

City Council/AlexRenew Board CSO Subcommittee/Workgroup

Meeting No. 17

January 18, 2023

Recap from October Meeting

- Provided a summary of noise variances with the City of Alexandria
- Tunnel Project Update
- Community Outreach Update

Tonight's Presentation

- Tunnel Project Update
- Update on pile driving activities and mitigation techniques at the Pendleton Street Site
- Community Outreach Update

Tunnel Project Update

Tunnel segments loaded onto MSV



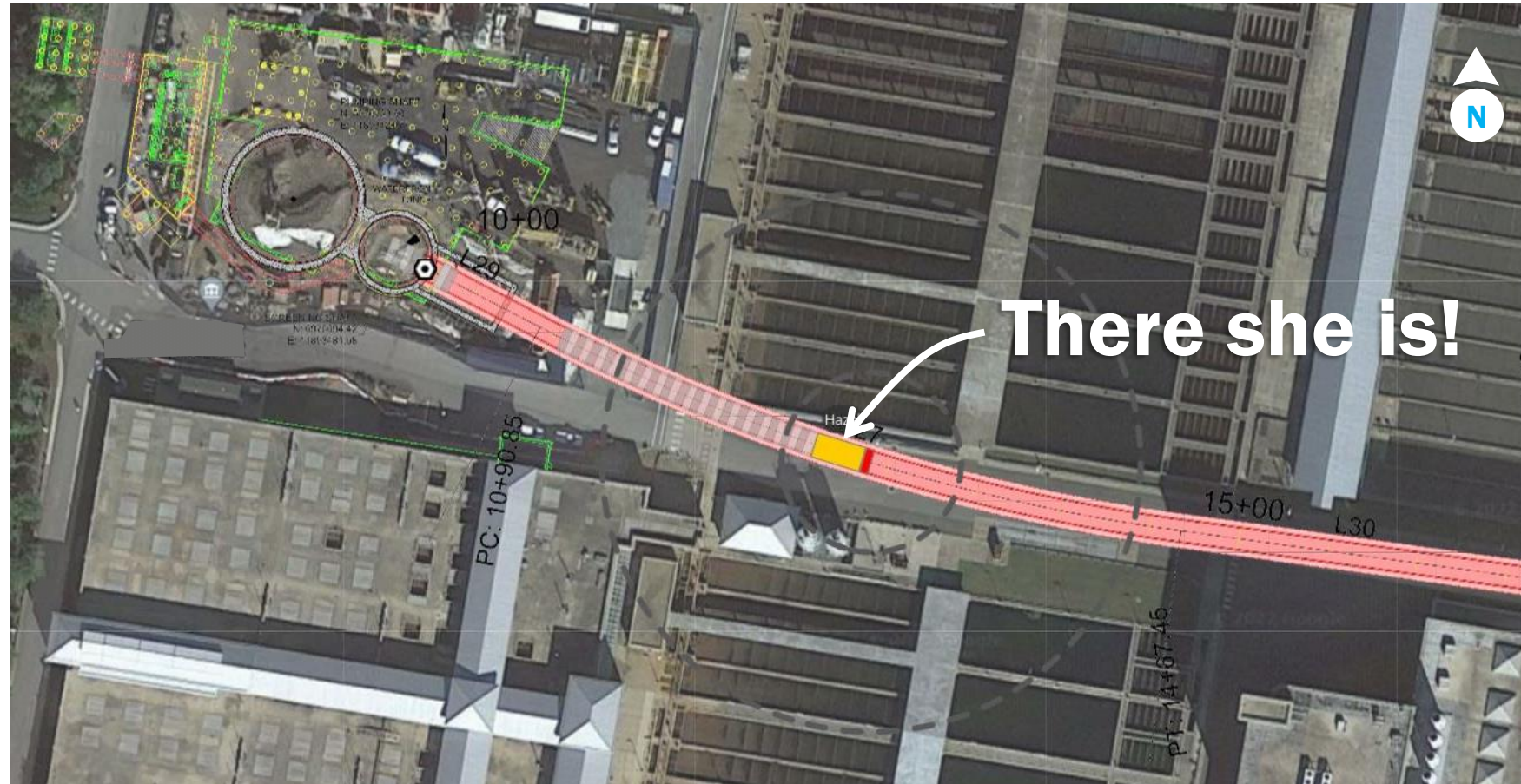
Summary of RiverRenew Tunnel Project noise variances permitted by the City of Alexandria.

Site	Activity	Noise variance	Hauling	Dates
Pendleton Street	Shaft excavation	5 a.m. – 11 p.m. (Mon-Fri)	7 a.m. – 6 p.m. (Mon-Fri)	Dec 2022 – May 2023
	TBM removal	24/7	7 a.m. – 6 p.m. (Mon-Fri)	Oct 2023 – Dec 2023
AlexRenew	Tunnel construction	24/7	7 a.m. – 6 p.m. (Mon-Fri)	Aug 2022 – Oct 2023

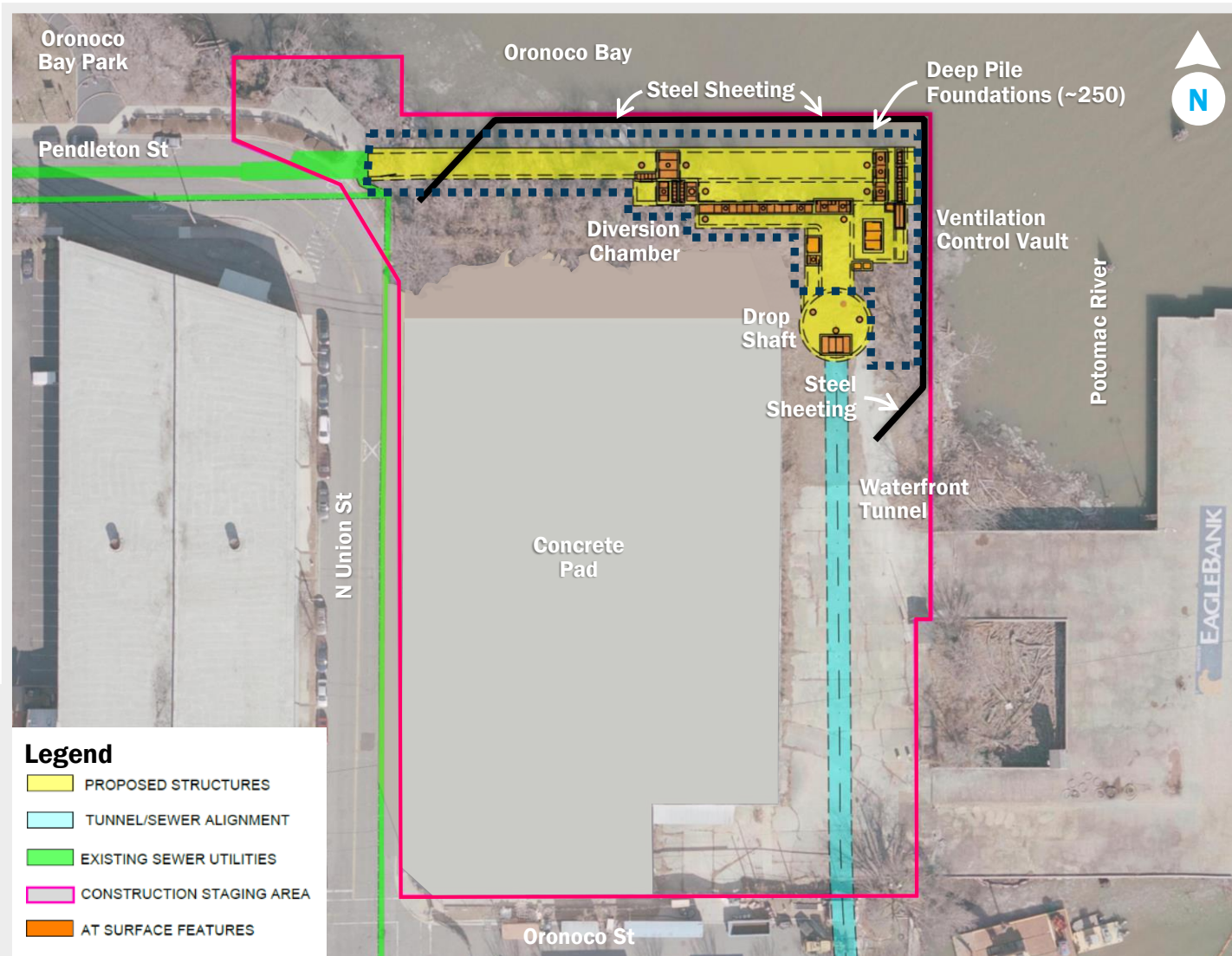


Status of Hazel the TBM

- 300 feet mined
- 10 gantries installed
- 61 rings (366 segments)
- 1 intervention to date



Pendleton Street Site design and construction update.



Design Progress

■ Actual ▨ Planned As of Dec 31, 2022



Construction Progress



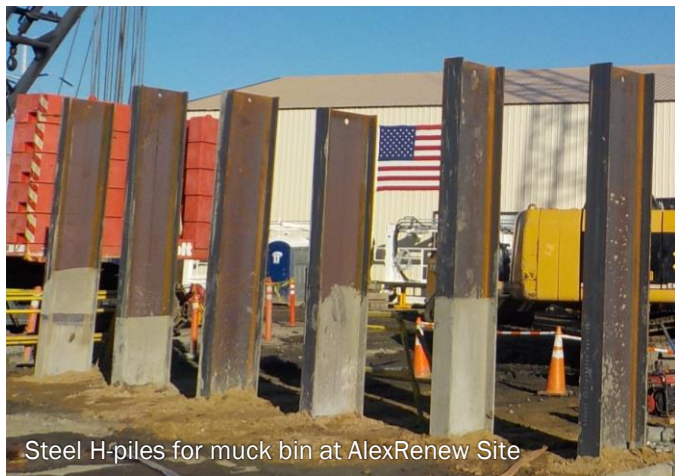
Nov 2024 ▲

Major Activities

- Shaft excavation ongoing
- Preparing site for pile driving

Pile driving at the Pendleton Street Site will start in February and last through June.

- 250 steel H-piles to depth of 100-feet
- Vertical and angled
- Foundation for diversion facility and promenade
- Accelerated schedule to meet milestone
- 9 a.m. – 6 p.m., Mon-Fri



Steel H-piles for muck bin at AlexRenew Site

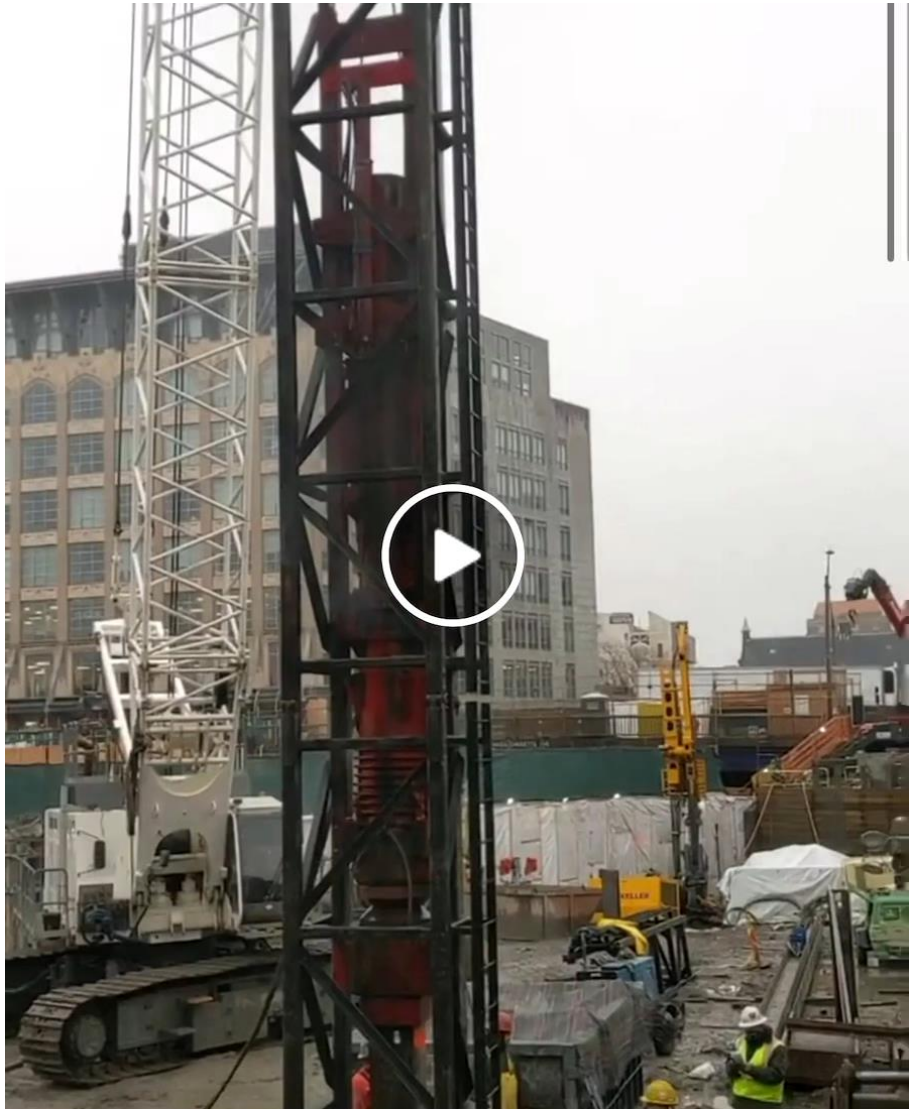


Rendering of final restored Pendleton St Site



Rendering of Pendleton St Site during shaft excavation and pile driving phase

Video of steel pile driving using a diesel impact hammer.



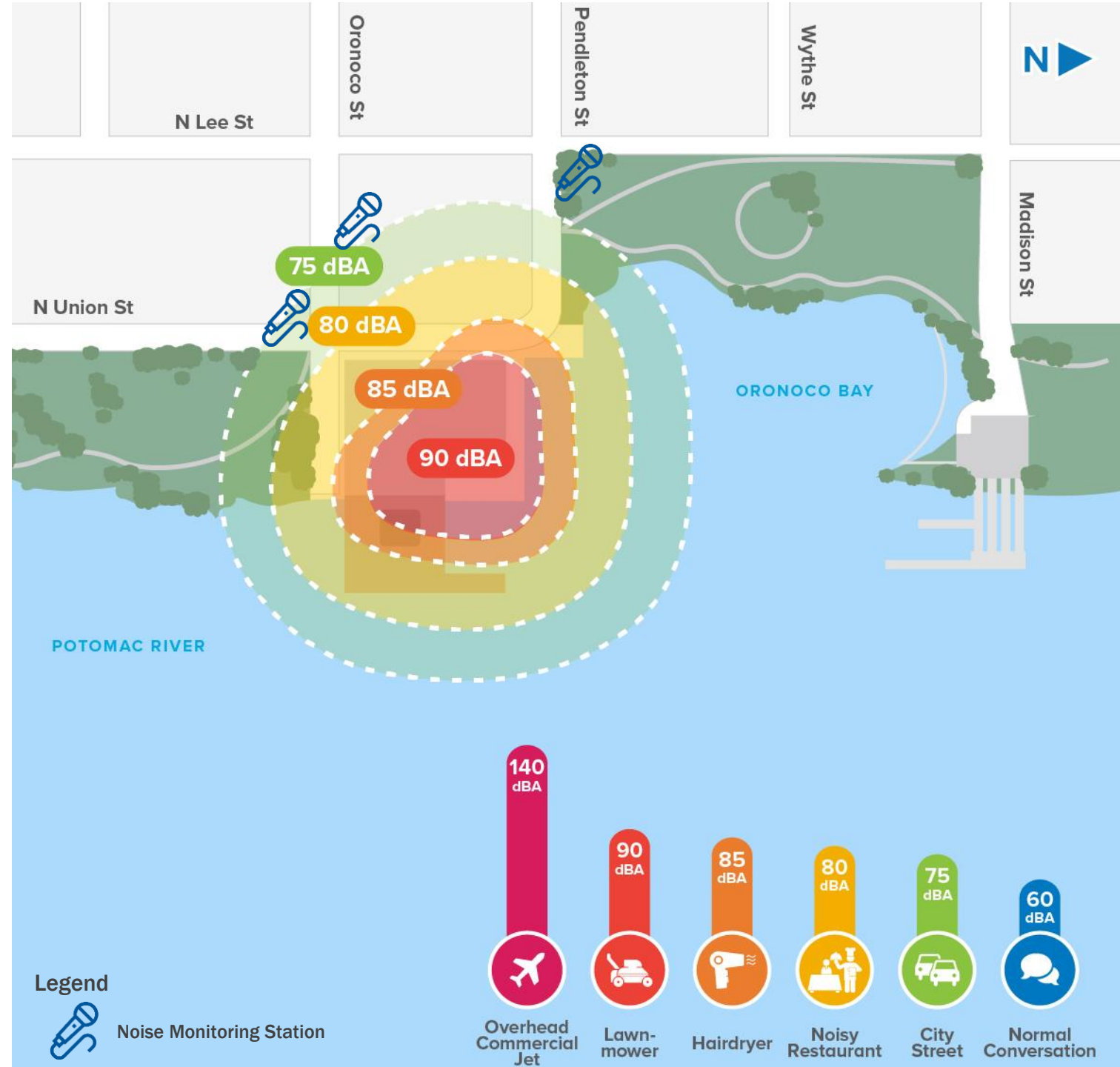
Vibrations associated with pile driving are not anticipated to cause impacts to existing structures.



Anticipated sound levels associated with pile driving at the Pendleton Street Site

Note: Sound levels are measured in decibels (dB). The higher the decibels, the louder the noise. A dBA is a weighted scale for judging loudness that corresponds to the hearing threshold of the human ear.

Pile driving restricted to 9 a.m. – 6 p.m. (Mon-Fri)



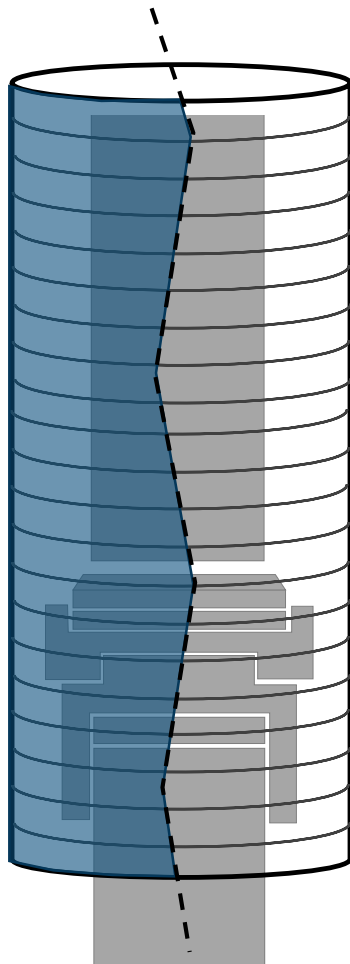
Mitigation approaches to minimize sound levels associated with pile driving activities.



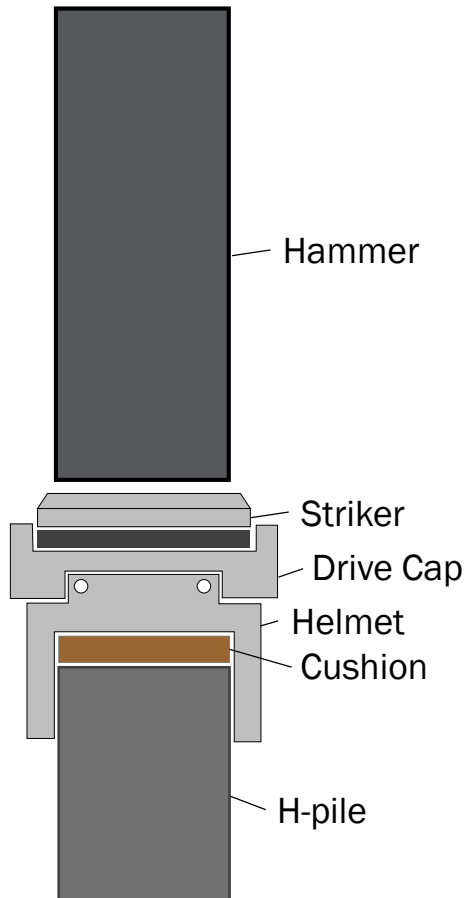
✓ **Stacked conex boxes** to deflect noise away from the community.



Sound blankets along fence to dampen noise



Enclosure to shroud the impact hammer



Cushion to dampen contact with H-pile



Vibrate piles initially



Evaluate use of hydraulic vs diesel hammer

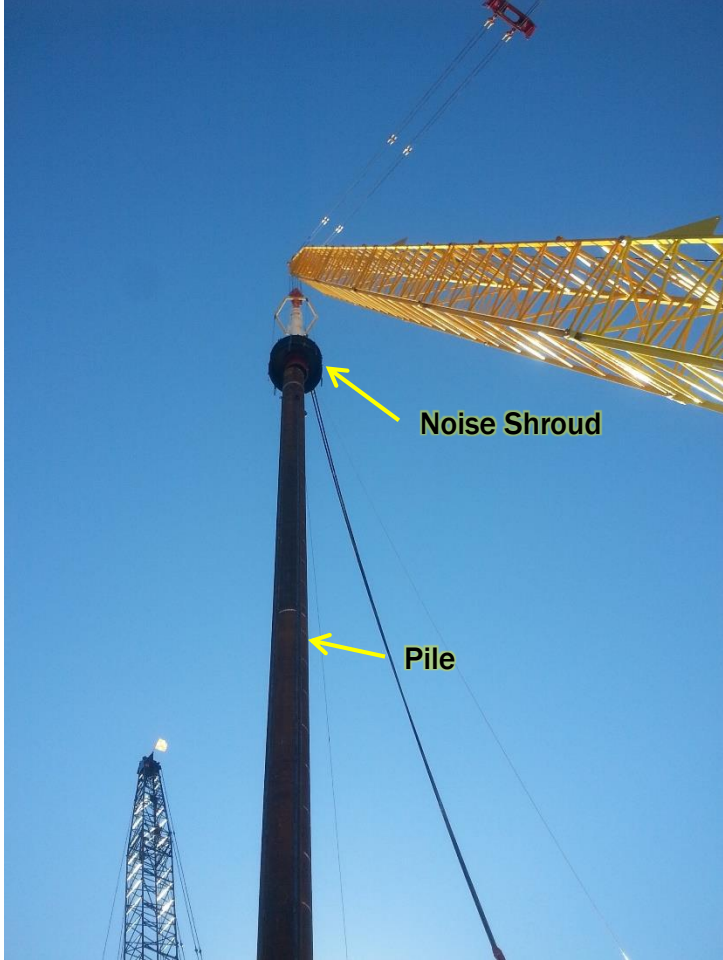
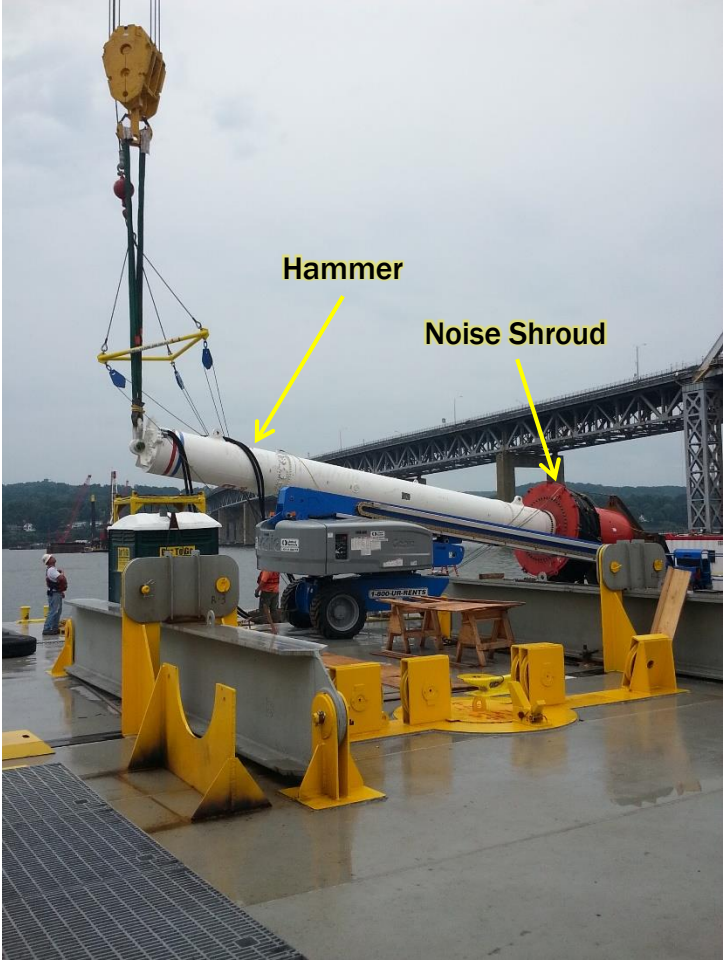


✓ **Continuous noise monitoring**



Personal use items

Pile driving noise shroud in action on Tappan Zee Bridge project.



Update on Pendleton Street Site pile driving community outreach campaign.

- Sip 'n See:
 - Thursdays 11 a.m. – 1 p.m.
 - “Special Edition”
- Flyer distribution
- Electronic messaging board
- Updates through CBWG
- Emails
- Website updates
- Social media posts

Pile Driving Activities at the Pendleton Street Site

Pendleton Street site overview

On rainy days, outdated combined sewer infrastructure in Old Town Alexandria pollutes the Potomac River from an outfall located at the end of Pendleton Street. To capture these overflows, AlexRenew is constructing a diversion facility at this site as part of the RiverRenew Tunnel Project. The diversion facility will connect to the Waterfront Tunnel, which will transport captured combined sewer flows to AlexRenew's wastewater treatment plant for purification.

Following construction of the diversion facility, a new promenade will connect the community to a healthier Potomac River.

What is pile driving?

To install steel H-piles at the Pendleton Street site, crews will use a diesel-powered impact hammer to drive each pile deep into the stiff Potomac Clay soil layer. Piles are oriented either vertically or at a slight angle.

Unavoidably, this process emits a repeated hammering sound that may be disruptive to those sensitive to noise. Diesel-powered impact hammers produce repeated "whoosh" and "ding" sounds as they strike piles, which happens 40-60 times per minute during installation activity.

Sound levels are measured using a weighted decibel scale that corresponds to the hearing threshold of a human ear. Pile driving activity will emit sounds between 75 and 90 dBA, which roughly correlates to soundscapes ranging from a busy city street to a running lawnmower.

Reducing noise as we build for healthier waterways

AlexRenew will continuously monitor sound levels and employ several noise mitigation techniques to help lessen the impact on the Alexandria community. These techniques include lining the perimeter of the site with sound blankets, stacking conex (shipping container) boxes along Union Street, using vibratory equipment in upper soil layers, cushioning the impact hammer, and employing personal mitigation measures.

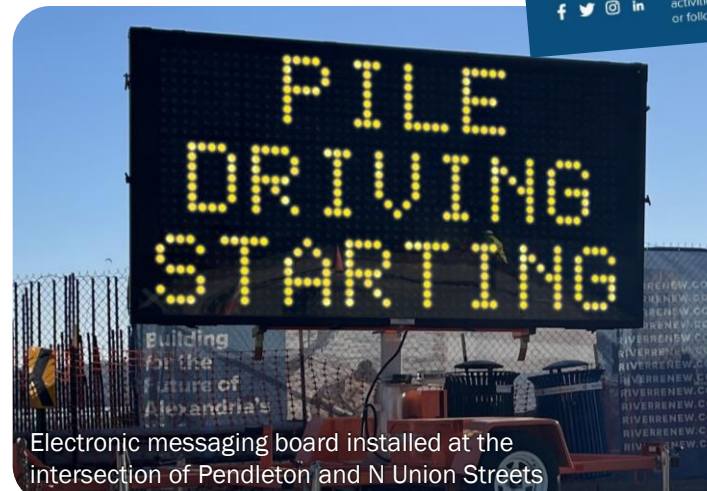
When will this occur?

Pile driving activity will last from February 2023 through June 2023 and take place only between the hours of 9 a.m. and 6 p.m., Monday through Friday.

Note: Schedule is generalized and subject to change.

To stay up to date on construction at the Pendleton Street's activities, sign up for alert emails on [RiverRenew.com/cons](https://www.riverrenew.com/cons) or follow us on social media.

To learn more about this essential work, scan the QR code to visit [RiverRenew.com](https://www.riverrenew.com), or email us directly at AskRiverRenew@alexrenew.com.



Electronic messaging board installed at the intersection of Pendleton and N Union Streets

Major construction activities in the next 6 months at Pendleton Street Site.

Feb	Mar	Apr	May	Jun	Jul
Shaft Excavation		Permanent Concrete (Shaft and NSS)			
Near Surface Structures (NSS) Deep Foundations and Support of Excavation (SOE)					



! 5 a.m.– 11 p.m.
Mon–Fri

No anticipated impacts to sidewalks, bicycle routes, or travel lanes

70 trucks/day

Shaft Excavation



9 a.m.–6 p.m.
Mon–Fri

No anticipated impacts to sidewalks, bicycle routes, or travel lanes

15 trucks/day

**Near Surface Structures Deep Foundations
(Pile Driving Activities)**



7a.m.–6p.m.
Mon–Fri

No anticipated impacts to sidewalks, bicycle routes, or travel lanes

70 trucks/day

Permanent Concrete Construction

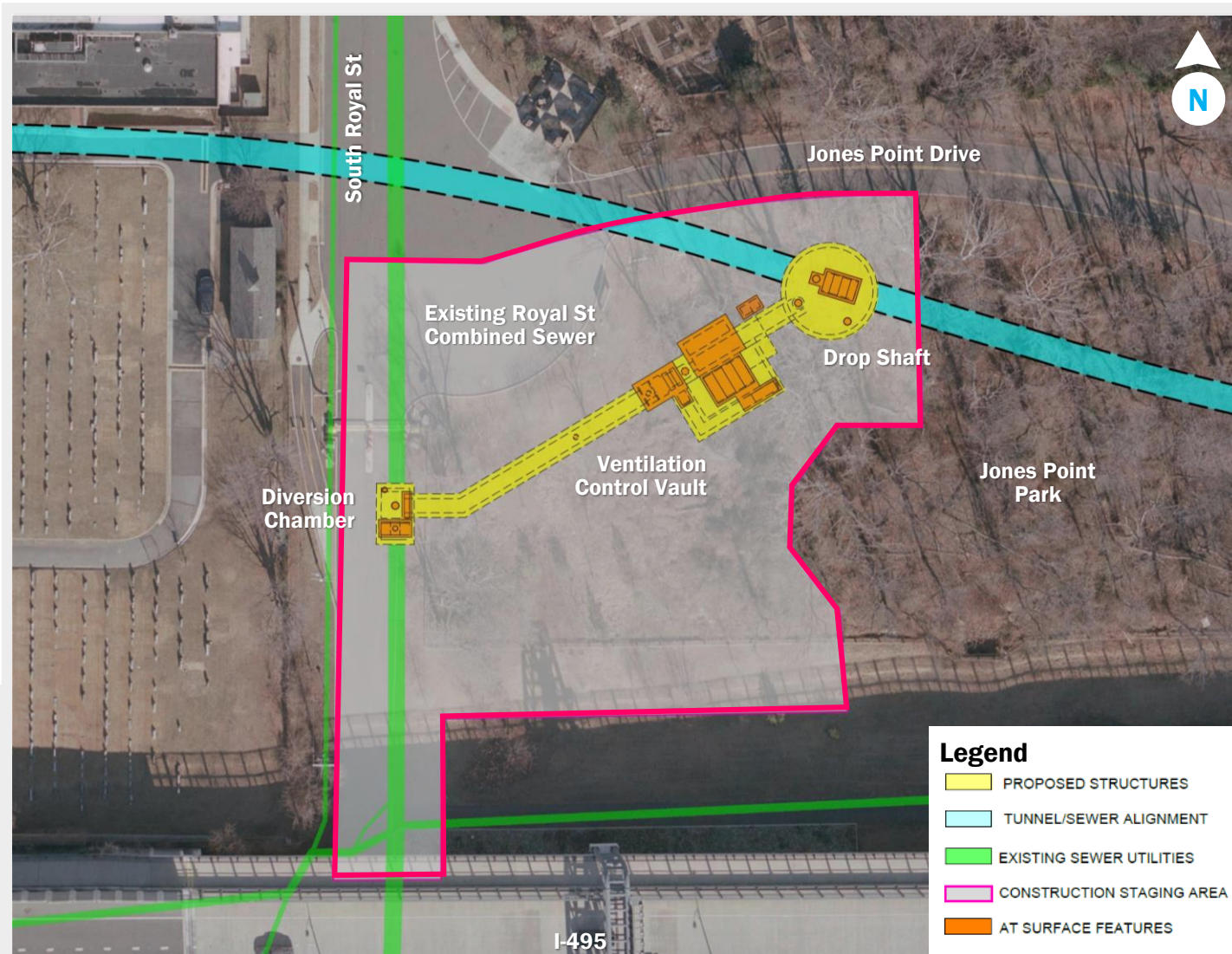


Note: Pictures representative of upcoming construction work



Variance (see Slide 4)

Royal Street Site design and construction update.



Design Progress

■ Actual ▨ Planned As of Dec 31, 2022



Construction Progress



Major Activities

- Near surface structure support of excavation ongoing

Parking restrictions near Royal Street Site

- Steel beam deliveries
- Additional deliveries in February

Heads Up!

Parking Restrictions on Franklin and S Royal Streets

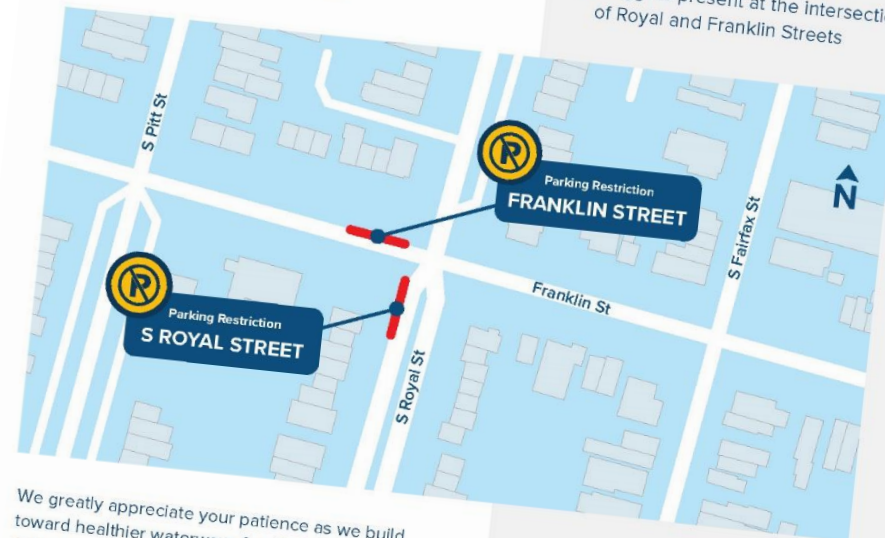
*Dates subject to change pending material delivery schedule

RiverRenew crews are building a diversion facility at the **ROYAL STREET** site as part of our mission to prevent millions of gallons of combined sewage from polluting local waterways each year.

In order to complete this essential infrastructure, RiverRenew crews need to deliver long, steel beams to the site. These beams will be delivered to the site on January 13 and 18.

What you can expect:



- Parking restrictions on Franklin and S Royal Streets (see map below)
 - 8 a.m. - 1 p.m.
 - January 13 and January 18
 - Future dates in February
- Flaggers present at the intersection of Royal and Franklin Streets



We greatly appreciate your patience as we build toward healthier waterways for Alexandria. Email us at askriverrenew@alexrenew.com or call the construction hotline at 1.800.234.6592 with any questions.



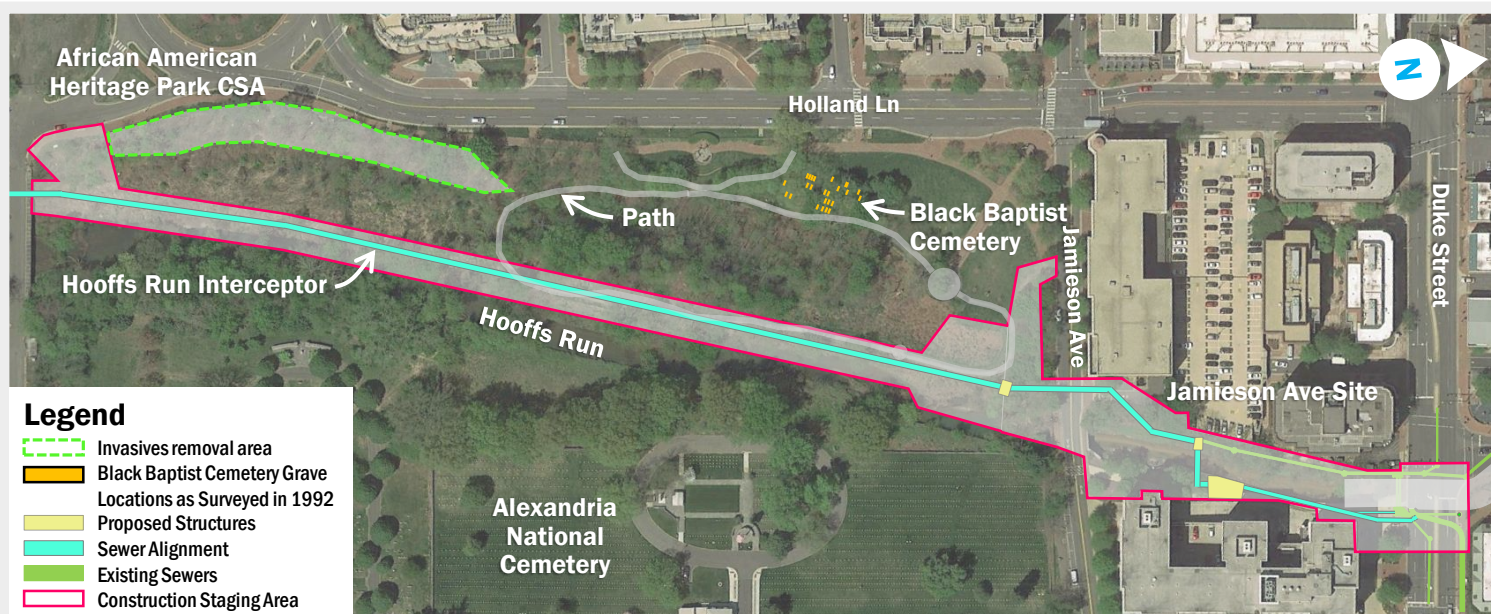
Major construction activities in the next 6 months at Royal Street Site.

Feb	Mar	Apr	May	June	July
Near Surface Structures Support of Excavation (SOE) and Foundation Piles				Near Surface Structures Construction	
					
<p align="center">7am-6pm Mon-Fri</p>				<p align="center">7am-6pm Mon-Fri</p>	
<p align="center">Occasional parking restrictions along haul route No anticipated impacts to sidewalks, bicycle routes, or travel lanes</p>				<p align="center">No anticipated impacts to sidewalks, bicycle routes, or travel lanes</p>	
<p align="center">20 trucks/day</p>				<p align="center">30 trucks/day</p>	
<p align="center">Near Surface Structures Support of Excavation and Foundation Piles</p>				<p align="center">Near Surface Structures Construction</p>	



Note: Pictures representative of upcoming construction work

Hooffs Run Interceptor design and construction update.



Design Progress

■ Actual ▨ Planned As of Dec 31, 2022



Construction Progress



Major Activities

- Jamieson Ave Site diversion chamber and extension sewer construction ongoing
- African American Heritage Park Site manhole construction ongoing

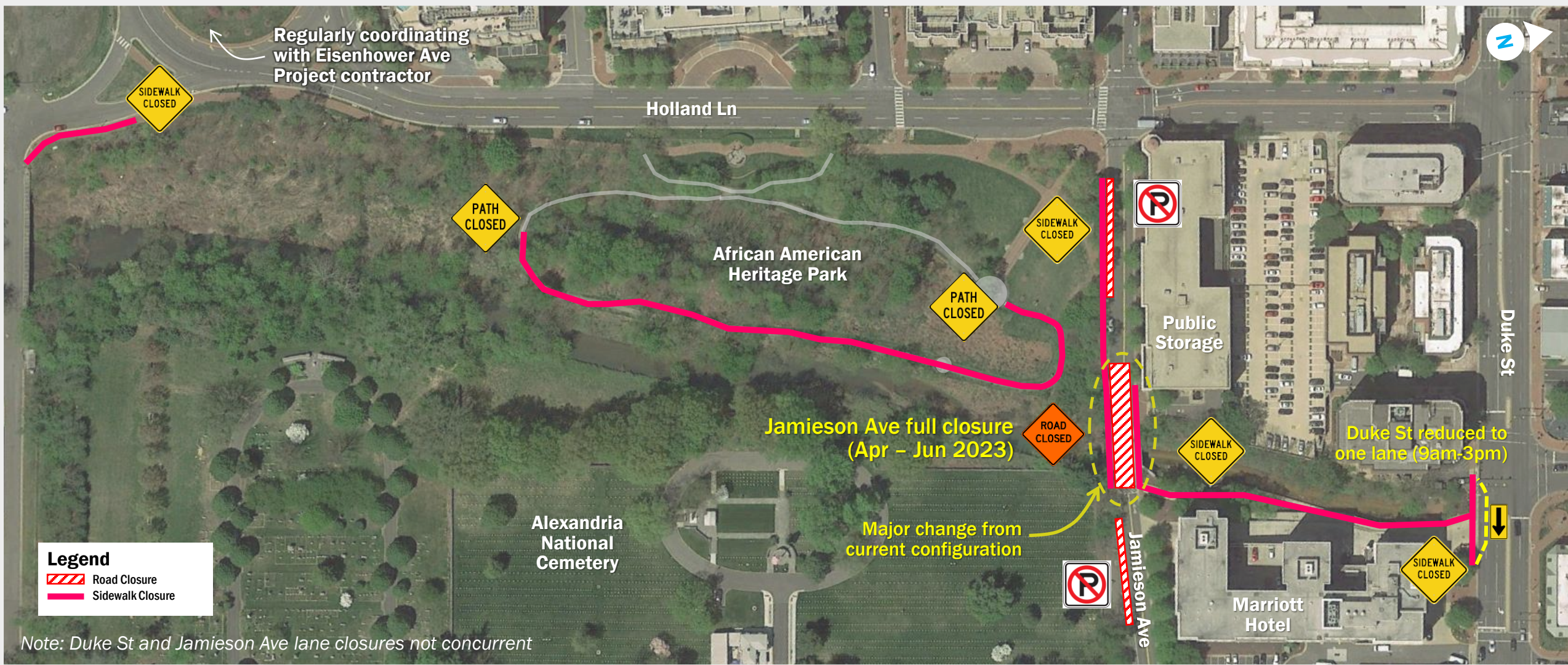


◀ African American Heritage Park Site



◀ Jamieson Avenue Site

Upcoming road and sidewalk changes associated with Hooffs Run Interceptor (April – June 2023).



Major construction activities in the next 6 months at Jamieson Avenue Site.

Feb	Mar	Apr	May	June	July
Diversion Chamber, Junction Chamber and Manhole			Open-Cut		

Jamieson Avenue full closure

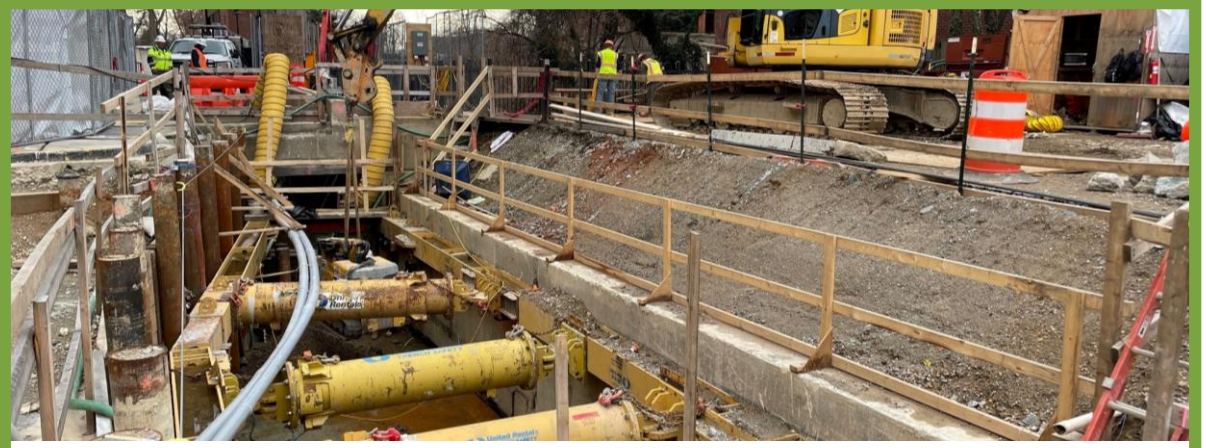


7am-6pm
Mon-Fri

Lane and sidewalk closures:
Duke St and Jamieson Ave

30 trucks/day

**Diversion Chamber, Junction Chamber,
and Manhole Construction**



7am-6pm
Mon-Fri

Lane and sidewalk closures:
Duke St and Jamieson Ave




10 trucks/day

Open-Cut Construction

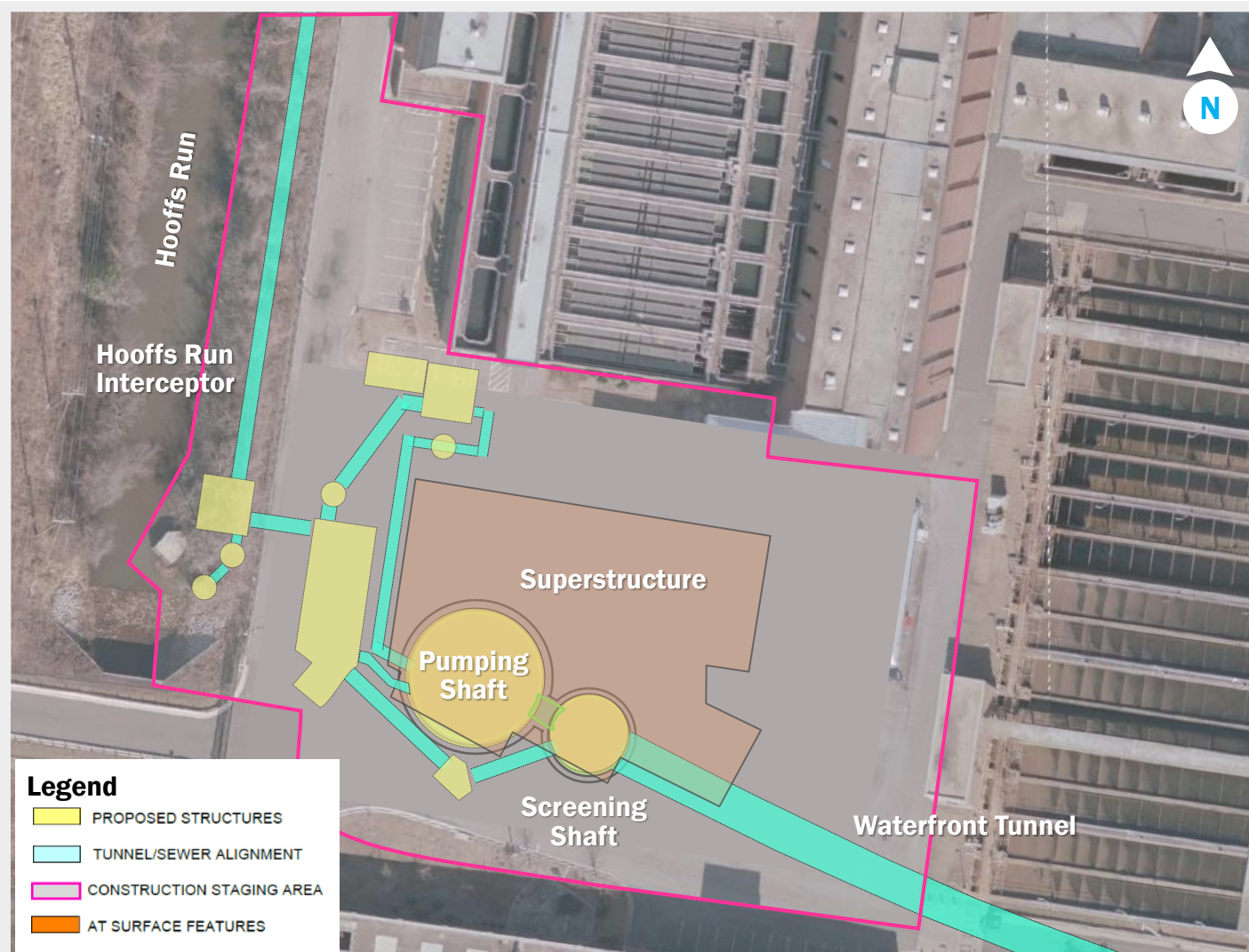


Note: Pictures representative of upcoming construction work

Major construction activities in the next 6 months at African American Heritage Park Site.

Feb	Mar	Apr	May	Jun	July
Manhole	Open-Cut	Sheeting	Open-Cut	Sheeting	Open-Cut
 <p>7am-6pm Mon-Fri</p> <p>Sidewalk closures (intermittent): Jamieson Ave, Holland Ln Parking restrictions (24/7): Jamieson Path closures (24/7): AAHP</p> <p>30 trucks/day</p> <p>Manhole Construction</p>	 <p>7am-6pm Mon-Fri</p> <p>Sidewalk closures (intermittent): Jamieson Ave, Holland Ln Parking restrictions (24/7): Jamieson Path closures (24/7): AAHP</p> <p>30 trucks/day</p> <p>Open-Cut Construction</p>	 <p>7am-6pm Mon-Fri</p> <p>Sidewalk closures (intermittent): Jamieson Ave, Holland Ln Parking restrictions (24/7): Jamieson Path closures (24/7): AAHP</p> <p>10 trucks/day</p> <p>Support of Excavation (Sheeting) <i>Impact hammer required at times</i></p>			

AlexRenew design and construction update.



Design Progress

■ Actual ▨ Planned As of Dec 31, 2022



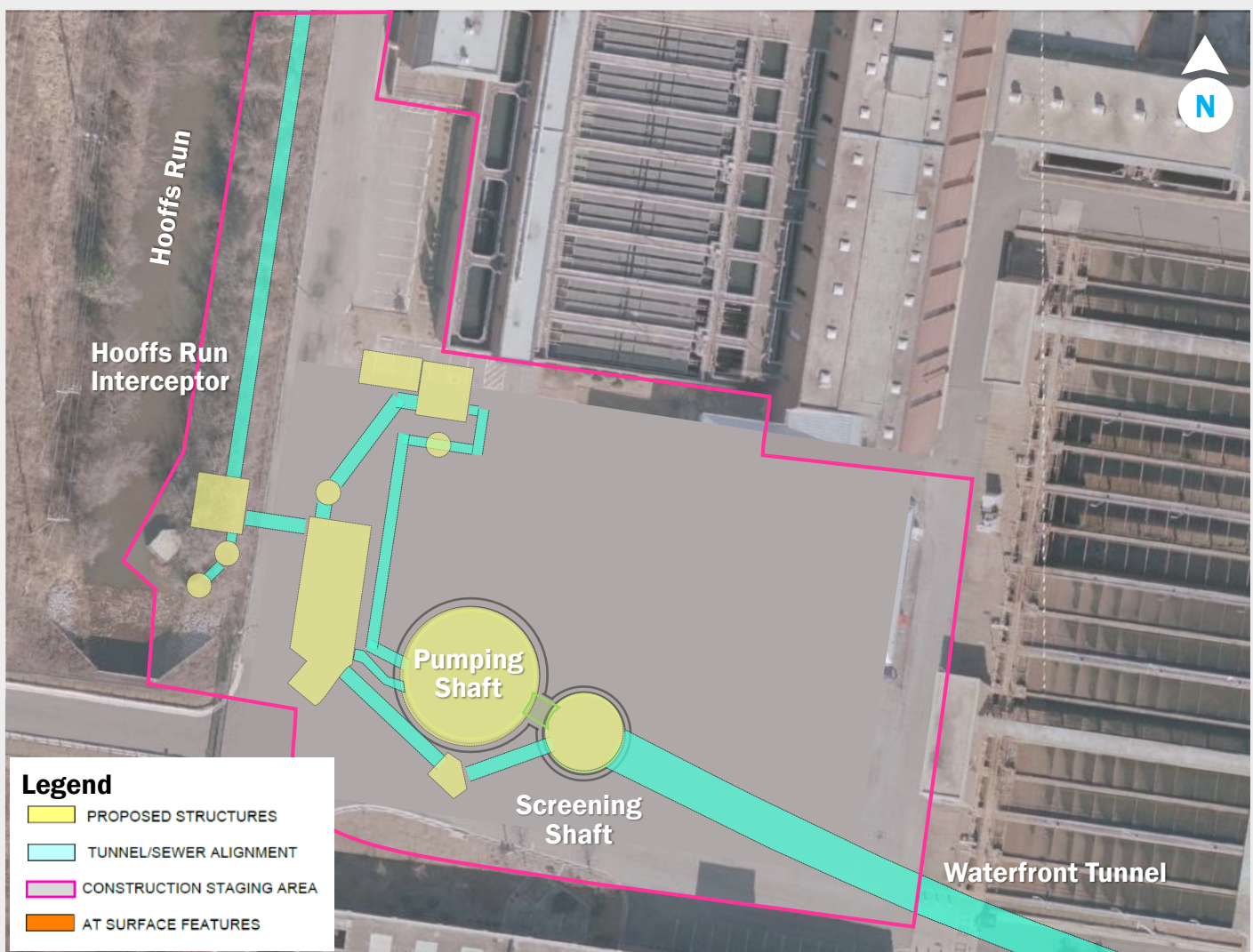
Construction Progress



Major Activities

- TBM mining ongoing
- Near surface structure support of excavation ongoing
- Ground improvement for Hooffs Run Interceptor (microtunnel) ongoing

Waterfront Tunnel design and construction update.

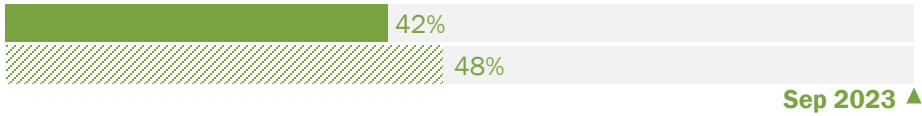


Design Progress

■ Actual ▨ Planned As of Dec 31, 2022



Construction Progress

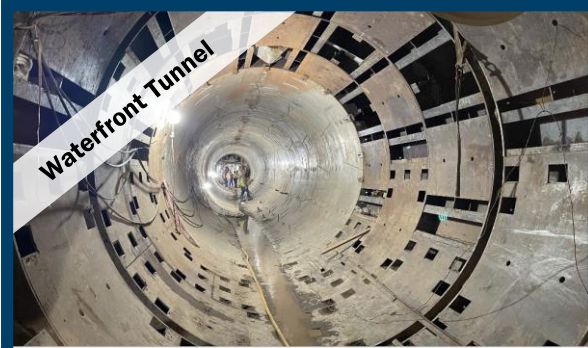


Major Activities

- TBM mining ongoing
- Assembling tunnel muck support structures

Major construction activities in the next 6 months at AlexRenew Site.

! Variance
(see slide 4)



Waterfront Tunnel

7a.m.–6p.m.
Mon–Fri

50 trucks/day



7a.m.–6p.m.
Mon–Fri

30 trucks/day



! 24 hours/day
7 days/week (Hauling 7a.m.–6p.m.)

120 trucks/day

Mine 700' Set up Muck Conveyor

Tunneling

Feb

Mar

Apr

May

Jun

Jul

Near Surface Struct. SOE

Microtunneling

Permanent Concrete Structures



Hooffs Run Interceptor & Pumping Station

7a.m.–6p.m.
Mon–Fri

50 trucks/day



7a.m.–6p.m.
Mon–Fri

50 trucks/day



7a.m.–6p.m.
Mon–Fri

30 Trucks/day

Community Outreach Update

**Cleaner waterways,
happier holidays.**
Season's greetings from RiverRenew

Historic signage development update

- Presented signage introduction to **CBWG** in April 2022
- Completed **further research for AAHP topics** over Summer 2022
- Met with **Mr. Myers** to get feedback on signage development and additional ideas in October 2022
- Worked with **Dutton & Associates** to advance research and develop cohesive narrative for AAHP in Fall 2022
- Coordinated with the City to **finalize signage locations and topics for AAHP** in December 2022
- Designs to be **substantially complete** by Summer 2023
- Signs to be **installed** Spring 2025



Sanctuary

Freedom

Civil Rights

Remembrance

Upcoming community outreach.



Community Listening Sessions

Pendleton St: March 6, 6:30-8:30 PM
Hooffs Run: March 7, 6:30-8:30 PM
Royal St: March 9, 6:30-8:30 PM

2023-24 Stakeholder Advisory Group Meeting

- March 16

TUNNEL TOURS

MAY 6 2023

Sip 'n See Events

Hooffs Run: Tues 11-1
Royal St: Weds 11-1
Pendleton St: Thursdays 11-1 and "Special Edition"



RiverRenewTM

INVESTING IN HEALTHIER WATERWAYS FOR ALEXANDRIA