**Alexandria Waterfront Commission**
**Waterfront Flood Mitigation Committee**

**Waterfront Flood Mitigation Position Statement**
***Draft for Waterfront Commission Consideration***
***April 14, 2022***

The Waterfront Commission's Flood Mitigation Committee has worked over the past year to review concepts and provide recommendations to the Waterfront Commission for Waterfront Small Area Plan implementation and flood mitigation investments in the core area of the City's waterfront. This letter summarizes a draft position for consideration by the full Waterfront Commission.

This statement begins by addressing a City staff-proposed Phase 1 flood mitigation scenario and proposed design features at Point Lumley and Waterfront Park. This is followed by recommendations for prioritizing other projects as funding permits, and other recommendations for consideration.

In formulating this position statement, the Waterfront Flood Mitigation Committee considered key investments to minimize waterfront flooding, including flood protection to elevation 6 (minimizing overtopping of the bulkhead by river water), and prevention of backflow at river outfalls and inundation of storm sewers. The committee worked extensively with City staff to review waterfront flood mitigation concepts, meeting eight times since April 5, 2021. The committee considered existing Council-adopted plans and prioritization of project elements to guide waterfront public realm investments, including the Waterfront Small Area Plan adopted in 2012, the Baseline Schematic Landscape and Flood Mitigation Design adopted in 2014, and the Baseline Phasing and Funding Plan adopted in 2015.

The Waterfront Flood Mitigation Committee notes the following caveats regarding these recommendations:

- The committee did not evaluate waterfront flood mitigation investments relative to other flooding and stormwater initiatives of the City, including the Flood Action program, which is not part of the City's Capital Improvement Program (CIP) but is separately funded by the City's Stormwater Utility Fee. The committee understands that City staff supporting both programs are working in coordination with each other, and that City Council ultimately has purview over all City flood and stormwater management initiatives.

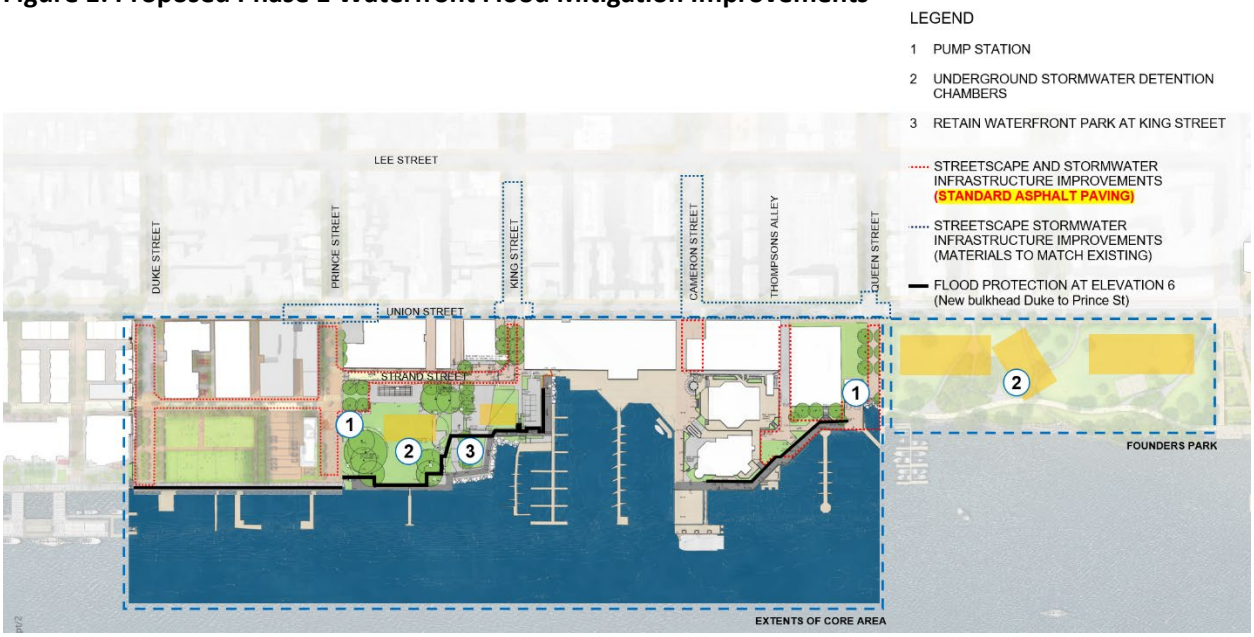
- The Waterfront Commission has historically supported investments in waterfront parks and public spaces to support achievement of the Waterfront Small Area Plan and seeks to optimize expenditure of capital funds allocated by City Council to waterfront betterment. The Waterfront Commission does not evaluate the merit of waterfront investments relative to other City capital priorities.

  City Council has allotted a total of $102 million (combination of prior year and FY22 approved CIP budget funding) for Waterfront Small Area Plan implementation, including design and construction efforts to facilitate implementation of the infrastructure included in the City Council-approved Waterfront Small Area Plan, and prioritized through community engagement processes, including flood mitigation.

**Flood Mitigation Scenario: Phase 1 Improvements**

The Waterfront Flood Mitigation Committee recommends to the Waterfront Commission that City staff continue to pursue the Phase 1 improvement scenario as presented by City of Alexandria Department of Project Implementation staff to the Waterfront Flood Mitigation Committee (Figure 1). The committee understands that this design and the specific anticipated features—including flood protection, pump stations, underground stormwater detention chambers, and streetscape and stormwater infrastructure improvements—will be subject to further refinement by the City's Progressive Design Build contractor, based on community input, innovative design solutions and new information as project development continues.

**Figure 1: Proposed Phase 1 Waterfront Flood Mitigation Improvements**




*Source: City of Alexandria Department of Project Implementation*

This scenario has an estimated cost of approximately $102 million, consistent with the CIP funding allocated to Waterfront Small Area Plan implementation. According to City staff, estimated costs are accurate at the level of detail appropriate for this stage in the planning process. Affordability will continue to be evaluated during the design-development process as construction and material costs continue to escalate in excess of historic average rates typically used to account for inflation.

Based on information presented to the committee by City staff, this scenario should be evaluated by the Progressive Design Build contractor and cost benefit analysis conducted against other possible alternatives for construction. Its proposed features include pump stations in Waterfront Park and the Queen Street right of way, south of Founders Park, underground stormwater detention chambers under Waterfront Park and Founders Park, and retention of the recent improvements in northern Waterfront Park at the foot of King Street.

This scenario also includes streetscape and stormwater infrastructure improvements but manages costs by using standard asphalt paving within the public Right of Way as indicated in Figure 1. The Waterfront Flood Mitigation Committee recommends evaluating the use of cost-effective paving material, in lieu of

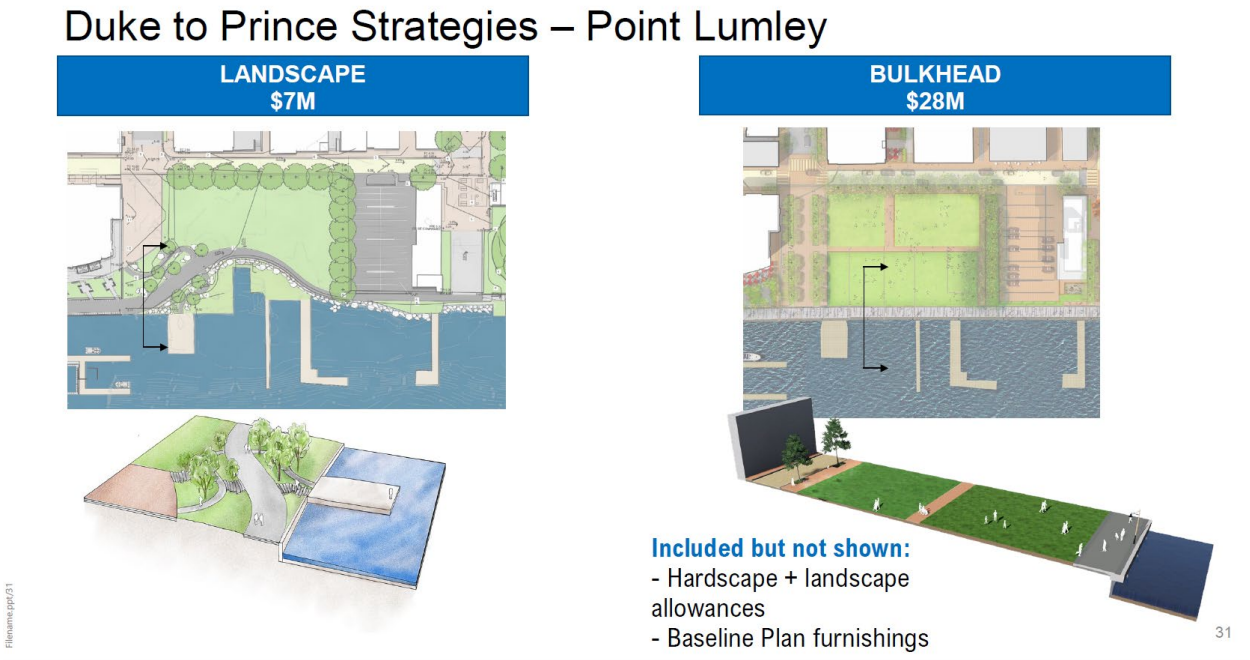
the previously adopted common elements, which could provide cost savings that may be invested in other elements of the plan.

**Hybrid Bulkhead at Point Lumley**

The Phase 1 scenario as recommended by staff incorporates a traditional bulkhead between Duke and Prince streets as depicted in Figure 1. Staff also presented a potential alternative for Commission consideration (and further evaluation by the Progressive Design Build Team) which partially naturalizes the riverscape at Point Lumley as depicted in Figure 2. This approach minimizes the cost of capital improvements and associated regulatory mitigation costs due to impacts in the river, associated with constructing a traditional bulkhead in this area. This approach could also provide the intended level of flood protection at a reduced capital cost.

The Waterfront Flood Mitigation Committee believes that a hybrid shoreline approach could provide an acceptable alternative to the bulkhead promenade proposed for this location in the 2014 Baseline Schematic Landscape and Flood Mitigation Design and supports the key 2012 Waterfront Small Area Plan objective of providing a continuous pathway along the waterfront.

**Figure 2: Hybrid Shoreline at Point Lumley**




*Source: City of Alexandria Department of Project Implementation Waterfront Implementation Project Presentation to Waterfront Flood Mitigation Committee, January 6, 2022, slide 28*

The Waterfront Flood Mitigation Committee supports continued consideration of the hybrid shoreline approach. The avoided cost of constructing a bulkhead promenade at this location may be reinvested in other elements of the Waterfront Implementation Project. Therefore, the Waterfront Flood Mitigation Committee recommends that City staff consider a hybrid approach to the shoreline at this location for further development by the Progressive Design Build team. Consideration of both the hybrid and traditional options should continue, in the event funding materializes to construct a traditional bulkhead as planned.

The Waterfront Flood Mitigation Committee recommends that the Waterfront Commission request City staff to clarify how savings from constructing a hybrid shoreline will be reinvested, to make certain that amenities provided during Phase 1 in lieu of a traditional bulkhead are consistent with waterfront plans and priorities, including the recommendations for prioritized investments outlined below.

If a hybrid bulkhead approach is implemented, the City should consider the visual continuity of naturalized shorelines by coordinating the look and feel of hybrid and natural shorelines in the core area and other sections of the waterfront, such as the features incorporated into the recently-renovated Windmill Hill Park shoreline.

**Landscape-Based Flood Protection at Waterfront Park**

The Phase 1 scenario incorporates landscape-based flood protection along Waterfront Park between Prince and King streets as depicted in Figures 1 and 3. This would maintain the existing bulkhead rather than replacing or encapsulating it in its entirety. This approach will provide the intended level of flood protection at a reduced capital cost. Both staff and the committee acknowledge that deferred investments in eventual bulkhead replacement will still be required, and not precluded, by this approach.

**Figure 3: Landscape-Based Flood Protection at Waterfront Park**


*Source: City of Alexandria Department of Project Implementation Waterfront Implementation Project Presentation to Waterfront Flood Mitigation Committee, January 6, 2022, slide 29*

**Recommendations for Prioritized Investments**

While the proposed Phase 1 scenario will make substantial investments in waterfront capital infrastructure, many proposed elements will remain to be addressed in subsequent phases. In programming future investments, the Waterfront Flood Mitigation Committee recommends that the City prioritize features that will have the greatest impact on how public spaces can be used (such as the

types and number of activities and number of people supported), rather than purely decorative and aesthetic features (such as higher-end paving materials) that have limited impact on potential uses and programming.

Therefore, the committee recommends the following prioritization of project elements in subsequent phases:

- Basic restoration of existing parks must be incorporated into Phase 1 project costs.

- Improvements in parks and public amenities should be the highest priority investment in subsequent phases.

- The cost of archaeology-related project elements should continue to be considered in all phases. The committee understands that these elements are captured by staff in estimated contingency costs.

- The design of these features should continue to account for the potential presence of contaminated soil and consider creative design features to address these impacts.

- For the reasons described above, both a traditional and hybrid approach to the bulkhead and promenade (as shown in Figure 1) from Duke to Prince streets at Point Lumley should be considered.

- The cost of promenade and streetscape paving per the Waterfront Common Elements should also be considered, as these features offer limited utility to the public.

**Other Recommendations**

The committee provides the following additional recommendations regarding the Waterfront Small Area Plan improvements and the waterfront flood mitigation program:

- Flood mitigation strategies and other waterfront improvements will create future-year operations and maintenance costs, which will be annually recurring. City Council will need to budget for these costs in future years as highlighted by staff and as further informed by the Progressive Design Build team.

- CIP funds allocated by City Council to Waterfront Small Area Plan implementation were originally intended to complete a full slate of waterfront capital projects, including parks and flood mitigation improvements. Given recent changes in program scope and high capital cost escalation, the budget is no longer sufficient to accomplish all anticipated elements. The committee recommends that additional budget be reserved in future year CIPs to finish parks as envisioned in the plan, or that alternate revenue streams be adopted to fund park and public space improvements. In addition, the City should continue to proactively pursue funding from federal and state grant programs, private philanthropy, and other sources to fund improvements that realize the City's vision for the waterfront.

- Where needed, the City should have the flexibility to revisit elements of previous plans or designs if they can yield significant cost savings while substantially providing the same

community benefit. The alternative hybrid shoreline option at Point Lumley is one example, which could offer meaningful capital cost savings that can be reinvested in other elements of the waterfront by deviating from the specific forms in the 2014 Baseline Schematic Landscape and Flood Mitigation Design while achieving the same goals.

- Since waterfront improvements will be accomplished over multiple phases, where possible the City should incorporate infrastructure supporting elements planned for future phases up front, so as to not substantially raise the cost of those elements. For example, amenities planned for Waterfront Park may require upgraded utilities to support recreational activities and events, and it may be most cost effective to incorporate those elements during Phase 1. This approach could reduce need to re-do elements of waterfront improvements in later phases and help to minimize capital costs over the long-run.

- Design and construction of waterfront flood mitigation improvements should minimize impacts on the operation and use of existing City parks to the fullest extent possible. We recommend that the City commit to restoring affected parklands/public spaces to essentially the same state they are in today and avoid displacing mature trees in affected parkland and other public spaces. We recommend performance-based contracting that encourages innovation by contractors to deliver desired outcomes cost effectively, with limited impacts on the parks and public spaces.

- The Waterfront Flood Mitigation Committee supports the use of innovative approaches to addressing the City's Green Building Policy in implementing waterfront improvements, including incorporation of water management and clean water strategies.

The Waterfront Flood Mitigation Committee appreciates the diligent efforts of Department of Project Implementation and other City staff to prepare and refine designs for Waterfront Small Area Plan investment over the past year.

We appreciate the opportunity to offer these recommendations and look forward to offering further feedback as plans and designs evolve. We are eager to see construction of these important waterfront park and infrastructure investments in the coming years.