



# **Project Update – Old Town Civic Association**

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

**April 10, 2024**

# Project Team

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**SKANSKA**



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

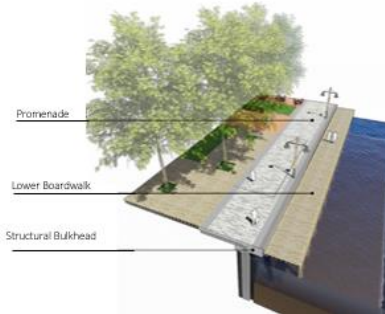
## BACKFLOW

of River Outfalls



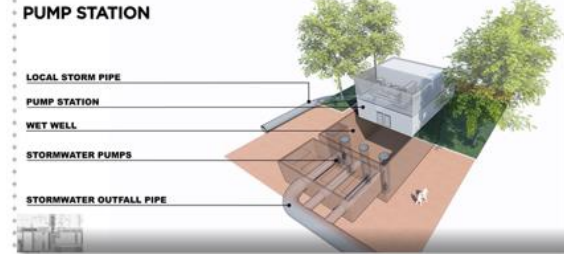
## OVERTOPPING

of Bulkhead



## INUNDATION

of Storm Sewers



# Update on Site Investigations



- **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



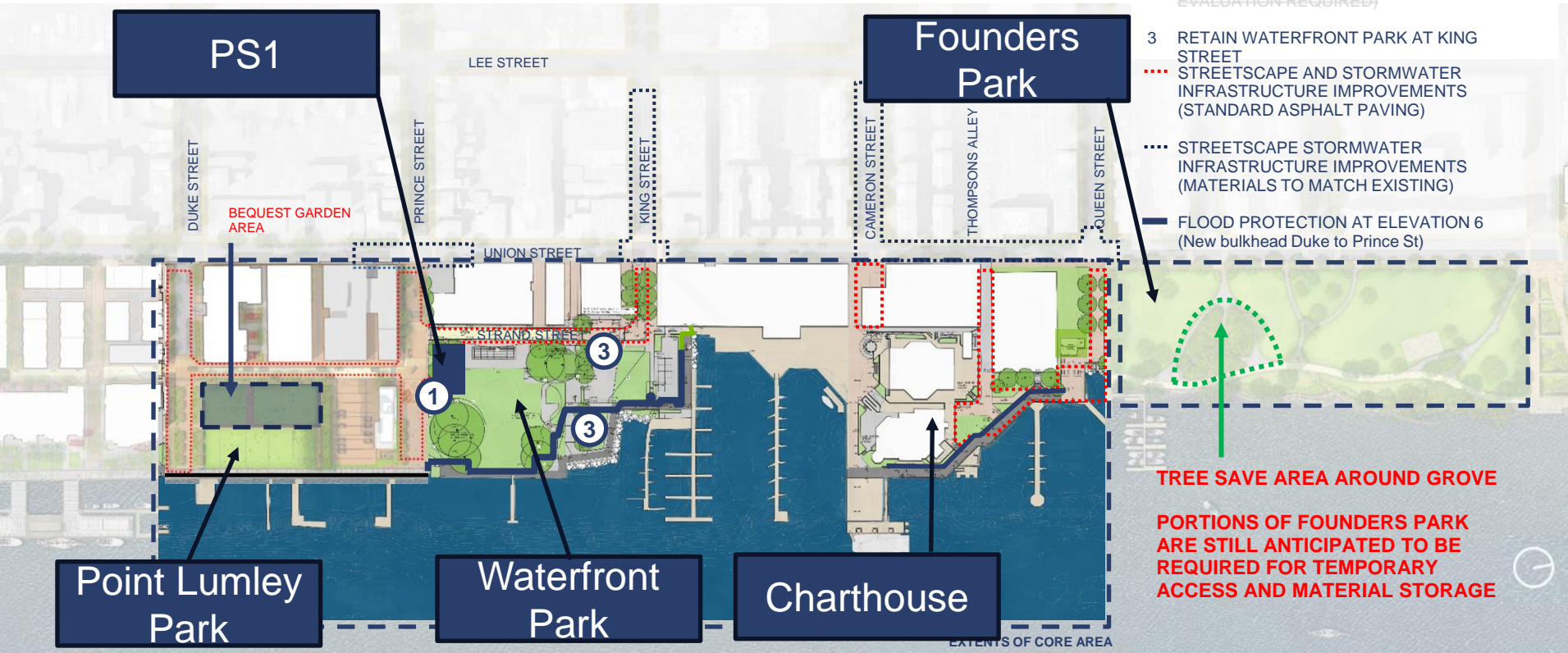
- **City is realizing the anticipated Benefits of Progressive Design Build!**
  - Cost reduction and innovation with expert designer and builder input
  - Builder input on assessing and pricing risk, means and methods, and cost estimates
- **Primary Cost Saving and Risk Mitigation Measures:**
  - **Eliminate 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**

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

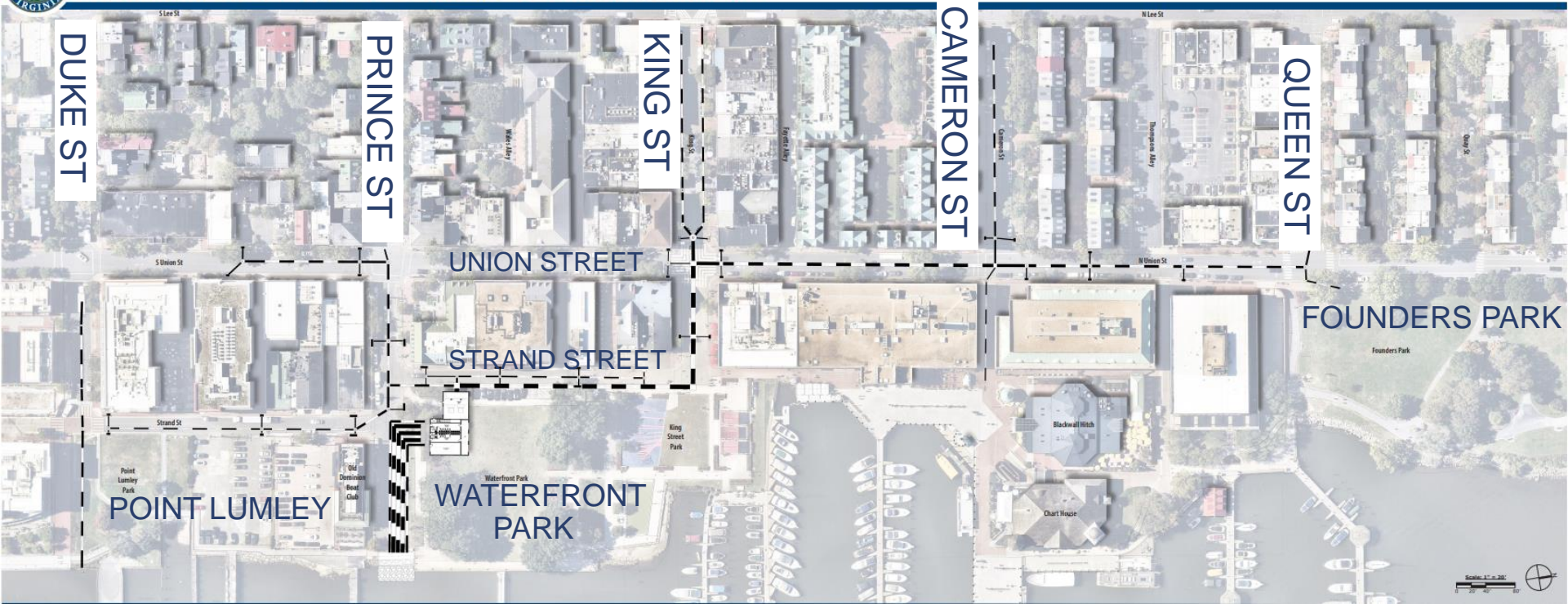


# Stormwater Infrastructure Plan

Draft, Deliberative, Pre-Decisional



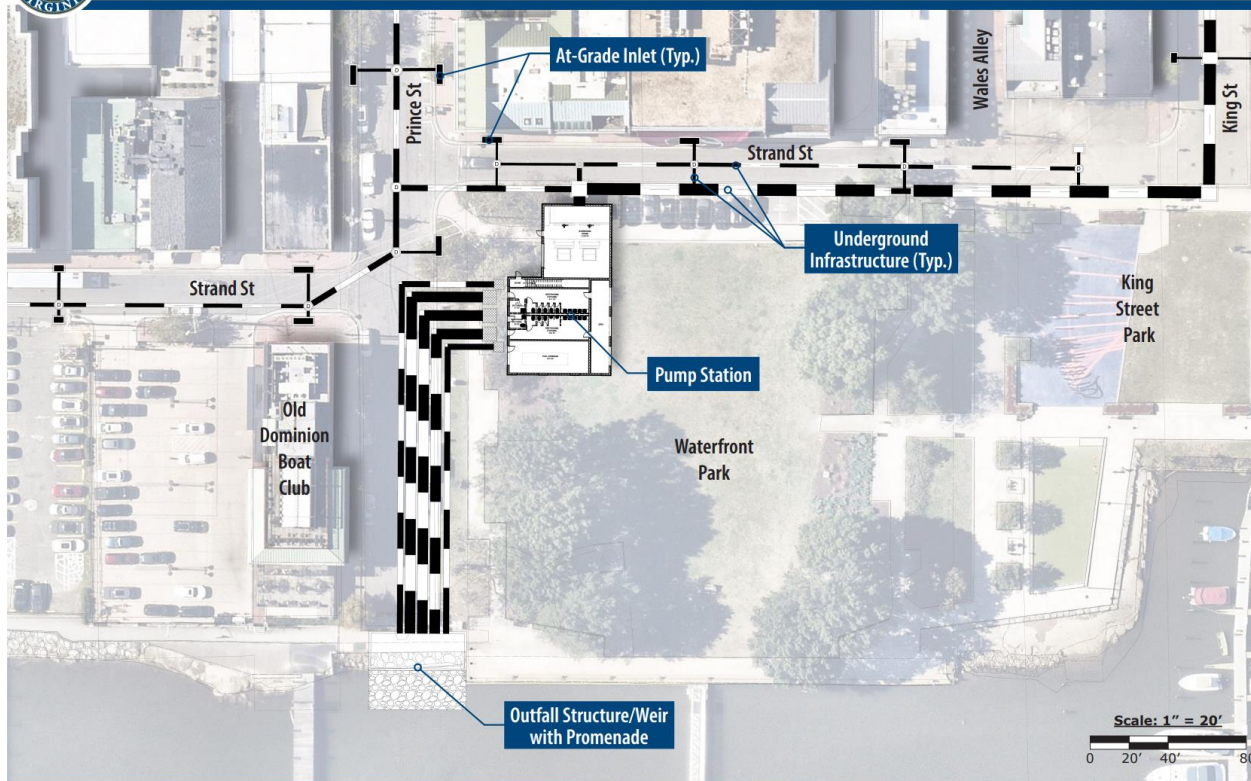
## City of Alexandria Waterfront Flood Mitigation - Stormwater Infrastructure Plan







## City of Alexandria Waterfront Park and Pump Station/Infrastructure Detail



## 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



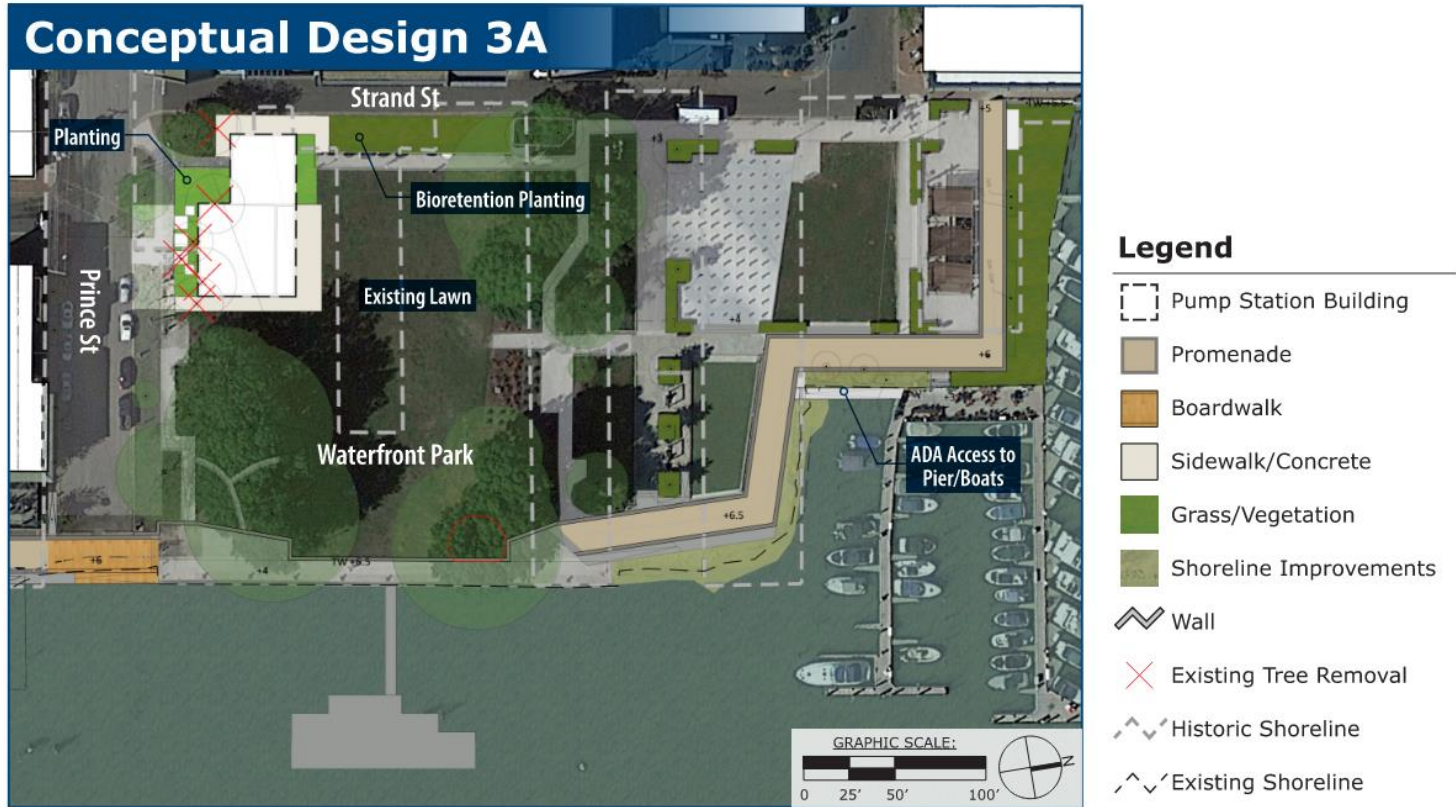
OPTION 2B



OPTION 3B

# Waterfront Park Concepts

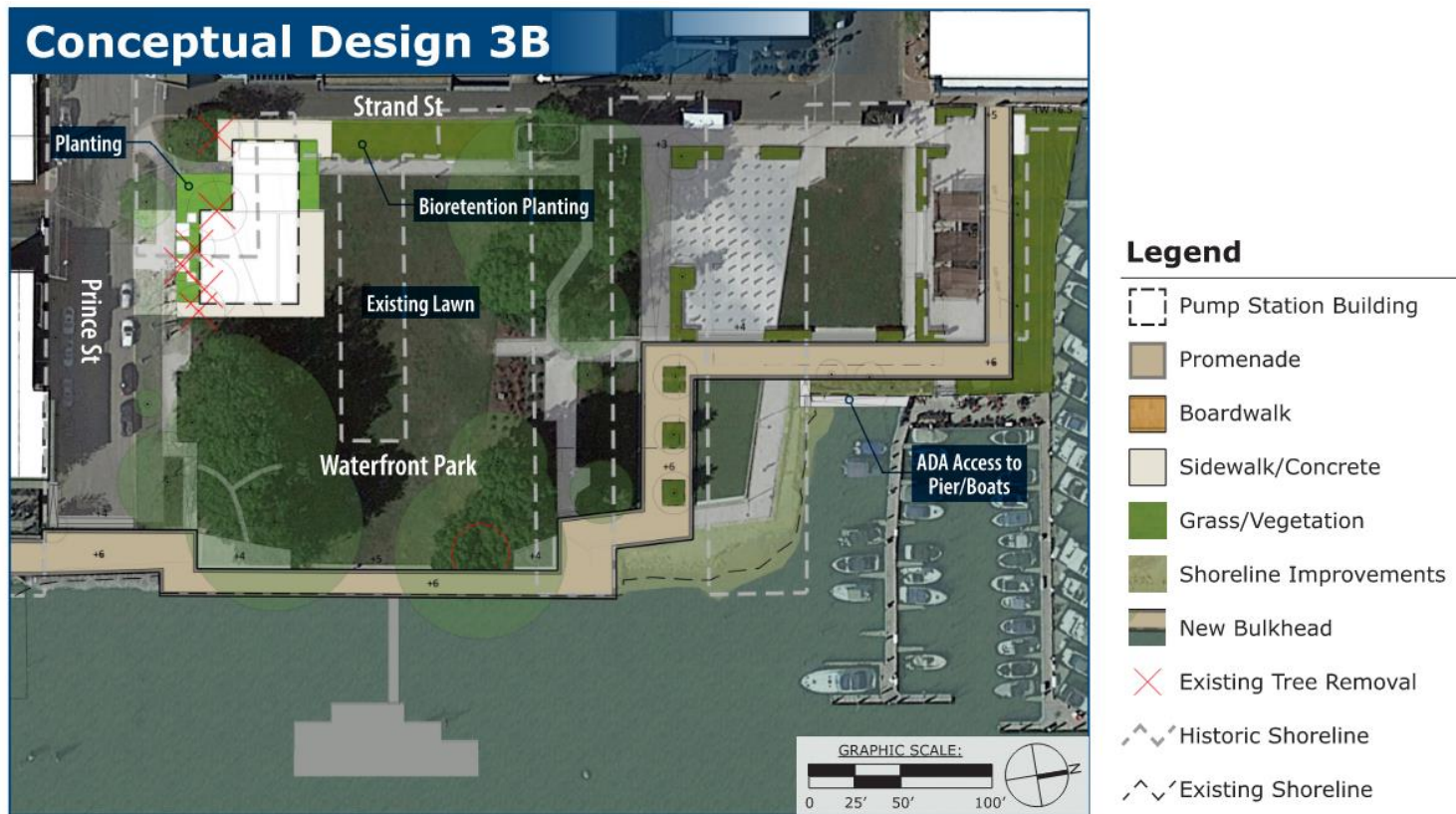
Draft, Deliberative, Pre-Decisional



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

# Waterfront Park Concepts

Draft, Deliberative, Pre-Decisional



\*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

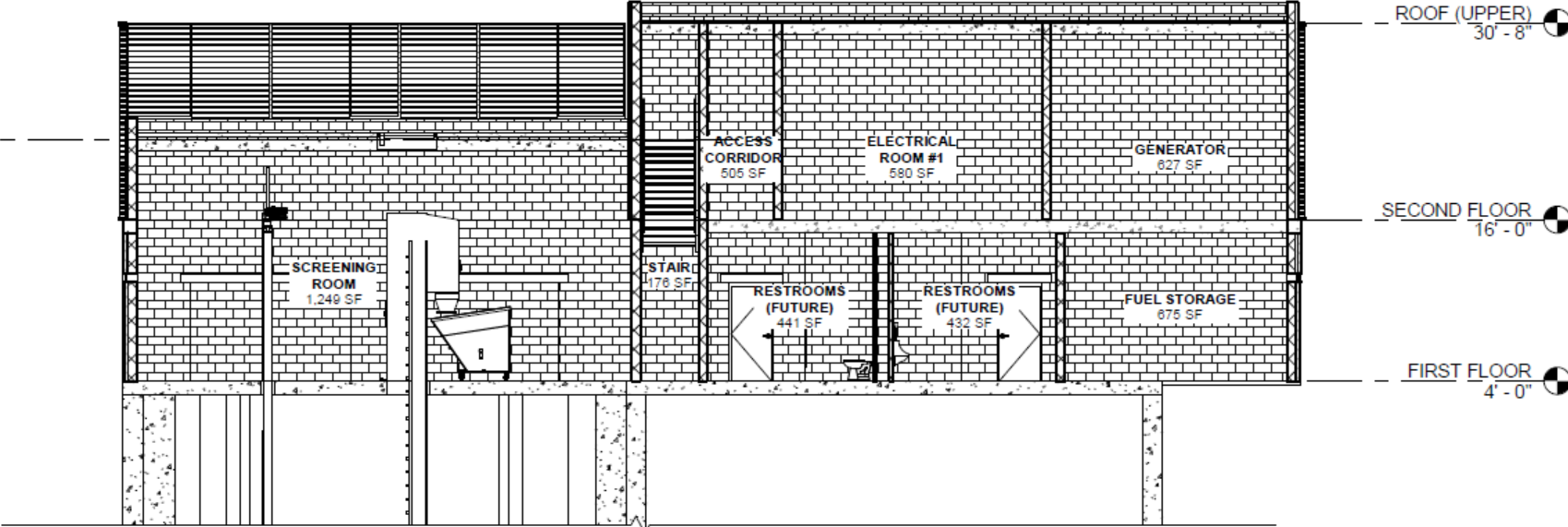
4' 0 4' 8'



Draft, Deliberative, Pre-Decisional

# PS1- WATERFRONT PARK (Single Station)

Draft, Deliberative, Pre-Decisional



**LONGITUDINAL SECTION**



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

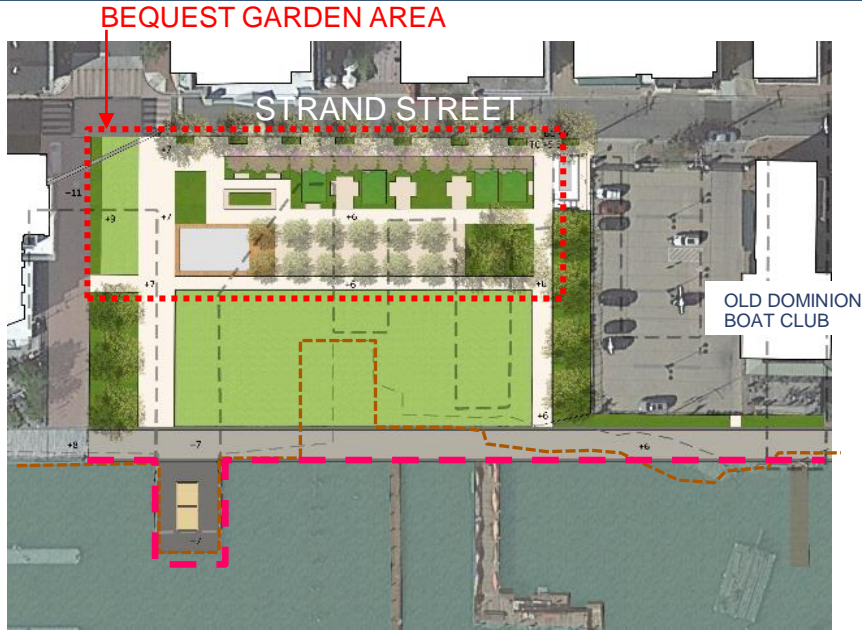
# Point Lumley Park



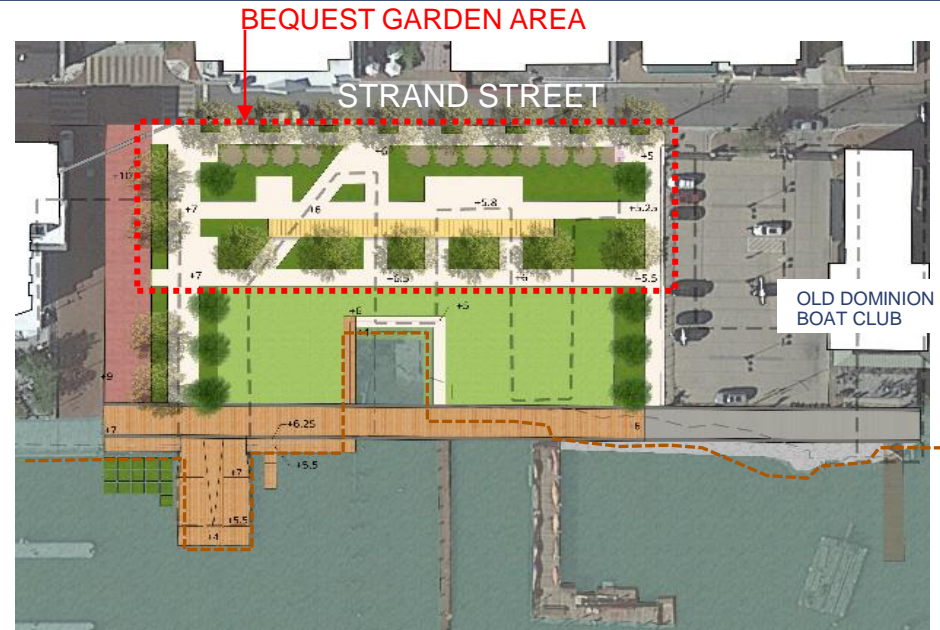


# Point Lumley Park – Shoreline Alternatives

Draft, Deliberative, Pre-Decisional



BULKHEAD OPTION\*



HYBRID SHORELINE ALTERNATE\*

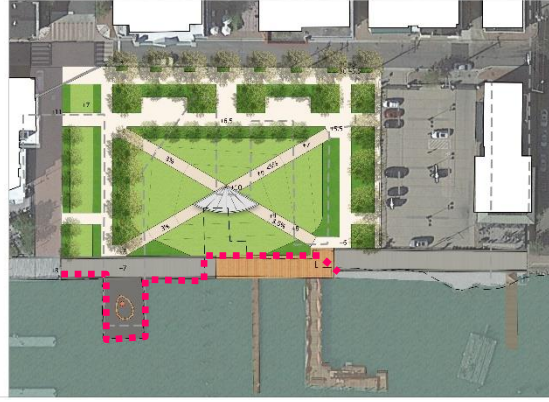
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# Point Lumley Park – Shoreline Alternatives

Draft, Deliberative, Pre-Decisional



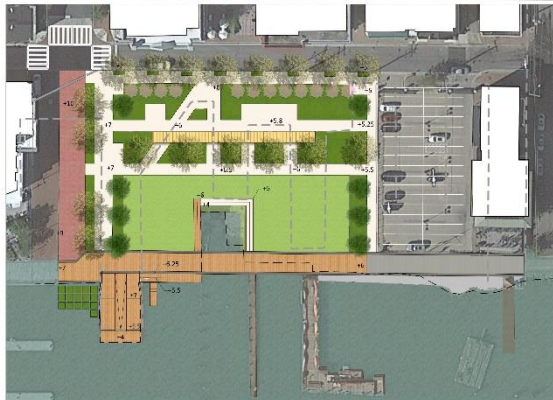
OPTION A: BULKHEAD



OPTION B: BULKHEAD WITH OVERHANG



OPTION C: BUILT UP SHORELINE



OPTION D: BUILT UP SHORELINE



OPTION E: NATURAL SHORELINE



OPTION F: NATURAL SHORELINE

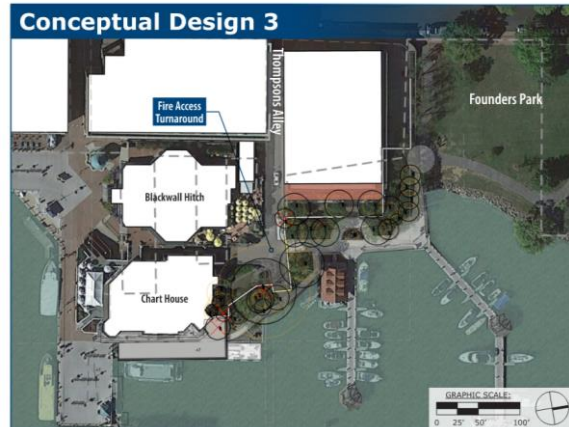
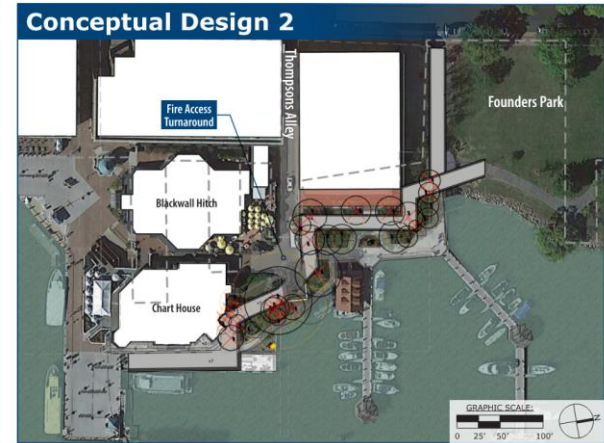
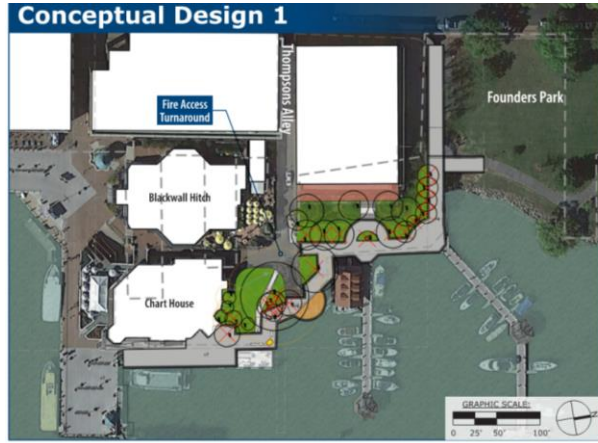
# Chart House and Thompsons Alley





# 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





# 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

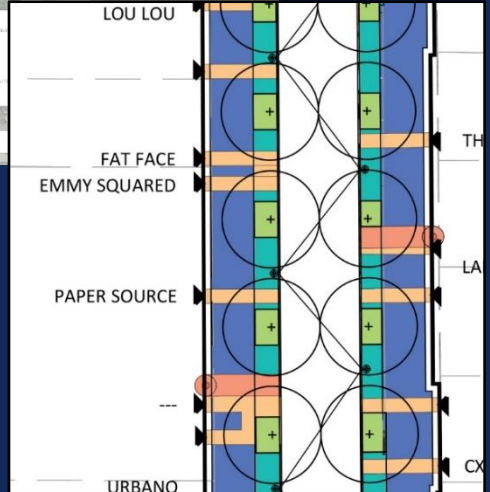




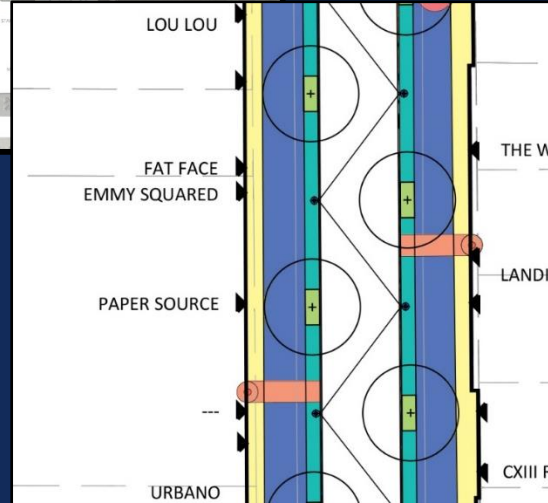
# King Street Use Studies



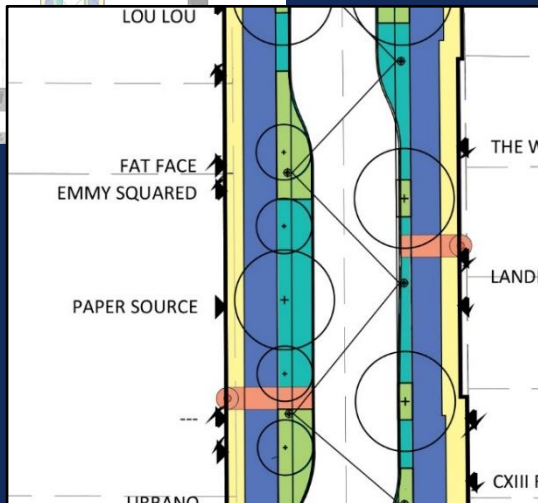
Option 1



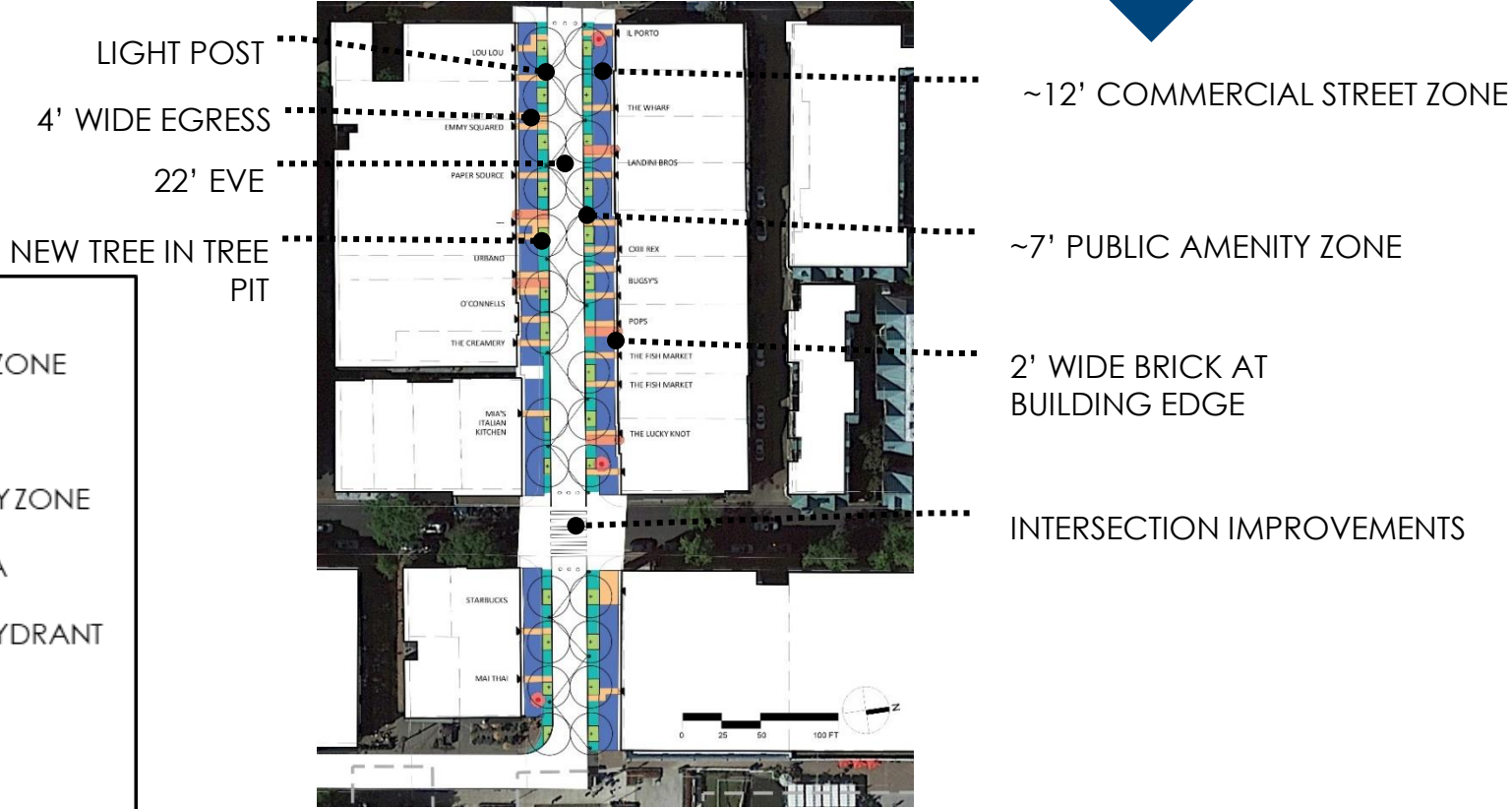
Option 2



Option 3



# King Street: Option 1



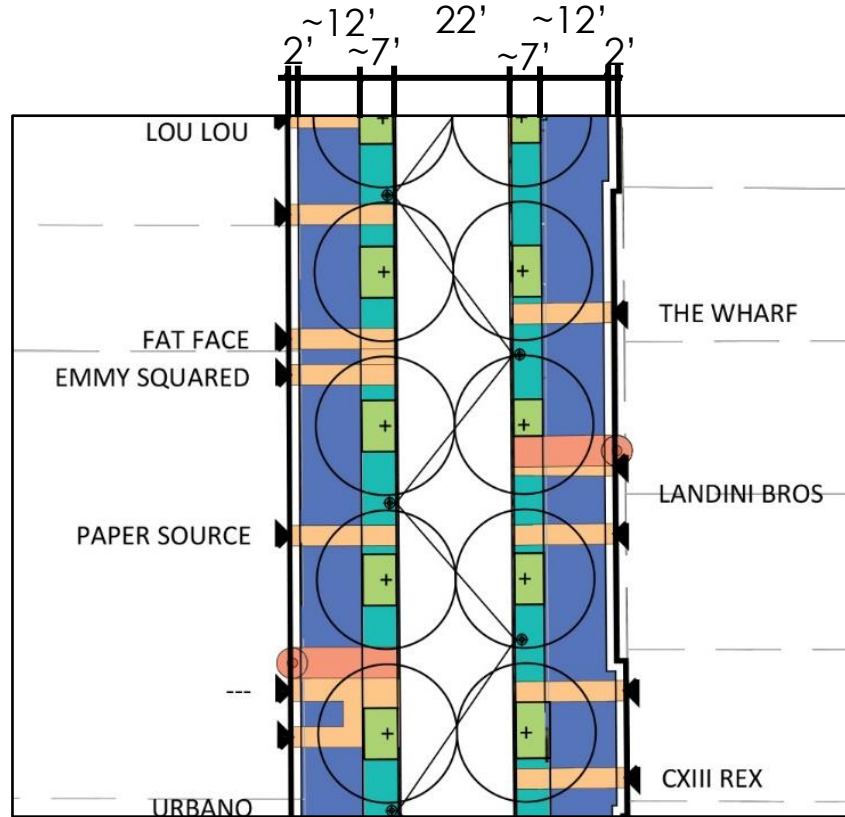
**LEGEND**

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

# 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

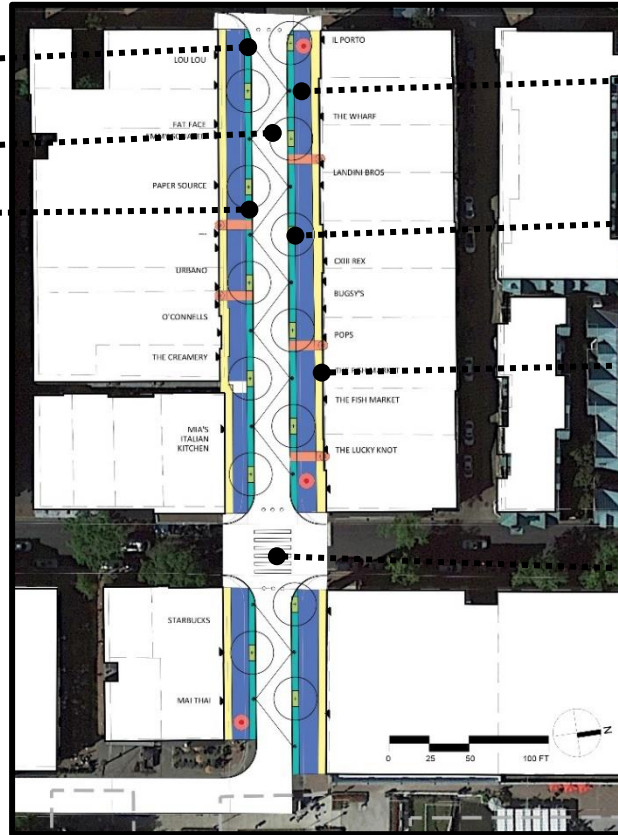
NEW TREE IN TREE PIT

~5' MIN ACCESS ZONE WITH BRICK PAVING AT BUILDING

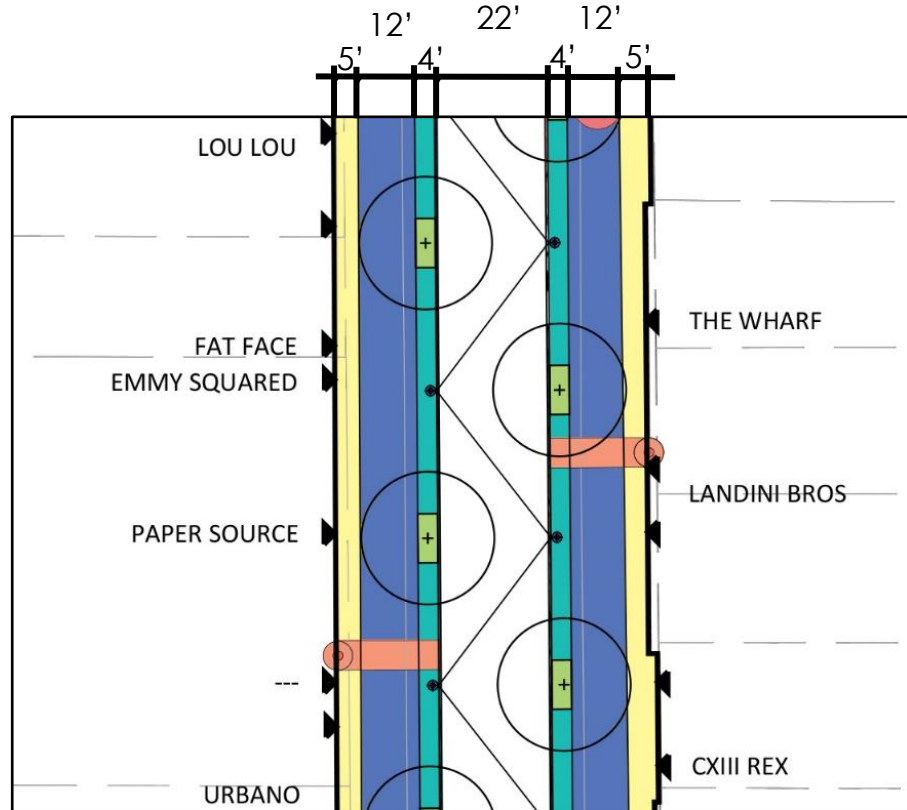
INTERSECTION IMPROVEMENTS

## 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

## LEGEND

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



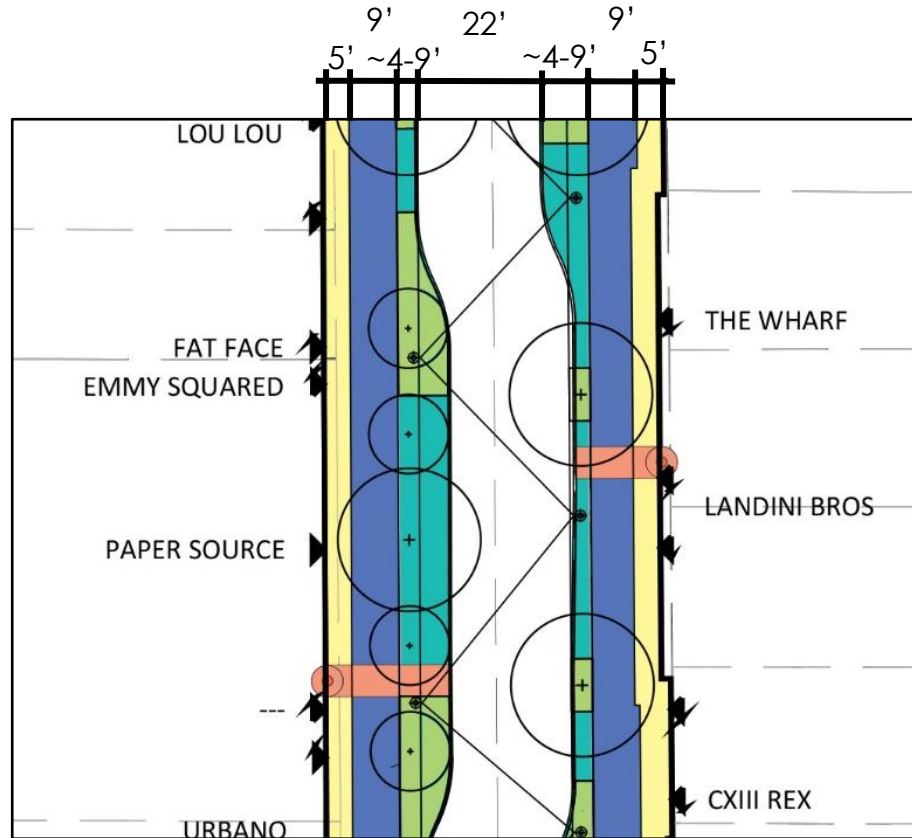
PUBLIC AMENITY ZONE  
(Variable Width)

~9' COMMERCIAL USE  
ZONE

NEW TREES

INTERSECTION  
IMPROVEMENTS

# King Street: Option 3



## LEGEND

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

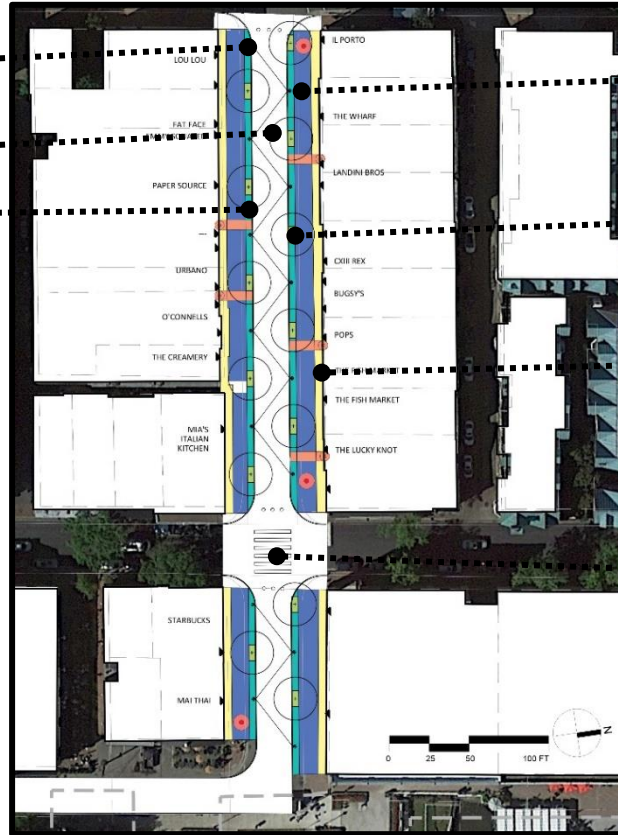


# Staff Recommendation: Option 2

LIGHT POLE  
22' EVE  
4' PUBLIC AMENITY ZONE

## LEGEND

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



~12' COMMERCIAL USE ZONE

NEW TREE IN TREE PIT

~5' MIN ACCESS ZONE WITH BRICK PAVING AT BUILDING

INTERSECTION IMPROVEMENTS

# Street Materials & Design

Lighting



Seating



Safety



Historic Elements



Pavement Materials



# Project Schedule

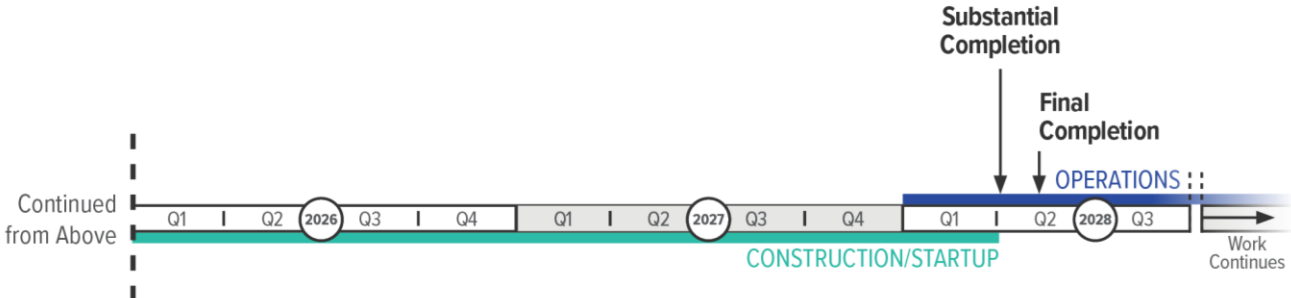
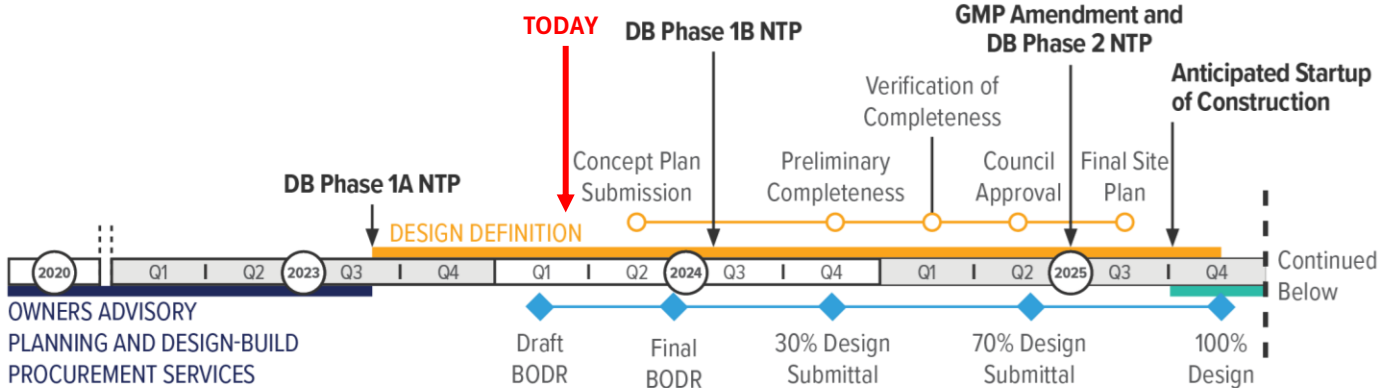


# Anticipated Near-Term Schedule

- 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:  
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[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)

