

Windmill Hill Bulkhead Improvements Project

Community Meeting I
February 12, 2015

Tonight's Meeting Agenda

- A. Introductions and overview
- B. 2003 plan and current conditions
- C. Potential shoreline treatment approaches and strategies
- D. Q&A and input opportunities

Project Team

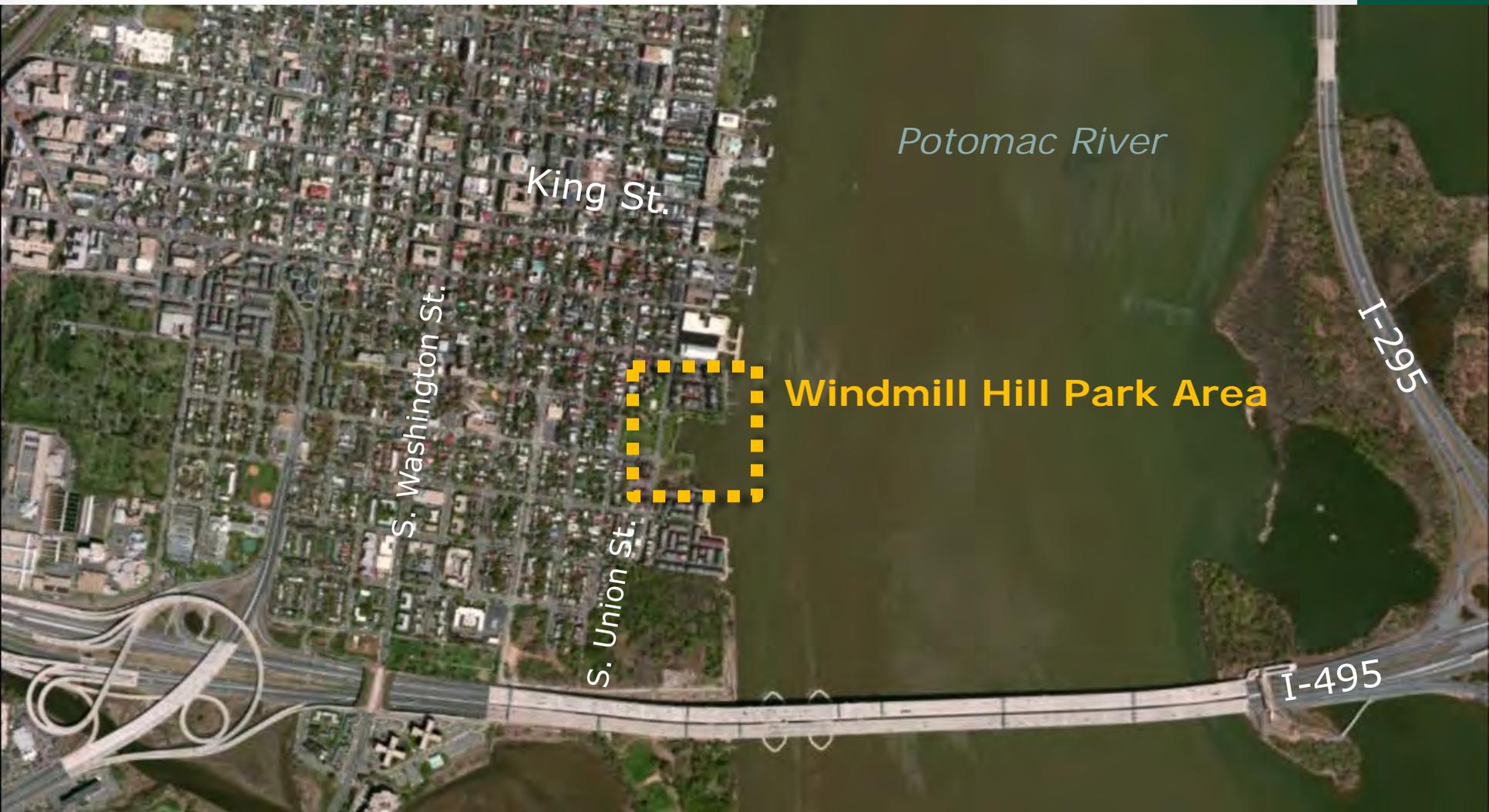
City of Alexandria

- **Tony Gammon**, Project Manager
Department of Project Implementation
- **Jack Browand**
Department of Recreation, Parks and Cultural Activities

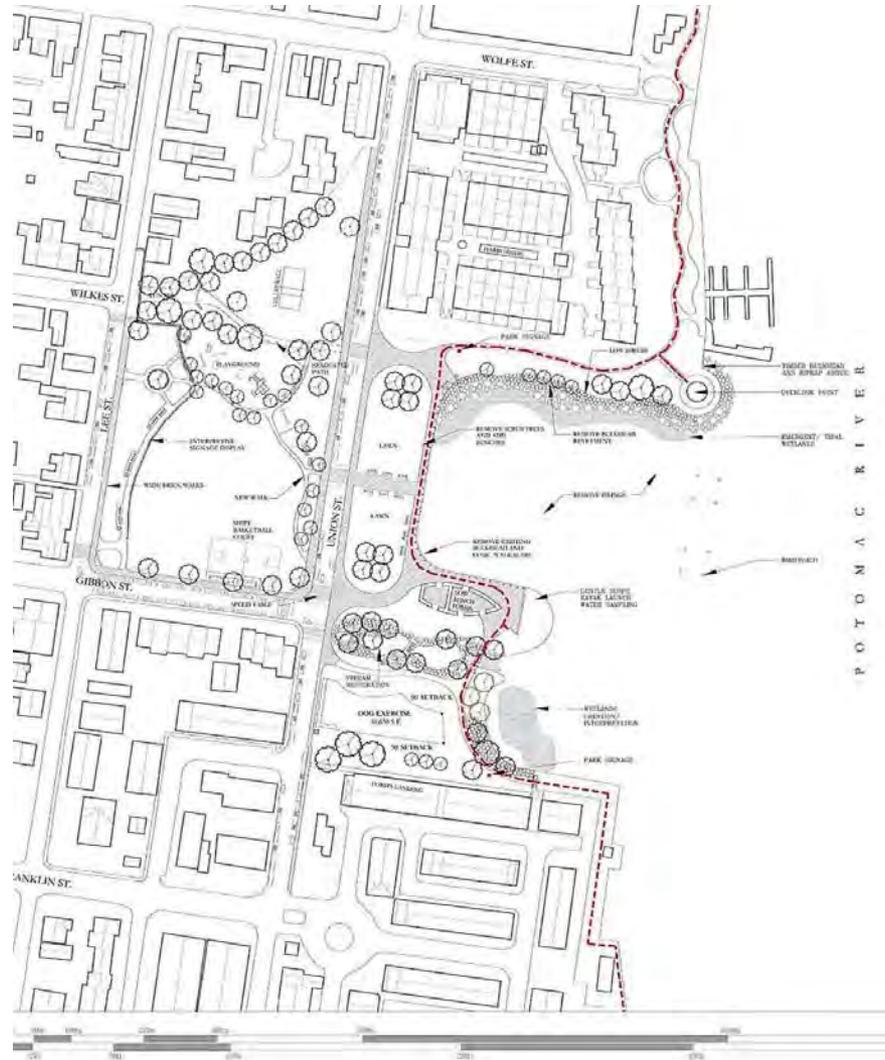
Consultant Design Team

- **Kevin Van Hise**, Project Manager
Kimley-Horn
- **Elizabeth Burkhart**, Bulkhead Design
Collins Engineers
- **Andropogon**, Living Shoreline Design Support

Project Location



2003 Plan



WINDMILL HILL PARK APPROVED CONCEPT PLAN

APRIL 12, 2003



1 PLAN DOES NOT ALLOW FOR PEDESTRIAN BOARDWALK AT WATERFRONT
2 SEPARATE PEDESTRIANS FROM THE DOG EXERCISE AREA.

Bulkhead Improvement Project Area





Why We Are Here

- Changes in Best Practices
 - Evolution of shoreline treatment design
 - More industry experience in living shorelines
- Evolving permitting environment
 - Collaboration with agencies
 - New permit thresholds every 5 years
 - Strong preference for environmentally beneficial shorelines

Project Phases

WE ARE HERE NOW

- Concept Development
- Public Engagement
- 30% Design

Phase I
(2014/15)

- Construction Plans, Specifications, and Estimates

Phase II
(2015/16)

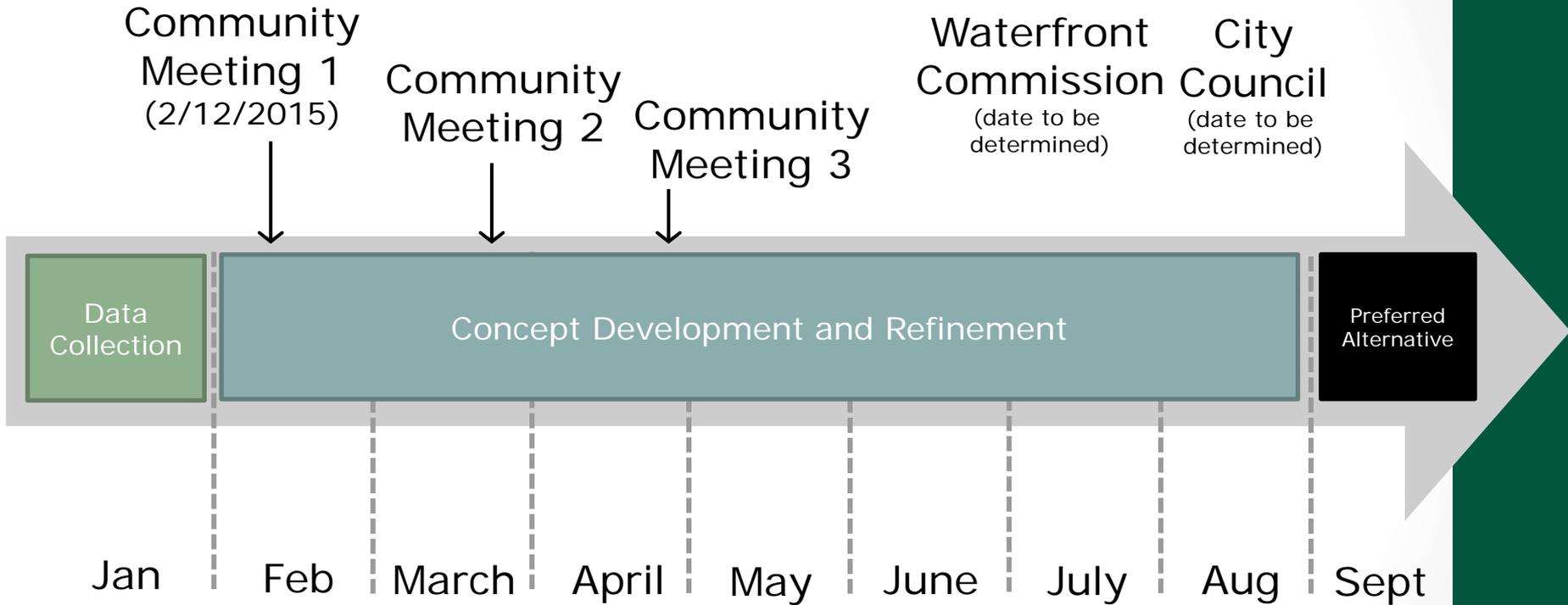
- Construction

Phase III
(2016/17)

Current Project Phase: Scope of Work

- Public engagement
- Data gathering
- Concept development and refinement
- Preferred Concept Plan
- Preliminary design (30%)

Current Project Phase: Schedule



Current Project Phase: Public Engagement

Meeting 1

- Project overview

Meeting 2

- 3 preliminary concepts

Meeting 3

- Preferred concept and refinement

Meeting 4

- Preferred approach

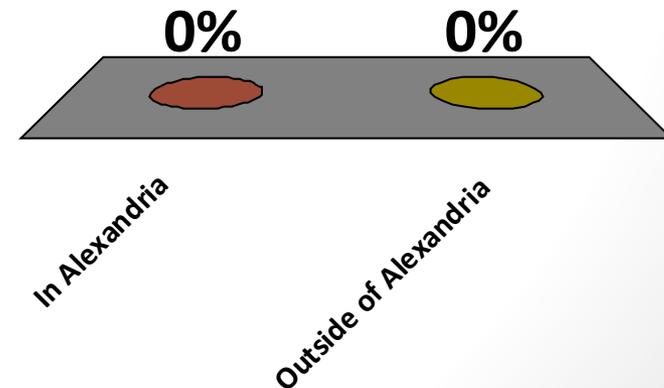


Audience Participation Opportunity During Presentation: Instructions

- Throughout the presentation we will ask for your input. You will use the keypad devices to record your answers
 - Please use the same device throughout
 - We're here to help, and happy to pause and lend a hand
- If you prefer, we also have a paper questionnaire
- Following the presentation and Q&A, preference exercise on the boards

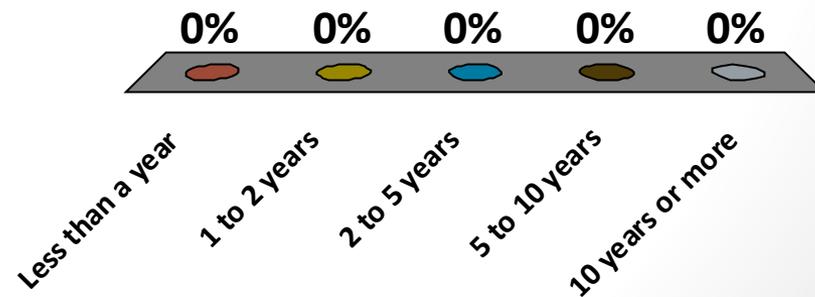
Where do you live? (select one)

- A. In Alexandria
- B. Outside of Alexandria



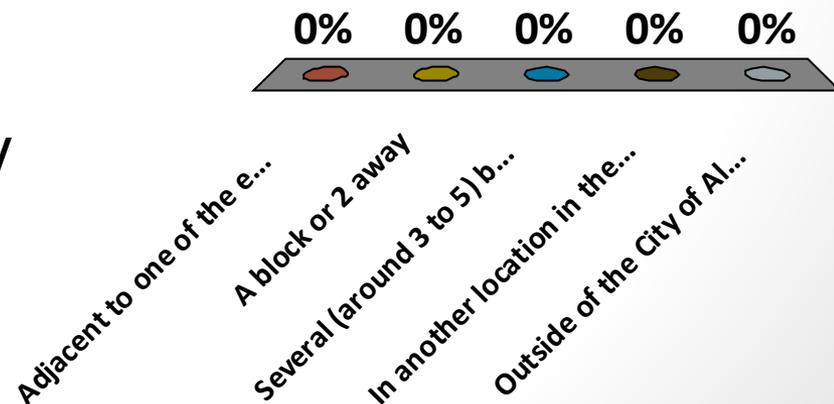
How long have you lived at your current residence? (select one)

- A. Less than a year
- B. 1 to 2 years
- C. 2 to 5 years
- D. 5 to 10 years
- E. 10 years or more



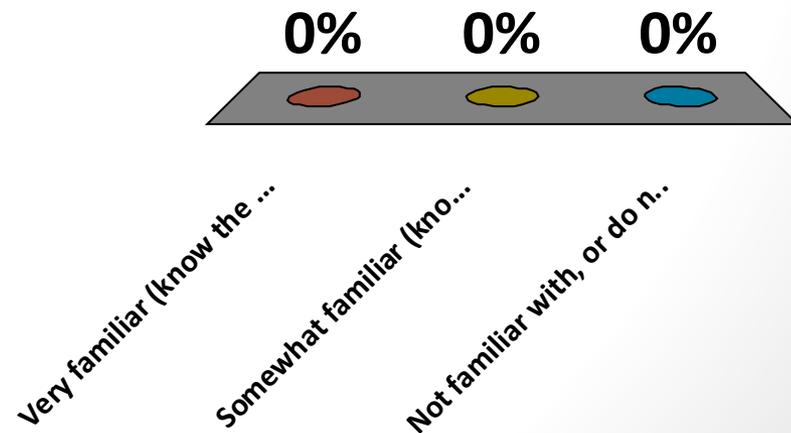
How close do you live to Windmill Hill Park? (select one)

- A. Adjacent to one of the edges of the park
- B. A block or 2 away
- C. Several (around 3 to 5) blocks away
- D. In another location in the City of Alexandria
- E. Outside of the City of Alexandria



How familiar are you with the 2003 Windmill Hill Park plan? (select one)

- A. Very familiar (know the plan, know the details)
- B. Somewhat familiar (know the basics, but not all the details)
- C. Not familiar with, or do not know of



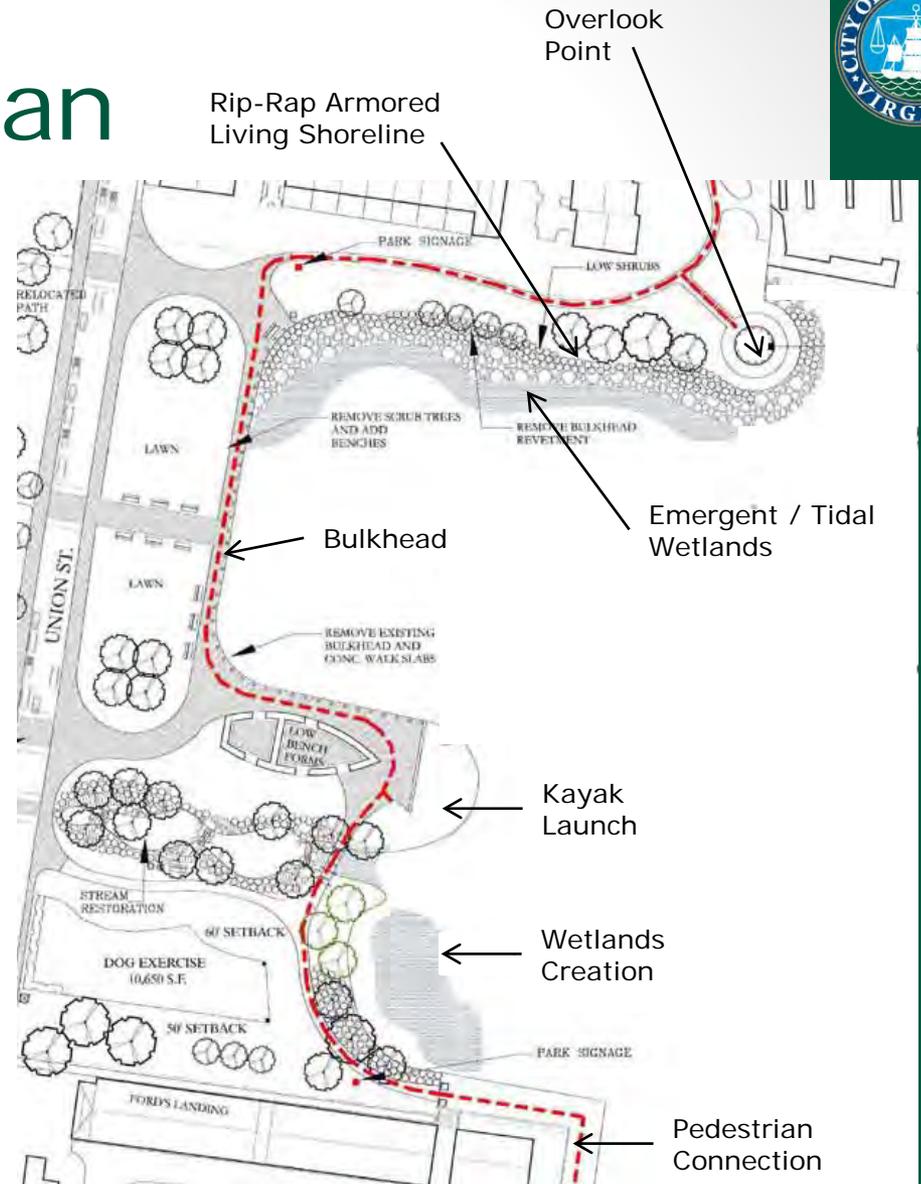


2003 PLAN

Approved 2003 Plan

City Council Approved Concept Plan (2003)

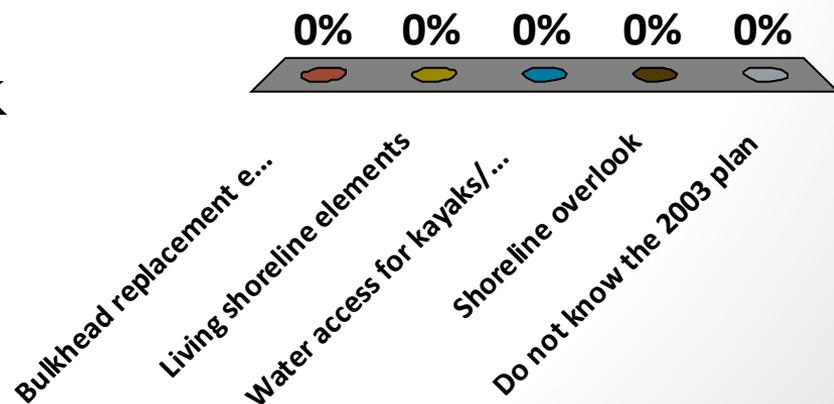
- Recommended combination approach
- Accommodation for canoes/kayaks and dogs
- Included overlook accommodation



If you are familiar with the 2003 park plan, what did you most LIKE about it?

(select all that apply)

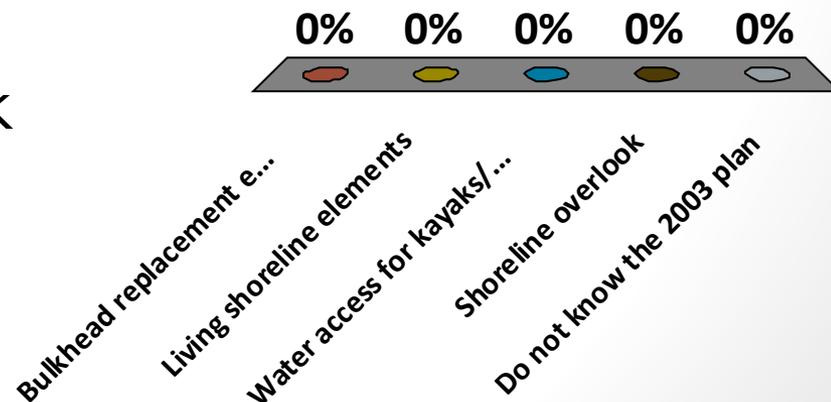
- A. Bulkhead replacement elements
- B. Living shoreline elements
- C. Water access for kayaks/canoes
- D. Shoreline overlook
- E. Do not know the 2003 plan



If you are familiar with the 2003 park plan, what did you most **DISLIKE** about it?

(select all that apply)

- A. Bulkhead replacement elements
- B. Living shoreline elements
- C. Water access for kayaks/canoes
- D. Shoreline overlook
- E. Do not know the 2003 plan



CURRENT CONDITIONS

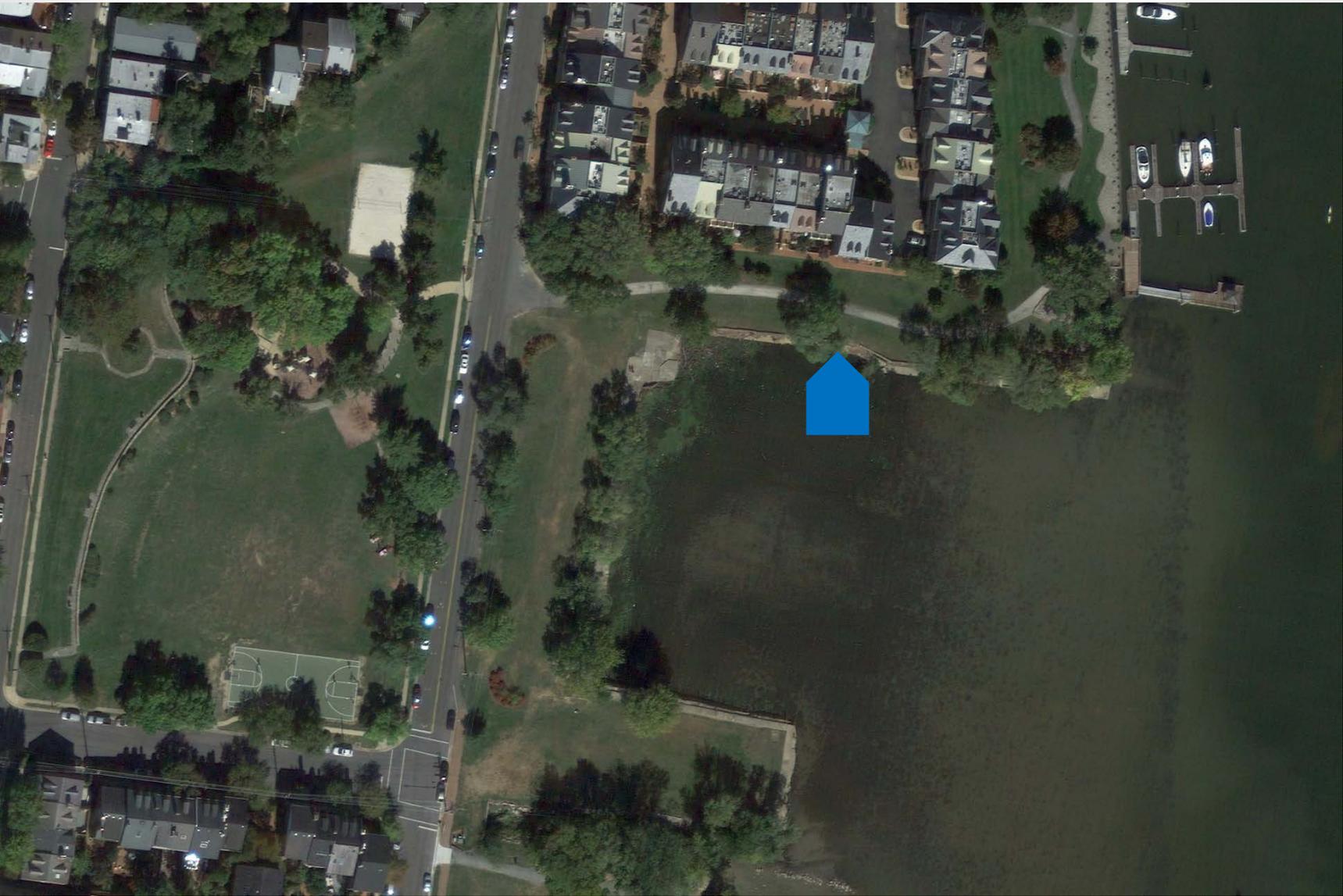
Overlook



Overlook



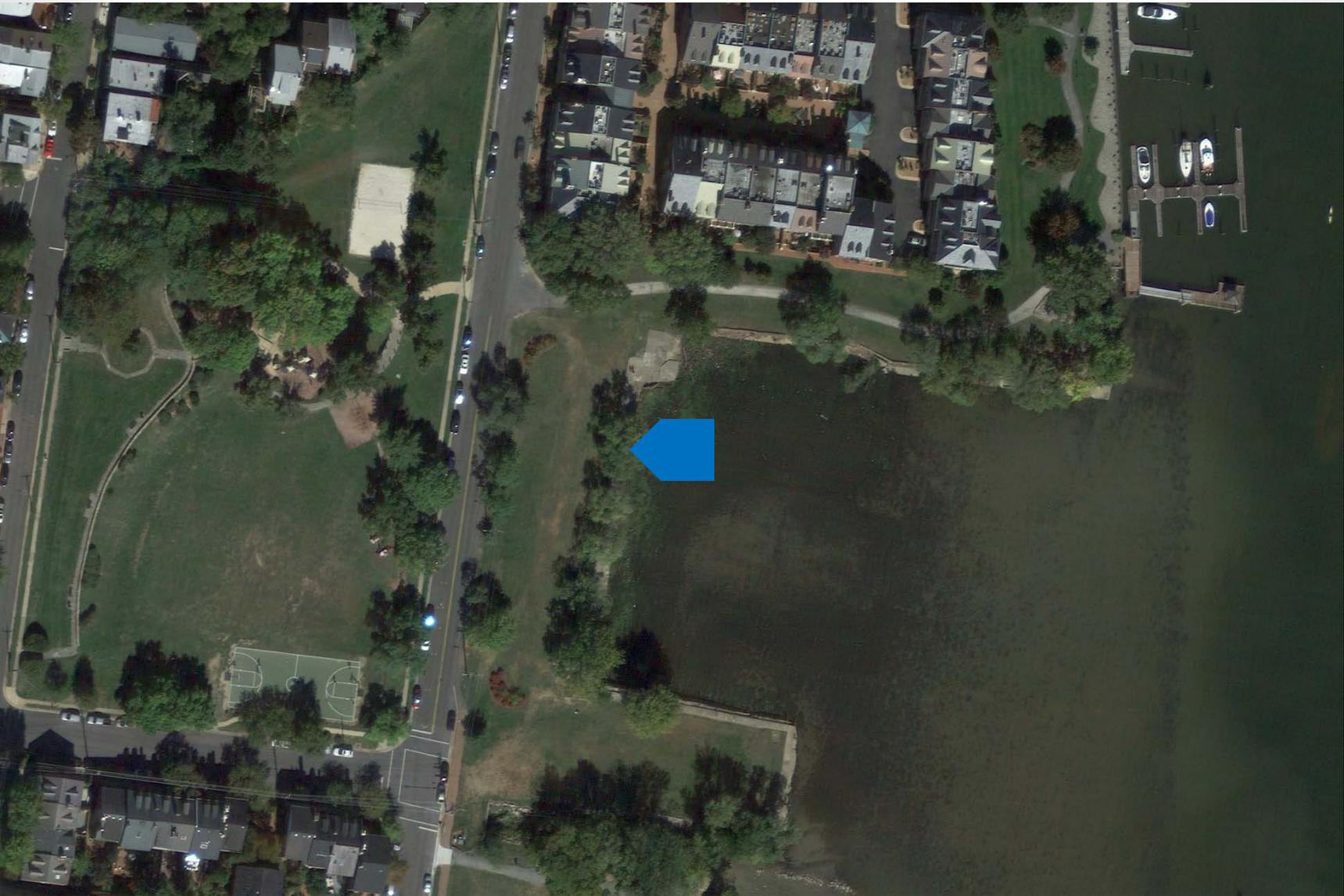
North Bulkhead



North Bulkhead



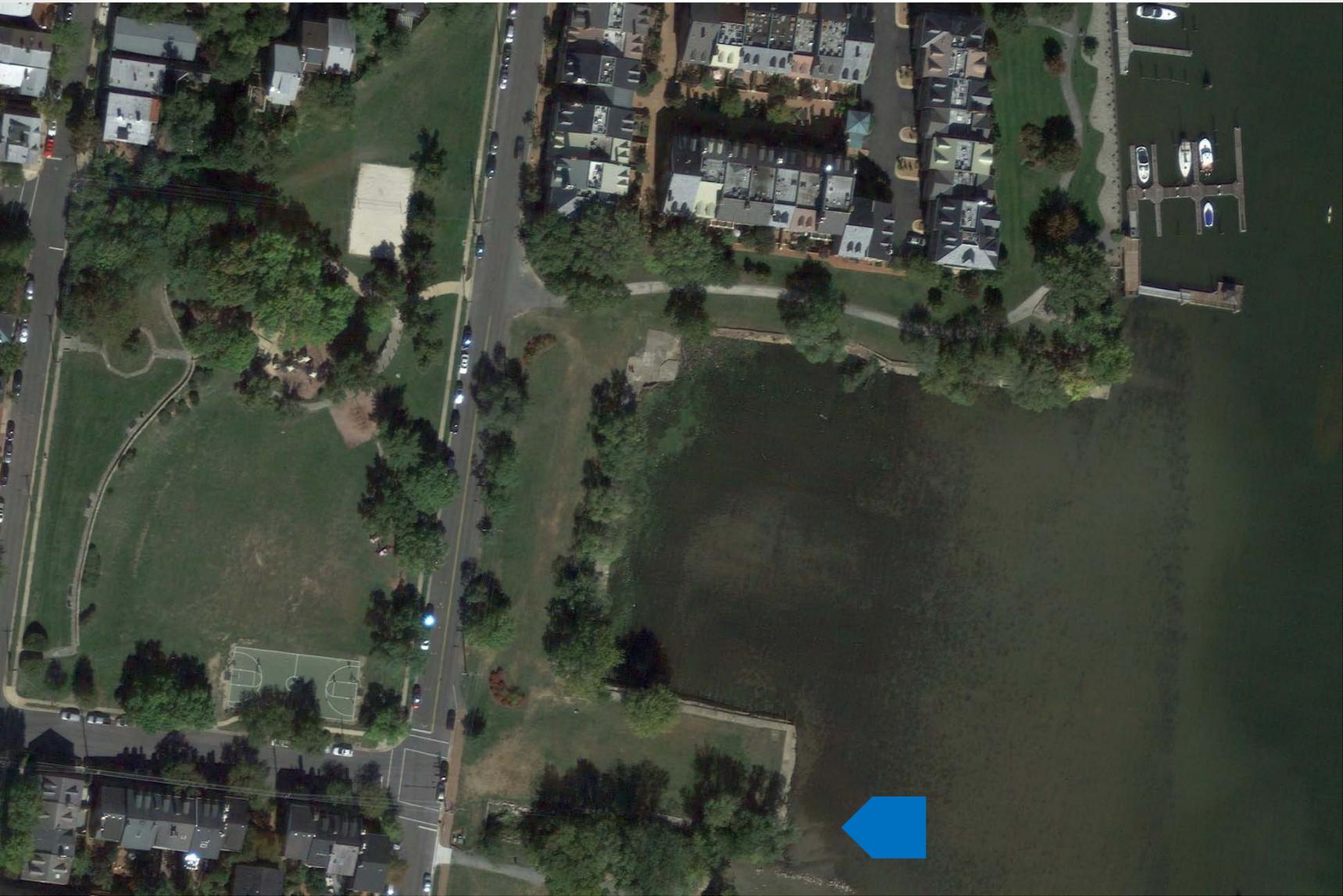
West Bulkhead



West Bulkhead



Existing Storm Outfall



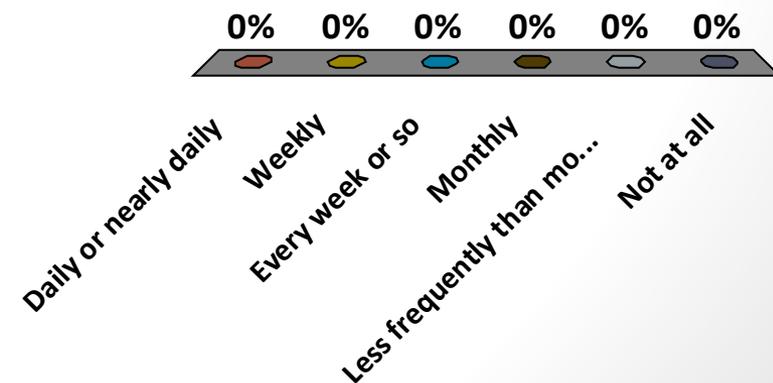
Existing Storm Outfall



On average, how often do you visit the park near the water's edge?

(select one)

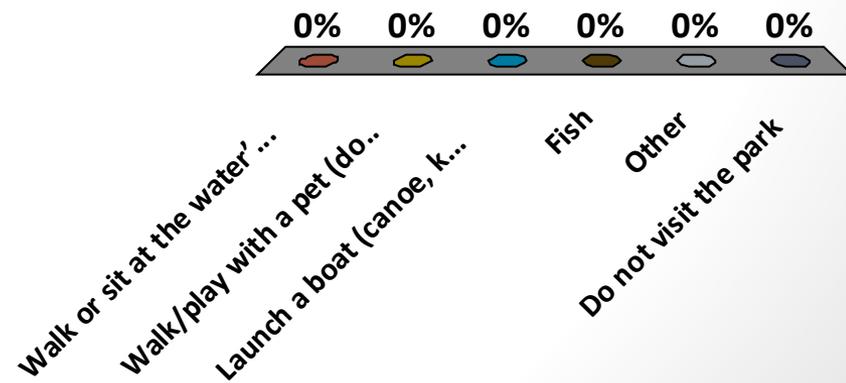
- A. Daily or nearly daily
- B. Weekly
- C. Every week or so
- D. Monthly
- E. Less frequently than monthly
- F. Not at all



Why do you currently come to the portion of the park near the water's edge?

(select all that apply)

- A. Walk or sit at the water's edge
- B. Walk/play with a pet (dog, other)
- C. Launch a boat (canoe, kayak, or similar)
- D. Fish
- E. Other
- F. Do not visit the park



OVERVIEW OF POTENTIAL DESIGN OPTIONS

Bulkhead Replacement Options

1. Structural Bulkhead-Vertical/Stepped
2. Rip-Rap Protected/Armored
3. Living Shoreline
4. Bulkhead-Living Shoreline Hybrid

Structural Bulkhead: Design Options

Vertical



Timber



Concrete

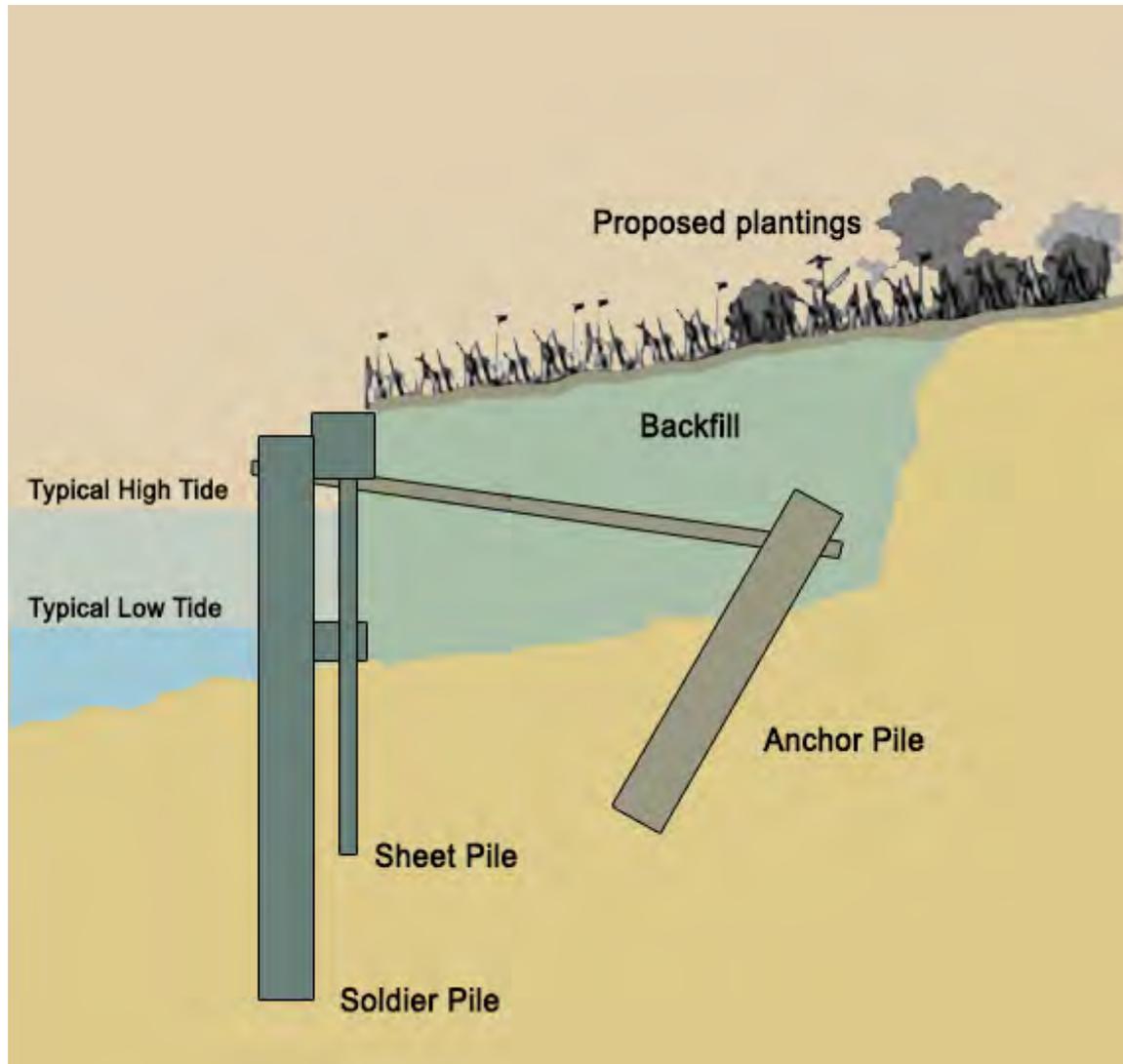


Steel

Stepped



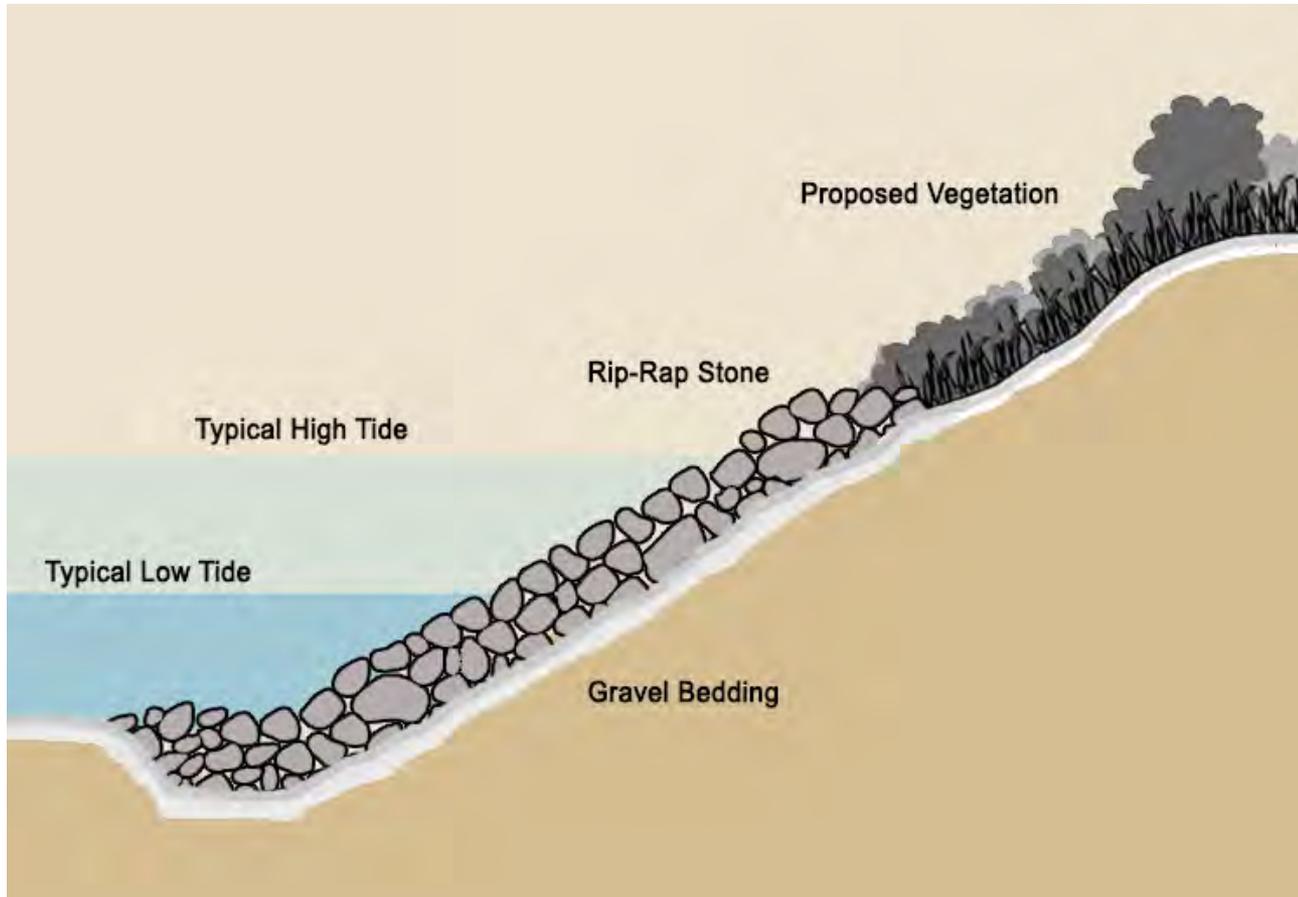
Structural Bulkhead: Cross Section



Rip-Rap/Armored Shoreline: Design Options



Rip-Rap/Armored Bulkhead: Cross Section



Living Shoreline: Design Options



Standard living shoreline treatments (un developed area)



Terraced system to enhance stormwater treatment effectiveness

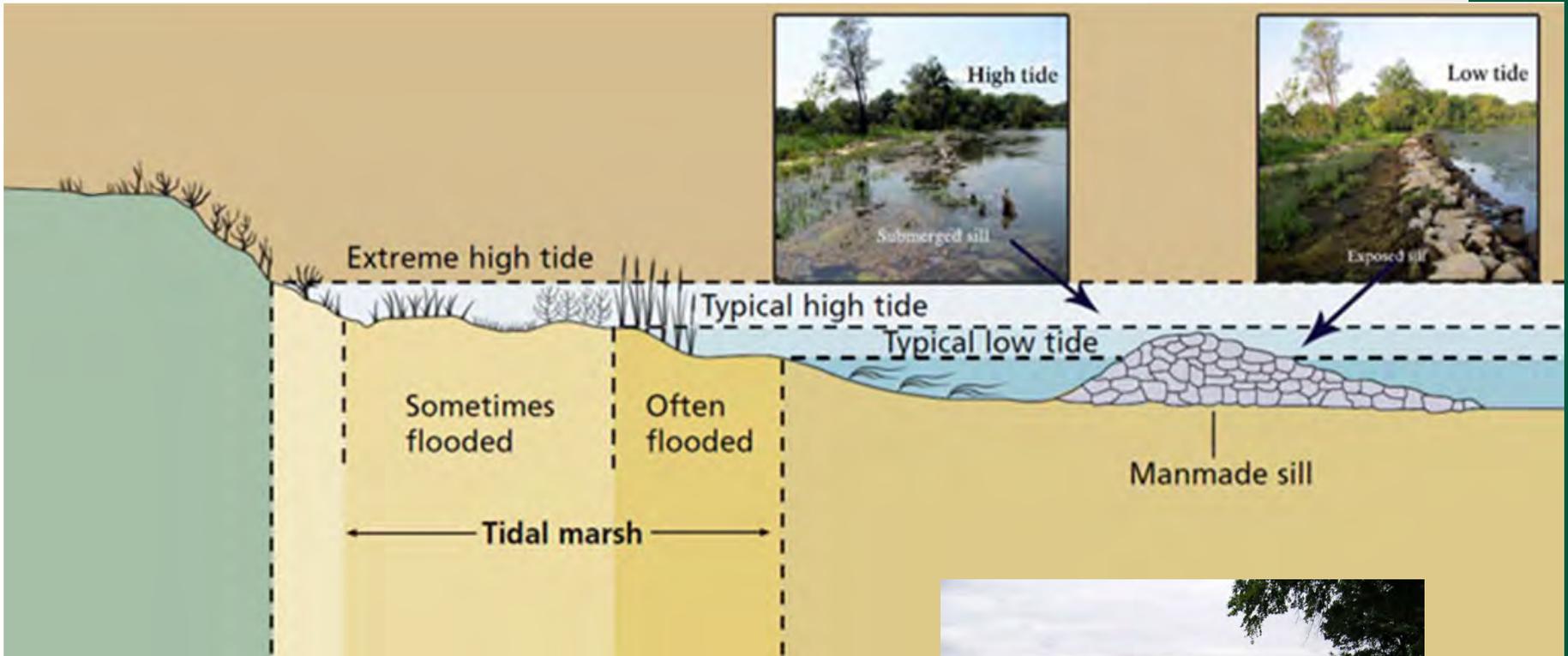


Standard living shoreline treatments (developed area)



Wetland fringe – Natural living shoreline

Living Shoreline: Cross Section



Living shoreline in low tide/low water condition



Living shoreline in high tide/high water condition

Bulkhead-Living Shoreline Hybrid: Design Options

- Incorporates features from living shoreline and bulkhead options
- Can use timber or steel piles

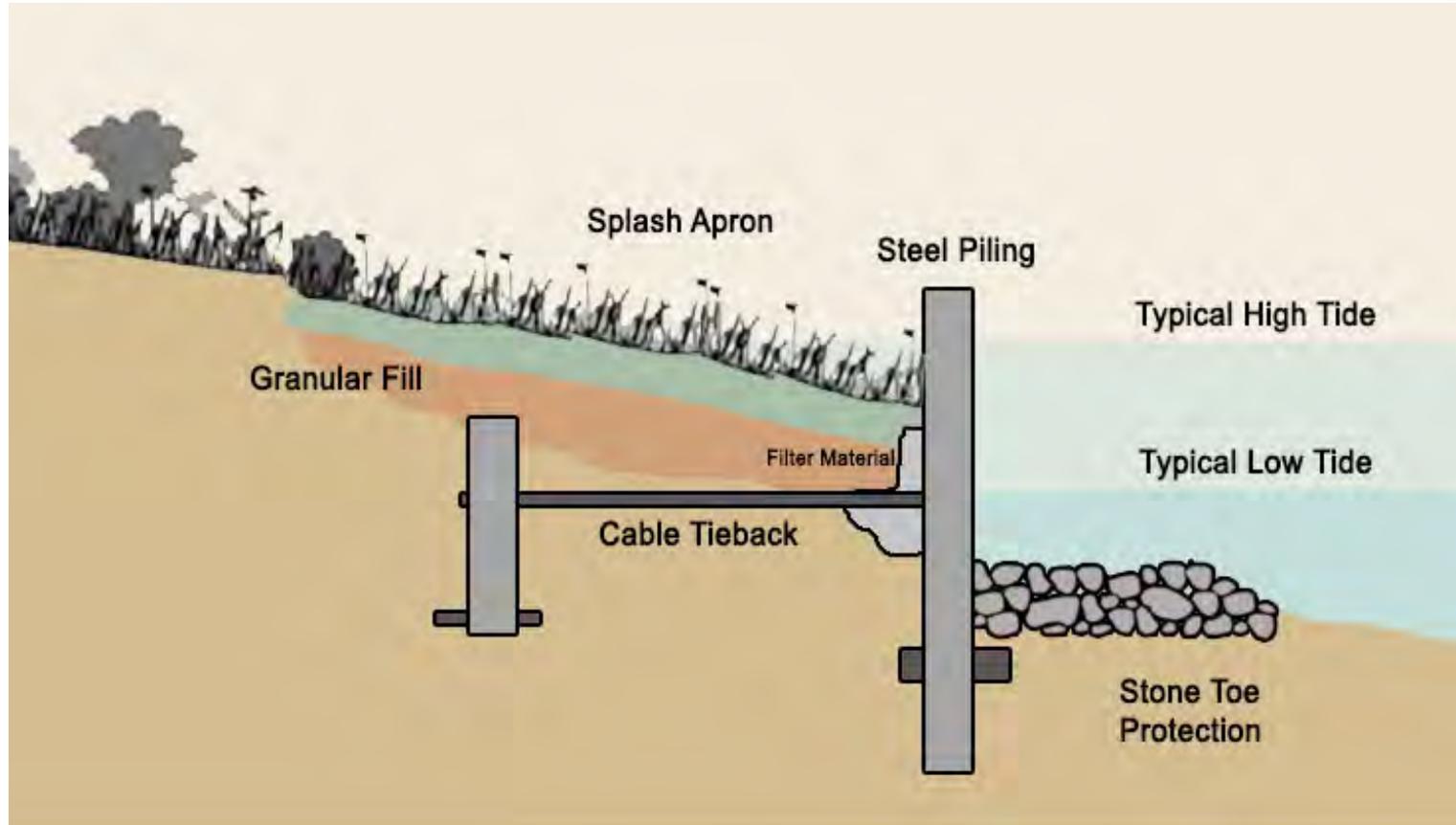


Hybrid shoreline in high tide/high water condition



Hybrid shoreline in low tide/low water condition

Bulkhead-Living Shoreline Hybrid: Cross Section



Shoreline Treatment Comparison

Shoreline Type	Protects Shoreline	Enhances Natural Environment	Lowest Requirement for Debris Management	Ease of Permitting
Bulkhead	●	○	●	○
Rip-Rap Armored Shoreline	●	○	⊙	○
Living Shoreline	●	●	○	●
Bulkhead -Living Shoreline Hybrid	●	⊙	○	⊙

Ongoing Infrastructure Maintenance Requirement	Construction Cost
\$	\$
\$	\$
\$	\$
\$	\$

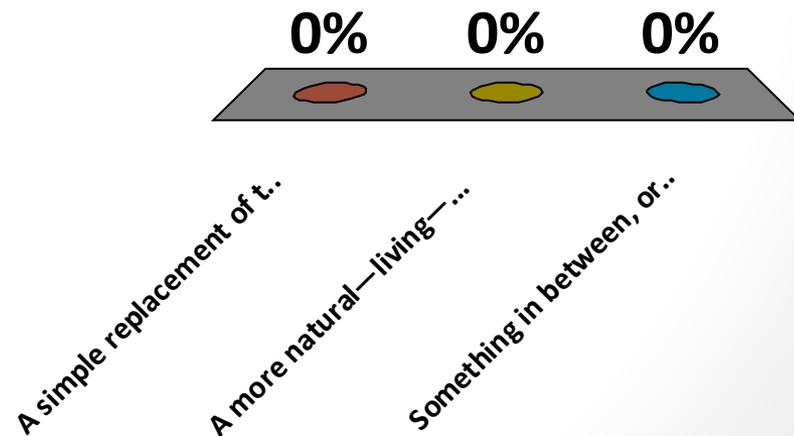
Legend

- Good
- ⊙ Better
- Best
- \$ Most Cost
- \$ Least Cost

What type of shoreline improvement treatment interests you most?

(select one)

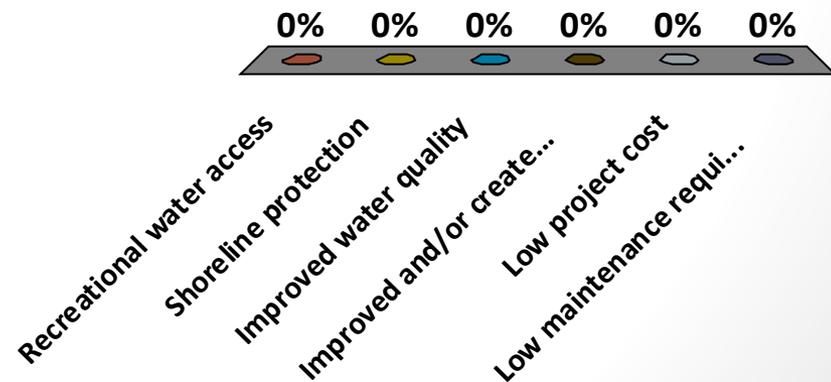
- A. A simple replacement of the existing bulkhead, nothing more
- B. A more natural—living—edge instead of a bulkhead
- C. Something in between, or a combination of a living edge and a bulkhead replacement



What do you most value?

(select all that apply):

- A. Recreational water access
- B. Shoreline protection
- C. Improved water quality
- D. Improved and/or created new wildlife habitats
- E. Low project cost
- F. Low maintenance requirement





Conceptual Shoreline Improvement Strategy

- *Will combine* several treatments to balance:
 - Cost (installation and maintenance)
 - Permitting timeline/burden
 - Environmental effects
 - Community/City goals

What's Next

- Community meeting focused on review of three options
- Refinement of preferred approach
- Approved plan



Q&A AND ADDITIONAL INPUT OPPORTUNITIES



Summary of Opportunities for Input

Today:

- Question and answer session
- Preference (dot) exercise using boards in this room

As the project moves forward:

- Contact Tony Gammon, *City of Alexandria*
- Upcoming community meetings

Dots Exercise

- Place **green** dots on the treatment approaches you prefer, and **red** dots on those that you do not prefer.
- You may place as many of your given dots on a picture as you like to indicate strength of preference.
- Please do not cover the dots of others.



Questions? Contact Us

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