2021-2022 RiverRenew Stakeholder Advisory Group

Meeting No. 1

February 18, 2021
SAG Meeting No. 1 Presentation Outline

- Getting to Know the RiverRenew Stakeholder Advisory Group
- How Water Works in Alexandria
- History of RiverRenew
- Update on Ongoing RiverRenew Construction Projects
- Update on RiverRenew Tunnel Project

Break

- Meet Traylor-Shea
- RiverRenew Tunnel Project Construction Staging Areas
- Schedule and Next Steps
- Public Comment Period
Tonight’s Speakers

Caitlin Feehan
Program Director

Justin Carl
Program Manager

Traylor-Shea Joint Venture
Design-Build Team
## Virtual Meeting Best Practices

<table>
<thead>
<tr>
<th>Video</th>
<th>Audio</th>
<th>Participation</th>
</tr>
</thead>
</table>
| • **Camera turned on** for SAG members, when possible | • **Microphones muted** unless speaking  
• Avoid speaking over or interrupting each other (see Ground Rules) | • Questions for **SAG members only** will be taken **after each section**  
• Please use the “**Raise Hand**” button to ask a question  
• Questions will be **answered in the order received**  
• **Public comment** will be taken at the end of the meeting. Each speaker will be allotted **3 minutes** |
Setting Ground Rules for a Productive SAG Meeting

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

Help the group enforce these ground rules.

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

Please direct all questions to Caitlin or Justin.

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

Suspend judgment, even when you disagree.

Be aware of assumptions, especially your own.

Ground Rules

Feedback from SAG Requested
Getting to Know the RiverRenew Stakeholder Advisory Group
2021-2022 RiverRenew Stakeholder Advisory Group At-a-Glance

**Charge:**
- Review and monitor construction/program progress
- Communicate progress to the community by leveraging existing networks
- Identify concerns and receive input from the public
- Provide recommendations regarding mitigation of construction impacts

**Other Information:**
- Established via City Council Resolution No. 2959 in September 2020
- Term: January 2021 – January 2022

**Members:**
- Morgan Babcock
  Eisenhower Partnership Nominee
- Liz Birnbaum
  Carlyle or Duke St. Corridor
- Dan Bradfield – SAG Chair
  South Old Town
- Ailing Bressman
  Engineering or Construction Background
- Yvonne Callahan
  OTCA Nominee
- Mace Carpenter
  Tobacco Quay, Waterfront Residences, or Rivergate
- Mark McNutt
  Interest in RiverRenew
- Erik Olson
  NOTICe Nominee

[Image of members]
Morgan Babcock
Representing Outfalls 003/4
Nominated by Eisenhower Partnership

- Carlyle Council Manager and TMP Coordinator
- Extensive experience working with AlexRenew as partners in the Carlyle area
- Active member of Visit Alexandria, Alexandria Economic Development Partnership, Small Business Development Center, and Board Member of the Eisenhower Partnership
Liz Birnbaum
Representing Outfalls 003/4
Member residing in Carlyle Community or Duke Street Corridor

- Previous SAG participation: 2018 CSS SAG, 2019-2020 RiverRenew SAG
- Extensive background in rivers and clean water with more than 20 years experience in federal water policy
- Sits on the boards of the Potomac Conservancy and the Carlyle Towers condominium, and is a former Park and Recreation Commission member
Dan Bradfield
SAG Chair
Representing Outfall 002
Member residing in South Old Town

• 2021-2022 RiverRenew Stakeholder Advisory Group (SAG) Chair
• Previous SAG Member: 2019-2020 RiverRenew SAG
• Professional Engineer with degrees in Civil and Environmental Engineering
• Civil Engineer in the U.S. Air Force, working on large public works and smaller city-wide utility system projects
Ailing Bressman
At-Large Member
Member with engineering or construction background

• Passionate about water issues and water conservation, with experience in water treatment plant design
• Holds a graduate degree in Environmental Engineering
• Recently received Engineer-in-Training designation (EIT)
Yvonne Callahan
Representing Outfall 002
Nominated by Old Town Civic Association (OTCA)

- Previous SAG participation: 2018 CSS SAG, 2019-2020 RiverRenew SAG
- Vice President of OTCA
- Actively involved in Old Town and equipped with a wealth of historical knowledge
Mace Carpenter
Representing Outfall 001
Member residing in Tobacco Quay, Waterfront Residences or Rivergate

- Sits on North Old Town Independent Citizens’ (NOTICe) Association and Rivergate Board of Directors
- Holds a graduate degree in public policy and political science
- Participated in RiverRenew 2018 and 2019 community listening sessions
- Active volunteer throughout the City
Mark McNutt

At-Large Member

Member with interest in RiverRenew

• Alexandria resident since 1975 and actively involved in local community associations and neighborhood groups
• Holds a degree in Economics of Natural Resource Development
• Interest in economics and city infrastructure
Erik Olson
Representing Outfall 001
Nominated by North Old Town Independent Citizens’ (NOTICe) Association

• Previous SAG participation: 2018 CSS SAG, 2019-2020 RiverRenew SAG
• Extensive career in environmental policy & law, particularly water issues, including at the Natural Resources Defense Council, the USEPA, and the U.S. Senate
• Holds degrees from Columbia University and the University of Virginia School of Law
Previous RiverRenew SAGs have Helped Shape the Program

**Major Outcomes of the 2017-2018 Long Term Control Plan Update SAG:**

- **Recommended Option B+** Unified Tunnel in LTCPU, subsequently approved by Virginia Department of Environmental Quality (VDEQ)
- Supported **transfer** of program responsibility from the City to AlexRenew
- Challenged team to reduce **overflow volume** at Outfall 001 and **extend** Outfall 001 to the Potomac River
- Requested **climate change** to be considered in analysis
- Noted Alexandria’s historic character and to consider potential **impacts to historic structures**
- Suggested investigating **affordability** strategies
Previous RiverRenew SAGs have Helped Shape the Program

<table>
<thead>
<tr>
<th>Major Outcomes of RiverRenew Design SAG (2019-2020):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promoted <strong>Community Listening Sessions</strong> to support public outreach associated with <strong>Environmental Assessment</strong> Process</td>
</tr>
<tr>
<td>Requested additional studies and informational flyer on <strong>climate change</strong></td>
</tr>
<tr>
<td>Provided input on first <strong>rate increase</strong></td>
</tr>
<tr>
<td>Reviewed <strong>shortlisting</strong> criteria for design-build procurement</td>
</tr>
<tr>
<td>Reviewed the development of <strong>Request for Proposal Documents</strong></td>
</tr>
<tr>
<td>Gave feedback on <strong>tunnel routes</strong> and <strong>facility locations</strong></td>
</tr>
<tr>
<td>Supported development and approval of <strong>Special Use Permits</strong></td>
</tr>
<tr>
<td>Served as liaisons to community while AlexRenew completed <strong>boring program</strong></td>
</tr>
<tr>
<td>Saw <strong>construction projects</strong> begin at AlexRenew</td>
</tr>
<tr>
<td>Provided significant input on site <strong>best management practices, safety requirements, and soil handling/transportation plan</strong></td>
</tr>
</tbody>
</table>
How Water Works in Alexandria
How Water Works in the City of Alexandria

Drinking Water

Wastewater and Combined Sewer Treatment

Sanitary and Combined Sewer System

Stormwater
AlexRenew’s Service Area Includes Alexandria and Portions of Fairfax County

Legend:
- Alexandria City Limits
- Service Area
- Fairfax Sewers
- Fairfax Pump Stations
- AlexRenew Interceptors
- AlexRenew Pump Stations
- Combined Sewer System
- Separate Sewer System
- Arlington Service Area
AlexRenew At-A-Glance

- Serves over 300,000 customers in Alexandria and Fairfax County
- Independent public entity created in 1952 by Alexandria City Council
- Led by a five-member citizen Board of Directors
- AlexRenew is primarily funded through sewer rates
- 35 million gallons of wastewater treated every day at our wastewater treatment plant
- 20 miles of sewer interceptors
- 4 combined sewer outfalls
- 4 pumping stations throughout Alexandria
History of RiverRenew
Alexandria is Served by Two Types of Sewer Systems

SEPARATE SEWER SYSTEM

ALEXRENEW WATER RESOURCE RECOVERY FACILITY

COMBINED SEWER SYSTEM

- Water Pipes
- Storm Sewers
- Sanitary Sewers
- Combined Sewers
Millions of Gallons of Rainwater Mixed with Sewage Pollutes Alexandria’s Waterways Each Year via Four Outfalls

A 2017 Virginia law requires remediation of these outfalls by July 2025

<table>
<thead>
<tr>
<th>Outfall</th>
<th>Overflow Volume (million gallons)*</th>
<th>Overflow Events*</th>
<th>2017 Law Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>46</td>
<td>37</td>
<td>4-6 overflows per year</td>
</tr>
<tr>
<td>002</td>
<td>40</td>
<td>46</td>
<td>80% bacteria reduction</td>
</tr>
<tr>
<td>003</td>
<td>25</td>
<td>70</td>
<td>99% bacteria reduction</td>
</tr>
<tr>
<td>004</td>
<td>17</td>
<td>45</td>
<td>99% bacteria reduction</td>
</tr>
</tbody>
</table>

*Yearly average based on 2000-2016 climate period
In June 2018, the City of Alexandria Transferred the Four Existing Outfalls and RiverRenew Ownership to AlexRenew
RiverRenew At-a-Glance

RiverRenew Projects:
- Tunnel Project
- Building J Facilities Relocation and Decommissioning Project
- 108 to 116 Million Gallons per Day Project
- Site Security and Access Project

RiverRenew Capital Cost:
- $615 million

RiverRenew Schedule:
- July 2018 – July 2025 (Substantial Completion of Tunnel Project)
Meet Cloe and Watch RiverRenew’s Motion Animation Video at RiverRenew.com!
Measuring Up to the 2017 Virginia Law Milestones

2017 Virginia Law Milestone

- **Virginia Law**: April 26, 2017
- **Long Term Control Plan Update Approved**: July 1, 2018
- **Construction Required to Begin**: July 1, 2023
- **Construction Required to be Complete**: July 1, 2025

RiverRenew Performance To-Date

- **June 29, 2018**: Long Term Control Plan Update Approved
- **July 1, 2019**: Construction Starts at AlexRenew
- **December 1, 2020**: Tunnel Project Design-Build Starts
- **April 4, 2021**: All Early Construction Projects Complete
RiverRenew will Improve Water Quality, Enhance Public Spaces, and Connect the Community to Our Waterways

Now

70 Overflow Events

140 Million Gallons

After RiverRenew

<4 Overflow Events

16.7 Million Gallons

(average over 2000 – 2016 study period)
RiverRenew Spending Plan

Total RiverRenew Spend to Date

Estimated RiverRenew Spend

Total RiverRenew Spend to Date (Fairfax County)

Total RiverRenew Spend to Date (AlexRenew)

Legend:

- Total RiverRenew Spend to Date
- Estimated RiverRenew Spend
- Total RiverRenew Spend to Date (Fairfax County)
- Total RiverRenew Spend to Date (AlexRenew)

$615M

$82M

Spent to Date
AlexRenew has Solicited Funds from a Variety of Sources to Fund RiverRenew and Minimize Rate Impacts

$25 million grant in April 2019. Seeking additional grant funding through Virginia General Assembly

Low Interest Loan through EPA’s Water Infrastructure Finance and Innovation (WIFIA) Act

Low Interest Loan through Virginia Clean Water Revolving Loan Fund (VCWRLF)
Over 90% of RiverRenew Tunnel Project Work is Anticipated to be Conducted by Firms based in Alexandria or the Greater Washington Metropolitan Area

Note: Percentages based on total contract value, with the exception of allowances.
Update on Ongoing RiverRenew Construction Projects
Map of Ongoing and Complete RiverRenew Projects

LEGEND
- Existing Outfall
- Ongoing and Complete RiverRenew Projects

AlexRenew Projects:
- Building J Facilities Relocation and Decommissioning
- 108 to 116 Million Gallons Per Day
- Site Security and Access

Robinson Terminal North Warehouse Demolition
Royal Street Site Investigations and Tree Clearing

Holland Lane Lot
## Summary of Ongoing and Complete RiverRenew Projects to Pave the Way for the Tunnel Project

### Projects at AlexRenew

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building J Facilities Relocation and Decommissioning Project</td>
<td>Relocation of building uses and building demolition</td>
</tr>
<tr>
<td>Increase of primary pumping capacity to 116 million gallons per day</td>
<td></td>
</tr>
<tr>
<td>Preparations of vacant lot for staging of Tunnel Project materials and equipment</td>
<td></td>
</tr>
<tr>
<td>Demolition of existing warehouse to prepare site for Tunnel Project</td>
<td></td>
</tr>
<tr>
<td>Site investigations and tree clearing activity to prepare site for Tunnel Project</td>
<td></td>
</tr>
</tbody>
</table>

### Other Work

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>108 to 116 Million Gallons per Day Project</td>
<td></td>
</tr>
<tr>
<td>Upgrades to existing access and security systems</td>
<td></td>
</tr>
<tr>
<td>Holland Lane Lot</td>
<td></td>
</tr>
<tr>
<td>Robinson Terminal North Demolition</td>
<td></td>
</tr>
<tr>
<td>Royal Street Site Investigations and Tree Clearing</td>
<td></td>
</tr>
</tbody>
</table>

Most of AlexRenew’s Campus has Been Under Construction Since July 2019
The 108 to 116 Million Gallons per Day Project was completed on December 11, 2020.
Building J Demolition is On-Schedule
Site Security and Access Improvements are Complete
Preparation of Holland Lane Lot is Complete
Robinson Terminal North Warehouse
Demolition was Completed in December 2020
Royal Street Site Investigations and Tree Clearing are Complete
Update on RiverRenew Tunnel Project
RiverRenew Tunnel Project At-a-Glance

Tunnel Project Components:
- Two-mile-long, 12-foot-wide Waterfront Tunnel approximately 100 feet below ground;
- Diversion facilities to direct 130 million gallons of combined sewage into the tunnel system
- Half-mile-long, six-foot-wide Hooffs Run Interceptor
- Pumping stations housed in two large shafts
- Superstructure to house pumping station equipment

RiverRenew Tunnel Project Construction Cost:
- $454.4 million

RiverRenew Tunnel Project Schedule:
- December 2020 – July 2025 (Substantial Completion of Tunnel Project)
Major RiverRenew Tunnel Project Components

Waterfront Tunnel

Diversion Facilities

- Diversion Chamber
- Ventilation Central Vault
- Drop Shaft
- Tunnel to AlexRenew

Tunnel Boring Machine

- Tunnel Interior
- Hydraulics Jackets
- Trenching Gear
- Concrete Tunnel Segments

Tunnel Dewatering and Wet Weather Pumping Station

- Pumping Room
- Screening Room
- Odor Control Room
- Debris Pipe
- Debris Screen
- Multi-Stage Pump

Hooffs Run Interceptor

- Excavation
- Tunnel Construction
Over the last 3 years, AlexRenew has Developed Documents and Completed Third Party Coordination to Serve as the Contractual Foundation for the Tunnel Project.

- Long Term Control Plan
- Preliminary Engineering Report
- Environmental Assessment
- Request for Qualifications
- Preliminary Engineering Reports
- Request for Proposal Documents

96 borings completed
32 permits approved
9 easements
The 2017 Law Significantly Accelerated the RiverRenew Tunnel Project Planning and Preliminary Design Phases

<table>
<thead>
<tr>
<th>Item</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Term Control Plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2017 Law</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preliminary Engineering Report</td>
<td>2017 Law</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Party Coordination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subsurface Exploration Program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Request for Proposal Documents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunnel System Procurement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wastewater Projects Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunnel System Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2027 Law Requirement</td>
</tr>
</tbody>
</table>

Legend: ● 2017 Law Requirement  ❄ RiverRenew Schedule (actual)

2017 Law Requires Construction to Start by July 1, 2023
2017 Law Requires Construction Completion by July 1, 2025
2017 Law Requires LTCP Completion by July 1, 2018

The 2017 Law Significantly Accelerated the RiverRenew Tunnel Project Planning and Preliminary Design Phases.
Design-Build Project Delivery Integrates the Designer and Contractor into a Single Team

Design-Bid-Build Delivery

- Owner
  - Designer
    - Architect
    - Engineer
  - General Contractor
    - Sub-contractors
    - Suppliers

Design-Build Delivery

- Owner
  - Owner’s Advisor
  - Design-Build
    - Architect
    - Engineer
    - General Contractor
    - Suppliers
    - Sub-contractors
Key Benefits of Design-Build Project Delivery

**Direct relationship between Contractor and Designer**
- Fosters collaboration, teamwork, and innovation
- Owner does not manage the design/construction interface

**Single Point of Responsibility**
- Reduces owner exposure to claims and cost overruns
- Majority of responsibility shifted to Design-Builder

**Shorter Project Delivery and Construction Durations**

**Owner Obtains Early Knowledge of Project Price**

**Owner can Consider Non-price Factors in Selection**
RiverRenew Tunnel Project Procurement Timeline

Request for Qualifications
- **June 2019** Issue Request for Qualifications
- **November 2018** Industry Outreach
- **October 2020** Shortlisted 8 Teams to 3

Request for Proposals
- **February 2020** Issue Request for Proposal Documents
- **March – July 2020** Collaborative Period
- **September - October 2020** Review Technical Proposals
- **October 2020** Evaluation and Formal Presentations/Interviews
- **November 2020** Board Approval
- **December 1, 2020** Notice to Proceed

Timeline:
- **September 2020** Receive Technical and Price Proposals
Proposals Included a Technical Component and Price Component, Weighted Equally

Technical Evaluation Factors

- Team Organization and Commitment
- Design and Construction Plan
- Community Impact Mitigation Plan
- Design and Construction Schedule
- Maintenance of Plant Operations and Systems Integration

Technical Proposal 50%
Sealed Price Proposal 50%

Best Value
Traylor-Shea was Selected as the Design-Builder for the Tunnel Project in November 2020

Work began on the $454.4M project in Dec 2020

Core Project Team from Blue Plains Tunnel:
Engineering News Record’s Top Project of 2016

Strong Local Presence
- Traylor headquartered in Alexandria, VA
- Shea headquartered in Washington, DC
- Local Jacobs offices throughout metro area

Extensive experience in construction of tunnels, combined sewer structures, and pumping stations

History of team working together (Traylor, Shea, and Jacobs)
Break
Meet Traylor-Shea
Mike Krulc is Traylor-Shea’s Project Director for the Tunnel Project

Resident of Alexandria, VA

20 years underground construction experience, 18 with Traylor

Experience building tunnels for water, sewer, transit, and wine caves
Traylor-Shea has an Extensive History of Working Together in the United States on Projects Similar to RiverRenew

- Omaha CSO Program, Omaha, NE
- Brightwater Conveyance System, Seattle, WA
- West Ship Canal CSO Tunnel, Seattle, WA
- Willamette River CSO Tunnel Program, Portland, OR
- Upper Northwest Interceptor Section 1-4, Sacramento, CA
- Low Lake Level Pumping Station, Las Vegas, NV
- North Outfall Replacement Sewer, Los Angeles, CA
- Northeast Interceptor Sewer, Los Angeles, CA
- South Bay Ocean Outfall Sewer, San Diego, CA
- North Shore Interceptor, Phase 1A, Milwaukee, WI
- Ottawa CSST, Ottawa
- Fall River CSO, Fall River, MA
- MetroWest Water Supply Tunnel, Framingham, MA
- Milwaukee Deep Tunnel System, Milwaukee, WI
- Blue Plains Tunnel, Washington, DC
- OARS Sewer Program, Columbus, OH
- Big Walnut Augmentation/Rickenbacker Interceptor Sewer, Columbus, OH
- Indianapolis CSO, Indianapolis, IN
- Ohio River Tunnel, Louisville, KY
- West Area CSO Tunnel & Pumping Station, Atlanta, GA
- South Cobb Tunnel & Influent Litt Station, Marietta, GA
Traylor-Shea’s First Project Together was North Outfall Replacement Sewer, Los Angeles, 1989
Key Traylor-Shea Tunnel Project Personnel

Jean-Marc Wehrli  
Project Manager

Paula Nacif  
Scheduler

Rich Taylor  
Design Coordinator

Shae Quigley  
Duddempudi  
Field Engineer

Samer Sadek  
Design Manager

Ryan Nelson  
Pump Station  
Construction Manager
Meet Jean-Marc: Traylor-Shea’s Project Manager

Jean-Marc Wehrli
Project Manager

Local experience as Project Manager on the Purple Line

20 miles of tunnel work valued at $1.5B

24 years of underground construction experience
Meet Paula Nacif: Traylor-Shea’s Scheduler

Local experience as Project Scheduler on the Purple Line

Implemented the first project controls department for Miami Dade Airport

Passionate about improving lives through new infrastructure

Paula Nacif
Scheduler
Meet Rich Taylor: Traylor-Shea’s Design Coordinator

Rich Taylor
Design Coordinator

11 years of experience in underground design and construction

Design coordinator for sections of Purple Line
Traylor’s Blue Plains Tunnel Project is Very Similar to the RiverRenew Tunnel Project

- **Constructed in the same ground** using a tunnel boring machine (Lady Bird)

- Lady Bird mined the **23-ft diameter, 4.5-mile-long tunnel in 23 months**

- Tunnel mined from an **active wastewater treatment plant**

- Coordinated with **concurrent pumping station construction**

- Completed with **no impacts to Consent Decree milestones**

- **Under budget**

- **1.4 million man-hours with zero lost time incidents**

- Numerous national and international **awards**
Meet Shae Quigley Duddempudi: Traylor-Shea’s Field Engineer

Joined Traylor 4.5 years ago

Local experience as Field Engineer on the Purple Line

Overseas philanthropic work with *Bridges to Prosperity* program
Meet Samer Sadek: Traylor-Shea’s Design Manager

Over 27 years of experience in underground project design

Technical background in soft ground tunneling design and construction

Experience in Design-Bid-Build procurement delivery methods
Corman Kokosing is a Key Traylor-Shea Construction Partner

- Extensive experience in:
  - Structural concrete/steel
  - Mechanical
  - Equipment setting
  - Startup and commissioning
- Strong local manpower resource
- Past experience in the City of Alexandria
- Experience working with Traylor on similar projects
RiverRenew Tunnel Project
Construction Staging Areas
Tunnel Project Work will Occur within Designated Construction Staging Areas

A Construction Staging Area (CSA) is a physical area of land designated for the Design-Build to occupy and complete the Work.

LEGEND
- Existing Outfall
- Waterfront Tunnel
- Hooffs Run Interceptor
- Construction Staging Area
Phases of Construction for RiverRenew Tunnel Project

- Restoration
- Site Preparation
- Permanent Structures
- Support of Excavation
- Excavation
- Tunneling
  Note: No Tunneling Associated with Hooffs Run Interceptor
Site Preparation. Establishment of the Construction Staging Area

- Fencing and Scrim
- Slit Fence
- Inlet Protection
- Working Surface
- Site Security
- Air Monitoring
- Office Trailers
- Aerial View
Support of Excavation. Installation of Structures to Support the Ground

Shaft Support of Excavation (Slurry Wall)
- Guide Wall
- Panel Excavation
- Hydromill
- Slurry
- Reinforcing Installation
- Concrete

Other Support of Excavation
- Sheetin
- Cement Panels

Note: No Shafts Associated with Hooffs Run Interceptor
Excavation. Digging and Removal of Materials

- Excavator
- Shaft Excavation
- Structure Excavation
- Structure Excavation
- Structure Excavation
- Loader and Truck
- Covered Truck
- Wheel Wash
Permanent Structures. Installation of Concrete and Other Components

- Shaft Reinforcing
- Tying Reinforcing
- Concrete Installation
- Working Concrete
- Structure Reinforcing
- Structure Formwork
- Shaft Formwork
- Finished Shaft Concrete
Site Restoration. Leaving a Lasting Legacy for the Community
Tunneling. Excavation and Erection of Waterfront Tunnel

- Tunnel Construction Site: AlexRenew CSA only
- Lowering TBM: AlexRenew CSA only
- Tunnel Segments: AlexRenew and Holland Lane CSAs only
- Tunnel Loci
- Bucket Lift: AlexRenew CSA only
- Handling Excavated Soil: AlexRenew CSA only
- Removing TBM: Pendleton Street CSA only
- Finished Tunnel

AlexRenew CSA only
AlexRenew CSA only
AlexRenew and Holland Lane CSAs only
Pendleton Street CSA only
Hooffs Run Interceptor Cut and Cover Construction

Pipe Installation
Support of Excavation (Sheeting)
Bypass Pumping
Overview of AlexRenew and Holland Lane Construction Staging Areas

Schedule and Work Hours

<table>
<thead>
<tr>
<th>Year</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>7AM-6PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>7AM-6PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hauling Information

35 trucks per day on average

Haul routes are subject to approval by the City

Legend

- PROPOSED STRUCTURES
- TUNNEL/SEWER ALIGNMENT
- EXISTING SEWER UTILITIES
- CONSTRUCTION STAGING AREA
- AT SURFACE FEATURES

Rendering of site after construction is complete
Overview of Pendleton Street Construction Staging Area

Schedule and Work Hours

- **Spring**: 2021 - 2025
- **Fall**: 2021 - 2025

7AM-6PM

Hauling Information

- **40 trucks per day on average**

Haul routes are subject to approval by the City.

Legend

- **PROPOSED STRUCTURES**
- **TUNNEL/SEWER ALIGNMENT**
- **EXISTING SEWER UTILITIES**
- **CONSTRUCTION STAGING AREA**
- **AT SURFACE FEATURES**

Rendering of site after construction is complete.
Royal Street Construction Staging Area

Schedule and Work Hours

<table>
<thead>
<tr>
<th>Year</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>7AM-6PM</td>
<td>7AM-6PM</td>
<td>7AM-6PM</td>
<td>7AM-6PM</td>
<td>7AM-6PM</td>
</tr>
</tbody>
</table>

Late Winter
Early Winter

Hauling Information

- 30 trucks per day on average
- Haul routes are subject to approval by the City

Legend:
- PROPOSED STRUCTURES
- TUNNEL alignments
- EXISTING SEWER UTILITIES
- CONSTRUCTION STAGING AREA
- AT SURFACE FEATURES

Rendering of site after construction is complete
Hooff's Run Interceptor Construction Staging Areas

Schedule and Work Hours

<table>
<thead>
<tr>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7AM-6PM

Hauling Information

- **20** trucks per day on average
- Haul routes are subject to approval by the City

Rendering of site after construction is complete
# Summary of Tunnel Project Schedule and Phases of Work

<table>
<thead>
<tr>
<th>Project Component</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>AlexRenew</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Holland Lane</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pendleton Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Royal Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterfront Tunnel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hooffs Run Interceptor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duke Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jamieson Avenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American Heritage Park</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Schedule is preliminary, generalized, and subject to change.

- Site Preparation
- Support of Excavation
- Excavation
- Permanent Structures
- Restoration
- Tunneling
- Cut and Cover
RiverRenew Tunnel Project Community Outreach Channels

### Community Meetings
- Council-Board Workgroup
- RiverRenew Stakeholder Advisory Group
- Community Listening Sessions
  *First event is February 25*

### Community Days
- Groundbreaking Ceremony
- TBM Unveiling Ceremony
- Waterfront Tunnel Tours
- Hooffs Run Restoration Day
- Mining Operations Completion Celebration
- Construction Completion Celebration

### Digital Communications
- RiverRenew.com
- #TunnelTakeoverTuesday
- The River Renewer

### Community Events
- Water Discovery Day
- W.A.T.E.R Fund Events
- Stream Clean ups
- Earth Day

### Education
- Cloe’s Corner
- Storybook Series
- Brochures and Fact Sheets

### Other Outreach Channels
- RiverRenew Construction Hotline
- Traffic Alerts
- Time-lapse Cameras

---

*First event is February 25*
Next Steps
2021-2022 Proposed RiverRenew SAG Meeting Topics (Draft)
Feedback from SAG Requested

- SAG Member Introductions
- RiverRenew Overview
- RiverRenew Progress Update
- Meet Traylor-Shea
- Tunnel Project Construction Staging Areas

February 2021 SAG Meeting
- SAG Feedback
- Construction Update
- Rates Update
- Groundbreaking Ceremony
- Duke St. Listening Session Prep

April 2021 SAG Meeting
- SAG Feedback
- Construction Update
- TBM Update
- Outreach Update
- Pendleton St. Listening Session Prep

June 2021 SAG Meeting
- SAG Feedback
- Construction Update
- TBM Update
- Outreach Update
- WATER Fund Event Prep

August 2021 SAG Meeting
- SAG Feedback
- Construction Update
- TBM Update
- Outreach Update
- Royal St. Listening Session Prep

October 2021 SAG Meeting
- SAG Feedback
- Construction Update
- TBM Progress Update
- Outreach Update

December 2021 SAG Meeting
- SAG Feedback
- Construction Update
- Outreach Update
## Schedule and Next Steps

<table>
<thead>
<tr>
<th>Upcoming Meetings</th>
<th>Next Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Next meeting April 15, 2021, 7-9pm</td>
<td>• Homework: Meet Cloe and learn more about RiverRenew at RiverRenew.com</td>
</tr>
<tr>
<td>• Register to attend the February 25 Community Listening Session</td>
<td>• Help promote February 25 Community Listening Session</td>
</tr>
<tr>
<td></td>
<td>• Reach out with community feedback or questions</td>
</tr>
<tr>
<td></td>
<td>• Follow AlexRenew on Facebook and Twitter</td>
</tr>
<tr>
<td></td>
<td>• Sign up for The River Renewer</td>
</tr>
</tbody>
</table>
Public Comment Period
To learn more, visit www.RiverRenew.com