

Ad Hoc Monitoring Group for Waterfront Construction

January 11, 2016



Update on “Action Items”

- Brian Rahal will send the FEMA studies to John Bordner.
- Emilio will report the light out on Duke and Union Street and coordinate with Dominion.
- Bert will send the “Minnesota Report” to Bill S.
- The group would like a map showing the properties in the RTN area.
- Bill S will compile a Historical Timeline of the Environmental Reports
- Will RTN voluntarily request a State Review of the Remediation Plan?
- John B and Pete M will meet and invite the RTN team to the next meeting.
- The RTS field meeting will be held on December 17th
- John B. will coordinate the Haul Route Civil fines with the Ad Hoc Group.
- The City/Developer will create a fact sheet for RTN as it relates to the handling the contaminated soil.



Waterfront Projects Updates

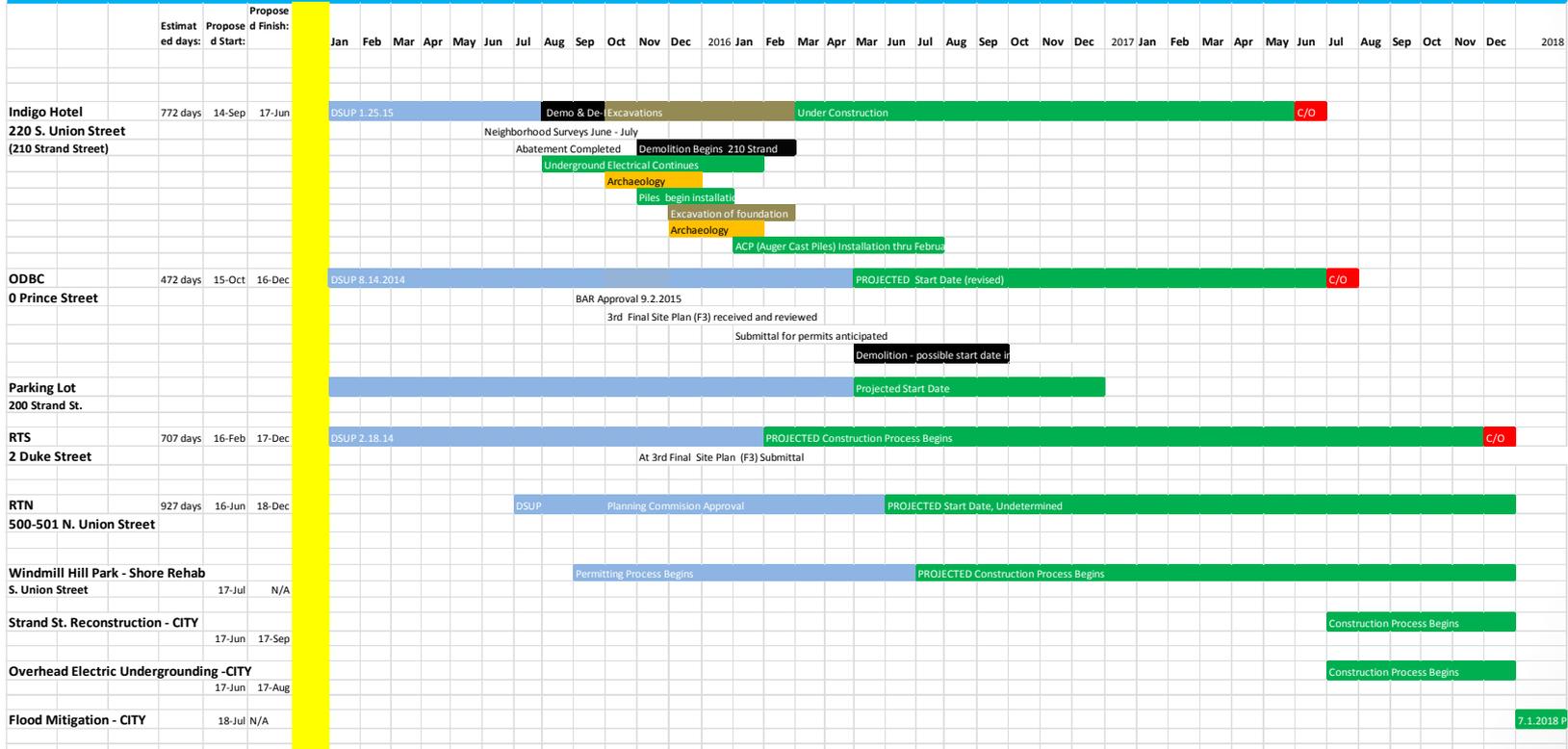
- Old Dominion Boat Club
- Robinson Terminal South
- Robinson Terminal North
- Windmill Hill Park Shoreline Rehabilitation
- Carr – Indigo Hotel



Waterfront Projects Construction Schedule

Waterfront Construction Schedule Living Timeline as of January 6, 2016

Schedule subject to change without notice



- *LEGEND**
- * DSUP ISSUED
 - * CONSTRUCTION UNDERWAY
 - * DEMOLITION
 - * EXCAVATION
 - * ARCHAEOLOGY
 - * CERTIFICATE OF OCCUPANCY



Public Safety/Service Measures

- Handling/Managing Contaminated Materials
- Floodplain Mapping
- Haul Route Penalty Docket Item
- South Union Street Signage/Crosswalks
- Lessons learned – Communication, Public Safety Measures, Point of Contact, Monthly on site meetings, Archaeology Updates



Contaminated Land Program

City authority established as part of zoning ordinance (Article 11-406 (D) and 11-410 (V))

- 11-406 (D): The preliminary site plan shall show the general location, dimensions, size and height of areas containing contaminated soils or USTs
- 11-410 (V): The final site plan shall ensure that adequate provision has been made to clean, control and/or alleviate contamination or environmental hazards in these areas

Contaminated Land Program

City's Contaminated Land Process is modeled after the VDEQ remediation methodology and includes:

- Site Characterization
 - Soil and groundwater sampling to identify hazardous and toxic chemicals and their exposure pathways
- Risk Assessment
 - Assess the health risks associated with hazardous and toxic materials to on-site workers, future occupants and surrounding residents



Contaminated Land Program

- Remediation plan (Clean-up plan)
 - Propose clean-up plan to control and/or remove the risks identified to the satisfaction of the City's Director of T&ES
 - Devise a health and safety plan to mitigate the identified risks that arise during the clean-up efforts to the satisfaction of the City's Director of T&ES
- Final site plan approval are released contingent on meeting all contaminated land conditions to the satisfaction of the Director of T&ES
- Disclosure of environmental conditions to prospective buyers typically required as a DSUP condition



Contaminated Land Process for Robinson Terminal North DSUP

- Condition #137 states that no construction shall take place until the following has been submitted and approved by the Director of T&ES:
 - Site characterization report;
 - A risk assessment report indicating potential risks associated with the contamination;
 - A health and safety plan developed and approved by a **certified industrial hygienist** aimed at minimizing the potential risks to the workers, the neighborhood and the environment;
 - An **onsite Health and Safety Manager** must be present at all times during remediation activities, and
 - **Initial air monitoring** will be required during site activities to demonstrate acceptable levels of volatiles and/or airborne particles.

Robinson Terminal North and Vicinity



Former Bogle Chemical





Chronology of Bogle Chemical Site

1973

Alexandria Health Department (AHD) inspection reveals large quantities of stored chemicals on property

Soil and groundwater sampling: elevated levels of arsenic

1974

Virginia State Water Control Board (VSWCB) cites Bogle for illegal industrial discharges to groundwater

Site Plans for Robinson Terminal North Warehouse approved
(There are no conditions related to placement of a "clay cap')

1975

AHD requires Bogle to:

- Secure access to site to minimize exposure
- Take action to remove contamination



Chronology of Bogle Chemical Site

1976

AHD takes blood samples from workers and residents living near facility:

- Hg and As: results within normal limits

VSWCB: "Special Order" to Bogle to address contamination

Bogle hires Dames and Moore to investigate site for extent of contamination.

- Most arsenic contamination is within the top 15' of surface soils
- Recommends placing 18 inches of compacted iron rich clay over contaminated soils to bind arsenic and prevent off-site migration
- Areas of highest contamination include current "Dalton's Wharf" and a portion of "Tobacco Quay" development

Consent Agreement between EPA and Bogle to address contamination (City staff have found references to Consent Agreement, but have not found the document)



Chronology of Bogle Chemical Site

1976/1977

Robinson Terminal North West Warehouse construction

1978

Bogle property sold to Development Resources Inc. with DSUP conditions:

- All contaminated soil to remain on site
- 18" clay cap to underlay project foundations
- No pools, basements or below slab grade construction

1979

Site Plans for Dalton Wharf Offices and Tobacco Quay Townhouses approved:

- Subject to Alexandria's Contaminated Land conditions

1980

Construction on Dalton's Wharf and Tobacco Quay begins

1982

Dalton Wharf's Final Site Plans show 18" clay cap below units



Chronology of Bogle Chemical Site

1983

EPA Preliminary Assessment of site for Superfund program:
"remedial action from the past contamination.. completed"

1984

EPA nationwide Dioxin investigation of former herbicide mixing sites includes Bogle:

No detectable levels in soils/sediment levels below health concern
No further action necessary

1989

EPA Screening Site Investigation for Superfund consideration:

- site not proposed for the National Priority List

1990

VSWCB cancels 1976 Special Order: fulfillment of requirements

1991

EPA Determines no further action is needed on site



Alexandria Town Gas Chronology

- **1851-1946:** City built ATG on Oronoco Street in 1851 and operated it until 1930
 - City sold ATG to Rosslyn Gas which continued operation until 1946; Rosslyn Gas eventually bought by Washington Gas
- **1979:** Lee Street Partnership constructed the current Lee Street Square office townhouses
- **1992:** Virginia Department of Waste Management conducted a preliminary site assessment
- **1999:** US Coast Guard, US EPA and VDEQ conducted file review and encouraged the City to enter the site in the VRP (Virginia Voluntary Remediation Program)

Alexandria Town Gas Chronology

2000-2004: VRP Initial Abatement

- Indoor/outdoor air testing –tested Lee Street Square townhouses and 10 of 16 N. Union Street townhouses
- Installed Oronoco outfall oil containment boom (2000)
- Installed five free product recovery wells (2003)

2000-2006: Multi-media Site Characterization

- Surface soil samplings, monitoring wells, soil gas survey, sediment survey, indoor/ outdoor air, drinking water
- Oronoco pipeline inspection

Alexandria Town Gas Chronology

2007 – Present: Site Remediation

- Oronoco pipeline cure-in-place liner #1 (2007) and liner #2 (2014)
- Biosparge groundwater treatment system
 - Pilot study -2009
 - Design & bid package -2010
 - Construction 2013
- Oronoco outfall dredge and cap system
 - Design in 2013 with estimated cost of \$1.65 M
 - Bids came in over budget
 - Scheduled to begin fall 2016



FEMA & NFIP

FLOOD FACTS (www.floodsmart.gov)

- Everyone Lives in a Flood Zone.
- You are eligible to purchase flood insurance as long as your community participates in the NFIP.
- In the past 5 years, all 50 states have experienced floods or flash floods.



FEMA/NFIP & Development

NFIP Communities Must Review Applications for Building in the Floodplain for being:

“Reasonably Safe From Flooding”

CFR Title 44, PART 65, §65.2 Definitions.

(c) "reasonably safe from flooding" means:
base flood waters will not inundate the land or damage structures to be removed from the Special Flood Hazard Area (SFHA)

BASE FLOOD

- The flood having a one percent chance of being equaled or exceeded in any given year. This is the regulatory standard also referred to as the "100-year flood." The base flood is the national standard used by the National Flood Insurance Program (NFIP) and all Federal agencies for the purposes of requiring the purchase of flood insurance and regulating new development. Base Flood Elevations (BFEs) are typically shown on Flood Insurance Rate Maps (FIRMs).

BASE FLOOD

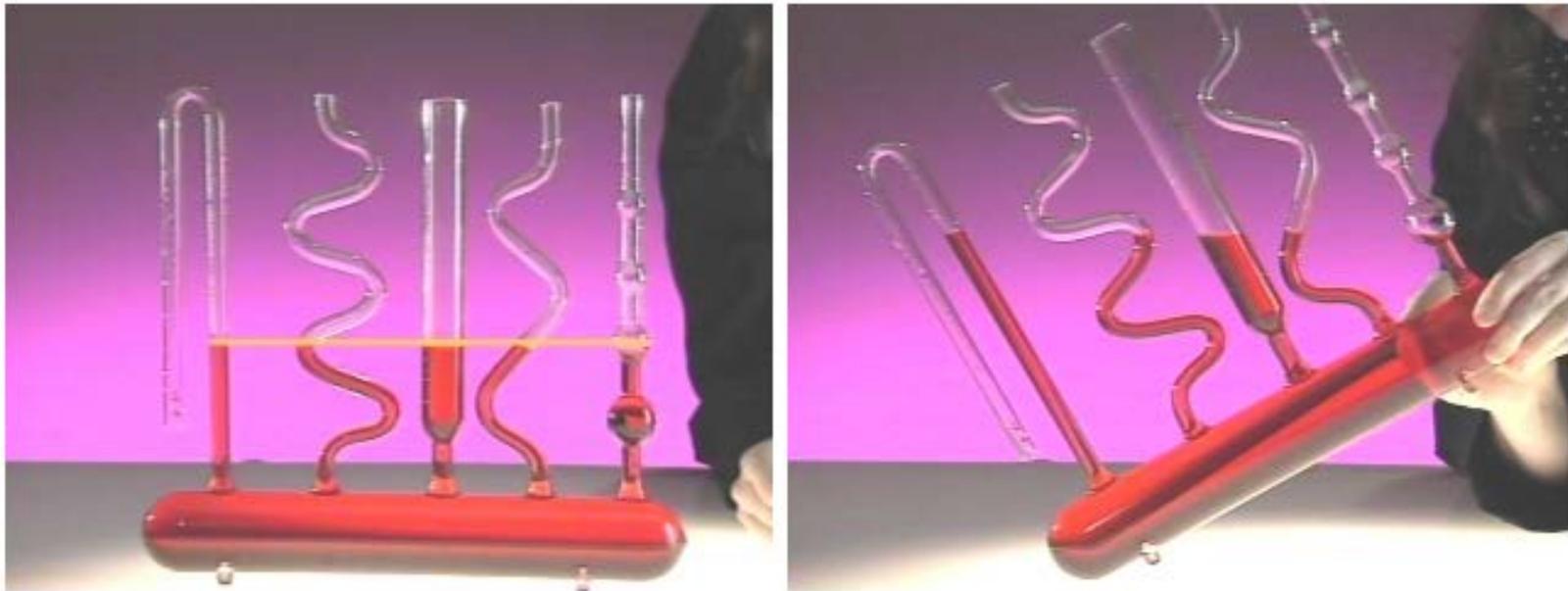
Permitted changes to BFEs due to development.

- NFIP Minimum Standard = 1.0-ft
- Alexandria's Higher Standard = 0.5-ft
 - Typically administered to NO RISE

POTOMAC RIVER BFEs

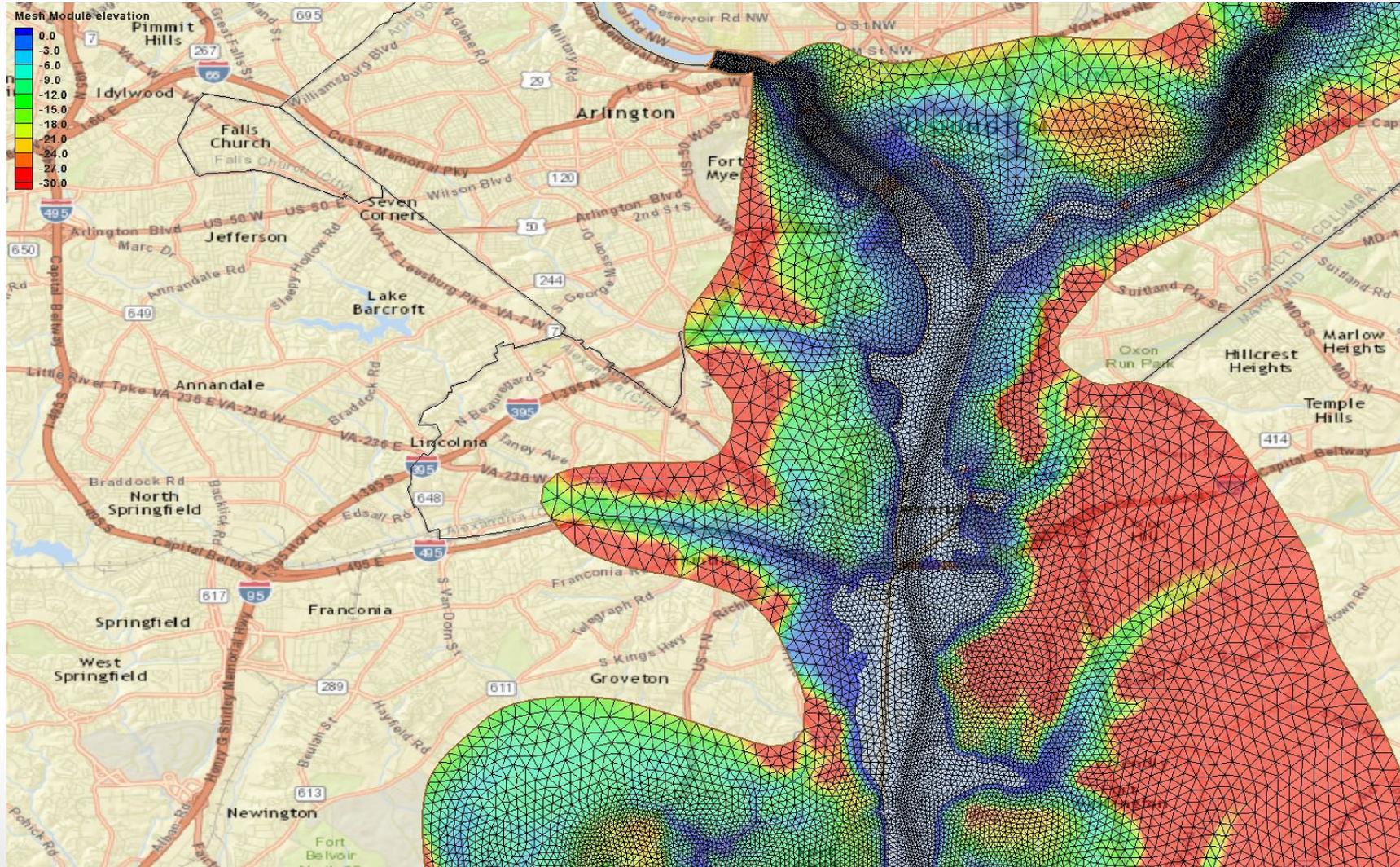
- Flood Insurance Study (FIS)
 - USACE Engineer Research and Development Center (ERDC) Coastal Hydraulics Laboratory (CHL) performed analysis.
 - The 1-percent annual chance storm surge elevation along the lower Potomac was estimated using the advanced CIRCulation (ADCIRC) numerical model.
 - In order to estimate the 1-percent annual chance storm surge elevation, an event emulating Hurricane Isabel was dynamically simulated.
 - This model was calibrated to replicate the 1-percent annual chance storm surge elevation at the Washington, D.C. National Ocean Service gauge no. 8594900 (Haines Point).
 - The results of this analysis were compiled into a unified storm surge profile.
 - The water-surface elevations provided in this document, prepared by the Baker Regional Management Center 3 (RMC3), were utilized to delineate the revised floodplain boundaries for the Potomac River.

WATER SEEKS ITS OWN LEVEL



The main principle behind “where the flood waters go”

ADCIRC 3D SURFACE



Profile Projected onto Land





Public Safety/Service Measures

Haul Route Penalty Docket Item:

The civil penalty for each individual shall be:

- \$100 for the first violation
- \$250 for the second violation
- \$500 for each additional violation

Public Safety/Service Measures

- South Union Street Signage/Crosswalks

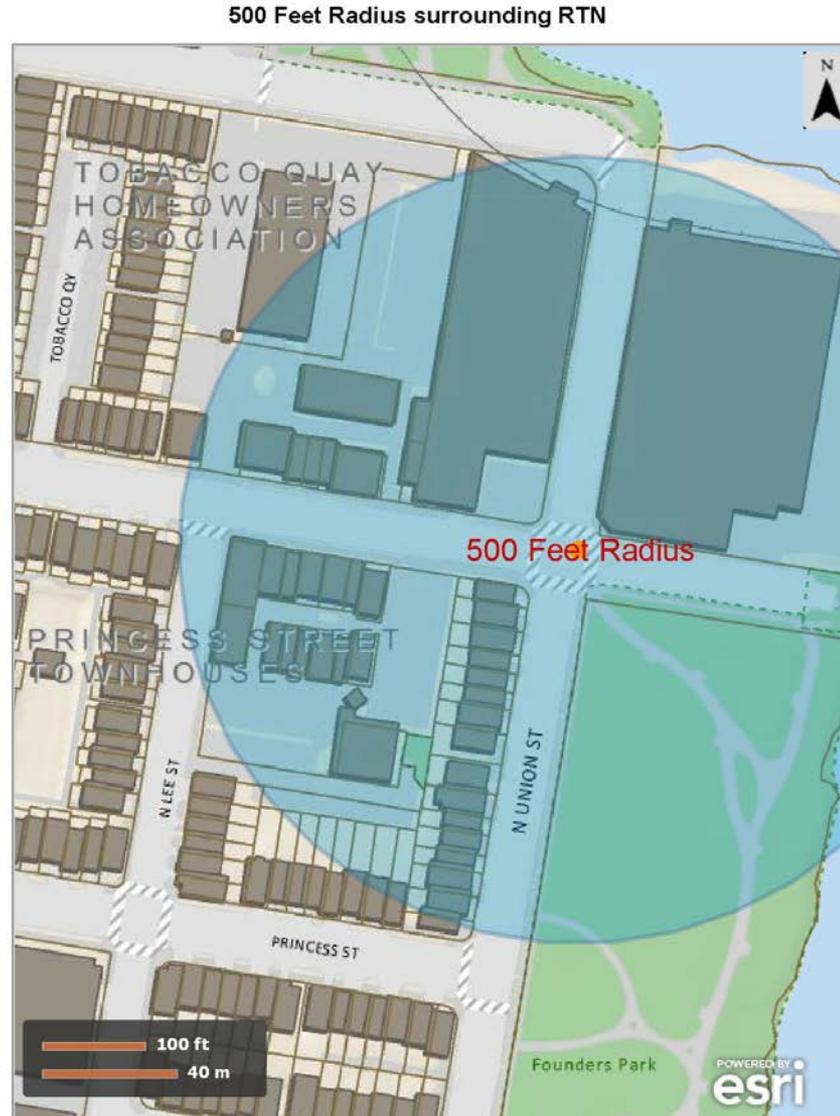


Lessons Learned

- Communication
- Public Safety Measures
- Point of Contact
- Monthly On-site Meetings
- Archaeology Updates

Lessons Learned

- Pile Driving





Next Steps & Next Ad Hoc Monitoring Group Meeting

- Action Items
- Next Meeting-Waterfront Construction Monitoring Group: February 1st @ 5:30pm, Sister Cities Conference Room



Upcoming Waterfront Related Meetings

- Waterfront Commission Meeting:
Tuesday, January 12th @ 5:30 pm
Marina Committee City Hall Room 2000
- Waterfront Commission Meeting:
Tuesday, January 19th @ 7:30 am Sister
Cities Conference Room
- South Waterfront Community Meeting:
Thursday, January 21st @ 9:30am In
front of Potomac Riverboat Charters