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Date	Ver.	Action By	Action	Result
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City of Alexandria, Virginia

MEMORANDUM

DATE: JUNE 4, 2015
TO: THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL
FROM: MARK B. JINKS, ACTING CITY MANAGER /s/

DOCKET TITLE:

Public Hearing and Consideration of an Amendment to the City Council Approved 2003 Windmill Hill Park Concept Plan to Include a Living Shoreline Design Concept.

ISSUE: City Council public hearing and consideration of an amendment to the City Council approved 2003 Windmill Hill Park Concept Plan to include a living shoreline design concept.

RECOMMENDATION: That City Council hold the public hearing and:

1. Amend the approved 2003 Windmill Hill Park Concept Plan to include a living shoreline design concept.
2. Authorize the City Manager to proceed with implementation of the living shoreline.

BACKGROUND: Discussions of the Windmill Hill Park Concept Plan started in the late 1990's, leading to a

Council adopted plan in April of 2003 (Attachment 1). The concept plan addresses the entirety of the park (east and west of Union Street) including proposed use areas, plantings, and sidewalks, along with a proposed shoreline rehabilitation plan.

Design and construction funding for park improvements (including the shoreline rehabilitation) was programmed in FY 2007 and FY 2008. The estimated construction costs, based on the 2003 concept plan, exceeded the available funding and implementation was deferred. In FY 2012 an engineering study concluded the bulkhead had failed and posed a safety hazard. A safety fence was installed in the fall of 2012 (FY 2013) to restrict access to the bulkhead.

Funding opportunities were explored in 2010 and 2012 from the U.S. Army Corps of Engineers (USACE) and the Federal Emergency Management Administration (FEMA) under grant programs to assist with funds to complete the bulkhead repair and reconstruction. The City was not successful in obtaining grant funding from either resource.

In FY 2013 the Waterfront Commission made a recommendation to Council to accelerate funding for design and construction from FY 2016 and FY 2017 to FY 2015, and FY 2016 respectively. The funding was programmed into the CIP as recommended and a consultant was hired in November of 2014 to perform the design.

DISCUSSION: The Windmill Hill Park shoreline on the Potomac River is in an advanced deteriorated condition as a result of age, erosion, and infrastructure failure. The 2003 concept plan proposed rehabilitation of the shoreline using a combination of treatments including: rip-rap armoring, vertical/structural bulkhead, and elements of a living shoreline.

Since the 2003 plan was adopted, there has been a growing demand for restoring natural shorelines, creating habitat, and facilitating natural water treatment processes. Vertical structural bulkheads are not a preferred shoreline treatment by the primary permitting agencies, USACE and the National Oceanic and Atmospheric Administration (NOAA), which prompted the need to test the 2003 concept plan against current best practices.

The Department of Project Implementation (DPI), on behalf of the Department of Recreation, Parks, and Cultural Activities (RPCA); worked with a specialized consultant team to address the potential shoreline treatments, develop several design concepts, and conduct a civic engagement process to gather input on the concepts.

February 12, 2015 - Community Meeting #1

The initial community meeting focused on a review of the 2003 concept plan, and potential treatment approaches and strategies that have evolved since its development. Approximately thirty (30) people attended and were provided several opportunities to provide input through keypad polling, open discussion, and a preference voting exercise.

Although the group had a mixed preference on potential treatment approaches, several common thoughts about the project were raised in the open discussion period:

- Desire to implement project soon
- Concern for debris management
- Desire for water access (kayaks and dogs)
- Desire to be mindful of construction cost and concern for ongoing maintenance budget

Concept Development

Following the first community meeting, three design concepts were developed for technical evaluation and presentation at the second community meeting. Construction cost estimates and estimations of construction complexity and the “ease of permitting” were developed for each concept. The three concepts were:

- Concept 1 - Modernized 2003 Concept Plan
- Concept 2 - Hybrid/Living Shoreline Concept Plan
- Concept 3 - Living Shoreline Concept Plan

Concept 1 was a modern revision of the approved 2003 concept plan, which combined a variety of shoreline treatment options. The shoreline included rip-rap armoring, vertical bulkhead, and a living shoreline. The shape of the basin remained generally consistent with the 2003 concept plan. This concept was estimated to be \$4.9 million, with the longest permitting timeline and greatest construction complexity of the three concepts.

Concept 2 was a hybrid living shoreline, utilizing elements of a partial bulkhead to minimize erosion, and living shoreline to provide the habitat and environmental benefits. The basin was reshaped to promote tidal flushing and minimize debris collection. This concept was estimated to be the most expensive at \$5.9 million, with a moderate permitting timeline, and a high degree of construction complexity.

Concept 3 was the living shoreline option, with a consistent living shoreline treatment applied throughout the basin. The basin was also reshaped, like Concept 2. This concept was estimated to be the least expensive construction cost at \$3.8 million, the easiest to permit due to its use of current best practices, and the least complex to construct because it does not incorporate a mix of treatments or vertical bulkheads.

April 13, 2015 - Community Meeting #2

The second community meeting focused on a review of the three concepts, developed with guidance from feedback gathered at the first meeting. Along with presenting and discussing details of each concept, detailed information was provided about the permitting process and how it relates to each concept. Approximately thirty-five (35) people attended and were again provided opportunities to provide input through keypad polling and open discussion.

The majority of those in attendance had the highest preference for the living shoreline option, Concept 3; and only approximately 4% (based on keypad polling) had a low preference for Concept 3.

In addition to the three concepts, additional design elements were presented as options to any selected shoreline treatment concept subject to available budget. The design options include an over-water pier, over-water boardwalk, or combination of both. These elements could provide a unique perspective of the shoreline and amenity space, but more importantly can provide an educational component important to the permitting agencies. The boardwalk and pier options provide the ability to access the different habitats created along the shoreline, and enhance understanding of natural cycles, including surface water treatment.

The community feedback was split on the additional design elements, approximately half of those in attendance preferring a pier, boardwalk, or combination element; and half in attendance preferring not to see any over-water elements.

Preferred Concept

Following the second community meeting a final, preferred concept was developed to a higher degree of detail, incorporating feedback from the civic engagement process. The preferred concept, as recommended by the consultant team, City staff, and supported by the community is a living shoreline plan based on Concept 3. The plan provides a low stone sill at the base of the shoreline, tidal and riparian plantings along the sloping bank, pedestrian paths, water access for dogs and kayaks, planted buffers, and restoration of and a pedestrian bridge

over the Gibbon Street stream outfall.

The preferred concept, “Living Shoreline Plan, June 2015,” is included as Attachment 2. The preferred concept plan was included and referenced in additional outreach conducted at several commission meetings.

May 18, 2015 - Environmental Policy Commission

Staff conducted a presentation to the Environmental Policy Commission on May 18, 2015. The presentation summarized the concept development process and reviewed the elements of the preferred concept in detail. The Commission voted and unanimously supports the living shoreline concept.

May 19, 2015 - Waterfront Commission Meeting

Staff and the project consultant conducted a presentation to the Waterfront Commission on May 19, 2015. The presentation summarized the concept development process, reviewed the three preliminary concept options developed, and reviewed the elements of the preferred concept in detail. The Commission voted and unanimously supports the living shoreline concept.

May 21, 2015 - Parks and Recreation Commission Meeting

Staff and the project consultant conducted a presentation to the Parks and Recreation Commission on May 21, 2015. The presentation summarized the concept development process, reviewed the three preliminary concept options developed, and reviewed the elements of the preferred concept in detail. The Commission voted and unanimously supports the living shoreline concept.

Implementation

Implementation of the shoreline rehabilitation, subject to authorization by Council, continues with the final design and permitting phases anticipated to begin immediately and be substantially complete in spring of 2016. Following completion of design and permit approvals, the construction is anticipated to begin as soon as practical after June 30, 2016, since the USACE restricts work in the Potomac River from February 15 to June 30 each year to protect anadromous fish use areas. Construction is anticipated to be substantially complete prior to February 15, 2017.

The additional design elements depicted on the Living Shoreline Plan (piers and boardwalks) will be addressed during the final design process. The elements would be included with consideration of construction cost and available budget, mitigation credits, permitting requirements, and community input.

FISCAL IMPACT: The estimated cost for implementation of the living shoreline (preferred concept) is approximately \$3.8 million, with options for additional improvements and amenities. The additional amenities, including optional boardwalks, piers, and overlooks, have an estimated range in cost from \$750,000 to \$1.2 million. The total funding available is approximately \$6 million, with \$5.5 million designated for shoreline rehabilitation and the remaining \$500,000, plus any surplus funds from the shoreline rehabilitation, to complete outstanding elements of the 2003 approved park plan.

ATTACHMENTS:

Attachment 1: Windmill Hill Park Approved Concept Plan, April 12, 2003
Attachment 2: Windmill Hill Park Living Shoreline Plan, June 2015
Attachment 3: Windmill Hill Park Shoreline Rehabilitation Presentation

STAFF:

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