5MW Temporary Power Drop**
2	**North Bridge** Hooffs Run Interceptor
3	**Building G** Construction Staging Area
4	**Tunnel Dewatering Pumping Station** Construction Staging Area
5	**Building L** Centralized Odor Scrubber
6	**Trailer Complex**
7	**Perimeter Road** Construction Staging Area
8	**South Bridge** Hooffs Run Junction Chamber

Questions and Answers