



# Project Update – Old Town Civic Association

**Alexandria Waterfront Implementation Project:  
Flood Mitigation and Lower King Street Improvements**

April 10, 2024

# Project Team

---



# Key Objectives

Draft, Deliberative, Pre-Decisional

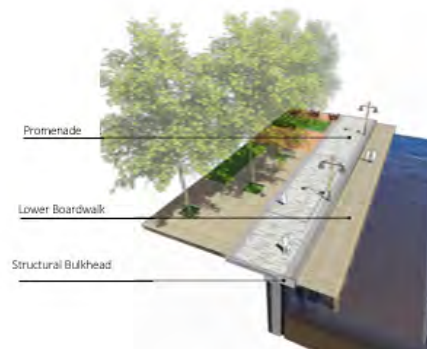
The City seeks to implement the Waterfront Implementation Project to:

- Mitigate stormwater and the most frequent tidal and riverine flooding
- Replace aging and failing shoreline infrastructure, where practicable and affordable
- Improve public accessibility and public amenities within key waterfront locations of Old Town Alexandria
- Actualize the goals of the Waterfront Small Area Plan

## BACKFLOW of River Outfalls



## OVERTOPPING of Bulkhead



## INUNDATION of Storm Sewers



# Update on Site Investigations



# Site Investigations and Evaluations

Draft, Deliberative, Pre-Decisional

- **Cultural Resource Investigations**

- Supplemental documentary study by Waterfront Historian.
- Informed team of higher risk of encountering historic wharf structures and/or ships at historic shorelines for PS2 in Founders Park.

- **Environmental Investigations**

- Additional quantification of soil contamination – informed us of higher than anticipated costs of disposal.
- Additional groundwater table monitoring – documenting higher than previously recorded water table.
  - Additional challenges and risks with underground storage (higher dewatering costs, risk of losing storage capacity and potential risk of water contamination).

- **Structural Assessments**

- Bulkhead condition at Waterfront Park has continued to decline from prior assessment.
- Additional scope and cost to repair or replace now anticipated, if feasible within funding.

- **Pump Station Location Assessment**

- PDB Team re-evaluated pump station size, location, and permanent impacts to park areas.
- Identified opportunity to reduce capital costs, risk, and asset management costs with alternative pump station approach.

# Site Investigations and Evaluations

Draft, Deliberative, Pre-Decisional



## • Structural Assessments

- Bulkhead condition at Waterfront Park (H) has declined from prior assessment.
- May require additional scope and cost to repair, or replace, if feasible and within funding.

# Scoping to Budget



# Scoping to Budget

Draft, Deliberative, Pre-Decisional

- **City is realizing the anticipated Benefits of Progressive Design Build!**
  - Cost reduction and innovation with expert designer and builder input
  - Builder input on assessing and pricing risk, means and methods, and cost estimates
- **Primary Cost Saving and Risk Mitigation Measures:**
  - **Eliminate Underground Storage**
  - **Single Pump Station Alternative**
- **Scoping To Budget Continues to keep project costs within Funding:**
  - Includes Primary Cost and Risk and saving measures above
  - Currently both Baseline and Alternate Approach **excludes replacement of aging and/or failed bulkhead from Cameron to Queen St**
  - Park/Street Restoration (in-kind) and potentially limited park improvements.
  - **Maintains most of Waterfront Park Improvements in current condition (as previously anticipated).**
- **Additional strategies will be further evaluated:**
  - Alternative/Hybrid Shoreline within Point Lumley Park to minimize impacts and cost of new bulkhead
  - Reducing Overhead Power Line Undergrounding (Prince Street and Strand Street)
  - Minimizing landscape and bulkhead improvements north of King Street (while still incorporating riverine flood protection elements)



# Alternative – Single Station Approach

LEGEND Draft, Deliberative, Pre-Decisional

- 1 PUMP STATION
- 2 POTENTIAL UNDERGROUND STORMWATER DETENTION CHAMBERS (FURTHER EVALUATION REQUIRED)
- 3 RETAIN WATERFRONT PARK AT KING STREET
- ..... STREETScape AND STORMWATER INFRASTRUCTURE IMPROVEMENTS (STANDARD ASPHALT PAVING)
- ..... STREETScape STORMWATER INFRASTRUCTURE IMPROVEMENTS (MATERIALS TO MATCH EXISTING)
- FLOOD PROTECTION AT ELEVATION 6 (New bulkhead Duke to Prince St)



TREE SAVE AREA AROUND GROVE

PORTIONS OF FOUNDERS PARK ARE STILL ANTICIPATED TO BE REQUIRED FOR TEMPORARY ACCESS AND MATERIAL STORAGE



# Stormwater Infrastructure Plan

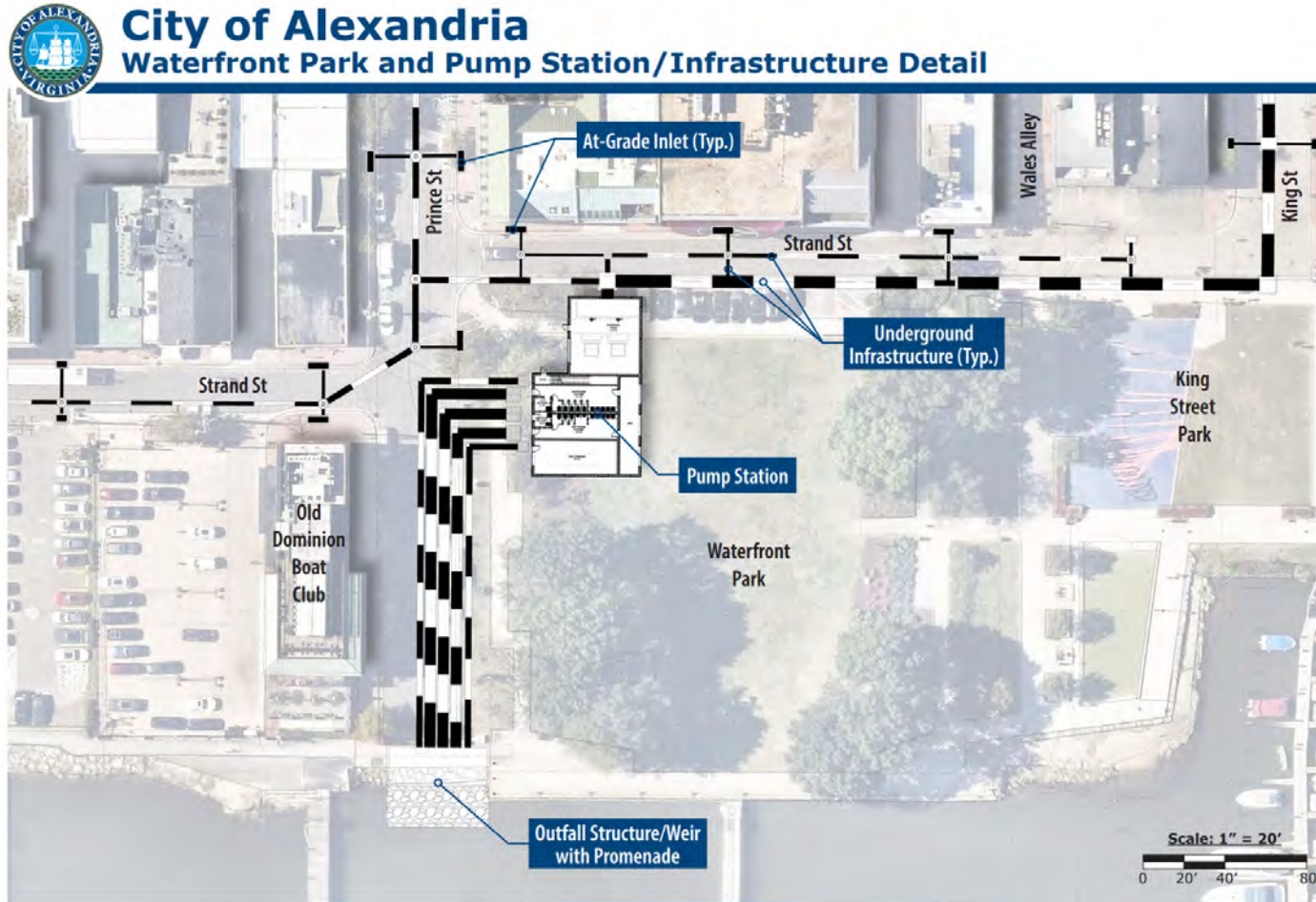
Draft, Deliberative, Pre-Decisional

 **City of Alexandria**  
Waterfront Flood Mitigation - Stormwater Infrastructure Plan



# Stormwater Infrastructure Plan

Draft, Deliberative, Pre-Decisional



# Waterfront Park - Single Pump Station Alternative Benefits

Draft, Deliberative, Pre-Decisional

## Net reduction of permanent impacts: ~3,000 SF

- Significantly reduces capital cost and risk:
  - Contaminated soil in Founders Park
  - Cultural Resource Implications/Risks
  - Eliminates excavation next to an existing building (211 Harbor Center)
  - Single building site / building crew
  - Lowers dewatering costs
- Anticipated reduction in Operating Budget Impacts:
  - Single Asset to operate and maintain
  - Lower replacement and lifecycle costs – roof, pumps, generators, etc.
- Maintains/Maximizes Open Space
- Eliminates visual impacts to Founders Park
- Responsive to points of known community concern

# Waterfront Park





OPTION 1A



OPTION 2A



OPTION 3A



OPTION 1B



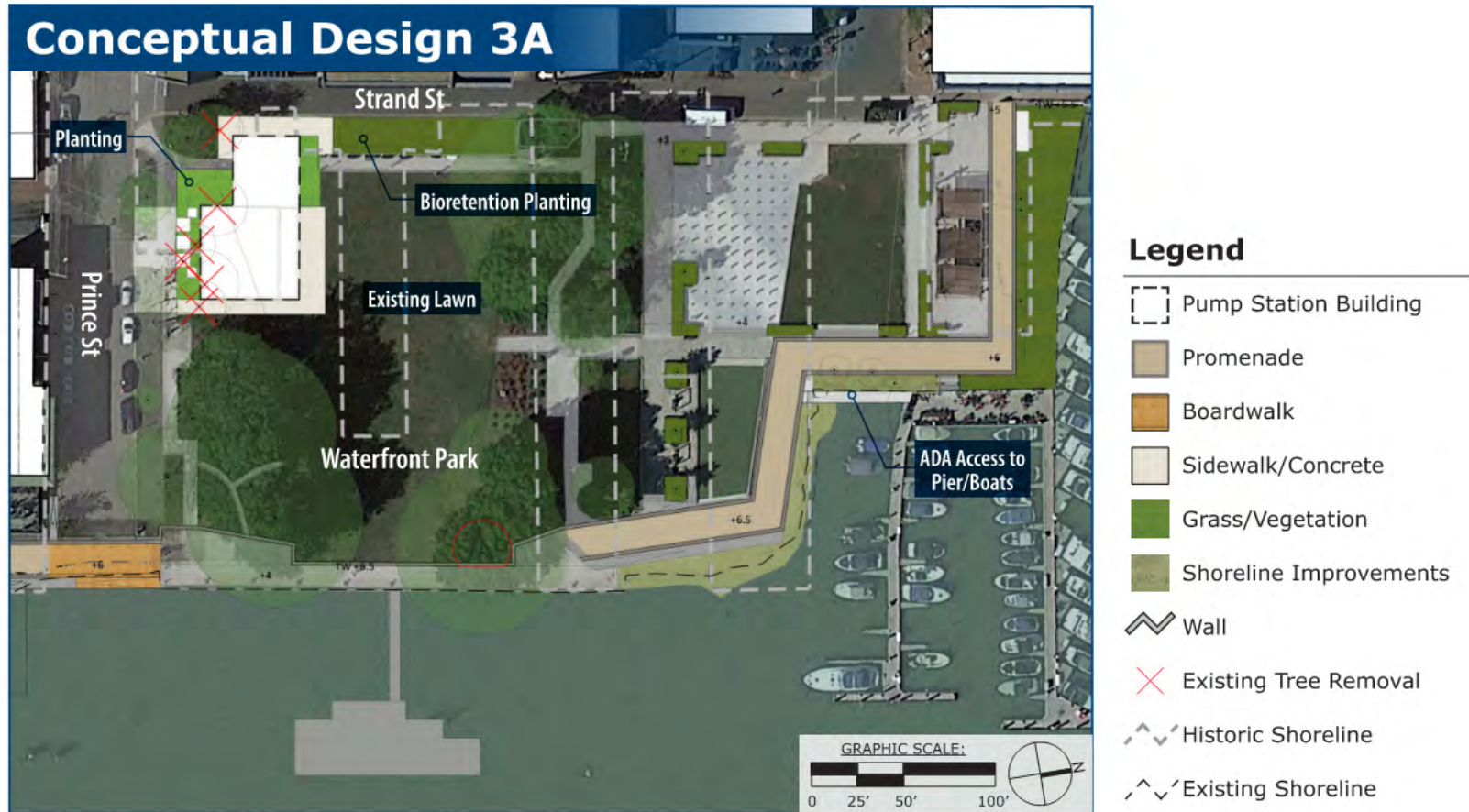
OPTION 2B



OPTION 3B

# Waterfront Park Concepts

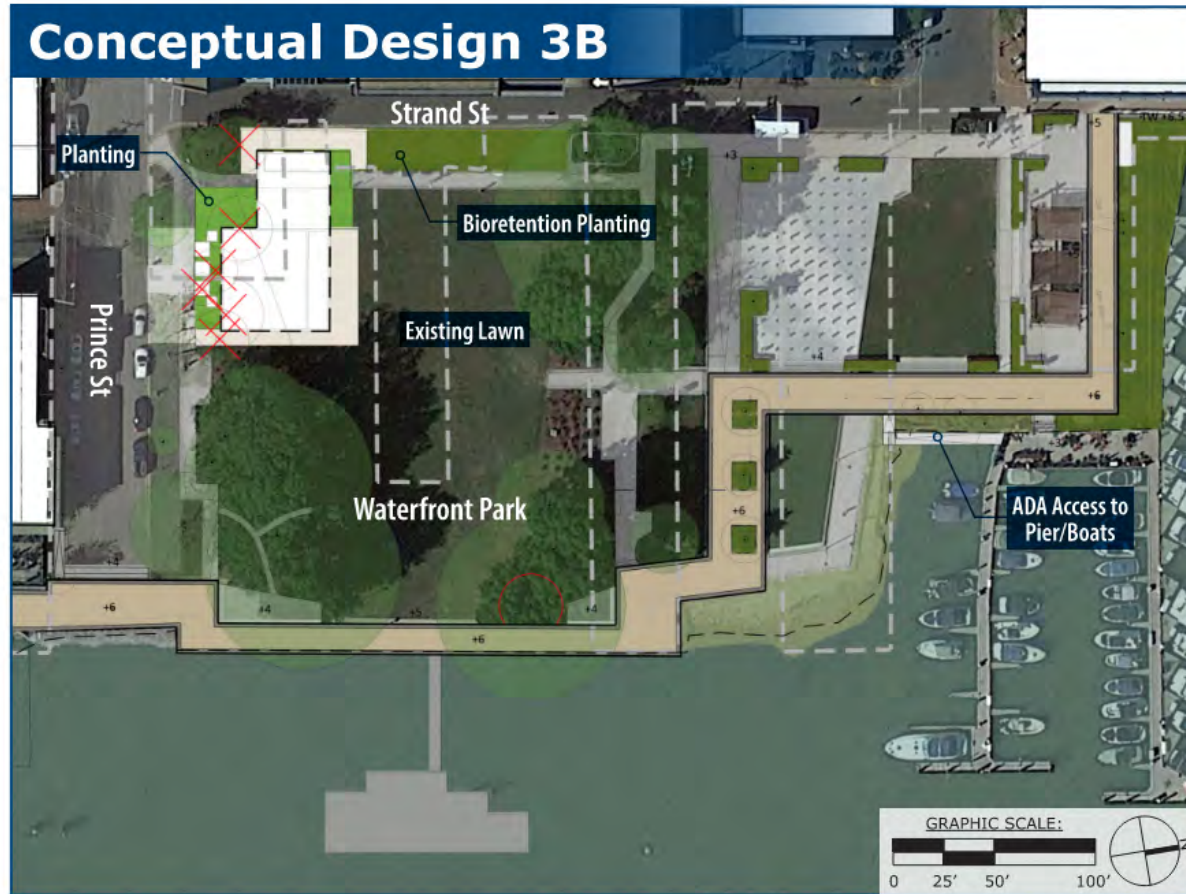
Draft, Deliberative, Pre-Decisional



\*Cost and regulatory impacts will be a primary driver in feasibility and selection

# Waterfront Park Concepts

Draft, Deliberative, Pre-Decisional



## Legend

- Pump Station Building
- Promenade
- Boardwalk
- Sidewalk/Concrete
- Grass/Vegetation
- Shoreline Improvements
- New Bulkhead
- Existing Tree Removal
- Historic Shoreline
- Existing Shoreline

\*Cost and regulatory impacts will be a primary driver in feasibility and selection



**Waterfront Park:  
PS1 – Pump Station Concept  
(Single Station Alternative - Development Ongoing)**

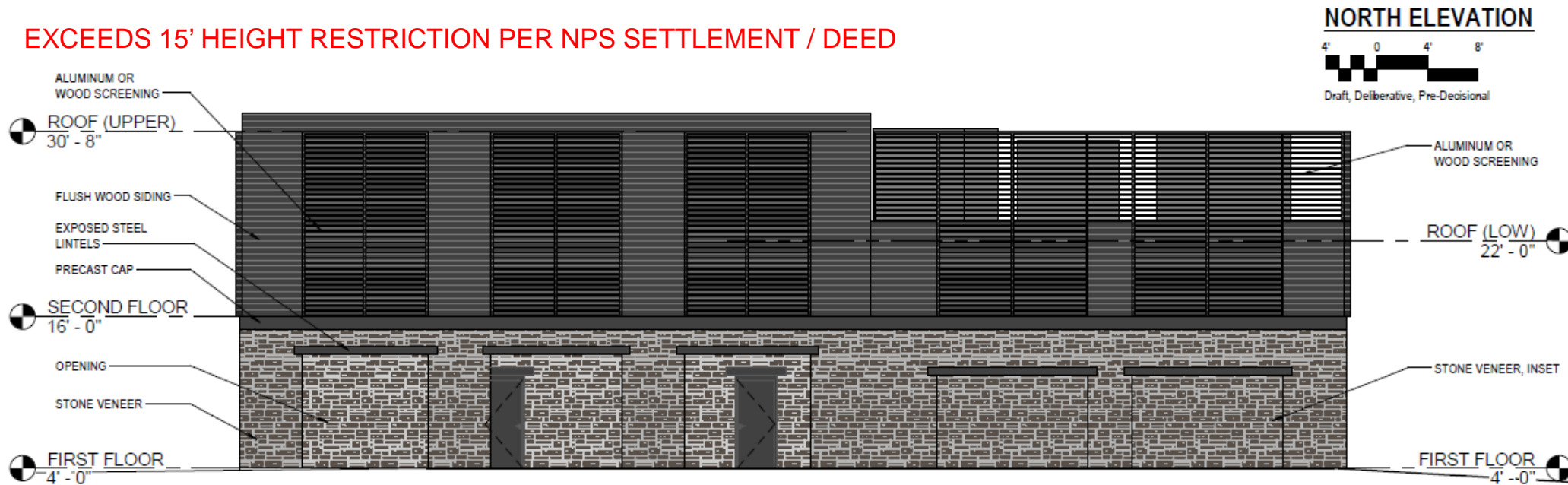


# PS1- WATERFRONT PARK (Single Station)

Study to determine scale and mass if only a single pump station were to be constructed:

- Two story Pump Station required
- <30' height anticipated
- Coordination ongoing with Dominion Energy
- Coordination ongoing with National Park Service for deed modification of height limitations
- BAR Concept Review anticipated – seeking input on architectural features
- Materials are conceptual – coordination required with BAR and budget affordability

**EXCEEDS 15' HEIGHT RESTRICTION PER NPS SETTLEMENT / DEED**



# PS1- WATERFRONT PARK (Single Station)

Draft, Deliberative, Pre-Decisional

- Team assessing further reduction in footprint
- Location of exterior walls structurally tied to underground wet-well structure
  - Informs minimum footprint dimensions
- Materials are conceptual – coordination with BAR and budget affordability required.



## SOUTH ELEVATION

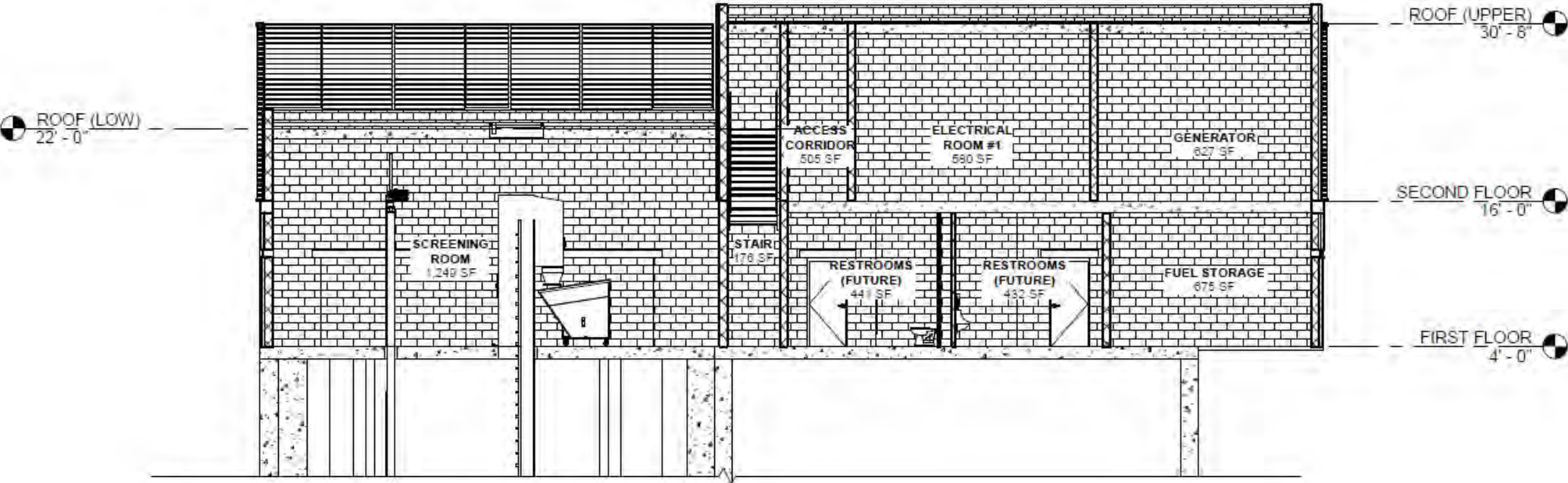
4' 0' 4' 8'



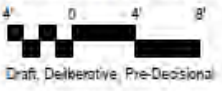
Draft, Deliberative, Pre-Decisional

# PS1- WATERFRONT PARK (Single Station)

Draft, Deliberative, Pre-Decisional

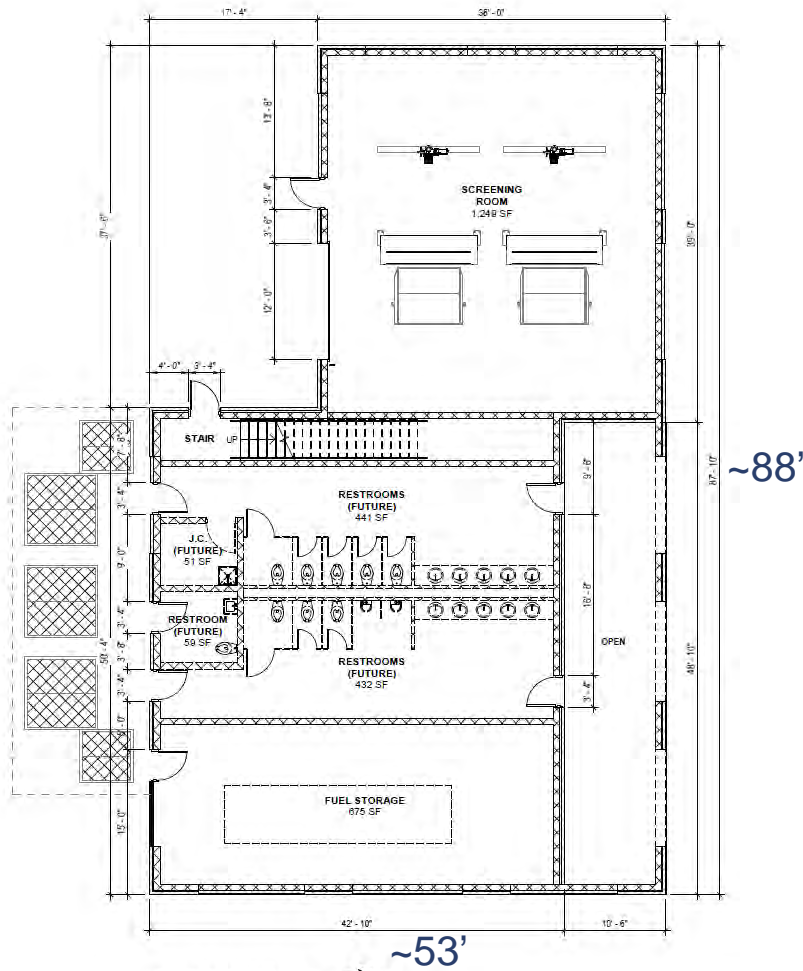


**LONGITUDINAL SECTION**

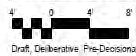


# PS1- WATERFRONT PARK (Single Station)

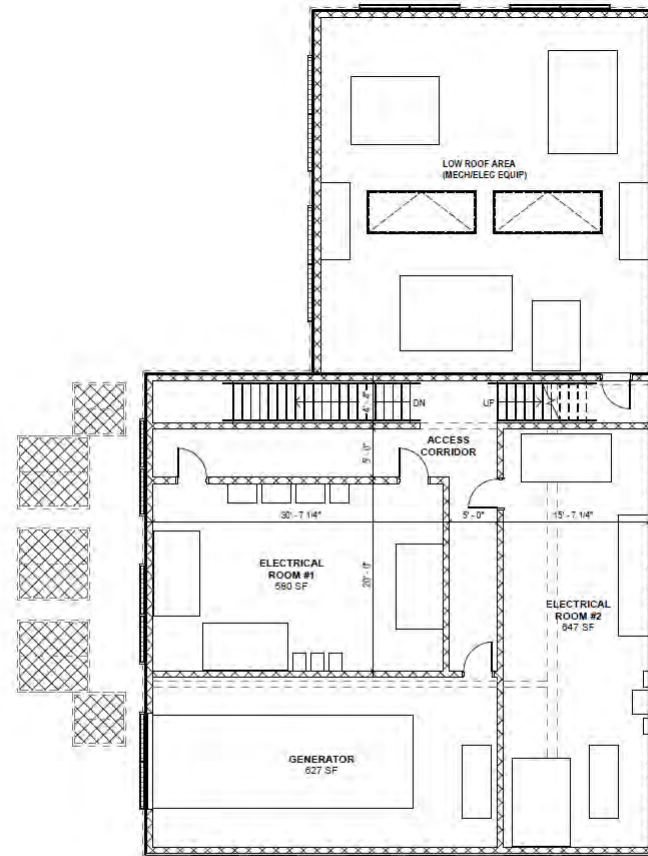
Draft, Deliberative, Pre-Decisional



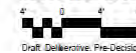
FIRST FLOOR PLAN



Draft, Deliberative, Pre-Decisional



SECOND FLOOR PLAN



Draft, Deliberative, Pre-Decisional

# PS1- WATERFRONT PARK (Single Station)

Draft, Deliberative, Pre-Decisional

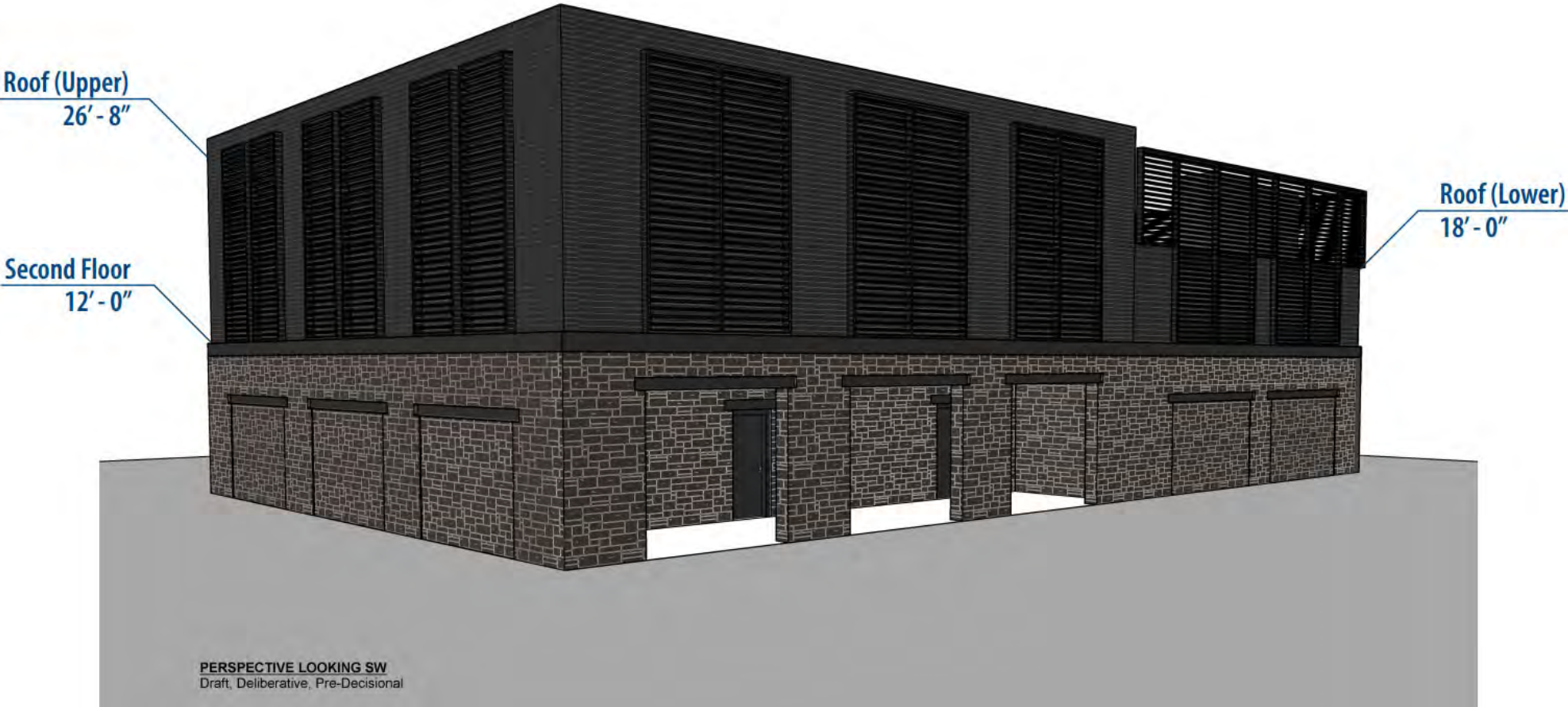


- Team working to further minimize footprint
- Location of exterior walls structurally tied to underground wet-well structure and informs minimum footprint dimensions
- Materials are conceptual – coordination with BAR and affordability required.

PERSPECTIVE OF SOUTH ELEVATION

# PS1- WATERFRONT PARK (Single Station)

Draft, Deliberative, Pre-Decisional



PERSPECTIVE OF NORTH ELEVATION

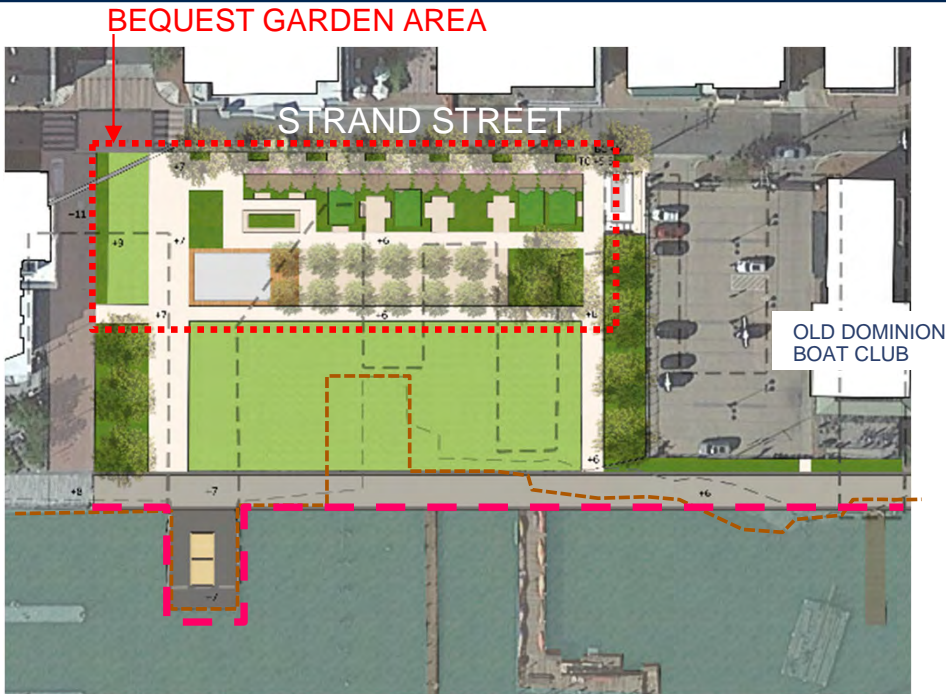
# Point Lumley Park





# Point Lumley Park – Shoreline Alternatives

Draft, Deliberative, Pre-Decisional



BULKHEAD OPTION\*



HYBRID SHORELINE ALTERNATE\*

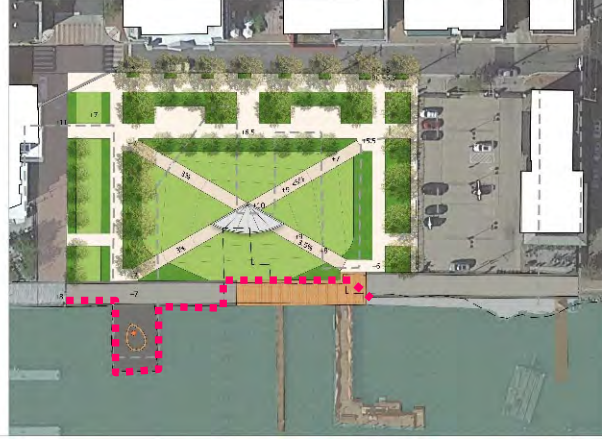
\*Cost and regulatory impacts will be a primary driver in feasibility and selection

# Point Lumley Park – Shoreline Alternatives

Draft, Deliberative, Pre-Decisional



OPTION A: BULKHEAD



OPTION B: BULKHEAD WITH OVERHANG



OPTION C: BUILT UP SHORELINE



OPTION D: BUILT UP SHORELINE



OPTION E: NATURAL SHORELINE



OPTION F: NATURAL SHORELINE

# Point Lumley Park – Precedent Images

Draft, Deliberative, Pre-Decisional



**Boardwalk**



**Structure**



**Trellis**



**Steps**



**Cribbing**

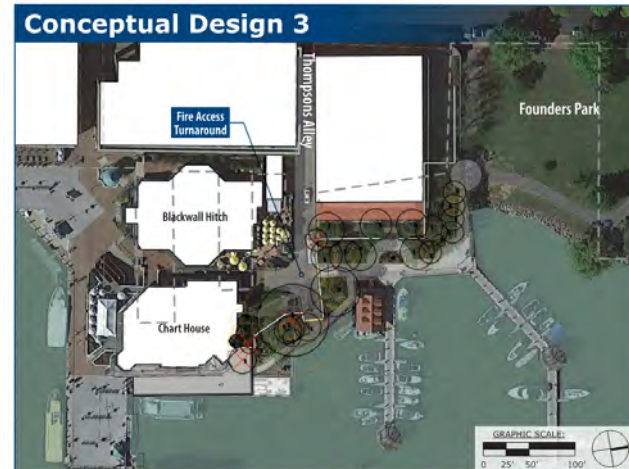
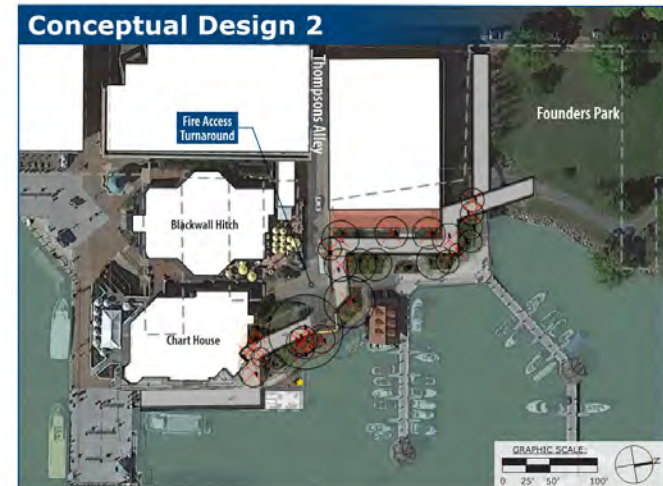
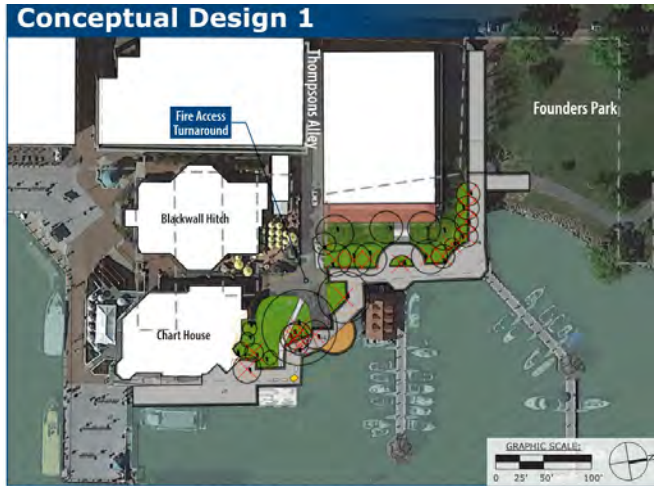
\*Cost and regulatory impacts will be a primary driver in feasibility and selection

# Chart House and Thompsons Alley



# Chart House and Thompsons Alley Concepts

Draft, Deliberative, Pre-Decisional



\*Cost and regulatory impacts will be a primary driver in feasibility and selection

# Lower King Permanent Design

## Use Diagrams



City of Alexandria  
Department of Transportation & Environmental Services &  
Department of Project Implementation

# Project Boundaries



# Guiding Principles



Utilize quality, affordable, durable and easy-to-maintain materials for construction.

Implement a cohesive streetscape design that creates a unique sense of place.

Build a pedestrianized area that protects users while maintaining access for emergency services.

Create a balanced space that supports all users, including pedestrians, shoppers, and diverse businesses.



# Illustrative Pedestrian Streets

Española Way, Miami



Capitol Riverfront, DC



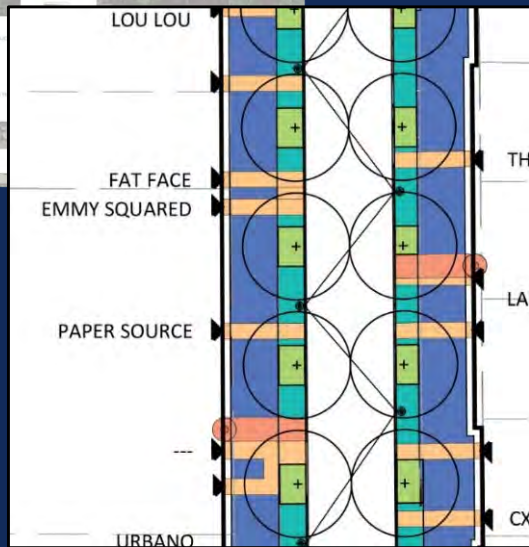
Charlottesville, VA



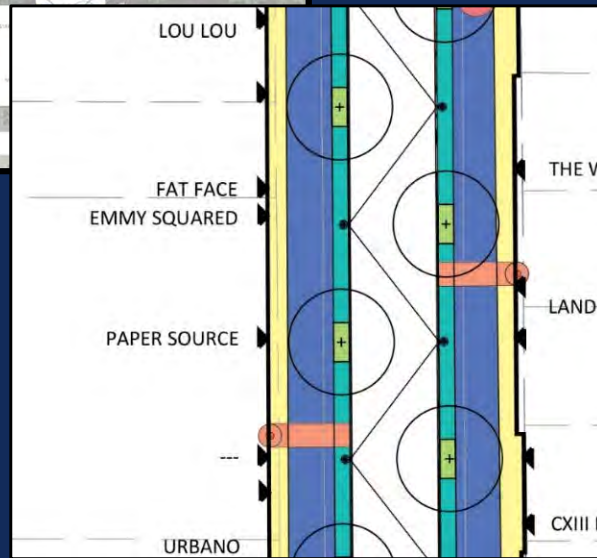
# King Street Use Studies



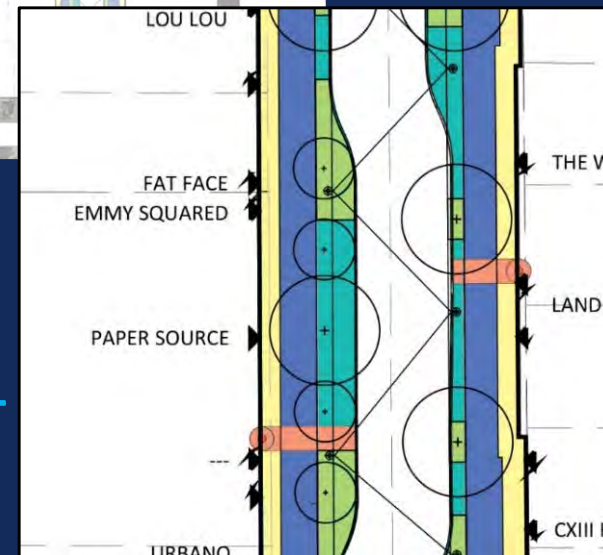
Option 1



Option 2



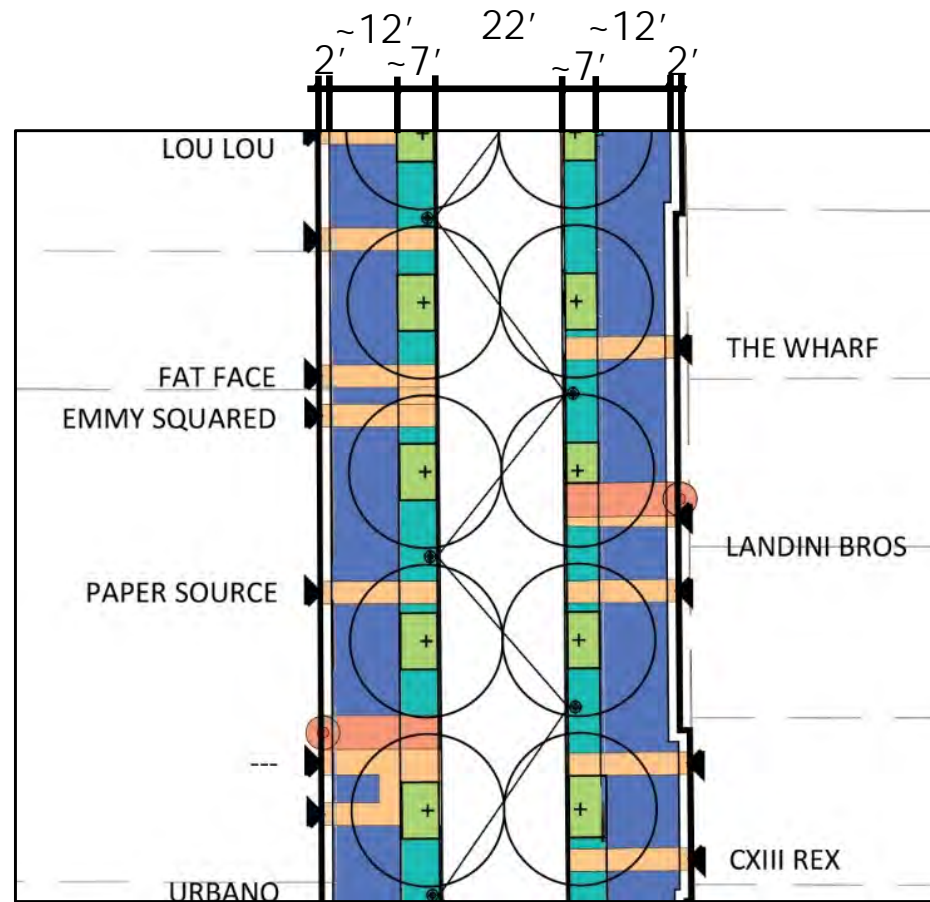
Option 3



# King Street: Option 1



# King Street: Option 1



## LEGEND

- COMMERCIAL ZONE
- 4' FIRE EGRESS
- PUBLIC AMENITY ZONE
- PLANTING AREA
- EXISTING FIRE HYDRANT
- EXISTING FDC
- STREET LIGHT

# King Street: Option 2

LIGHT POLE  
 22' EVE  
 4' PUBLIC AMENITY ZONE

~12' COMMERCIAL USE ZONE

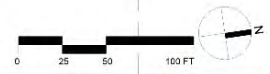
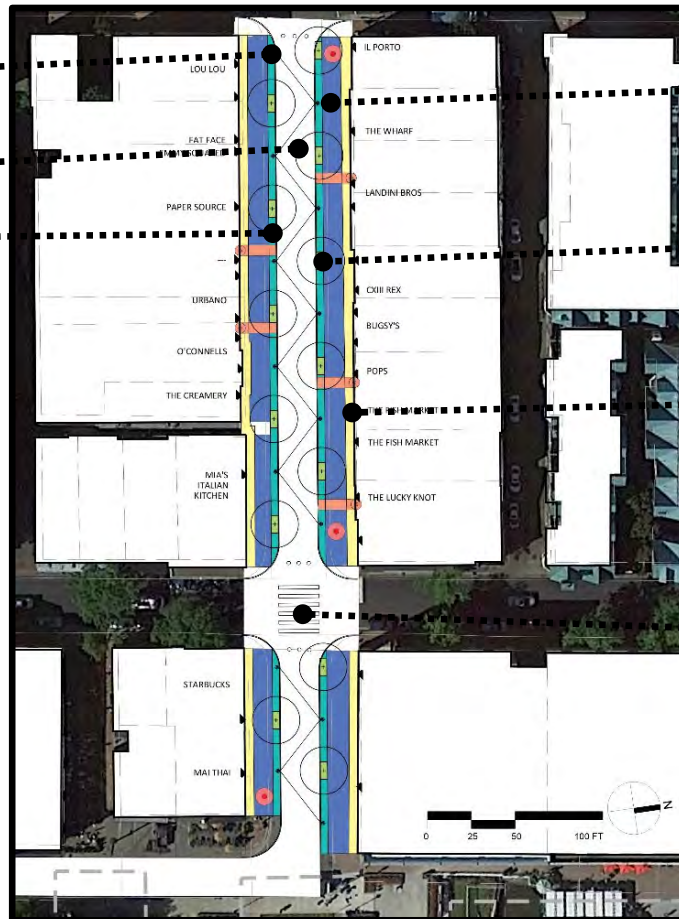
NEW TREE IN TREE PIT

~5' MIN ACCESS ZONE WITH BRICK PAVING AT BUILDING

INTERSECTION IMPROVEMENTS

## LEGEND

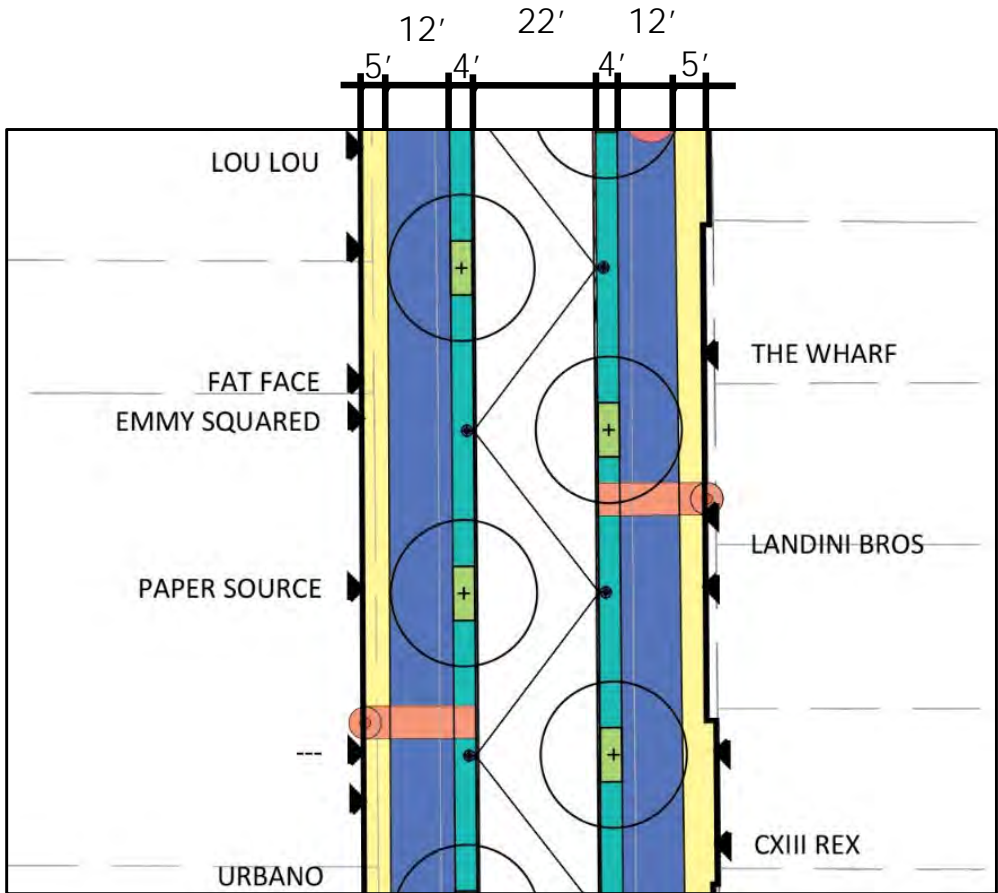
- COMMERCIAL ZONE
- PUBLIC AMENITY ZONE
- ACCESS ZONE
- PLANTING AREA
- EXISTING FIRE HYDRANT
- EXISTING FDC
- STREET LIGHT



# King Street: Option 2

**LEGEND**

- COMMERCIAL ZONE
- PUBLIC AMENITY ZONE
- ACCESS ZONE
- PLANTING AREA
- EXISTING FIRE HYDRANT
- EXISTING FDC
- STREET LIGHT



# King Street: Option 3

LIGHT POST  
 5' WIDE ACCESS ZONE  
 22' EVE

PUBLIC AMENITY ZONE  
 (Variable Width)

~9' COMMERCIAL USE  
 ZONE

NEW TREES

INTERSECTION  
 IMPROVEMENTS

## LEGEND

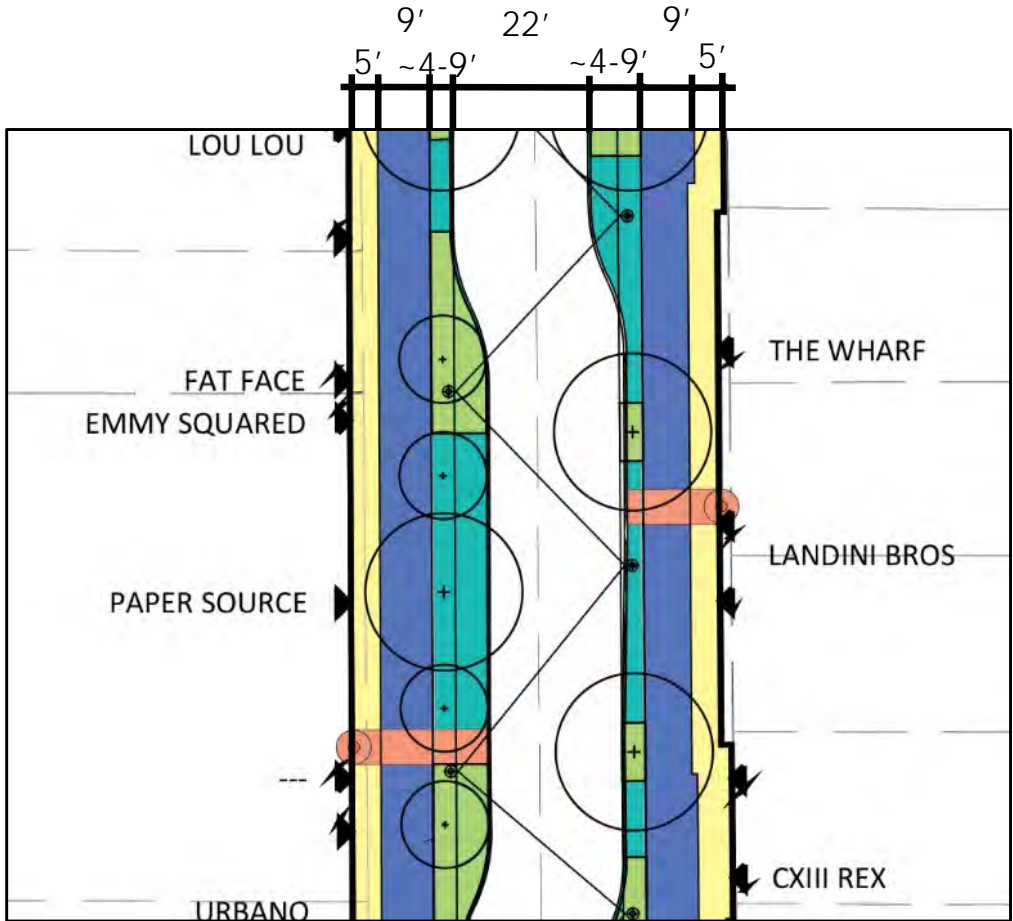
- COMMERCIAL ZONE
- PUBLIC AMENITY ZONE
- ACCESS ZONE
- PLANTING AREA
- EXISTING FIRE HYDRANT
- EXISTING FDC
- STREET LIGHT



# King Street: Option 3

**LEGEND**

- COMMERCIAL ZONE
- PUBLIC AMENITY ZONE
- ACCESS ZONE
- PLANTING AREA
- EXISTING FIRE HYDRANT
- EXISTING FDC
- STREET LIGHT





# Staff Recommendation: Option 2

LIGHT POLE  
 22' EVE  
 4' PUBLIC AMENITY ZONE

~12' COMMERCIAL USE ZONE

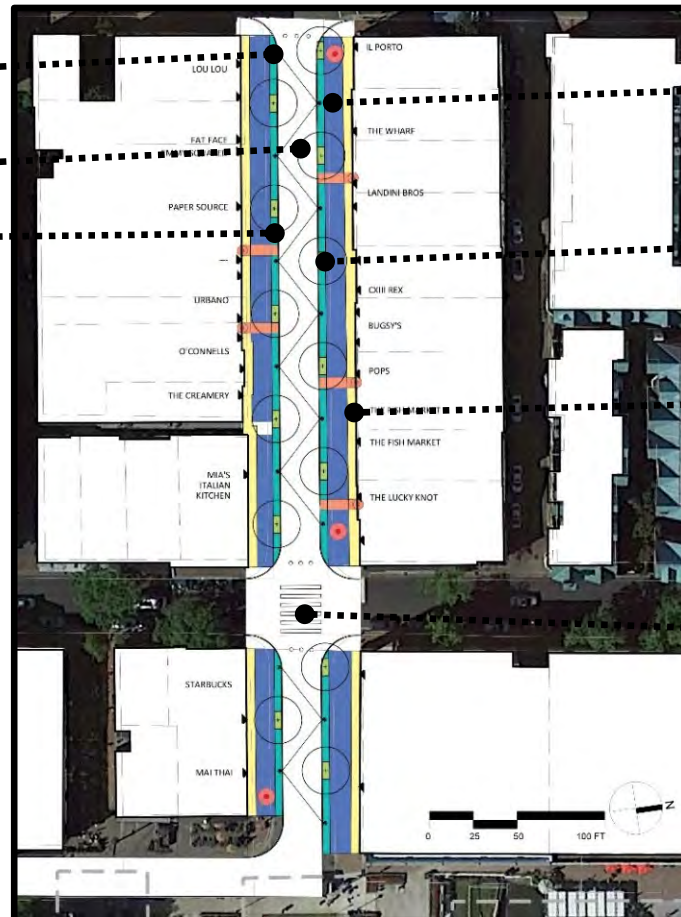
NEW TREE IN TREE PIT

~5' MIN ACCESS ZONE WITH BRICK PAVING AT BUILDING

INTERSECTION IMPROVEMENTS

## LEGEND

- COMMERCIAL ZONE
- PUBLIC AMENITY ZONE
- ACCESS ZONE
- PLANTING AREA
- EXISTING FIRE HYDRANT
- EXISTING FDC
- STREET LIGHT



# Street Materials & Design

Lighting



Seating



Pavement Materials



Safety



Historic Elements



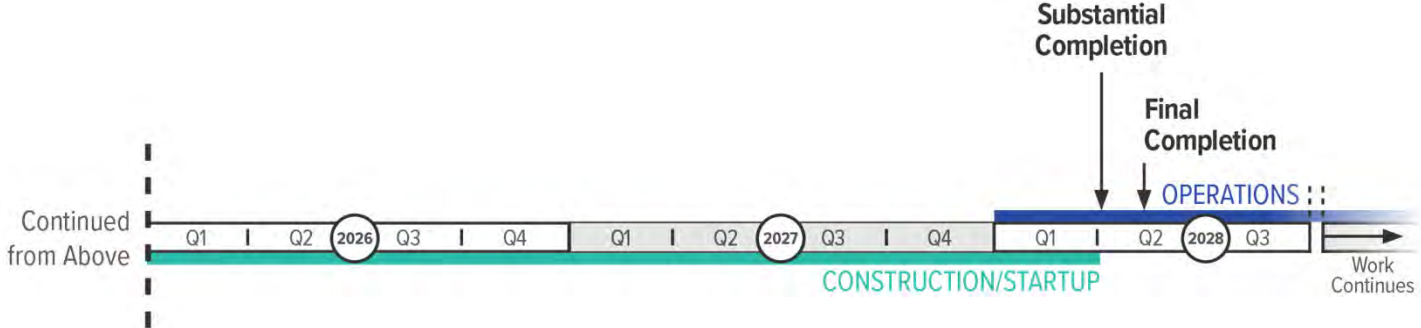
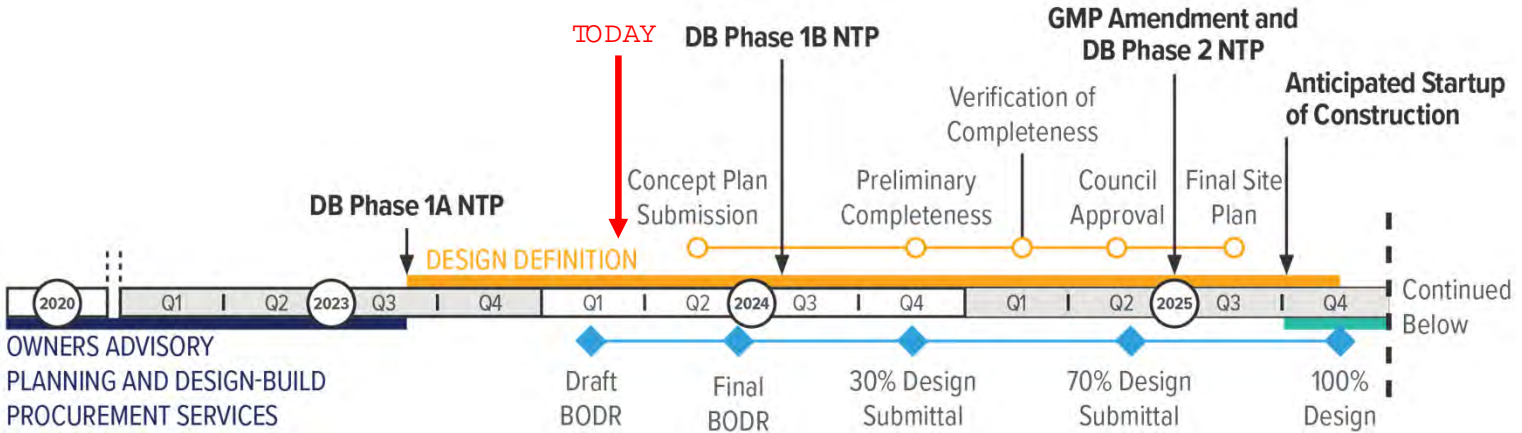
# Project Schedule



# Anticipated Near-Term Schedule

- March:
  - 19th - Updates to Waterfront Commission
  - 21st - Updates to Parks and Recreation Commission (VIRTUAL)
  - 26th – 7pm - Public Open House – Charles Houston Recreation Center
- April & May
  - April 10 – Old Town Civic Association (in person)
  - OHAD BAR Concept Review (Station Only) – Anticipated April/May – Date TBD
  - Additional Public Meetings, as new information and updates available

# Baseline Project Schedule



**LEGEND**

- ◆ Design Milestones
- DSUP Milestones
- BODR Basis of Design Report
- GMP Guaranteed Maximum Price
- DB Design Builder
- DSUP Development Special Use Permit

Construction will commence AFTER City's 275<sup>th</sup> birthday celebration

# Thank you!

Email Questions or Comments to:  
Matt Landes  
[Matthew.Landes@AlexandriaVA.gov](mailto:Matthew.Landes@AlexandriaVA.gov)

Sara Brandt-Vorel  
[Sara.BrandtVorel@alexandriava.gov](mailto:Sara.BrandtVorel@alexandriava.gov)

Project Website:  
[www.AlexandriaVA.gov/Waterfront](http://www.AlexandriaVA.gov/Waterfront)

