

### **Program Summary:**

A waterfront study leveraging economic development, industry, flood risk reduction, and public access to water, all with an eye towards highest and best land use.

### **Program Statement:**

The Chesapeake Industrial Waterfront Study is a planning effort focusing on a 10-mile-long stretch of the Southern Branch of the Elizabeth River in Chesapeake, VA. Significant waterfront industrial activity occurs along this river, particularly towards the northern city boundary, where the channel is regularly federally maintained, and there are fewer height constraints, such as bridges. However, the waterfront is also a prime location for all types of real estate, including residential and commercial, and these uses often compete for space. Complicating things further, Chesapeake is experiencing increased coastal hazards, including heavy rain events, recurrent flooding, and rising sea levels. As such, two goals of the study were to understand the current condition of the industrial waterfront and to determine preferred uses based on current and future coastal hazards.

The Industrial Waterfront Study advances maritime land-use planning by reversing a trend seen across the country: rather than trying to plan what to do with failing industrial uses, Chesapeake has asked how to support and promote industry in such a way that it can grow and thrive. The plan recognizes the importance of these revenue- and job-generating industries. While the focus of the study was the industrial waterfront, resilient and future-proofed links to rail and road were also key considerations, as well as public access to areas where industrial uses have become obsolete. The sum of these parts is a holistic vision for the Southern Branch that allows space for industrial growth, protection of critical natural features, and places for the community to access recreation and public waterfronts.

# MP85.01

Planning Area (sq miles)  
**About 25 sq miles**

Cost per Square Foot:  
**N/A**

Construction Cost  
**N/A**

Date of Completion:  
**March 2024**

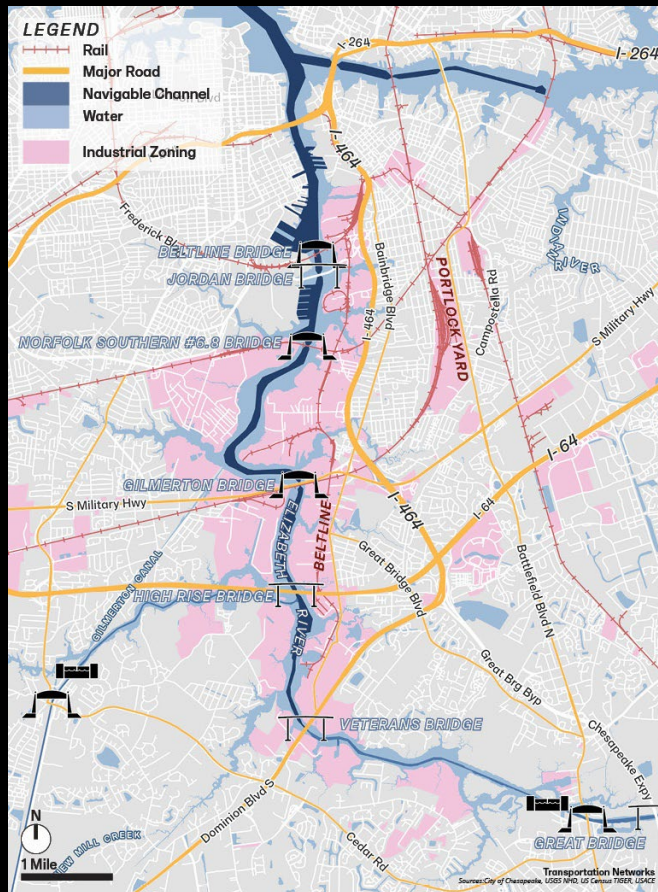
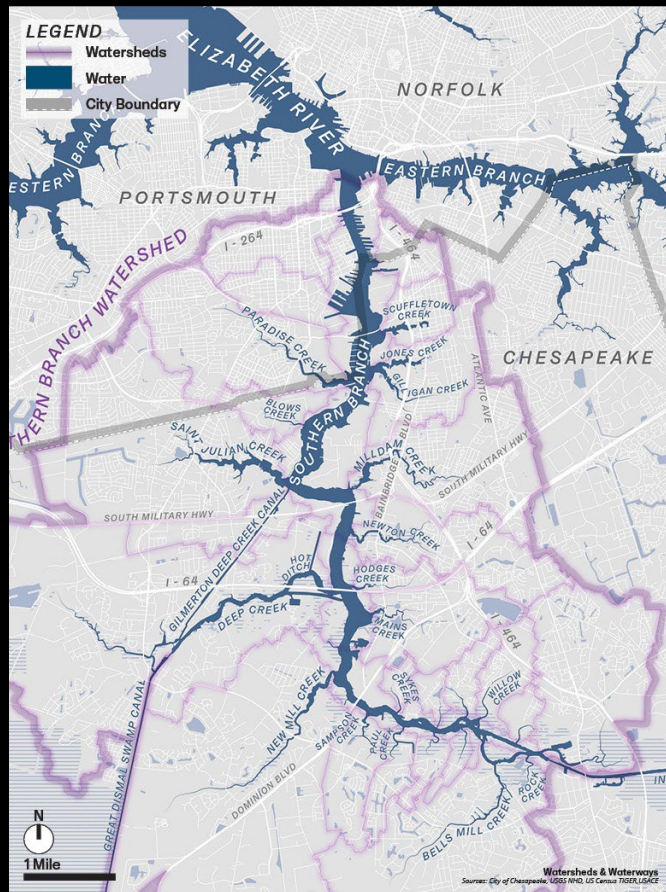


# MP85.02

## Planning for People and Industry

Centered on the Elizabeth River in Chesapeake, VA, this study focuses on shaping a resilient vision for the industrial waterfront and surrounding neighborhoods. The plan reverses a trend seen across the country: rather than trying to plan what to do with obsolete industrial sites, Chesapeake has asked how to support industry so it can grow and thrive. This plan recognizes the importance of these industries and considers the best ways to support them; for example, consolidating industrial users as much as possible improves the cost-benefit analysis for infrastructure improvements. Additionally, the plan does not simply analyze the economic environment but looks at the industrial waterfront in the context of the communities and landscapes surrounding it, ensuring a balanced plan addressing the needs of residents, communities, and industry.





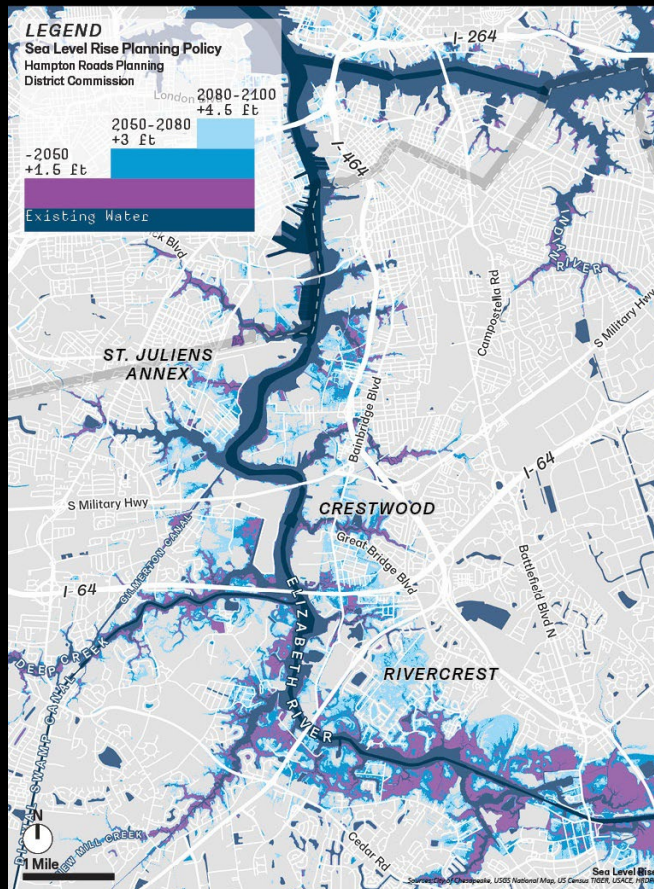
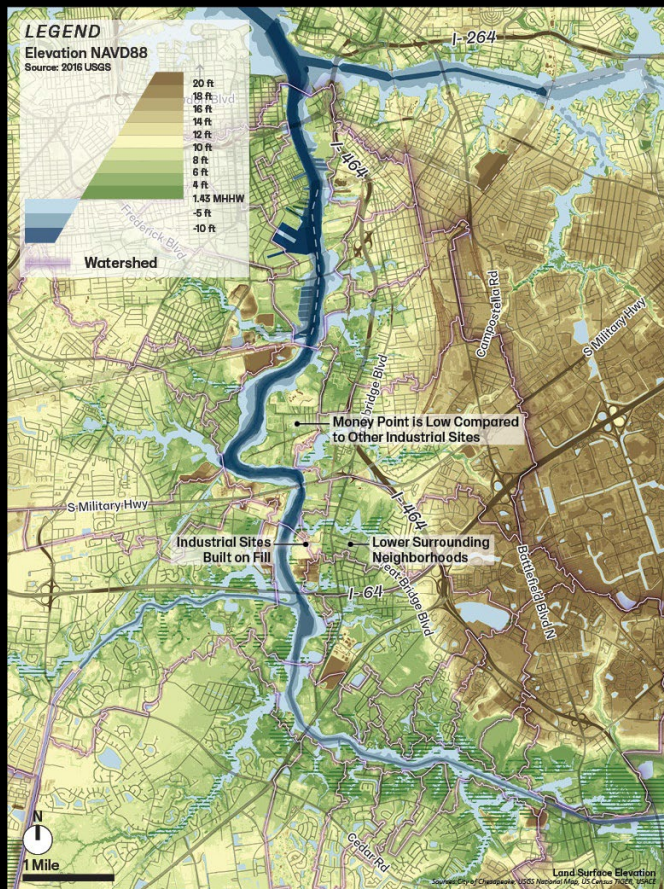
# MP85.03

## Waterways and Infrastructure

The industrial waterfront exists primarily along the deep water channel, a federally maintained waterway (35 to 40 ft deep) allowing larger ocean-going ships to access waterfront facilities. With over 16 square miles of industrial-zoned land (over half along the waterfront), the Southern Branch has a myriad of port facilities: dry and liquid bulk storage, recycling, marine construction, shipping, and logistics. The industrial waterfront and the larger Chesapeake economy rely on a network of infrastructure that includes rail lines, roads, and navigation channels, which can present conflicts where they cross. Lowered draw bridges can cause delays for waterborne ships, rail crossings exacerbate road congestion, and low overhead heights can limit rail freight volumes.



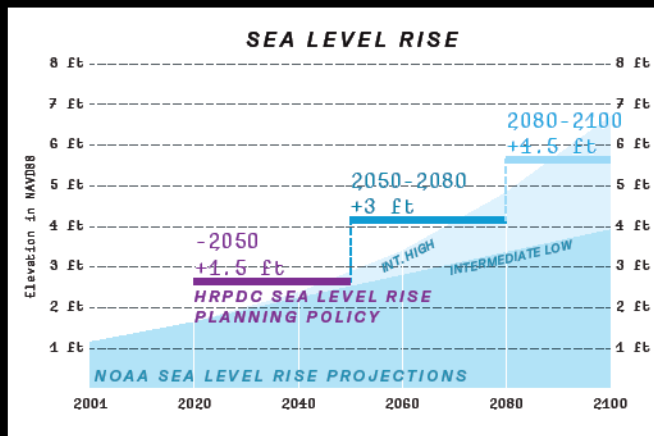
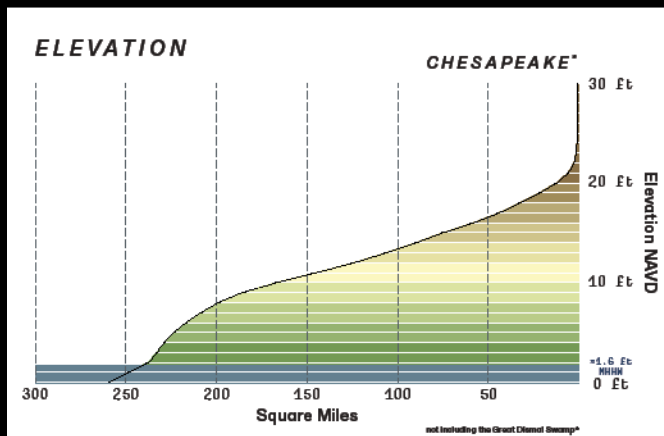




# MP85.04

## Elevation, Flood Risk, and Sea Level Rise

Although a coastal city, Chesapeake has more high ground than other municipalities in the region, with over half of its land more than ten feet above sea level. Due to fill and dredged spoil, the industrial waterfront is high in many areas, while waterfront residential properties are generally lower. With sea levels rising, it is crucial to consider elevation to make future land use decisions. Over time, low-lying corridors like Bainbridge Blvd can become permanently inundated by the rising seas and will need to be raised (see pg 8). Implementing improved drainage and green infrastructure can decrease the risk of tidal flooding. In areas threatened by rising seas, raising roads and implementing tide gates can mitigate the flood risk, and where defensive infrastructure is infeasible, buyouts can be necessary to get people out of harm's way.







Meeting With Industrial Stakeholders



Boat Tour of the Elizabeth River



Workshop with City Staff and Local Experts



Community Presentation & Engagement

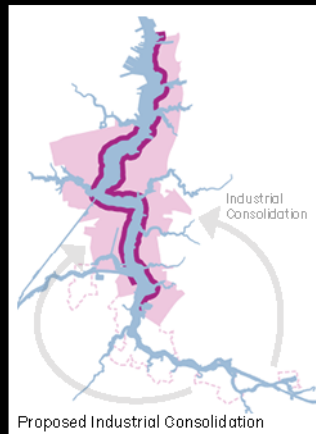
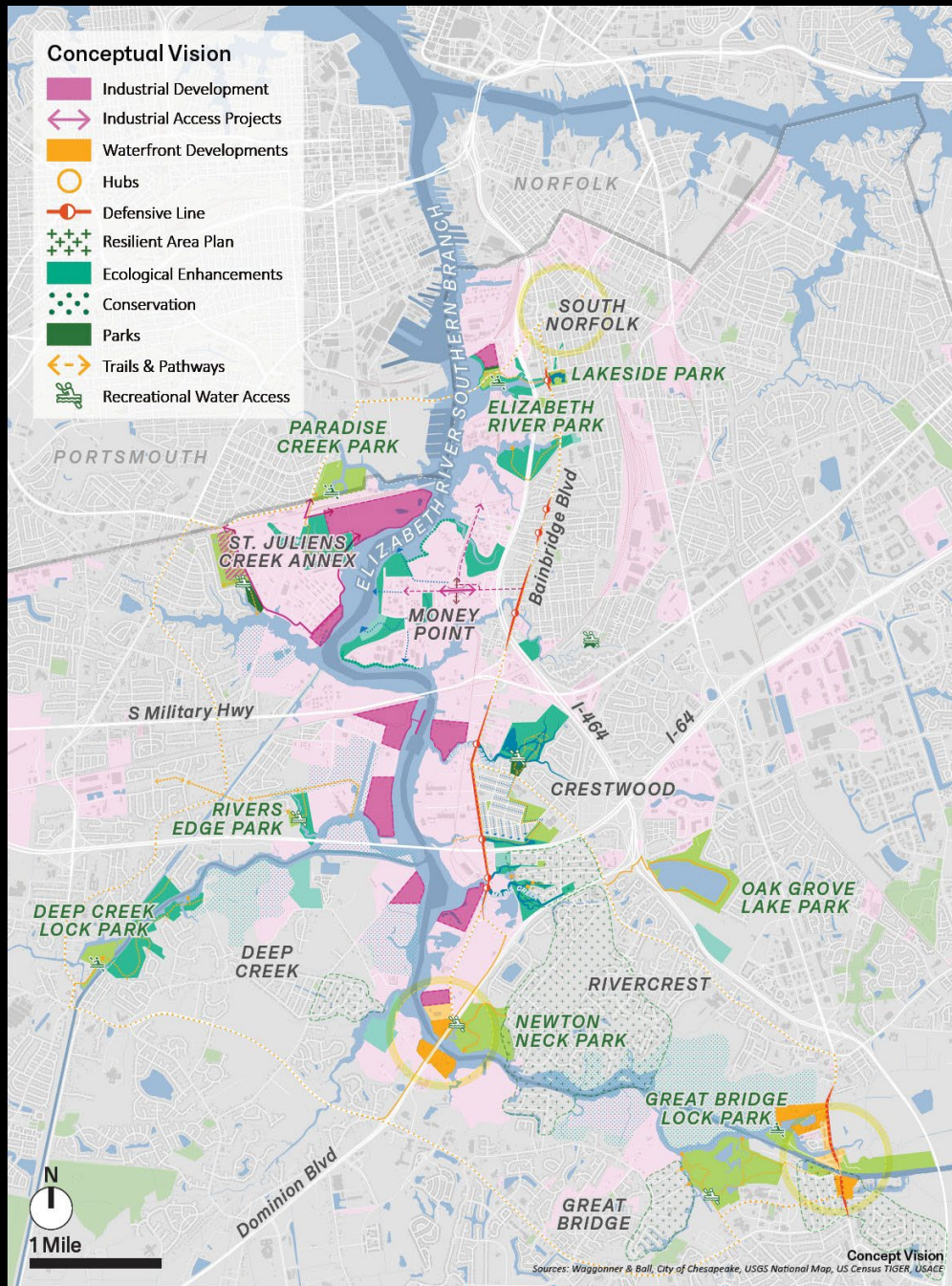


# MP85.05

## The Planning Process

Our team began with exhaustive site research and mapping, reviewing geospatial datasets, meeting with industrial and community stakeholders, and ground-truthing observations in the field. Once a shared understanding of existing conditions was established, we convened stakeholders, planners, officials, and designers for an intensive, 3-day visioning workshop focused on building consensus around the highest and best use of waterfront land. After the workshop, our team developed implementable project concepts for the industrial waterfront, such as proposed industrial development sites, neighborhood stormwater parks, and road raisings to protect against sea level rise. Together, the projects form a comprehensive vision for the future of the industrial waterfront, encompassing industrial, ecological, and recreational elements.





# MP85.06

## Conceptual Vision

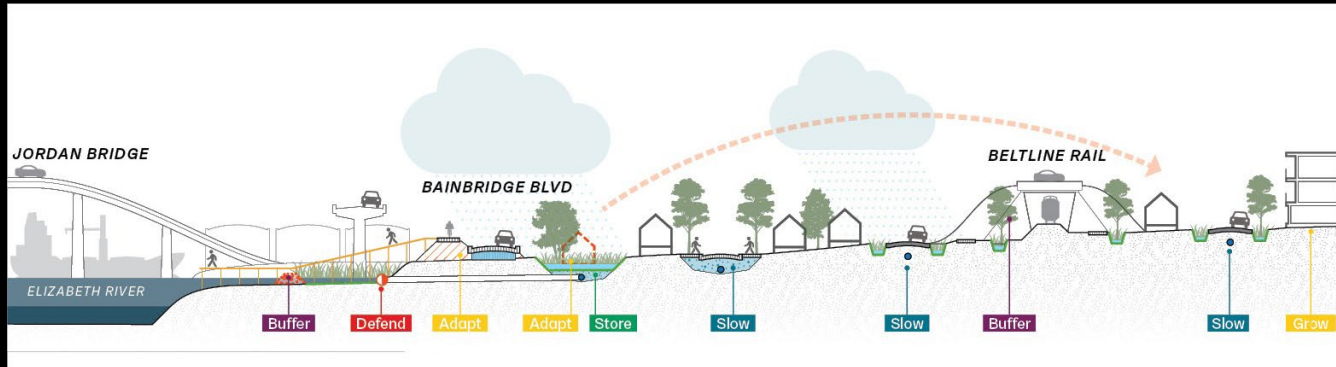
The central goal of the plan is to promote the highest and best use of the waterfront, considering economic potential, infrastructural feasibility, and community needs. Throughout the study area, the highest and best use changes in response to several factors: preserving and promoting industrial activity, creating recreation and conservation zones, and developing mixed-use waterfront hubs where major transportation corridors meet the water. While industry is prioritized along the deep water shipping channel, smaller creeks and tributaries are prioritized for community and recreational access, with a network of trails connecting residents to the waterfront and helping to buffer housing from industry. The project area was divided into geographic regions (see slides 9-13), each with key takeaways and recommendations.



# MP85.07

## Resilience and Adaptation Strategies

A toolkit of place-based strategies helps industry and communities adapt to the impacts of climate change, sea level rise, and flooding. Rooftops, driveways, streets, and sidewalks can be redesigned to slow down rain, catch it where it falls, and allow it to soak into the ground. Large-scale retention features integrated into public spaces provide space to hold water from runoff and high tides. Building with nature can create a buffer at the water's edge using soft structures that mimic or restore natural features. Berms, levees, and floodwalls are hardened structures that defend against the tide and reduce the risk of tidal and storm surge flooding. Raising roads and buildings above the floodplain adapts the built environment to growing flood risk, as do buyouts and relocations of vulnerable residents away from areas that flood.



Slow - Bioswale



Store - Stormwater Park



Buffer - Living Shoreline



Defend - Tide Gate



Adapt - Elevated Road



Adapt - Buyout & Retrofit



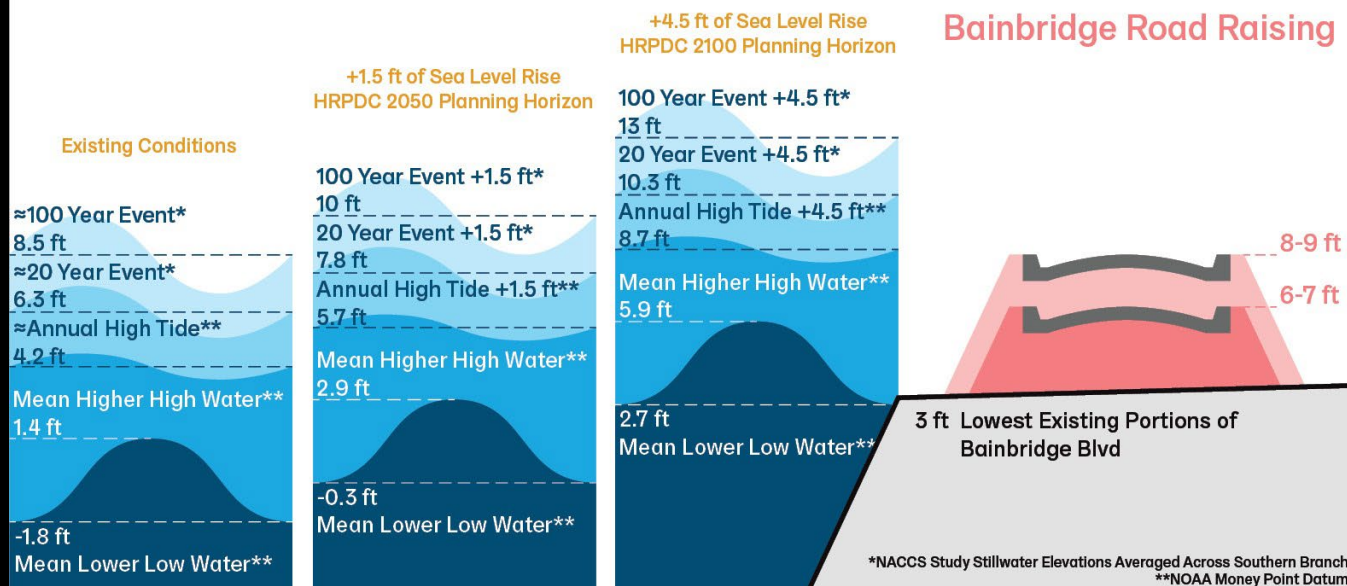




# MP85.08

## Bainbridge Road Raising

A key project would raise Bainbridge Boulevard, which is frequently affected by floods, to create a multifunctional flood defense line. This critical transportation route connects the working waterfronts of Chesapeake to the surrounding region. Raising the road will prevent chronic flooding, and with the implementation of tide gates, will allow the road to act as a tide and storm surge barrier, defending neighborhoods just inland like Crestwood and Portlock against moderate storm surge events. Over time, rising sea levels will lower the protection level, and further elevation or an alternative strategy will need to be investigated. Rather than a single-purpose infrastructure project, raising Bainbridge Blvd is an opportunity to protect the surrounding neighborhood, improve water quality and stormwater management, and increase neighborhood interconnectivity.





## LEGEND

- Industrial Opportunity
- Commercial/Mixed Use Opportunity
- Trails & Multimodal Projects
- Resiliency Project
- Defensive Lines
- Enhanced Ecological Function Project
- Parks
- Existing Recreational Water Access
- Potential Recreational Water Access
- Rail



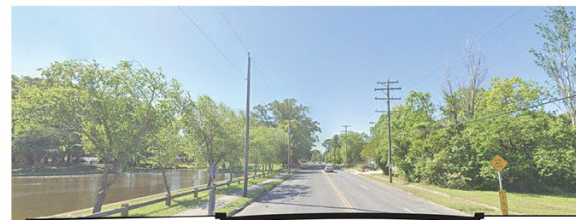
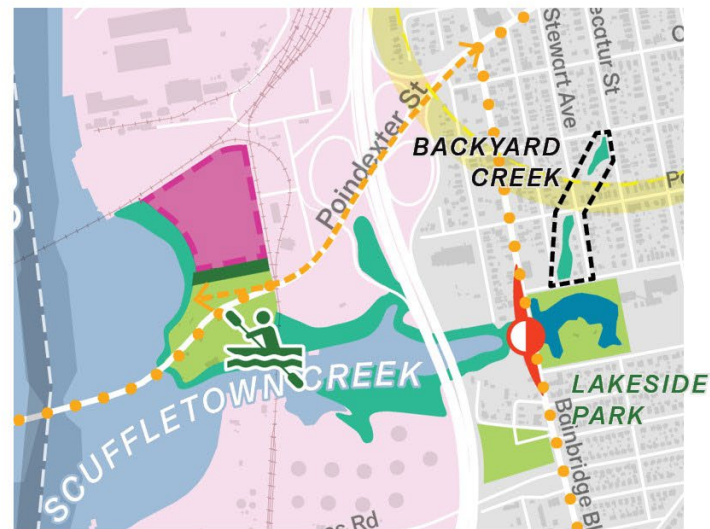
# MP85.09

## South Norfolk

Chesapeake's northernmost geographic sub-area is a historic neighborhood with an active industrial waterfront, a riverfront park, and a walkable commercial corridor along Poindexter Street. South Norfolk has the potential to become the city's best parks district if industry is strategically consolidated.

Goals and key takeaways include:

- Raise and fortify low-lying sections of Bainbridge Blvd, creating a line of defense against sea level rise and storm surges.
- Connect South Norfolk's parks and urban core through trails, bike paths, and boardwalks.
- Develop the Belharbour site for industrial use with living shoreline and community waterfront access.



Bainbridge at Lakeside Park



Elevated Bainbridge



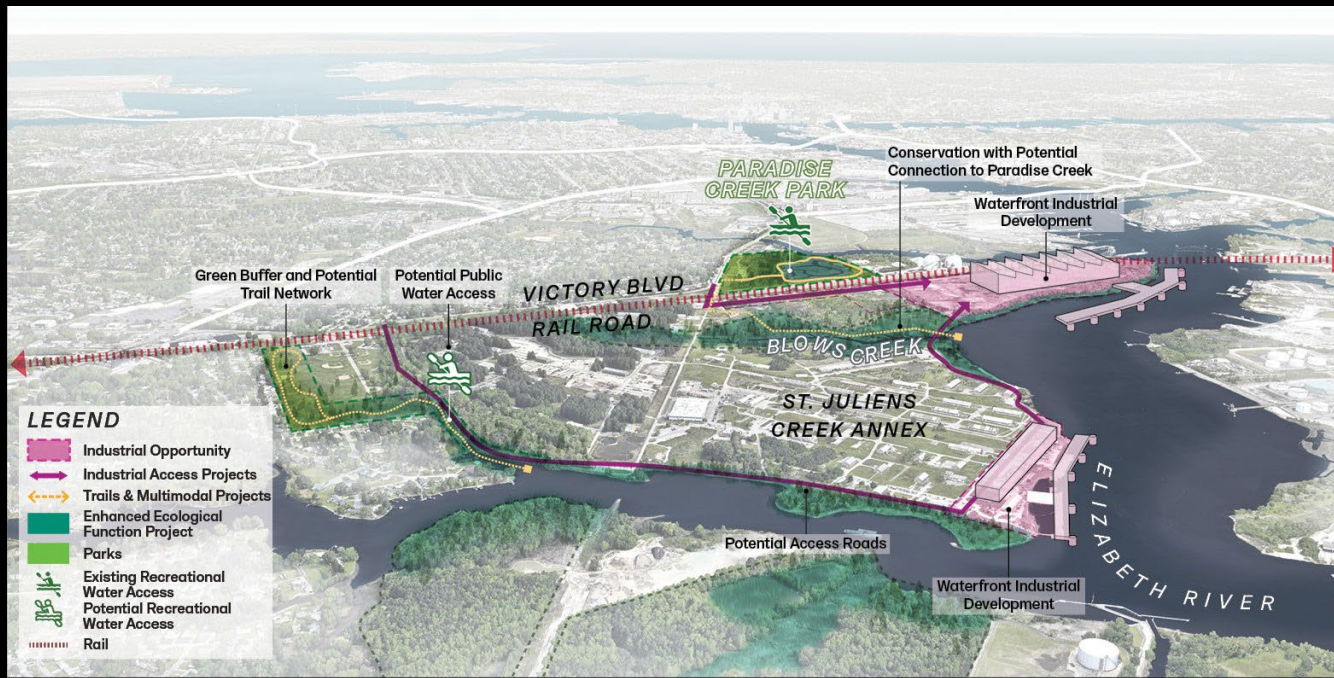
# MP85.10

## St. Julien's Annex

Centered around a historic Naval support facility, this area has high potential for waterfront industrial redevelopment, space for wetlands restoration and conservation, and opportunities to create public recreational water access along St. Juliens Creek.

Goals and key takeaways include:

- In coordination with the Navy, redevelop the Annex's waterfront for industrial uses.
- Encourage the development of the deep water site east of St. Juliens Creek Annex.
- Create public water access points along St. Juliens Creek.
- Increase connectivity between parks.
- Restore Blows Creek and connect to Paradise Creek Park.



## LEGEND

- Industrial Opportunity
- Industrial Access Projects
- Ecological Enhancement Project
- Conservation
- Park Project
- Existing Water Access
- Proposed Water Access
- Loop Trail
- Paths & Boardwalks
- Drainage Improvements
- Existing Park
- Industrial Zoning



## LEGEND

- Industrial Opportunity
- Industrial Access Projects
- Resiliency Project
- Defensive Lines
- Enhanced Ecological Function Project
- River Edge
- Inland
- Drainage Improvements
- Rail



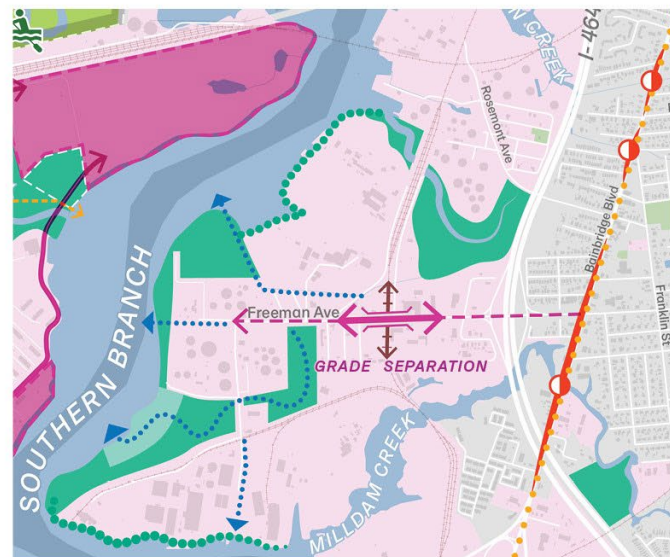
# MP85.11

## Money Point

One of the earliest industrial developments in Chesapeake, flood and environmental risk overlap in this isolated peninsula with a single road connecting it to the high ground.

Goals and key takeaways include:

- Create uninterrupted road access route to the area through grade separation from rail and additional access points.
- Prioritize brownfield sites for remediation and redevelopment.
- Expand the existing living shoreline to improve water quality.
- Upgrade stormwater infrastructure in tandem with green infrastructure corridors.
- Infill industrial development in underutilized sites.



Existing Roadside Ditches Filled with Water

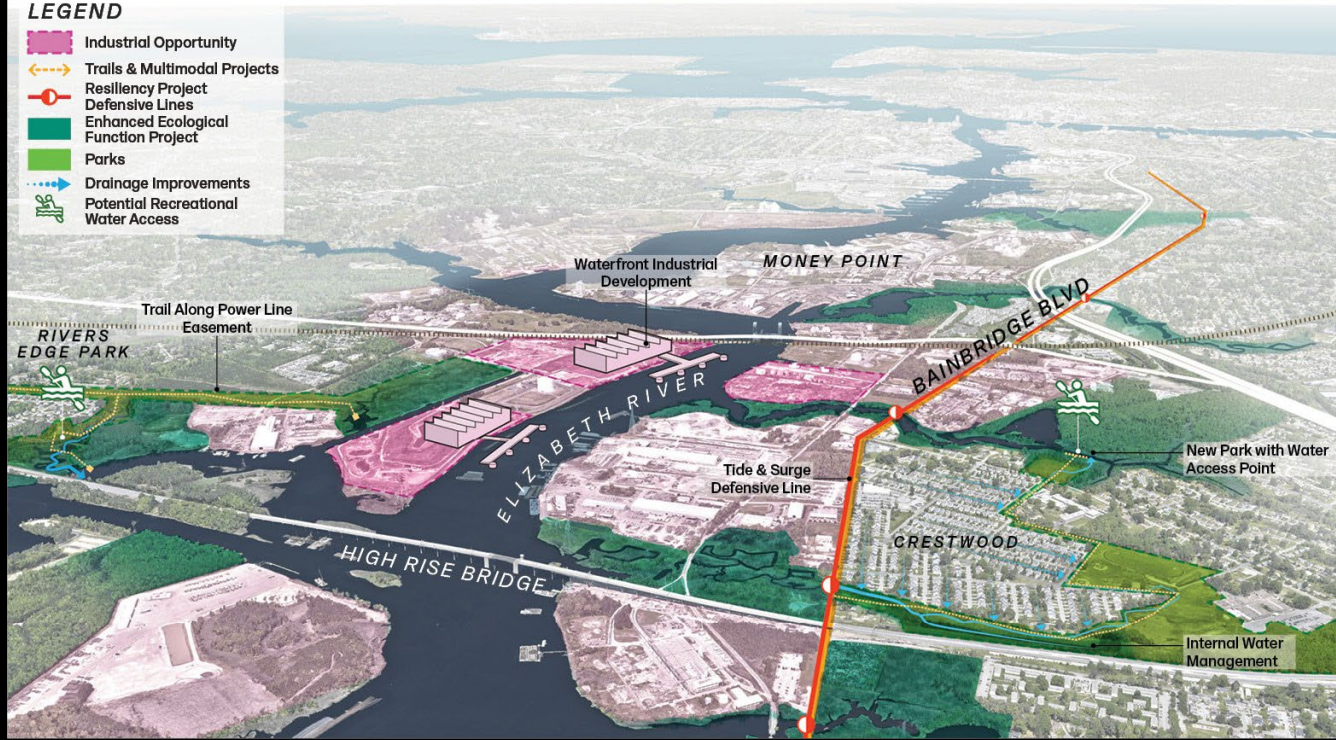


Raised Road and Bioswale Combination



## LEGEND

-  Industrial Opportunity
-  Trails & Multimodal Projects
-  Resiliency Project
-  Defensive Lines
-  Enhanced Ecological Function Project
-  Parks
-  Drainage Improvements
-  Potential Recreational Water Access



# MP85.12

## Crestwood & Deep Creek

The Elizabeth River's southernmost stretch of deep draft industrial waterfront features a large former power plant site and high-ground industrial property. The surrounding neighborhoods are low-lying and prone to flooding during tidal and rain events.

Goals and key takeaways include:

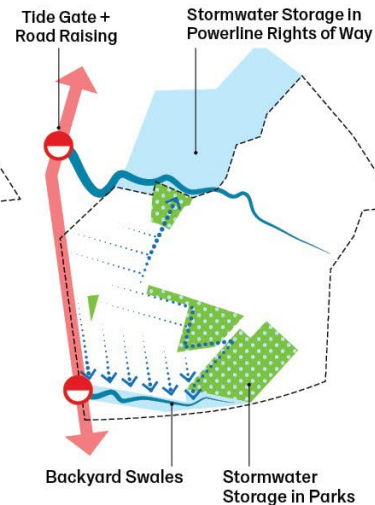
- Construct a raised flood defense line along Bainbridge Boulevard to protect vulnerable populations in low-lying neighborhoods.
- Redevelop the former Dominion power plant site for phased waterfront industrial use on the high ground.
- Establish recreational water access points at Newtons, Hodges, Mains, and Deep Creeks.

### Existing Crestwood

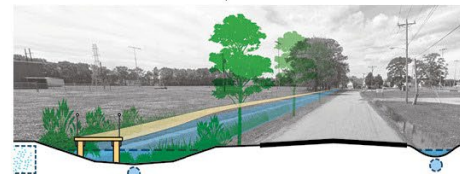
Tidal and Rainfall Flooding



### Proposed Crestwood



Existing



Proposed



# MP85.13

## Great Bridge

At the southernmost end of the River is an opportunity for waterfront commercial development on a key corridor and a new park near the Veterans Bridge.

Goals and key takeaways include:

- Raise Battlefield Blvd as it crosses the floodplain.
- Promote commercial waterfront development around Battlefield Blvd.
- Connect public parcels and amenities to waterfront parks.
- Conserve existing undeveloped land for habitat and recreation.
- Adapt flood-prone residential neighborhoods.

