

# City of Alexandria, Virginia

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## MEMORANDUM

**DATE:** SEPTEMBER 4, 2024

**TO:** THE HONORABLE MAYOR AND MEMBERS OF THE CITY COUNCIL

**FROM:** *TAS* TERRY A. SUEHR, DIRECTOR, PROJECT IMPLEMENTATION

**THROUGH:** JAMES F. PARAJON, CITY MANAGER

**SUBJECT:** ALEXANDRIA'S WATERFRONT FLOOD MITIGATION PROJECT -  
ANALYSIS OF ALTERNATIVE PUMP STATION LOCATIONS

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**EXECUTIVE SUMMARY:** In response to stakeholder requests, City staff and a team of consultants evaluated the feasibility and risks associated with four alternative pump station locations to determine if they could potentially meet project requirements for siting the pump station within the project area. Ultimately, the evaluation determined that the originally-proposed location in Waterfront Park, which is consistent with the 2014 Waterfront Plan adopted by Council, remains the recommended alternative. Findings of the evaluation are provided in the narrative herein and the documents attached for reference.

**BACKGROUND:** Stakeholder requests were received in May (Old Town Civic Association (OTCA) stakeholder meeting) and June (Old Town Business (OTB) letter to City Manager and Council dated June 27, 2024), requesting consideration and evaluation of alternatives to the 2014 Waterfront Plan location.

The sites requested for evaluation are:

1. 110 South Union – OTCA
2. 1 Prince Street – OTCA & OTB
3. 2 and 6 Prince Street – OTCA
4. Point Lumley Park (gravel parking lot adjacent to Old Dominion Boat Club) – OTCA

City staff, the project's Owner Advisor, Carollo Engineers, and the project's Progressive Design-Builder, Skanska/JMT, collaborated to evaluate the feasibility and risks associated with each site alternative. A summary of the evaluation, and the constraints and risks identified, is provided herein and in the attached slides.

**SUMMARY OF FINDINGS:** Each alternate site introduced significantly increased risks and costs. These included, increased complexity of construction, complications from adjacent structures and foundations, overhead and underground utility conflicts, property acquisition costs, and increased construction phase impacts. The following highlights the key challenges of each site:

1. 110 South Union – High acquisition, investigation, mitigation, and construction costs; potential vibration damage to adjacent structures; construction risk undesirable to progressive design-builder; significant project schedule delay
2. 1 Prince Street – High acquisition, investigation, mitigation, and construction costs; potential vibration damage to adjacent structures; longer duration shutdown of S. Union St for construction; construction risk undesirable to progressive design-builder; significant project schedule delay
3. 2 and 6 Prince Street – Pump station footprint will not fit, even with partial extension into right-of-way
4. Point Lumley Park – Significant change from adopted Waterfront Small Area Plan; greater loss of park space; increased investigation and construction costs; additional overhead power relocations; longer duration shutdown of Strand St for construction; restart NPS approval process; significant project schedule delay

Further evaluation of an alternate site would require restarting the planning process for the pump station site to include additional site investigations, due diligence, outreach, and engineering analysis. If the site also required acquisition, an additional 18-24 months could be added to the project schedule. This would dramatically increase total program costs and expose the City to greater risk of price escalation, requiring further reduction of scope to remain within budget. In addition to increased project delivery costs, the City would lose tax revenue with three of the private sites evaluated.

None of the locations evaluated are consistent with the long-standing Waterfront Plan which has guided Planning and Zoning approvals and informed redevelopment efforts by others.

In addition to the identified site risks and constraints, the additional cost of an alternate site is not within the approved budget. The project team separately recommended critical bulkhead repair and replacement that is not affordable within the current funding. Staff and engineering consultants recommend that any additional project funding be prioritized for the critical infrastructure replacement.

**RECOMMENDATION:** City staff and the project team recommend that the City proceed with the pump station location in Waterfront Park. The project team's collaborative design approach will work to minimize the size and visual impact of the pump station, and to incorporate it into the programming of the park as a public benefit (e.g. restrooms, shade structures, etc.). Staff and the project team are confident that with continued stakeholder collaboration, a more elegant and creative solution, that minimizes impacts to the community and neighbors, is feasible.

**ATTACHMENTS:**

1. Old Town Business letter, dated June 27, 2024, to City Manager and Council
2. Project Briefing – Evaluation of Alternate Pump Station Locations

**STAFF:**

Emily A. Baker, Deputy City Manager  
Matthew Landes, Portfolio Manager, DPI



June 27, 2024

Mr. James Parajon  
City Manager  
City of Alexandria  
301 King Street  
Alexandria, VA 22314

RE: Waterfront Flood Mitigation Plan

Dear Jim,

We are deeply concerned about the location of the Waterfront Park Pump Station and urge you to consider creative alternative options immediately while the project is still in the design phase.

Moving the now massive (87' by 53' & 27' tall) Pump Station to center west of Waterfront Park:

- Cuts off Strand St. from the rest of Waterfront Park which will limit its intended pedestrianization benefits to draw visitors south from King St.
- Limits the utility and beauty of Waterfront Park, our most visited and active Park.
- Materially impacts the needs of the surrounding business community.

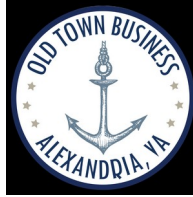
We have been following the Waterfront Flood Mitigation closely for years and understand its twists and turns, from two pump stations with underground water retention and a full bulkhead replacement to the current, pared down plan which limits many of the improvements in the 2014 Olin plan due to cost constraints. These changes have created the need for a massive pump station structure which cannot be dropped into Waterfront Park without considering the impact.

One such creative option we urge you to explore is the purchase of 1 Prince St., the AMGA building that is currently listed for sale. This site allows for the activation of the Park and Strand St. while accomplishing the needed flood mitigation objectives. There should even be enough space on the parcel to accomplish other City priorities, including a potential museum or shop on the Waterfront.

We highly encourage you to think of alternative, creative solutions to limit the impact to Waterfront Park and would also appreciate the opportunity to discuss creative solutions for Strand St. activation and the loss of parking on Point Lumley Park.

We would be happy to gather a group of key stakeholders with a diversity of ideas to help find creative solutions to these issues.

Please keep us apprised of any changes to the Plans as soon as they are proposed.



Sincerely,

*Charlotte Hall*

Charlotte Hall  
Old Town Business Association

*We the undersigned are supportive of the OTBA position in this matter:*

William Smith, on behalf of:  
Virtue Feed & Grain  
106 S. Union St.

Murray Bonitt, on behalf of:  
10 Duke St. Owners  
10 Duke St.

Stuart Fox, on behalf of:  
Route 66 Ventures  
110 S. Union St.  
101 N. Union St.  
6 King St.  
100 S. Union St.  
102 S. Union St.  
104 S. Union St.  
1 Cameron St.  
5 Cameron St.

Scott Shaw, on behalf of:  
Alexandria Restaurant Partners  
Vola's Dockside Grill & Hi Tide Lounge  
2 Pioneer Mill Way  
3 Pioneer Mill Way  
Ada's on the River  
BARCA Pier & Wine Bar

Scott Shaw, on behalf of:  
Tall Ship Providence Foundation

Andrea Smith, on behalf of:  
Misha's Coffeehouse and Roaster  
6 Prince St.



Robert Brandt, on behalf of:

10 Prince St.

2 Prince St.

Kate Ellis, on behalf of:

Hotel Indigo

Trae Lamond, on behalf of:

Chadwicks Restaurant

203 Strand St.

Carrie Hanlon

1 Prince St.

American Medical Group Association

cc: Honorable Mayor & Members of the Alexandria City Council  
Matthew Landes, Portfolio Manager, Department of Project Implementation



# **Project Briefing – Evaluation of Alternate Pump Station Locations**

## **Alexandria Waterfront Implementation: Flood Mitigation**

**August 14, 2024**

**Terry Suehr, PE – Director, Project Implementation**

**Matthew Landes, PLA – Portfolio Manager, Project Implementation**

# Pump Station: Alternate Site Analysis





# Alternative Sites

Draft, Deliberative, Pre-Decisional



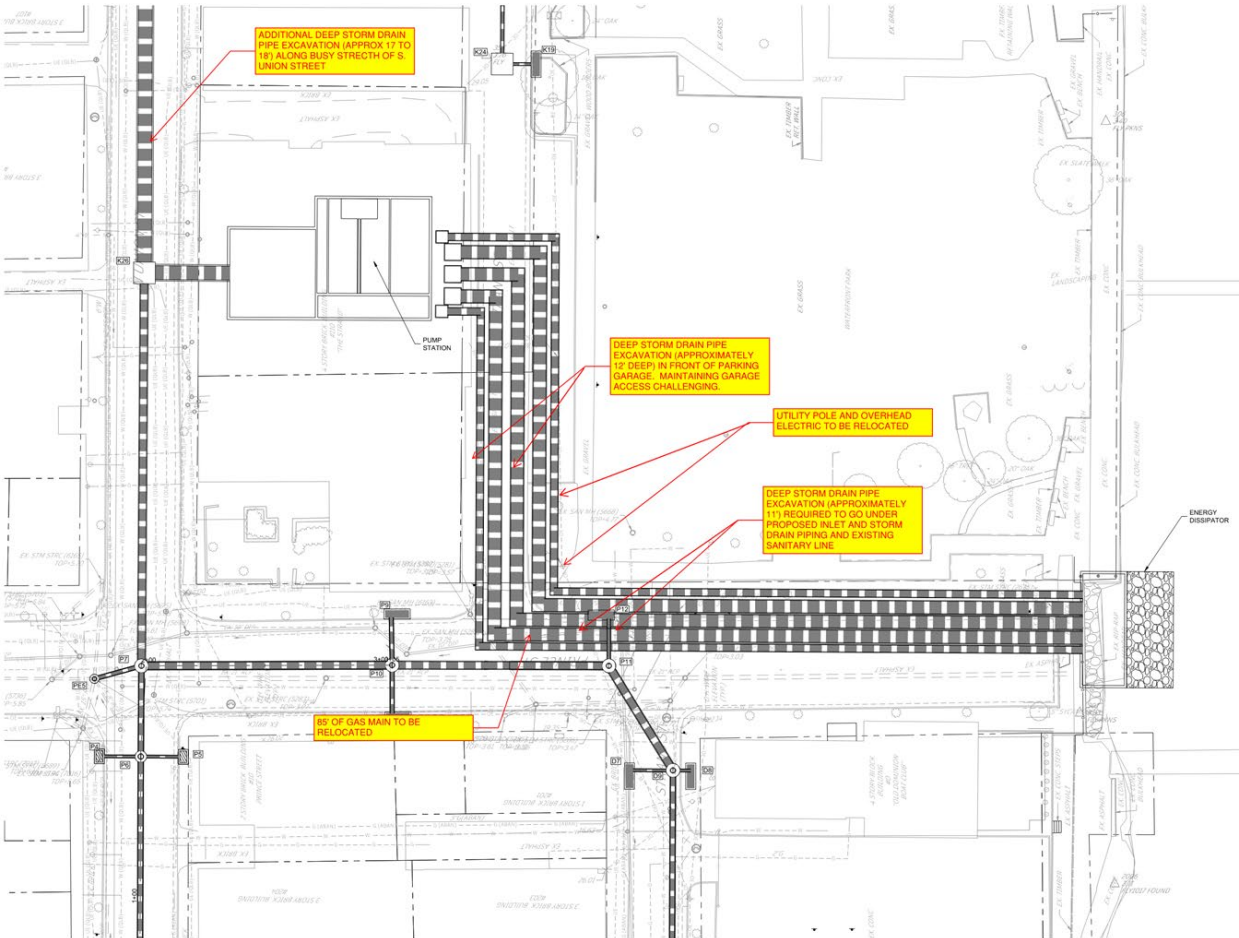
1. Alternate site selection would be moving in the wrong direction in terms of keeping on schedule and scoping to budget.
2. A change at this stage will require a great deal of additional time and money to acquire property and to conduct due diligence and acquisition (for private parcels) and to otherwise design, permit, and construct this project.
3. In all alternative sites, permitting, structural geotechnical, and legal risk exists and increase compared to the proposed concept and station location.
4. Alternative sites have not yet been vetted or investigated to the degree the long-standing Waterfront Park location has been. Additional risks and investigations would be required for archaeology, soil contamination, groundwater, and geotechnical engineering/structural capacity.
5. Modifications to adjacent buildings and foundations [to remain] may trigger updates due to changes in building codes and would need to be further evaluated. Costs and project risks would likely increase.
6. Lot's more unforeseen challenges with modifying existing structures and additional time and investment would be required for due diligence, feasibility analysis, and assessment of cost impacts and risks. Foundation undermining could lead to instability or collapse. Will likely require costly and risky underpinning of the existing structure to strengthen and/or stabilize its foundation. This is a complex and sensitive process. **Skanska may not be willing or able to accept the risk after further evaluation.**
7. Increased structural monitoring costs. Specialized excavation methods will likely be necessary for installation of large diameter piping (expensive versus open cut i.e. trenchless technology), detailed structural assessments, increased traffic disruptions, archeology concerns (not sure if this is an issue, but something we would need to look into), soil conditions would need strong consideration, water table and ground water management both during construction and long-term.
8. Increased challenges with street shutdowns, deeper excavations and deeper de-watering and excavation anticipated for all alternative sites.
9. The team recommends any additional funding be invested in the recommended bulkhead improvements and stabilization prior to investing in acquisition of additional property.
10. Overall, we would be making a challenging project much more challenging with increased risks, and costs, with the alternate options evaluated.

# Alternative Site 1 – 110 S Union

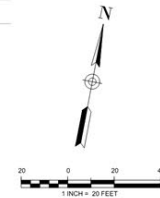
Draft, Deliberative, Pre-Decisional



- City Assessed Value: \$5,500,000 (market value likely much higher)
- Cons:
  - Delay due to Acquisition (\$ and process)
  - Higher costs:
    - Delay
    - Acquisition
    - Loss of tax revenue - ~\$65,000/yr
    - More costly support of excavation
    - Costly crane likely required
    - Sewer line conflicts with outfall
  - Constraints-
    - Tight laydown & staging
    - Adjacent structures
    - Limited crane swing/access space
  - Longer shut down for S Union and Prince
  - Loss of architecturally significant structure
- Pros:
  - Preserves open space
  - Restrooms still possible where desired



1. Long-term closure of South Union Street
2. Significant cost increase for mitigation to prevent settlement and subsidence as a result of soil movement.
3. Risk of vibration damage to adjacent structures for both construction activities and long-term operations.
4. Foundation undermining could lead to instability or collapse. Will likely require costly and risky underpinning of the existing structure to strengthen and/or stabilize its foundation. This is a complex and sensitive process. Skanska may not be able to accept the risk after further evaluation.
5. Change in the natural water table below this building could require long-term control of adjacent buildings requiring long term monitoring and control.
6. Increased outreach to adjacent buildings to communicate new building use type, vibration and structural impact, change in
7. Longer design and constructions schedule, more time project team is onsite and mor impact to the community and businesses.
8. Increased cost of engineering, investigations.
9. Increased risk and insurance premiums.



# Alternative Site 2 – 1 Prince (130 S Union)

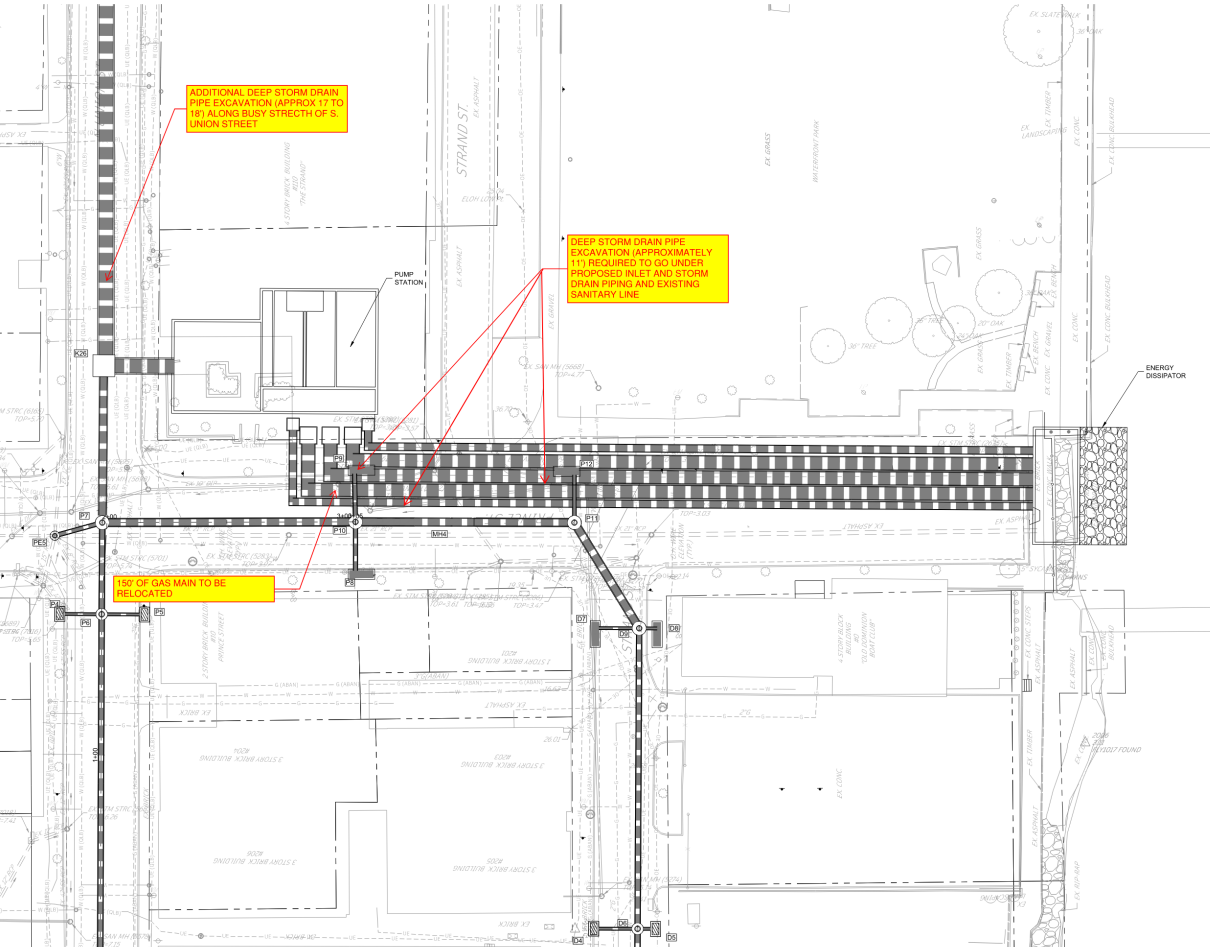
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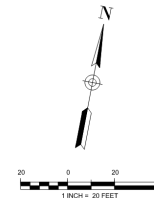
- City Assessed Value: \$7,120,000 (market value likely much higher)
- Cons:
  - Delay due to Acquisition (\$ and process)
  - Higher Costs-
    - Delay
    - Acquisition
    - Loss of tax revenue ~\$82,000/yr
    - More costly support of excavation
    - Sewer line conflicts with outfall
  - Constraints-
    - Laydown
    - One constraining party walls
  - Longer shut down for S Union and Prince
- Pros:
  - Preserves open space
  - Restrooms still possible where desired

# Alternative Site 2 – 1 Prince (130 S Union) – Skanska/JMT

Draft, Deliberative, Pre-Decisional



1. Long-term closure of South Union Street
2. Significant cost increase for mitigation to prevent settlement and subsidence as a result of soil movement.
3. Risk of vibration damage to adjacent structures for both construction activities and long-term operations.
4. Foundation undermining could lead to instability or collapse. Will likely require costly and risky underpinning of the existing structure to strengthen and/or stabilize its foundation. This is a complex and sensitive process. Skanska may not be able to accept the risk after further evaluation.
5. Change in the natural water table below this building could require long-term control of adjacent buildings requiring long term monitoring and control.
6. Increased outreach to adjacent buildings to communicate new building use type, vibration and structural impact, change in
7. Longer design and constructions schedule, more time project team is onsite and mor impact to the community and businesses.
8. Increased cost of engineering, investigations.
9. Increased risk and insurance premiums.



# Alternative Site 3 – 2 and 6 Prince

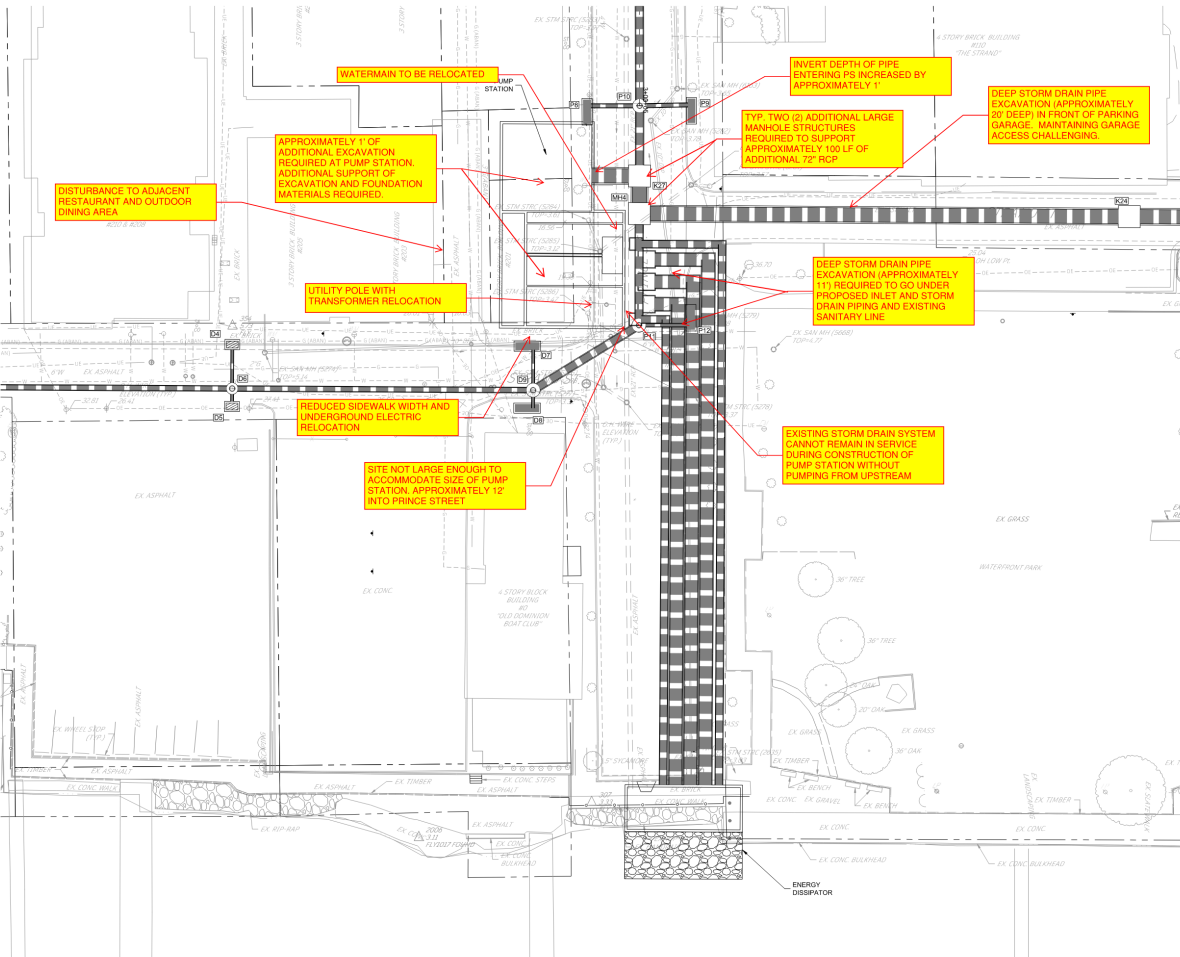
Draft, Deliberative, Pre-Decisional



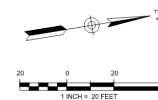
- City Assessed Value:
  - 2 King Street - \$711,358
  - 6 Prince Street - \$966,575
  - 203 Strand (Partial)(market value likely much higher)
- Cons:
  - Delay due to Acquisition (\$ and process)
  - Opposition by Chadwick's (dining space)
  - Higher costs:
    - Delay
    - Acquisition
    - Loss of tax revenue - ~\$19,000/yr
      - \$11,000
      - \$8,400
    - Sewer line conflicts with outfall
    - More costly support of excavation
  - Constraints-
    - **Site too small** and constrained – station will not fit
    - OSHA safety cranes/power lines
    - Laydown
    - Conflicts with overhead utility
    - One constraining party walls
  - Longer closure for Prince Street
- Pros:
  - Preserves open space
  - Restrooms still possible near where desired

# Alternative Site 3 – 2 and 6 Prince – Skanska/JMT

Draft, Deliberative, Pre-Decisional



1. Facility does not fit – issues and setback requirements raised by JMT are valid.
2. Closure of adjacent streets to allow for construction will be required.
3. Relocating and overhead powerlines will be required, causing disruption and requirements for temporary / alternative service.
4. Deeper and longer excavation for sewer pipe likely to create more intense and longer duration disruption to garage entrance on Strand Street.
5. Including all risks and issues listed for prior scenarios.





# Alternative Site 4 – Point Lumley

Draft, Deliberative, Pre-Decisional



- City Owned – No Assessed Value

## Cons:

- Major change from adopted plan
- Anticipate opposition by neighbors
- Greater loss of green space
- Higher Costs-
  - Design/Re-design
  - Site Investigations
  - Cultural Resource Investigations
- Restarts NPS approval/modification
  - Restrictions apply if moved south
- Longer closure for Prince and Strand Street
- No restrooms in location most needed
- No infrastructure in WF Park for programs

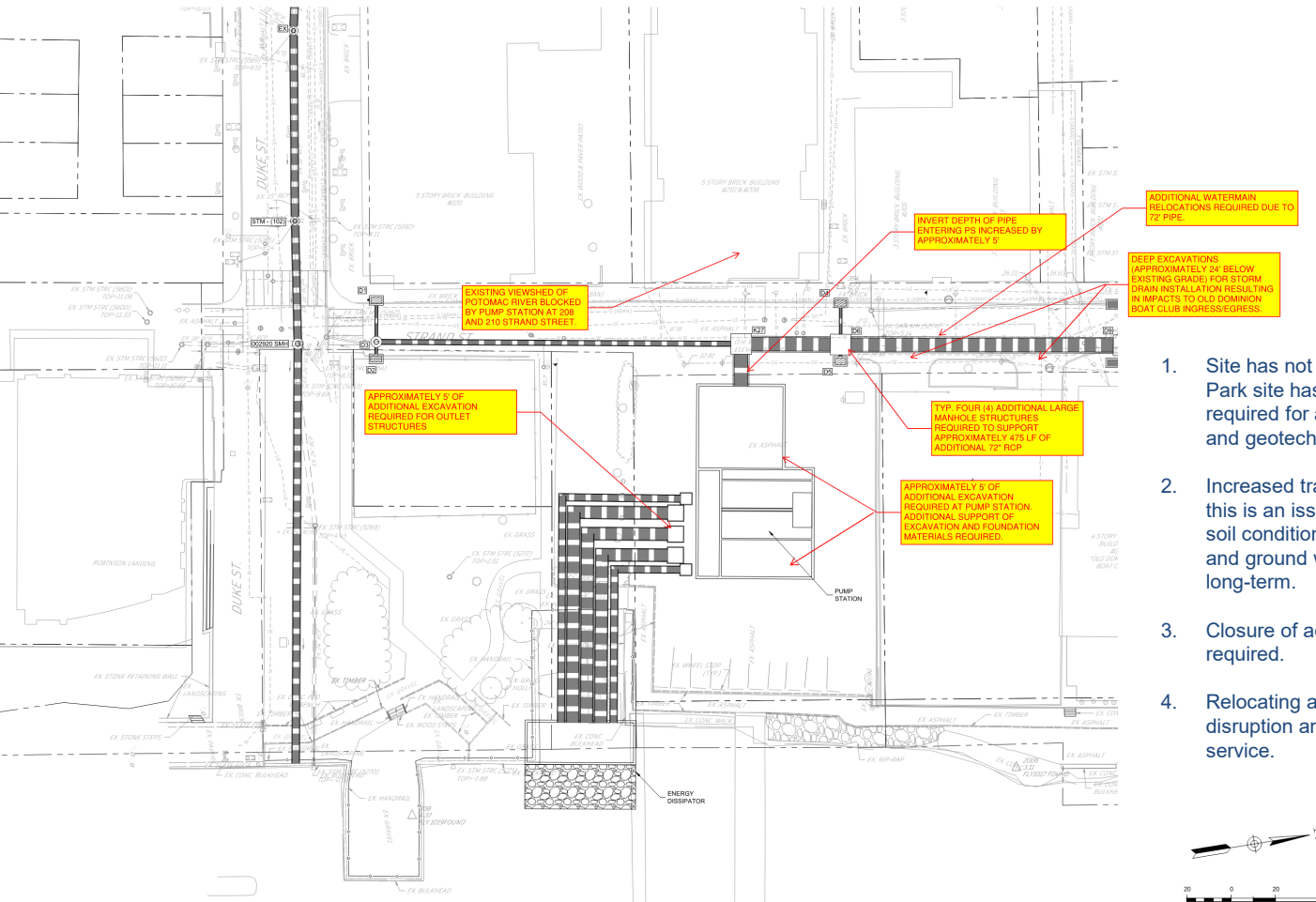
## Pros:

- No delay or cost due to acquisition.
- No risk due to adjacent foundations.
- Reduces impact to program in WF Park
- No loss of tax revenue.

~4,700 SF OF [POTENTIAL/FUTURE] GREEN SPACE LOST

# Alternative Site 4 – Point Lumley – Skanska/JMT

Draft, Deliberative, Pre-Decisional



1. Site has not been vetted or investigated to degree Waterfront Park site has been. Additional risks and investigations required for archaeology, soil contamination, groundwater, and geotechnical engineering/structural capacity.
2. Increased traffic disruptions, archeology concerns (not sure if this is an issue, but something we would need to look into), soil conditions would need strong consideration, water table and ground water management both during construction and long-term.
3. Closure of adjacent streets to allow for construction will be required.
4. Relocating and overhead powerlines will be required, causing disruption and requirements for temporary / alternative service.

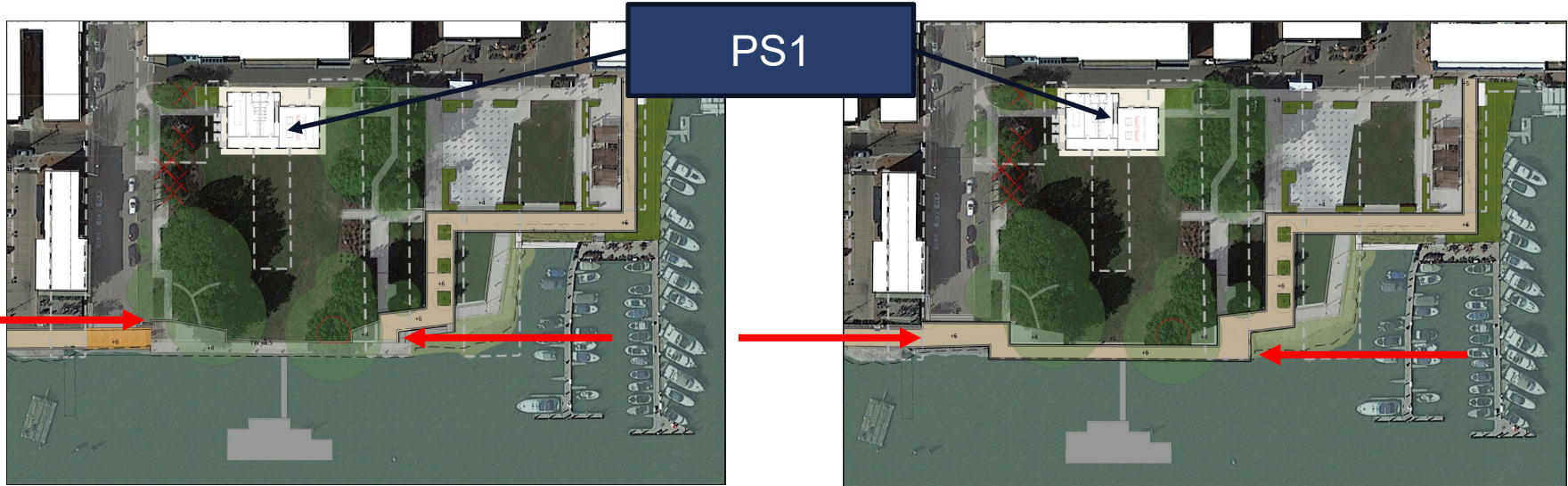
# Pump Station: Current Concept



# Waterfront Park – Proposed Pump Station Location

Draft, Deliberative, Pre-Decisional

## Consistent with Waterfront Plan (2014) & National Park Service Engagements



### INTERNAL FLOOD WALL OPTION

- Concept anticipated to be within budget.

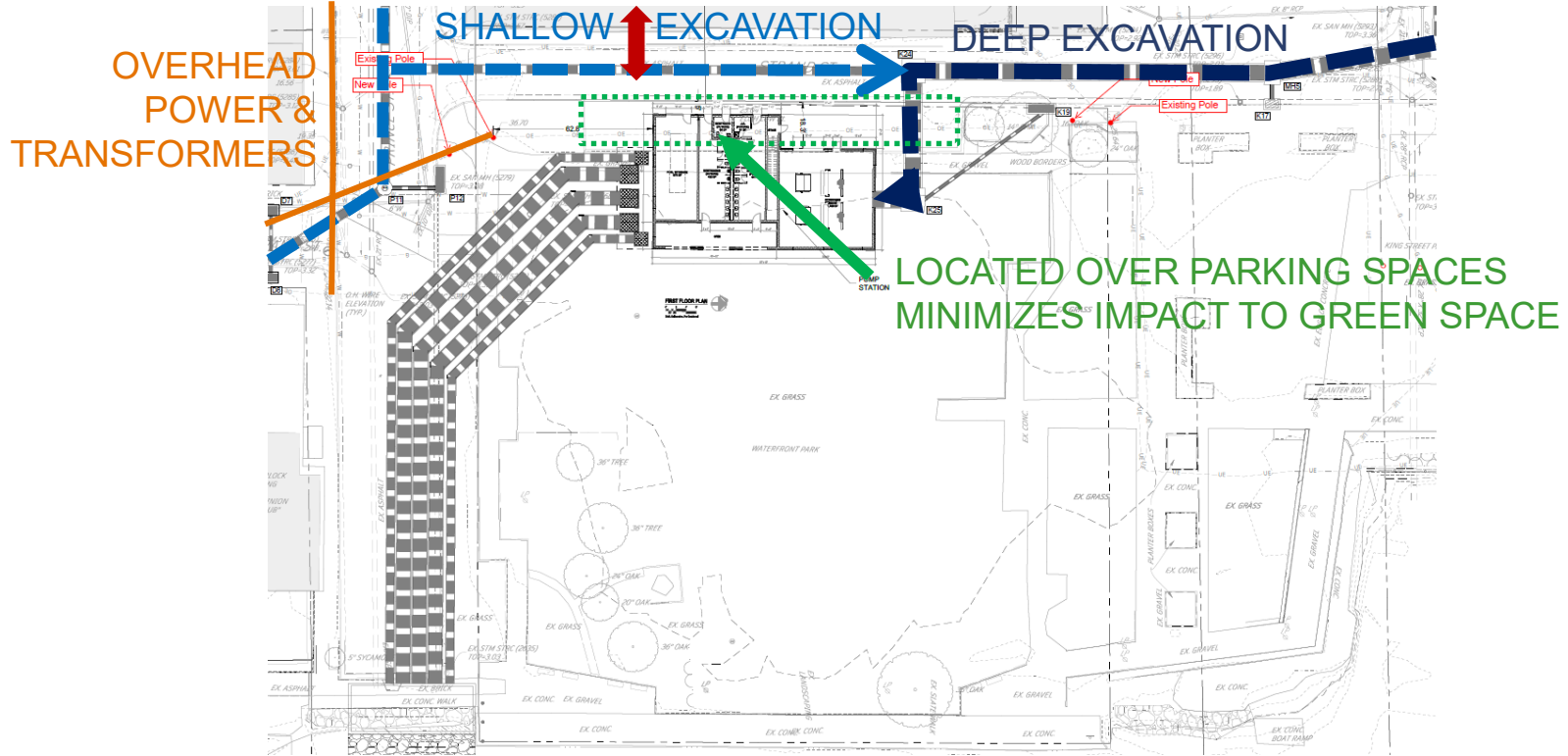
### ALL NEW BULKHEAD OPTION

- Technically Preferred Concept – not currently within budget.
- Advancing to determine costs associated with new bulkhead

# MINIMIZATION OF IMPACTS

Draft, Deliberative, Pre-Decisional

MINIMIZES IMPACT TO GARAGE ENTRANCE



Net INCREASE in Park Space with Strand Lot Conversion  
(only ~3,160 SF of greenspace lost in Waterfront Park)

# Consistent with Adopted Waterfront Plan (2014)

Draft, Deliberative, Pre-Decisional

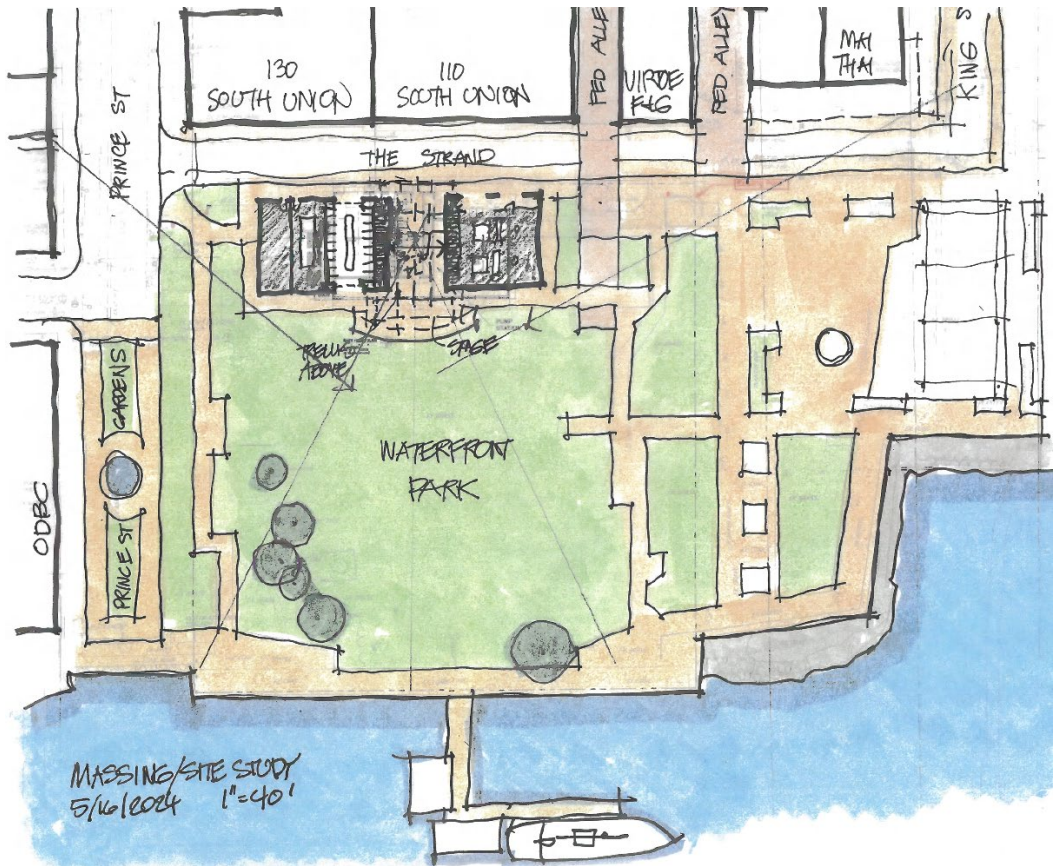


# Waterfront Park: Alternate Concept Layout For Further Evaluation



# Waterfront Park – Staff Alternative

Draft, Deliberative, Pre-Decisional





# Waterfront Park – Staff Alternative

Draft, Deliberative, Pre-Decisional

