MINUTES

WATERFRONT COMMISSION
Flood Mitigation Subcommittee
April 5, 2021
5 p.m.

Waterfront Commission Flood Mitigation Subcommittee Members
Present**:**
Gina Baum, Alexandria Park and Recreation Commission
Beth Gross, Founders Park Community Association (FPCA), and Subcommittee Chair
Trae Lamond, Old Town Business and Professional Association (OTBPA)
Mark Ludlow, Alexandria Archaeological Commission (AAC)
Nathan (Nate) Macek, Alexandria Planning Commission and Vice-Chair, Waterfront Commission

City Staff /Consultants
Mark Jinks, City Manager
Terry Suehr, Director, DPI
Matthew Landes, Division Chief (DPI)
Jack Browand, Commission Staff Liaison, and Acting Deputy Director, (RPCA)
Lydia Durand, Management Analyst III (DPI)
Iris Portny, Commission Recording Secretary, RPCA
Ana Vicinanzo, Urban Planner II, RPCA
Nicole Johnson, Administrative Support V, TES
Jenna Manuszak, Carollo Engineers
Eric Harold, Carollo Engineers
Michael MacPhee, Carollo Engineers
Anneliza Kaufer, The Olin Studio
Sarah Miller, The Olin Studio
Skip Graffam, The Olin Studio

Attendees*:*

Stephen Thayer, Chair, Waterfront Commission	Louise Roseman, Park Planning District I
Doug Gosnell, Pleasure Boat Owners	Robert Cvejanovich, OTCA
Kelvin Cole	Ann Schack
Yvonne Callahan	Justin Carl
Ed Cronin	Bert Ely
Karen Pallansch	Laura Leussing

Call to Order

Gross called the meeting to order at 5p.m. and welcomed people to the first meeting of the Waterfront Commission's Flood Mitigation Subcommittee. Future meetings will be held every other month on the first Monday of the month at 5 p.m. to receive and discuss options being developed by the Department of Project Implementation (DPI) for revising and updating the City's flood mitigation plan originally approved by Council in 2015.

The next Subcommittee meeting is scheduled for June 7, 2021. Meetings will be held virtually until the City decides otherwise.

Flood Mitigation Plan - Staff Presentation

Terry Suehr (Director, DPI) and Matthew Landes, (Division Chief and Waterfront Program Manager, DPI)

Introduction

Director Suehr introduced the presentation of the ongoing reassessment of the Waterfront Flood Mitigation Plan approved by Council in 2015 and the DPI staff and Carollo Engineers and Olin Studio consultants working on it. The Olin Team created the City's Waterfront landscape design that incorporated the flood mitigation plan's elements in 2015. The Carollo team has been working with staff for the past year to gather information and develop models so that revised flood mitigation options can be based on current realities and climate change models.

Factors prompting the reassessment. Changes since 2015 since the City approved the plan in 2014:

- ***Financial -*** major cost increases for procuring the project's elements. The City's CIP budget includes $102 million to fund the procurement (funded at 75% of the 2015 estimates of $145 million). The current projected cost is about $200 million. A new approach with cost saving measures and/or phasing is required.
- ***Changes in Engineering Best-Practices –*** global advances in the approach and best practices for flood mitigation and resiliency in response to increases in storm frequency and intensity;
- ***Environmental -*** more frequent and severe storms due to climate change and new opportunities to incorporate green solutions.

Community engagement - Public input to assess and confirm community priorities, and addressing any questions and concerns are important to the reassessment process. This Subcommittee is intended to serve as a conduit in that process. Outreach and briefings to other residential and business groups will follow.

- DPI urged meeting participants to share information about the new options with their constituent communities widely and to encourage people to submit their questions, priorities and concerns to staff.

BRIEFING

Details of the revised options and information developed by the reassessment are included on to the City website: Flood Mitigation Presentation

Issues highlighted by the staff briefing included:

- ***Priorities for implementing the Waterfront Plan in phases are unchanged.*** Costs have changed but priorities have not.
    - The elements within the core area covered by the Waterfront Small Area Plan (core area) – Duke Street to Queen Street and Union Street to the river are still the top priority.
    - Three top Waterfront Plan elements are still flood mitigation, river promenade and public plaza at the foot of King Street.

- ***Engineering advances –*** Flood mitigation strategies for disaster preparedness and flood recovery have evolved in recent years as flooding has become more frequent and intense worldwide.
    - Resilience and recovery are the modern/preferred strategy. The 2015 design relied on extremely large pumping stations and pipe infrastructure systems and systems are now available that address resiliency and water quality.
- ***Costs and funding sources –***
    - Cost estimates have increased from $145 million (2015) to $200 million and approved CIP funding is $102 million. Either additional funding sources are needed or finding cost savings.
    - Potential sources of additional funding are being evaluated which include FEMA grants and state grants for resiliency and flood mitigation. Additional funding sources will be evaluated as additional program details become available.
- ***Types of flooding solutions must address***
    - Flooding from storm water runoff that exceeds the sewer system's current capacity (the most frequent cause of nuisance flooding)
    - Storm sewer backups during major tidal events or floods; and
    - Over-topping of bulkhead (river-driven).
- ***New more affordable flood mitigation strategies worldwide focus on quick recovery and resiliency - including green solutions - rather than using large barriers and pumps to prevent flooding*.** **For example:**
    - Incorporating flood events into designs that aid quick recovery and, where appropriate, use storm water as a feature in amenities, e.g., rainwater park pavilion and/or cloudburst park.
    - Underground storage tanks in parks that do NOT conflict with above ground uses of a park and are pumped out by nearby pumping stations smaller than those originally planned.
- ***Founders and Waterfront Parks*** have been identified as potential sites for underground water storage tanks.

PUBLIC ENGAGEMENT –Staff requested public feedback on *s*everal issues as they consider which options to investigate further.

- Low impact and cost-effective storm water management options, e.g. underground storage tanks, storm water incorporated as a public park amenity; green options
- Alternative flood protection strategies being considered - options that are a mix of deployable and fixed elements that vary with a given locations features

Subcommittee Discussion - Issues of particular interest:

- ***Scientific, environmental, and flood mitigation advances -*** Enthusiasm for the City's opportunity to update the Flood Mitigation Plan to take advantage of scientific, environmental and technological advances made since 2015, including access to improved data projecting climate change's impacts.
- ***Underground storage tanks in Waterfront and Founders Park: Why would tanks not also flood?*** A: Underground storage tanks capture storm water run-off from streets and roads. In

locations where river flooding overtops a barrier, protection would be provided by raising the elevation using a possible mix of measures, e.g. barriers, architectural glass or landscaping-based infrastructure to elevation of six feet which will protect against the most frequent flood events.

- ***Underground storage/How would storage tanks work***? A: Localized flooding happens when a storm sewer fills up. Pipes connected to the underground tanks would collect rainwater runoff when the storm sewer fills up during large and/or intense storms and act as holding tanks that would be pumped out by the pump stations to prevent the need for extremely large capacity pumps.
- ***Underground storage/Founders Park:*** Is this option to protect against flooding in Founders Park or in the core area outside the park? A: Both.
- ***Underground storage/Process used for adding Founders Park to the core area?*** A: The Waterfront Plan's core area has not been expanded.
    - Underground storage tanks in Founders Park and Waterfront Park are a potential option to help address nuisance flooding throughout the Waterfront area, increase resilience, and reduce the project's overall cost. Some infrastructure improvements in Founders Park were anticipated in the baseline design as well to connect the pump station to the storm sewer infrastructure.
- ***Goals/The reassessment needs clear goals: Prevent nuisance flooding? Protect Waterfront-area buildings? Minimize maintenance costs?*** A. The broad focus is to identify flooding sources and then do a cost-benefit analysis of options available to mitigate flooding so that an updated plan can be based on the most current data and science available.
    - Top priority is mitigating nuisance flooding– the community's top priority in 2015. Mitigating river flooding when barriers are overtopped will be addressed to the extent funding is available. Seeking continued guidance from Owner-Advisor and the community on best approach within funding constraints.
- ***Costs/Protecting archaeological resources unearthed during excavation?*** The potential costs of addressing archaeological resources unearthed during Founders Park and Waterfront Park excavations for underground tanks should be considered. A: Actions will comply with City, state and federal regulations for protecting historic resources and this is taken into account from a risk management and mitigation strategy and within cost planning.
- ***Compare the City's Waterfront and non-Waterfront flood mitigation*** **costs -** How does the Waterfront flood mitigation estimate of $200 million compare to cost estimates for flood mitigation projects elsewhere in the City? A: Costs for addressing inland flooding in the City – to be funded by storm water utility fees - are greater than a $177 million estimate that was mentioned for the full 10 year CIP program funded by the stormwater utility.

FOLLOW-UP: In the future, staff will provide a slide comparing cost estimates for Waterfront and inland flood mitigation projects, recognizing that inland flood mitigation projects are separate from the Waterfront Plan.

- ***Funding sources?*** A: Waterfront flood mitigation is funded by the CIP budget funded (general revenues) and/or a blend of bond funds. Opportunities for federal and state grants and co-funding are also being considered.

- **Costs of taking no action on Waterfront flood mitigation improvements.** The community needs to be able to weigh the potential costs and benefits of Waterfront flood mitigation improvements against other City needs, e.g. school improvements. Potential costs of a 'do-nothing' baseline option for flood mitigation should be included for comparison, e.g. what would ongoing maintenance costs be? What would the likely impacts of potential street closures be? A: Models being developed have to date focused on options for enhancing resilience by improving the flood mitigation infrastructure. Potential costs of a 'do-nothing' option can be investigated.

FOLLOW-UP: For comparison, the potential costs of a baseline/do-nothing option, using storm models that include 10-year and 100-year storm impacts will be investigated.

- ***Prince/King Street flooding -*** Are there currently backflow preventers at existing outfalls? A: No. Potential options are being considered, e.g. improving trash removal upstream, installing modern backflow preventers in outfall pipes, and identifying sites where additional backflow preventers could provide effective and quick improvement.
- ***Alternative approaches/Trucks to pump out overflow?*** A: Could an intersection like Prince/Strand be pumped out be movable pumps instead of using a permanent pump station? A: Deployable pumps used during construction were considered and rejected: they need a lot of space, are noisy, do not have the needed capacity and would be cost-prohibitive. They also rely on timely manual deployment which can increase risk for unexpected events or events with limited advanced warning.
- ***Alternative approaches/ Could dredging the riverbed help mitigate flooding?*** A: The costs of riverbed modifications would be exorbitant, would not be likely to be approved by permitting and regulatory agencies, and are not likely to yield any significant benefit.

- ***Reassessment timeline?***
    - ***2021/ Modeling and public engagement*** – Site investigations and refining the models needed to support cost-benefit analyses of options is expected to continue through summer 2021 with public engagement gathering residents' and businesses' feedback on options, priorities, and concerns as vital input.
    - ***2022/Baseline design -*** Mid-2022 is the target for putting out a revised baseline design that can then be finalized.

Additional Commission and Public Comments:

- ***Ann Shack/ Founders Park -*** Would underground tanks in Founders Park conflict with the park's passive uses? FPCA members have made significant contributions to maintaining the park for passive public uses. Would like the park kept out of the design for now. A: If underground storage is utilized there is no requirement to change the programming and use of the park. There will be temporary impacts to the park; however, the City would be committed to a full restoration of the park.
- ***Ann Shack -*** DPI should consider options for integrating work in Founders Park with that of the nearby ALEX Renew project to reduce costs. A: ALEX Renew primarily focuses on the sanitary sewer overflow problem and is not focused on solving the types of flooding challenges that will

be addressed by the Flood Mitigation project. RiverRenew and Flood Mitigation staff are in coordination with one another.

- ***Doug Gosnell*** – Can backflow preventers be installed at the end of the pipes where they exit at the river to make maintenance easier? A: That option is a possibility and is under consideration.
- ***Doug Gosnell*** – Is a six-foot elevation enough to provide protection against river overtopping? A: Six feet protects against the most common types of nuisance flooding. A cost-benefit analysis will be done for extreme flooding where the system would be overwhelmed and need to be pumped out for recovery. Additional future-proofingfor increased flood elevations is a possibility as well, but may be constrained by funding.
- ***Yvonne Callahan -*** (OTCA) - She hopes there will be opportunities to combine excavation related to the Founders Park underground tanks with the nearby RiverRenew excavation to reduce costs.
- ***Yvonne Callahan/Storm water treatment –*** What are the requirements for treating rainwater stored in tanks that will be released back into the Potomac? A: An underground storage system includes a water quality system by filtering out sediment before water is pumped to the river.
- ***Bert Ely –***Has a passive system without pump stations or permanent infrastructure been considered? A: A gravity system without large pumps or infrastructure was considered and was determined not to be feasible. Water flowing out by gravity would back up into the system and needs to be pumped out or stored.

Landes announced that staff is available to brief individual groups and community associations, upon request.

Next Meeting: June 7, 2021 at 5 p.m.

The meeting was adjourned at 6:40 p.m.