

Panel Discussion:

BENEFICIAL USE IN THE CHESAPEAKE BAY

Eastern Chapter WEDA Fall 2019 Conference



Moderator:



Walter Dinicola, P.E.
Principal Engineer

Panelists:



Doug Myers
Maryland Senior Scientist,
Chesapeake Bay Foundation



Jackie Specht
Coastal Science Program Manager,
The Nature Conservancy



Kristen Keene
Innovative Reuse Program Manager,
Maryland Department of Transportation
Maryland Port Administration



Isaac Hametz
Principal & Research Director,
Mahan Rykiel Associates



CHESAPEAKE BAY
FOUNDATION

Saving a National Treasure

Chesapeake Bay Foundation and Fleming Park

An Intersection of Priorities to Save the Bay

Doug Myers

MD Senior Scientist



The Chesapeake Bay

A 64,000-square-mile watershed that covers parts of six states and is home to more than 18 million people.

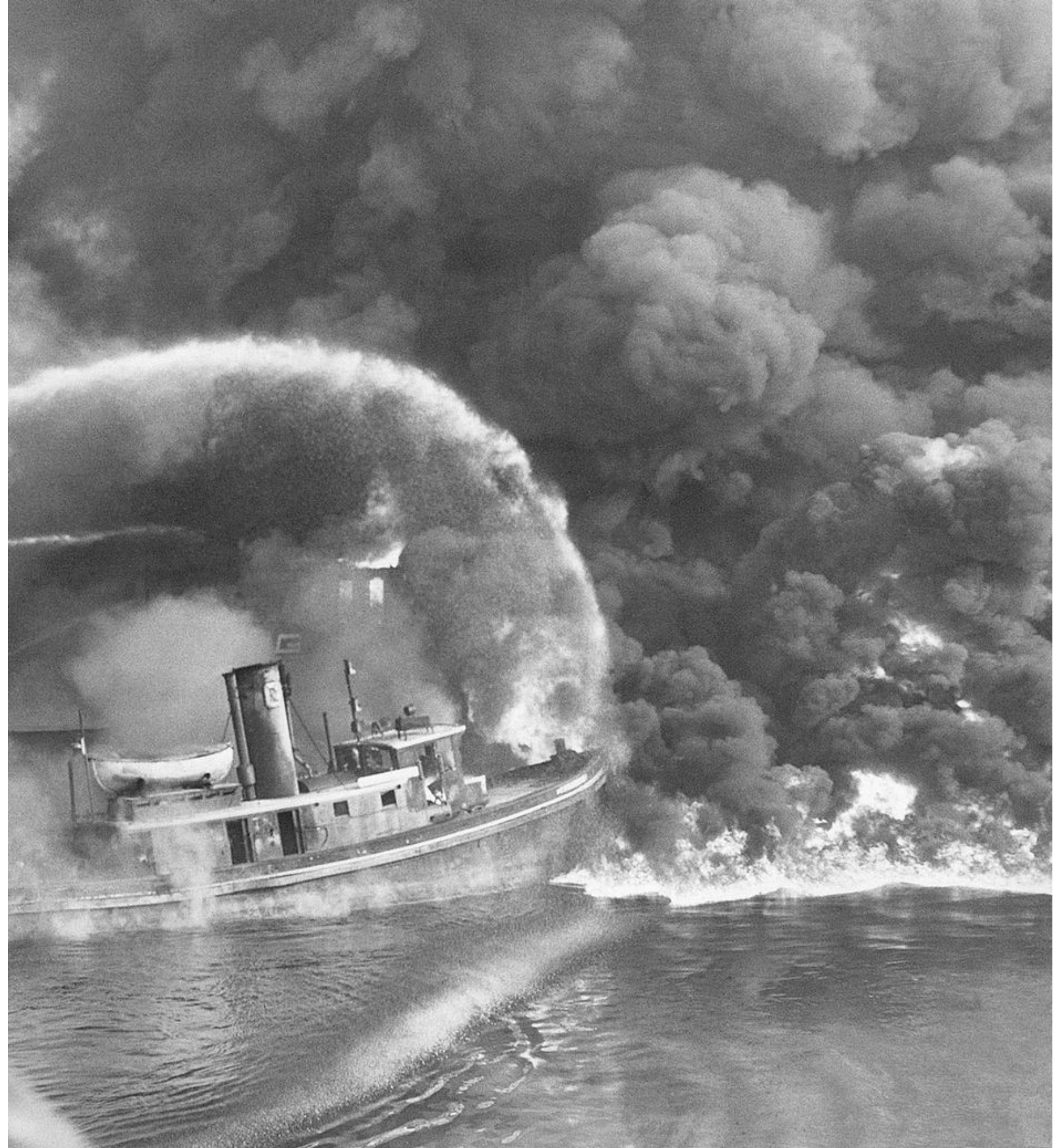


The Clean Water Act

The Promise of Clean Water for All Americans

Before the 1972 Clean Water Act, many of the nation's rivers were open sewers filled with untreated human waste and toxic chemicals. Fish kills and public health warnings were commonplace; in 1969, Ohio's Cuyahoga River caught on fire.

The Clean Water Act promised to restore the nation's waterways so they would again be safe for fishing and swimming.



How Clean Do Our Waters Need to Be?

- “Water quality standards” are foundation of Clean Water Act
- States set standards for individual pollutants at levels that are protective of Act goals
- Waters not meeting standards are considered “impaired”
- Impaired waters require a clean up plan called a Total Maximum Daily Load (TMDL) or a “pollution diet”



The Clean Water Blueprint

Watershed Improvement Plans (WIP)

- WIP Phase I (2010) established a pollution 'diet; to restore and protect the Bay.
- WIP Phase II (2012) provided detailed pollution reduction strategies to achieve Maryland's Bay restoration goals.
- WIP Phase III (2019) builds on lessons learned from Phases I and II and charts a course to 2025 that is locally-driven, achievable and balanced.
- To meet the goals of the WIP III, sediment plays a large role in reducing nutrient loads since phosphorus attaches to sediment; practices that reduce phosphorus tend to drive sediment reductions.

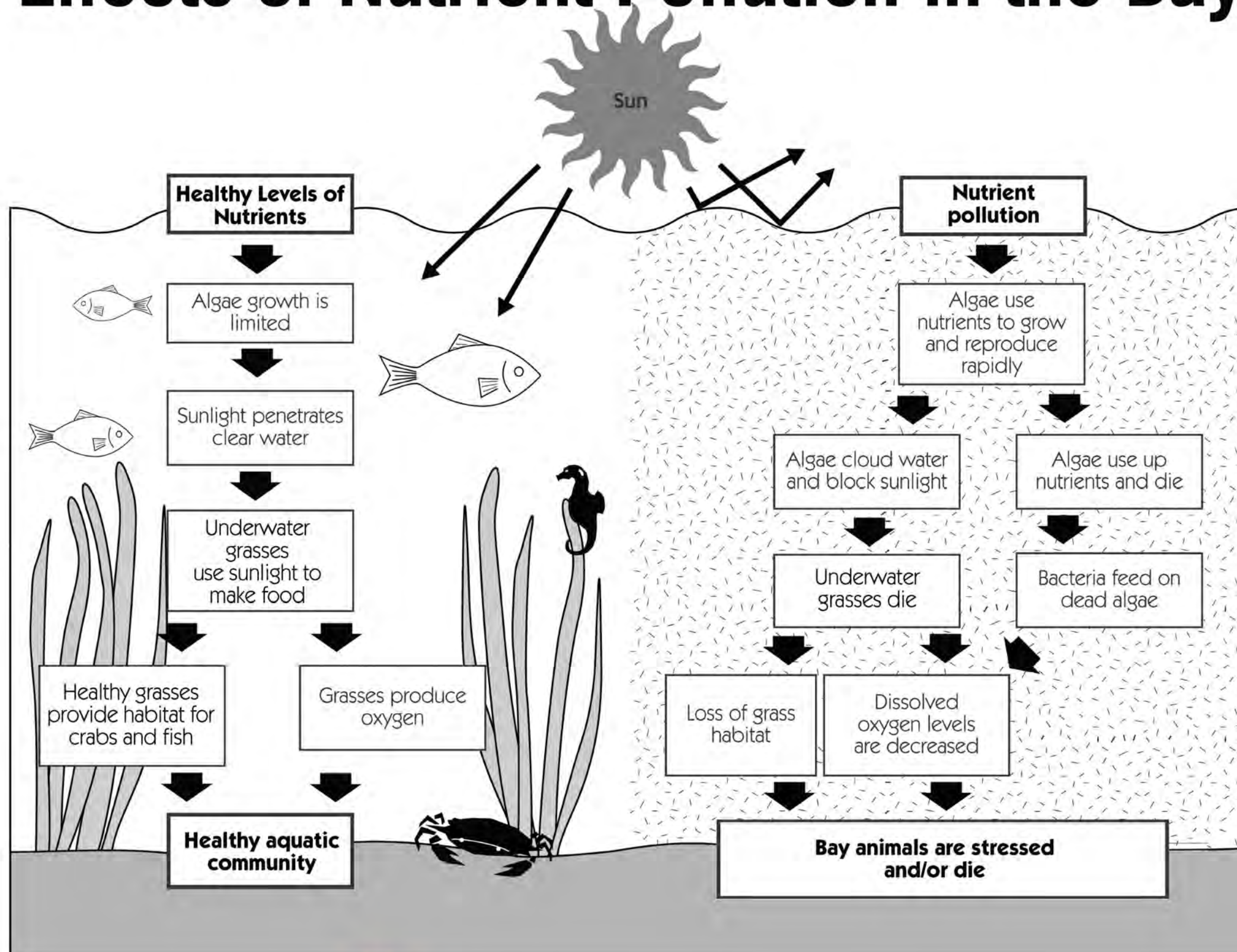


© Paul Bird Images

Good Sediment & Bad Sediment

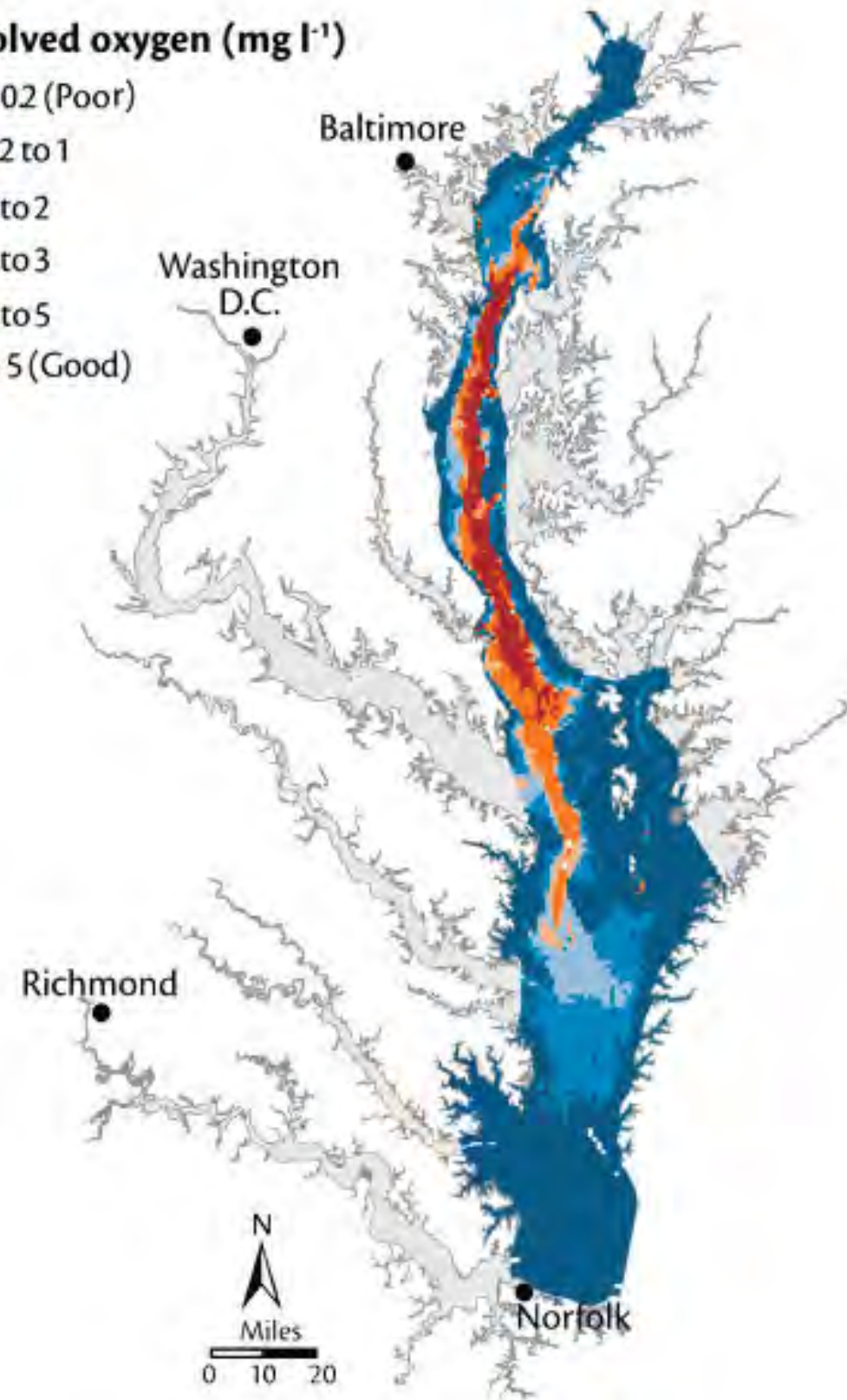
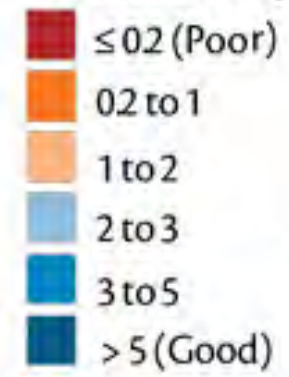


Effects of Nutrient Pollution in the Bay



Late August 2009

Dissolved oxygen (mg l⁻¹)



Sources of Pollution

Pollution from many sources harms the Chesapeake Bay:

- Agricultural Runoff
- Sewage Treatment Plants and Factories
- Urban and Suburban Stormwater Runoff
- Air Pollution
- Other Sources



**Environmental
Literacy**

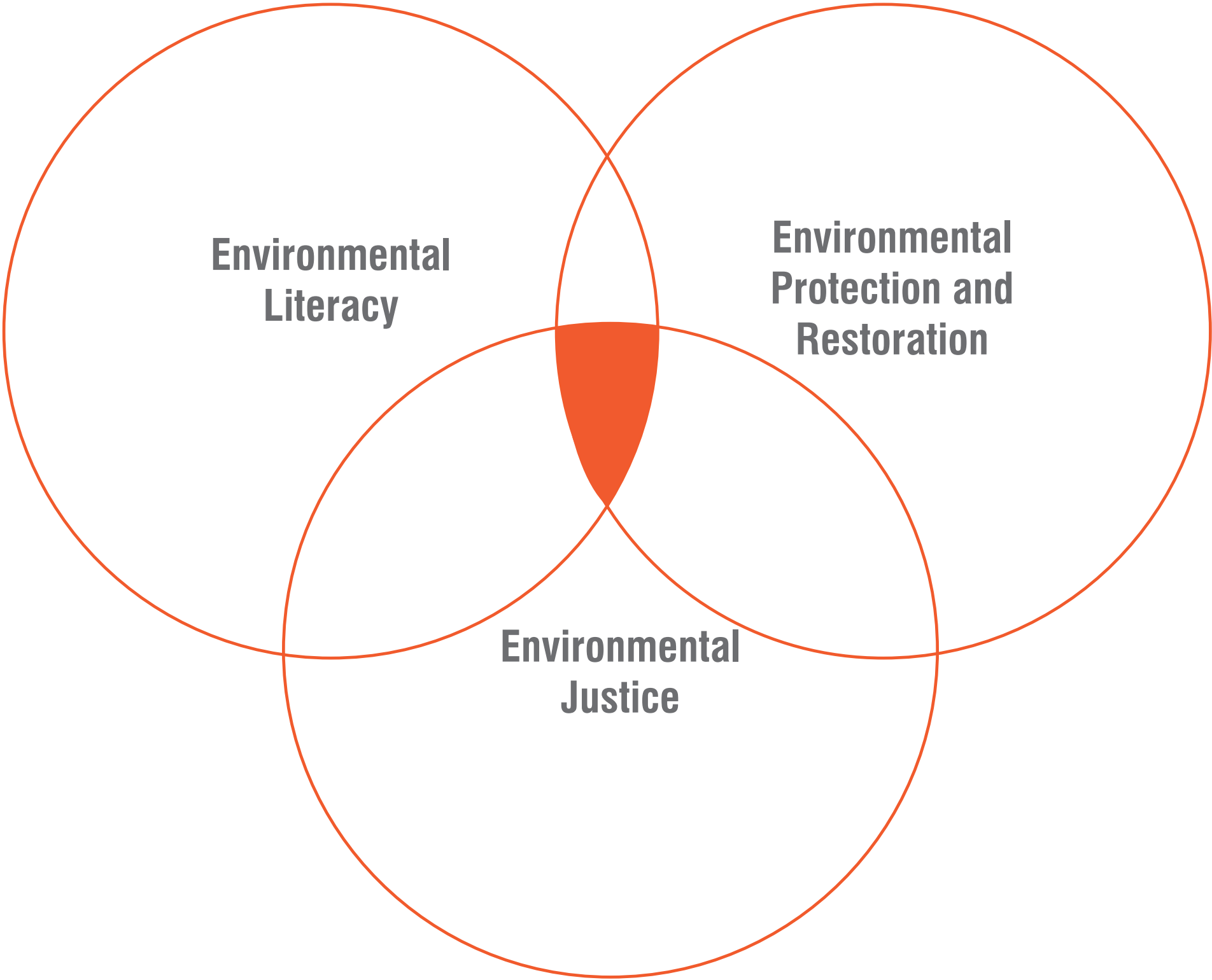
**Environmental
Protection and
Restoration**

CBF Priorities and history in Baltimore Harbor

**Environmental
Justice**

FLEMING PARK

Fleming Park brings disparate program areas within the organization together into one project.



The Chesapeake of our Future





CHESAPEAKE BAY
FOUNDATION

Saving a National Treasure

Thank you

Doug Myers

MD Senior Scientist

dmyers@cbf.org






Building Coastal Resilience

Jackie Specht

Coastal Science Program Manager,
The Nature Conservancy



The Nature Conservancy's vision for land and water conservation across North America is to *conserve a representative network of resilient sites and connecting corridors that will sustain North America's natural diversity by allowing species to adapt to climate impacts and thrive.*

Robinson Neck Preserve

- Ecologically valuable
- Culturally valuable
- Coastal resilience

Is thin-layer placement (TLP)
a solution?



Questions:

- How do we ensure that placement of dredged sediments is environmentally responsible?
- How do we align dredged sediments with the restoration sites?
- How do we target sites for beneficial use that can provide the greatest value for coastal resilience?

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NOAA Coastal Management Fellow



Understand the challenges, options, and practices for the beneficial use of dredged material and what opportunities exist to promote and enhance natural and nature-based features for **community resilience** with these materials

Problem

Upland capacity is limited and
our coasts are at risk



Opportunity

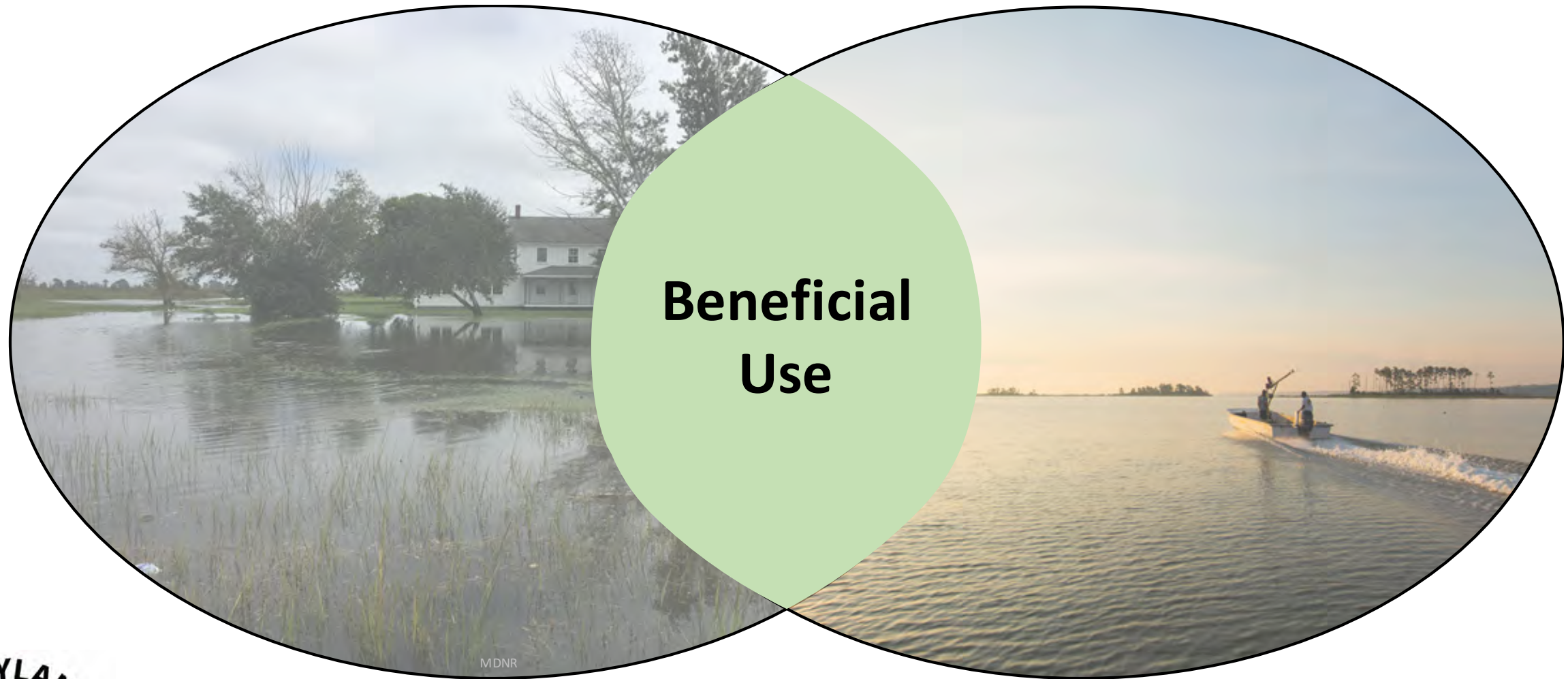
Dredged material (sediment)
is a resource



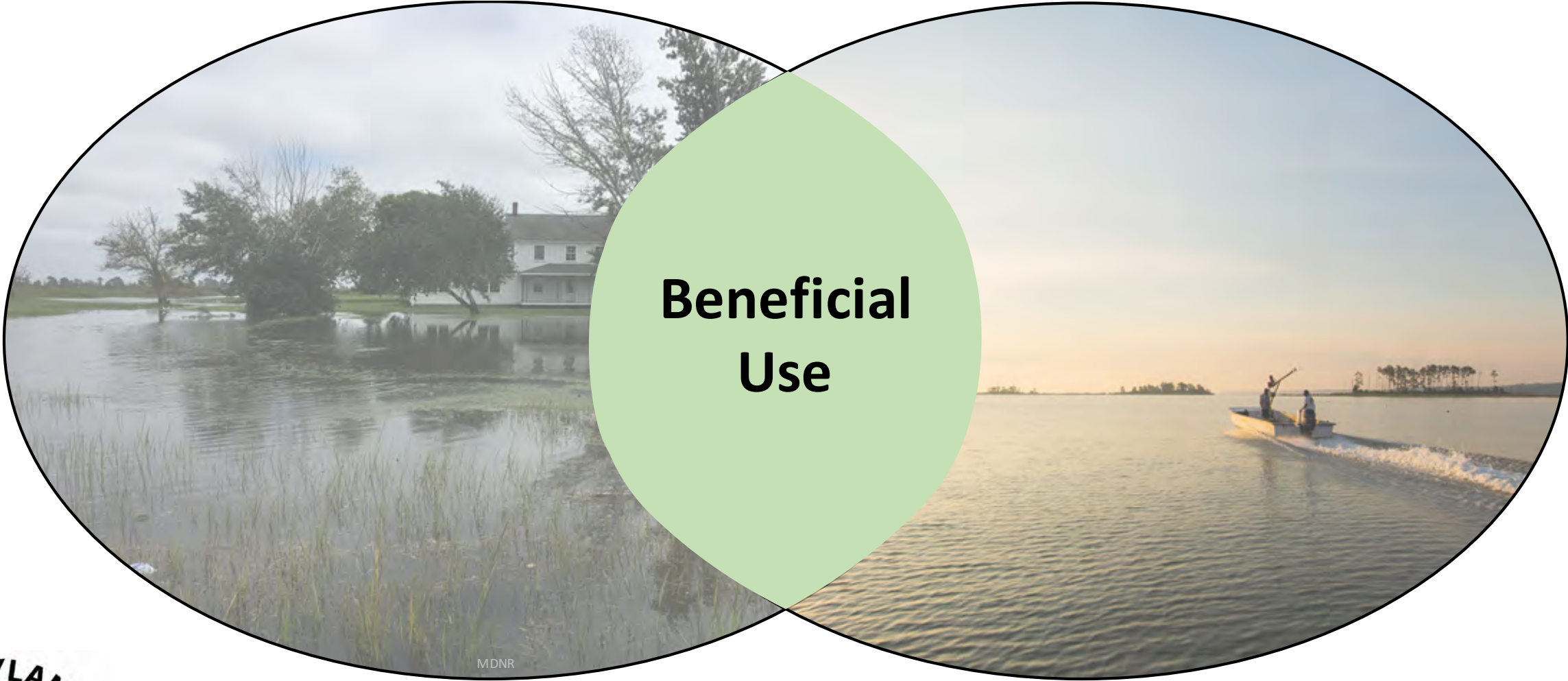
Challenge

Connecting restoration and dredging to build resilience

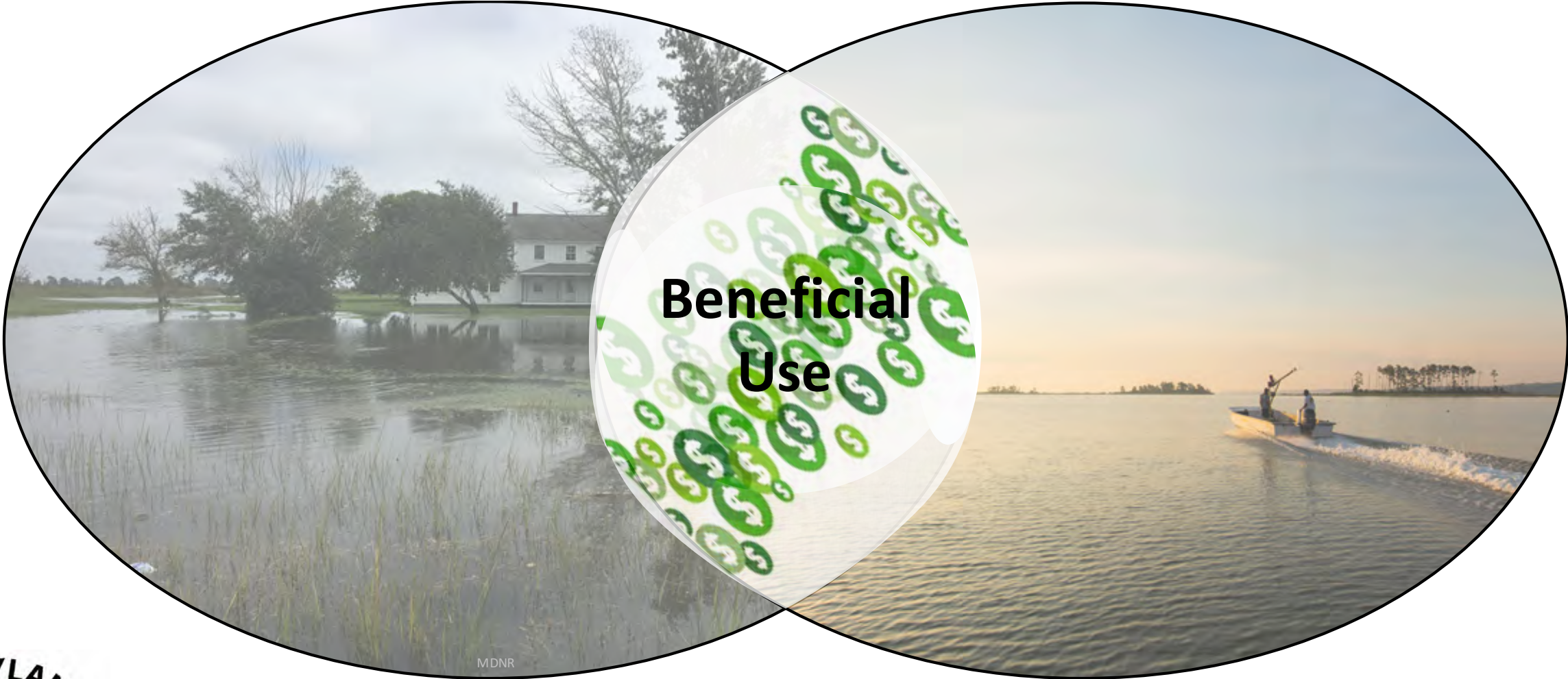




How do we better align restoration and dredging?



How do we better align restoration and dredging?



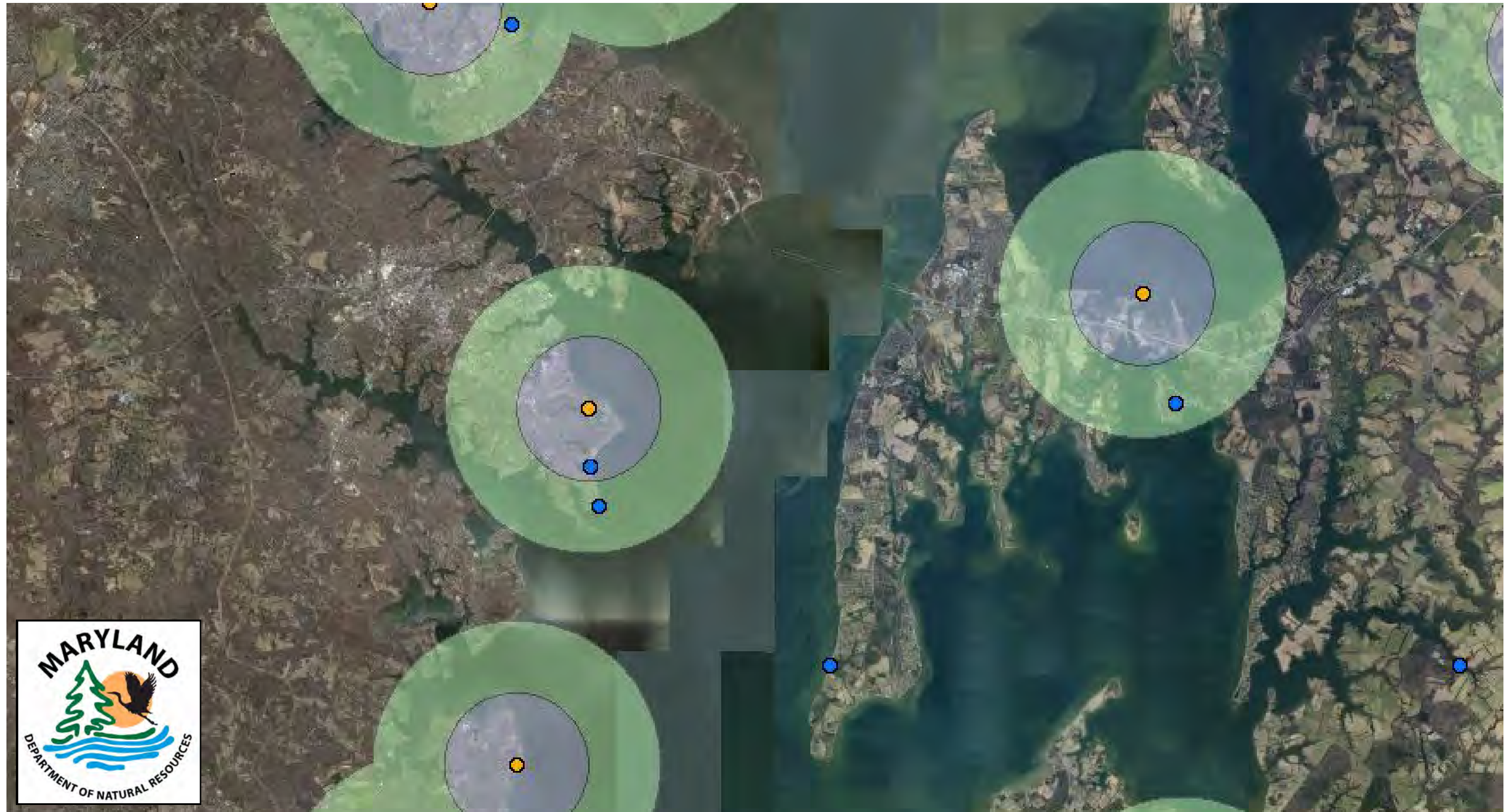
What policies and procedures need to be put into place to provide environmental protection?



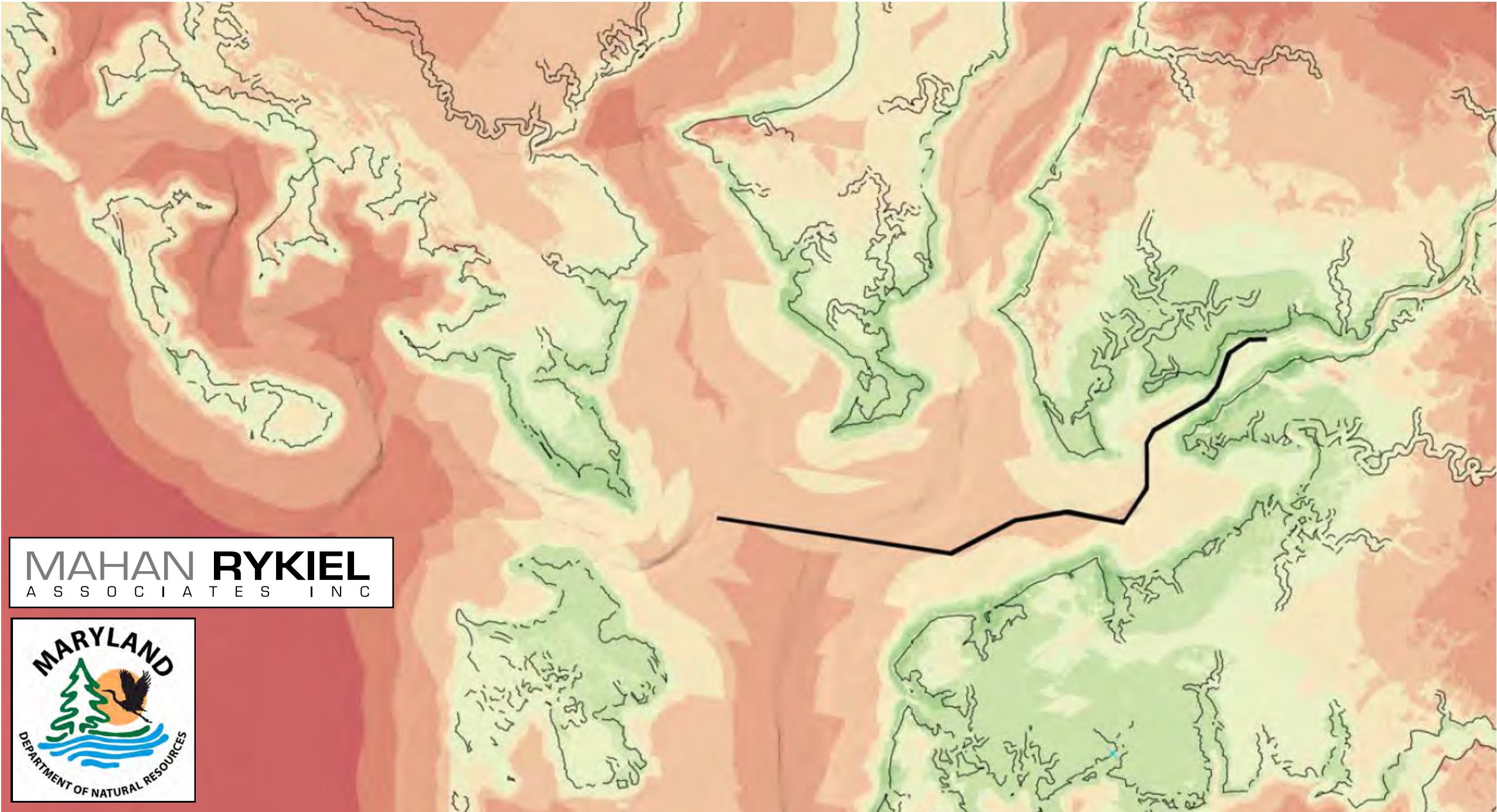
What policies and procedures need to be put into place to provide environmental protection?

Policy	Process	TLP Planning Document
<p>Goal: Protect natural resources</p> <p>How:</p> <ul style="list-style-type: none"> • Hierarchy for uses • Conditions for placement • Procedures for request 	<p>Goal: Protect natural resources and provide implementation structure</p> <p>How:</p> <ul style="list-style-type: none"> • Step-by-step chronological guide • Dredging, restoration, and review perspectives 	<p>Goal: Capture TLP best <i>known</i> management practices</p> <p>How:</p> <ul style="list-style-type: none"> • Desktop analysis user guide • Pre-planning checklist • Lessons-learned • Demonstration projects • Resources

How do we better align restoration and dredging?



How do we better align restoration and dredging?



Questions:

- How do we ensure that placement of dredged sediments is environmentally responsible?
- How do we align dredged sediments with the restoration sites?
- How do we target sites for beneficial use that can provide the greatest value for coastal resilience?

TNC's Resilient Coasts Program

- Define resilience
- Use a landscape scale perspective to target resilience areas
- Demonstrate effectiveness of nature-based solutions for coastal resilience

TNC's Resilient Coasts Program

- **Define resilience**
- Use a landscape scale perspective to target resilience areas
- Demonstrate effectiveness of nature-based solutions for coastal resilience

TNC's Resilient Coasts Program

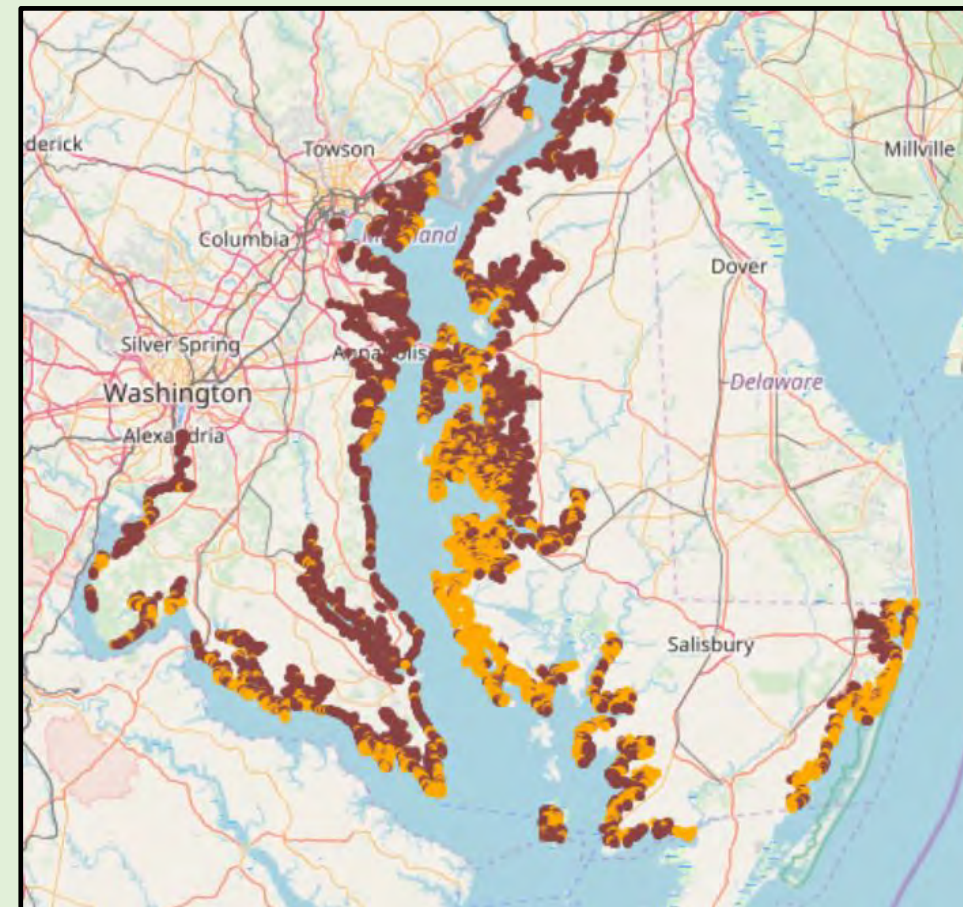
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TNC's Resilient Coasts Program

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Coastal Resiliency Assessment



Identifies priority areas for conservation (●) and restoration (●).

TNC's Resilient Coasts Program

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- **Demonstrate effectiveness of nature-based solutions for coastal resilience**

TNC's Resilient Coasts Program

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Wave attenuation study



Study to document impacts of NNBF type on wave attenuation

- Demonstrate efficacy of *our* marshes in protecting communities
- Provides quantifiable reasons to protect marshes

TNC's Resilient Coasts Program

- Define resilience
- Use a landscape scale perspective to target resilience areas
- **Demonstrate effectiveness of nature-based solutions for coastal resilience**

Sea Level Rise Viewer



Turner Station Conservation Teams

- Virtual reality sea-level rise hazard projections and adaptation scenarios

TOUCHING GROUND WHERE WE ARE NEEDED THE MOST

Sea Level Rise Vulnerability

0 to 2 Foot Inundation

0 to 2 Foot Inundation



Thank you

Jackie Specht

Coastal Science Program Manager,
The Nature Conservancy
jackie.specht@tnc.org



Sediment to Solutions

Channeling Innovation

Kristen Keene

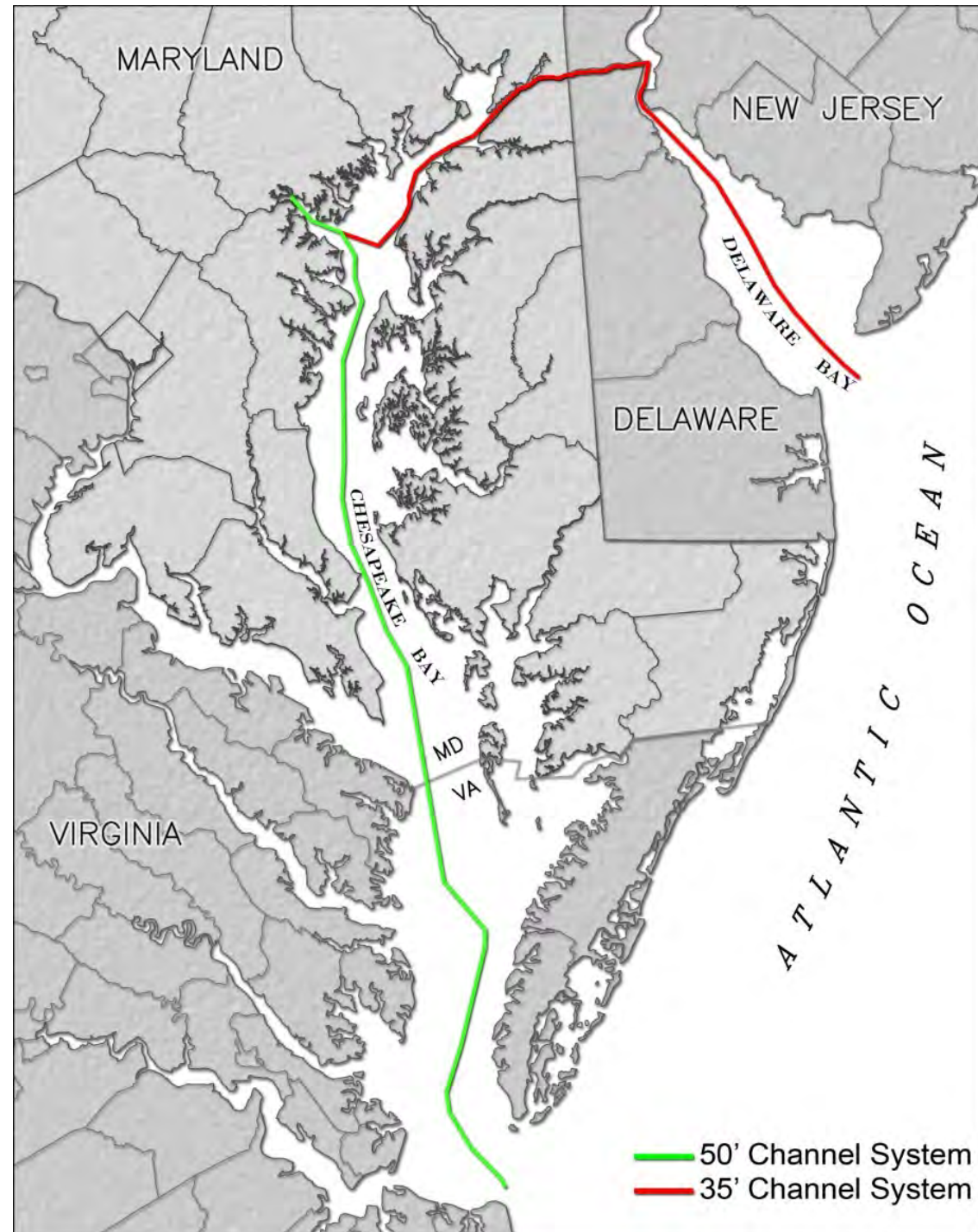
Innovative Reuse Program Manager, Maryland
Department of Transportation Maryland
Port Administration



MDOT MPA MISSION:

“To increase the flow of waterborne commerce through the State of Maryland in a manner that provides benefit to the citizens of the State.”

Dredging Shipping Channels



Major shipping channels in the **Chesapeake Bay and Baltimore Harbor** are maintained at a **50-foot depth**; **other channels** are maintained at a **35-foot depth**

Dredging Volumes:

Port of Baltimore Shipping Channels Maintenance Dredging

- Port of Baltimore's shipping channel
 - Maintaining a 50' depth keeps channels safe and open and the Port competitive.
- Annual maintenance of the State's marine highway
 - 136 miles of dredged channels/yr
- 4.7mcy of material is dredged annually
 - Harbor channel material: 1mcy/yr
 - Bay channel material
 - C&D Canal approach channel material



Evergreen Triton: 14,424 TEUs

Maryland's Dredged Material Management Program (DMMP)

Guiding Legislation: The Dredged Material Management Act of 2001

Prioritized placement options in the following hierarchy:

- **Innovative Reuse and Beneficial Use**
- Upland Sites and Other Environmentally Sound Confined Capacity
- Expansion of Existing Facilities
- Other Options to Meet Long-Term Placement Needs (excluding re-deposition in an unconfined manner)



DMMP Committee Structure

This is how Maryland engages stakeholders in dredged material management – from challenge identification through site operation and end use.

- Representatives of relevant state and federal regulatory agencies, research and business communities, environmental organizations

- Citizens, agencies, organizations, communities, groups interested in dredged material placement

- People or agencies with Bay-related environmental data or knowledge

Governor of Maryland

Executive Committee

Management Committee

Citizens' Advisory Committee

Harbor Team

Innovative Reuse Committee

Hart-Miller Island
Citizens Oversight Committee

Cox Creek
Citizens Oversight Committee

Masonville
Citizens Advisory Committee

Pearce Creek
Implementation Committee

Bay Enhancement Working Group (BEWG)
and Scientific and Technical Advisors

Partners in Dredging

MARYLAND CITIZENS



Sediment Management Experts



Statutory Definitions:

Innovative Reuse:

“includes the use of dredged material in the development or manufacturing of commercial, industrial, horticultural, agricultural or other products.”

Beneficial Use:

“Means any of the following uses of dredged material from the Chesapeake Bay and its tributary waters placed into waters or onto bottomland of the Chesapeake Bay or its tidal tributaries, including Baltimore Harbor:

- The restoration of underwater grasses
- The restoration of islands
- The stabilization of eroding shorelines
- The creation or restoration of wetlands
- The creation, restoration, or enhancement of fish or shellfish habitats

New Solutions Needed

Innovative Reuse and Beneficial Use



Building
Materials



Habitat
Restoration



Manufactured
Top Soil



Site
Reclamation

MPA Long-Term Innovative Reuse Goal:

Recycle 500,000 cy/year of Harbor Channel sediment



Maryland's Dredged Material Challenges

- Salinity
- Heavy metals
- Particle size
- Moisture content
- Presence of sulfides

Turning Challenges into Opportunities

- **Conducting Large-Scale Beneficial Use in the Chesapeake Bay**
- **Implementing Small-Scale Innovative Reuse in the Baltimore Region**
- **Governor Hogan issued Waste Reduction/Resource Recovery Executive Order**

Large-Scale Beneficial Use in the Chesapeake Bay

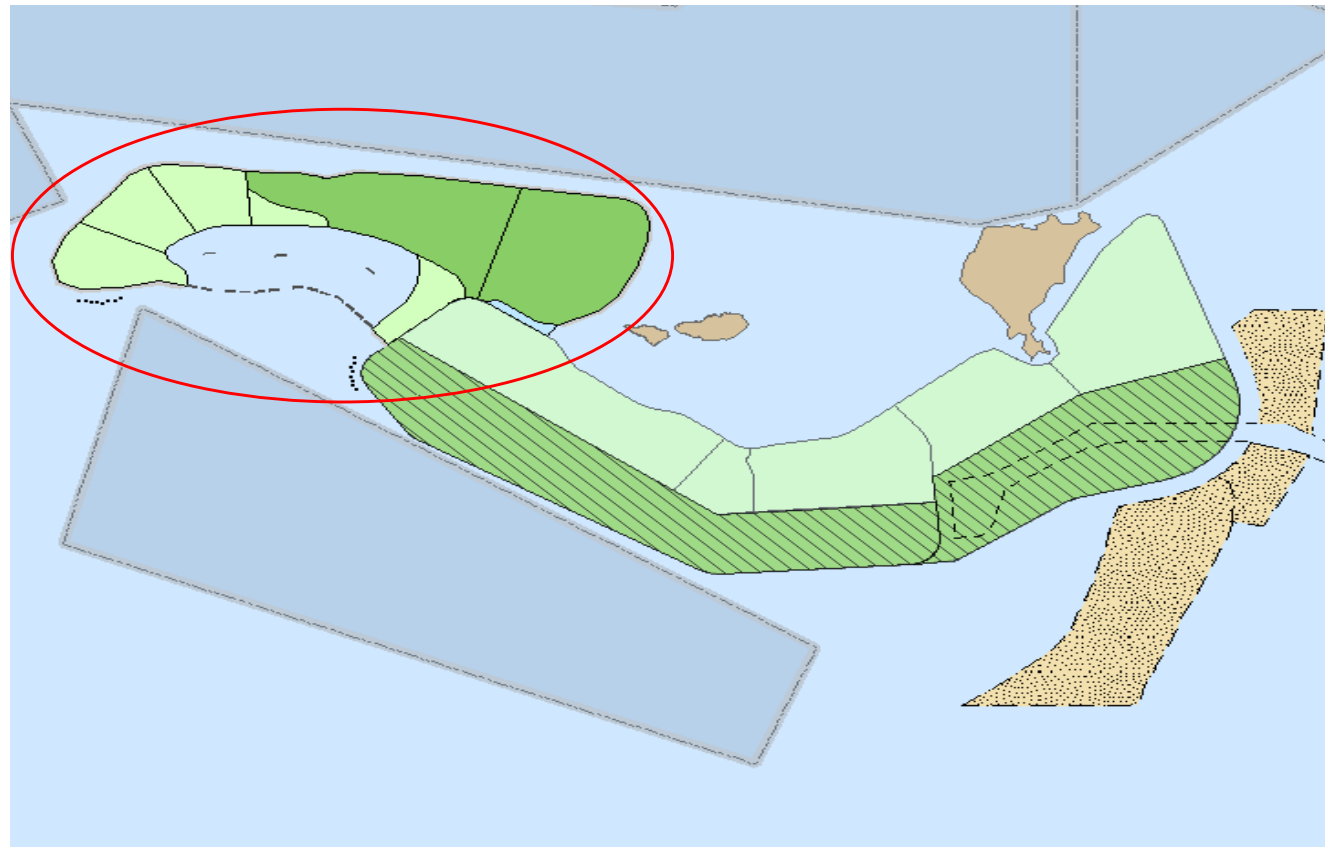
Poplar Island

- 40 mcy capacity
- 1,140 acres total



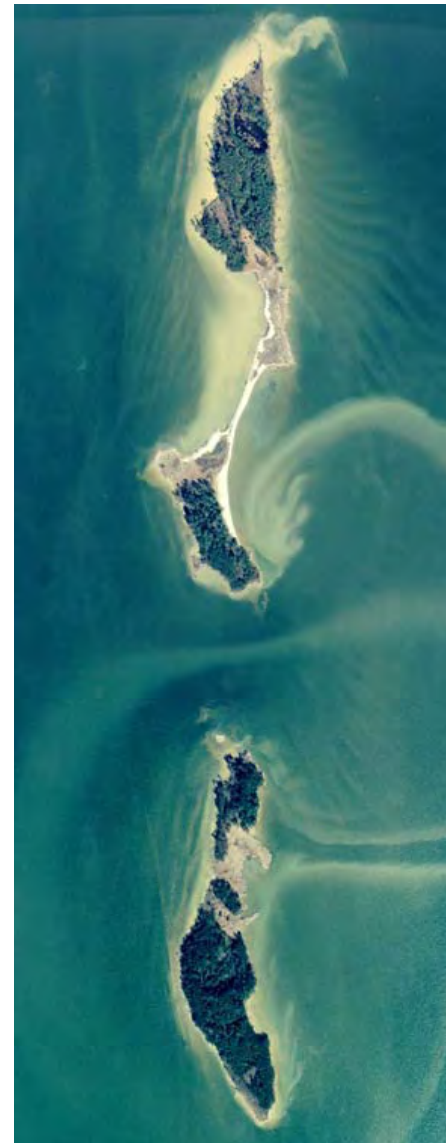
Poplar Island Expansion

- 575 additional acres
- 28 mcy additional capacity
- 206 acres of wetlands
- 259 acres of uplands
- 110 acres of open water embayment

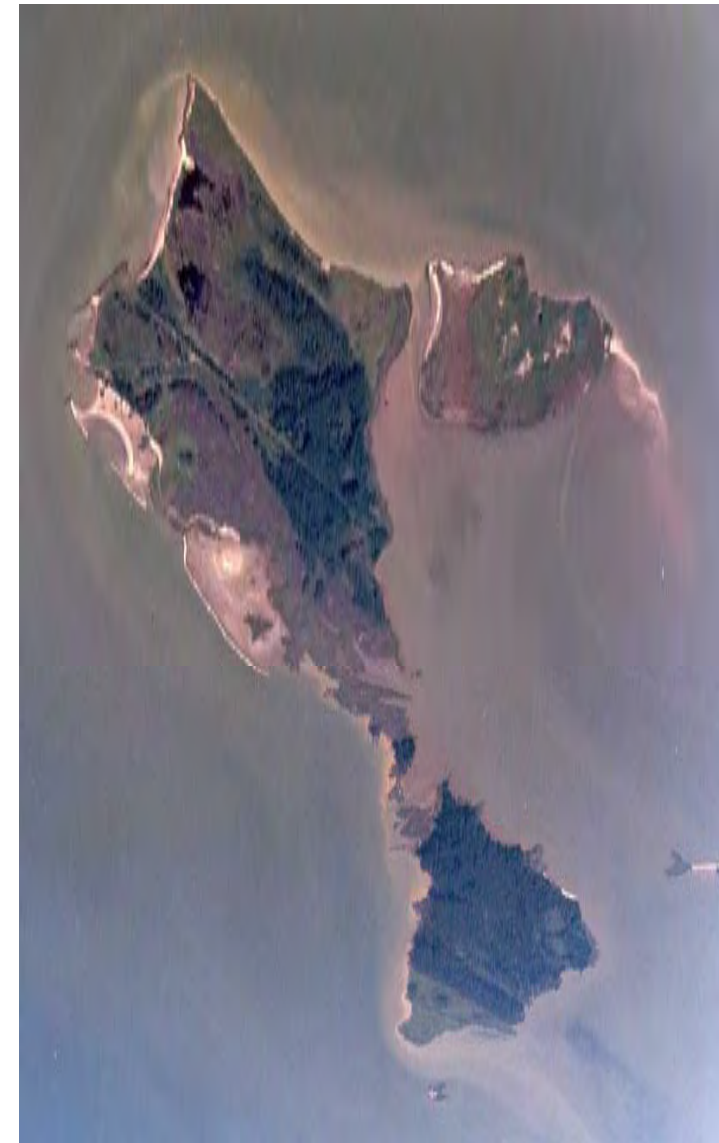


Mid-Chesapeake Bay Islands Project

- Provides 90-95 million cubic yards of dredged material placement capacity.
- Beneficial use of sediment dredged from the Port of Baltimore's 50' deep open Bay channels in Maryland.
- Restores important, scarce remote island habitat at James and Barren Islands.
- Provides shoreline protection and resiliency for Dorchester County and its property owners.



James Island: 2072 acres
55% wetland,
45% upland habitat



Barren Island 72 acres
Sub-Aquatic Vegetation
restoration/protection

Small-Scale Innovative Reuse in the Baltimore Region



Waste Reduction and Resource Recovery Executive Order

- Recognizes dredged material as a valuable resource with vast reuse potential
- Calls on State agencies to be leaders in the reuse of dredged material
- Prompted the creation of the Sustainable Materials Management Maryland (SM3) workgroup



Engineered Fill at Hawkins Point DMCF



4,500 cubic
yards delivered



Alternative Daily Cover at Quarantine Road Landfill: 6,000 cy



Dredged Material in ACTION!



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PANEL DISCUSSION:
BENEFICIAL USE IN THE CHESAPEAKE BAY



CHESAPEAKE BAY
FOUNDATION

The Nature
Conservancy



MAHAN RYKIEL
ASSOCIATES INC

Ridgely's Cove Remedial Capping





MAHAN RYKIEL
ASSOCIATES INC



Cornell University

Eastern Chapter WEDA Fall 2019 Conference

PANEL DISCUSSION:
BENEFICIAL USE IN THE CHESAPEAKE BAY



CHESAPEAKE BAY
FOUNDATION



MAHAN RYKIEL
ASSOCIATES INC



Thank You

Kristen Keene

Innovative Reuse Program Manager, Maryland
Department of Transportation Maryland
Port Administration

MAHAN RYKIEL

A S S O C I A T E S I N C

Isaac Hametz

Principal & Research Director,
Mahan Rykiel Associates







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A BIRDS-EYE VIEW OF THE HEART OF BALTIMORE

The original of this picture was sketched in pencil by Mr. Edward W. Spofford in the Fall of 1911, a little over seven years after the disastrous fire which laid in ashes practically all the section of the city shown in the foreground. That the city should have rebuilt on such a splendid scale in so short a time is a magnificent tribute to the enterprise and ability of her citizens.







Eastern Chapter WEDA Fall 2019 Conference

PANEL DISCUSSION:
BENEFICIAL USE IN THE CHESAPEAKE BAY



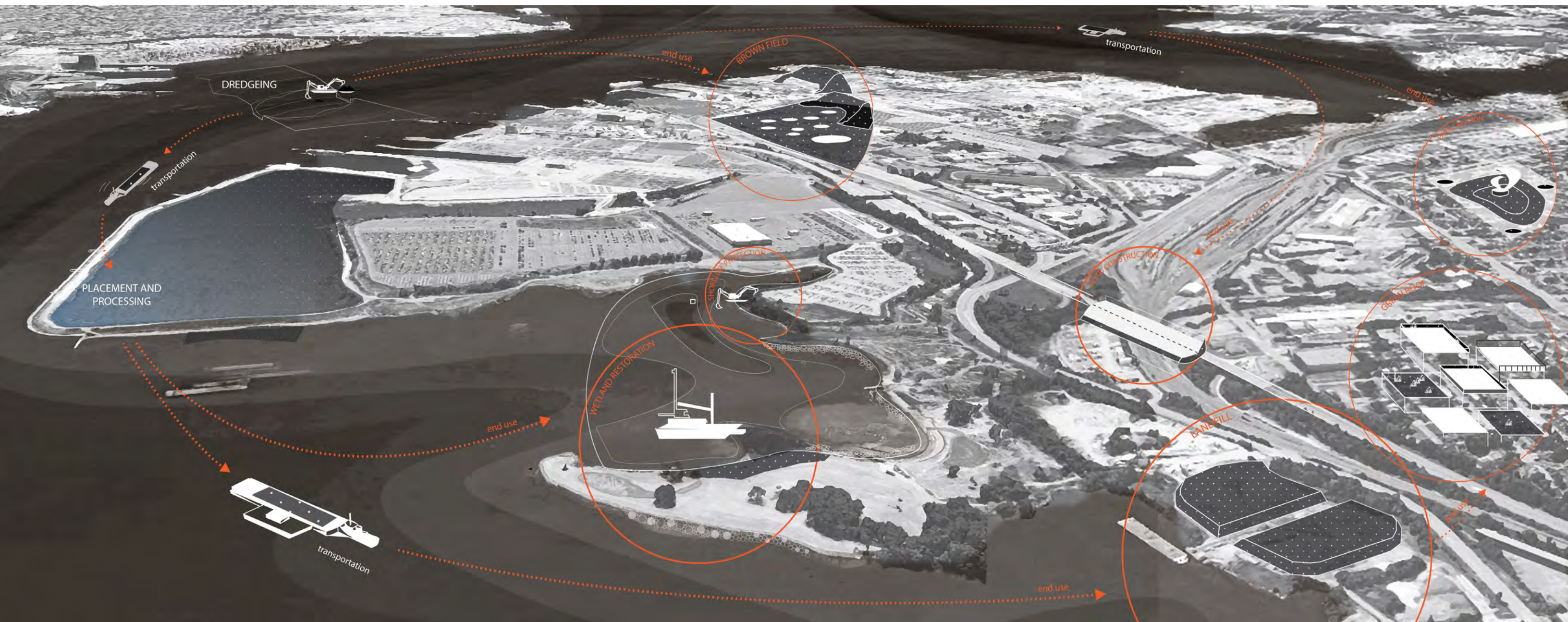
CHESAPEAKE BAY
FOUNDATION

The Nature
Conservancy



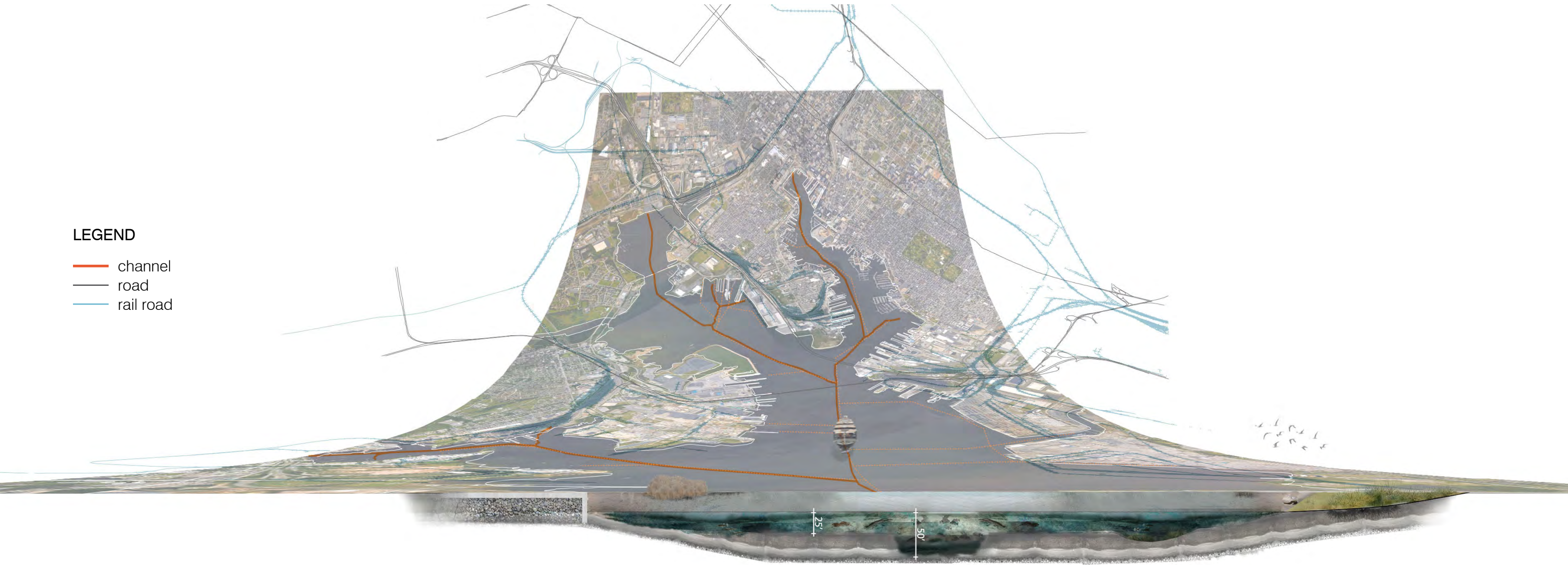
MDOT
MARYLAND DEPARTMENT
OF TRANSPORTATION

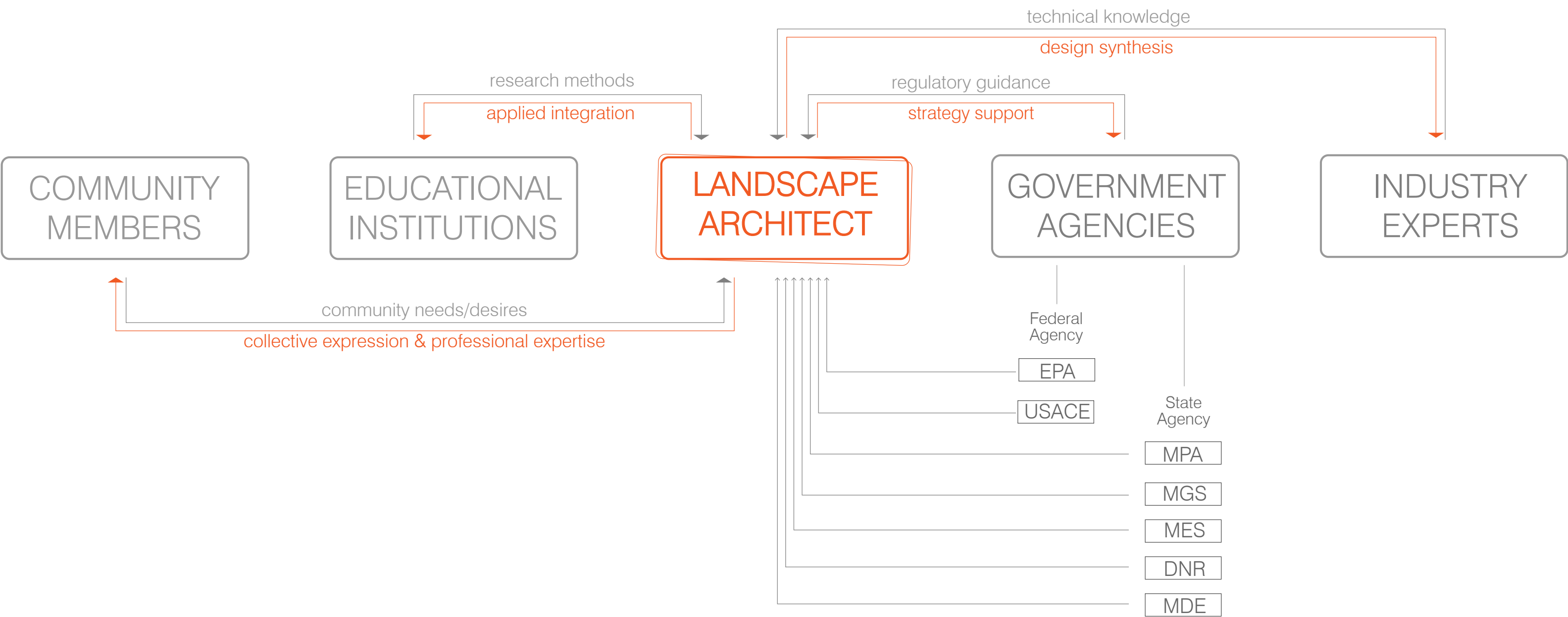
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LEGEND

- channel
- road
- rail road







VOLUME

The total volume of dredged material in innovative reuse and beneficial use projects varies. Volumes can range from as little as 5,000 cubic yards in small scale thin layer placement projects to upwards of 40 million cubic yards in large-scale restoration projects like Poplar Island.



STAKEHOLDERS

Committed stakeholders help advance innovative reuse and beneficial use projects in direct and indirect ways. Among the ways that stakeholders support projects are through advocacy, funding, outreach, and implementation.



SOCIAL VALUE

Social justice issues are explicitly and/or implicitly part of every innovative reuse and beneficial use project. Among the social benefits that can be provided by projects are access to open space, flood risk reduction, pollution abatement, and equitable development.



ECOLOGICAL VALUE

Ecosystems are modified during innovative reuse and beneficial use projects. These modifications can be designed to maximize targeted ecological functions including but not limited to habitat creation, nutrient cycling, biodiversity preservation, and carbon sequestration.



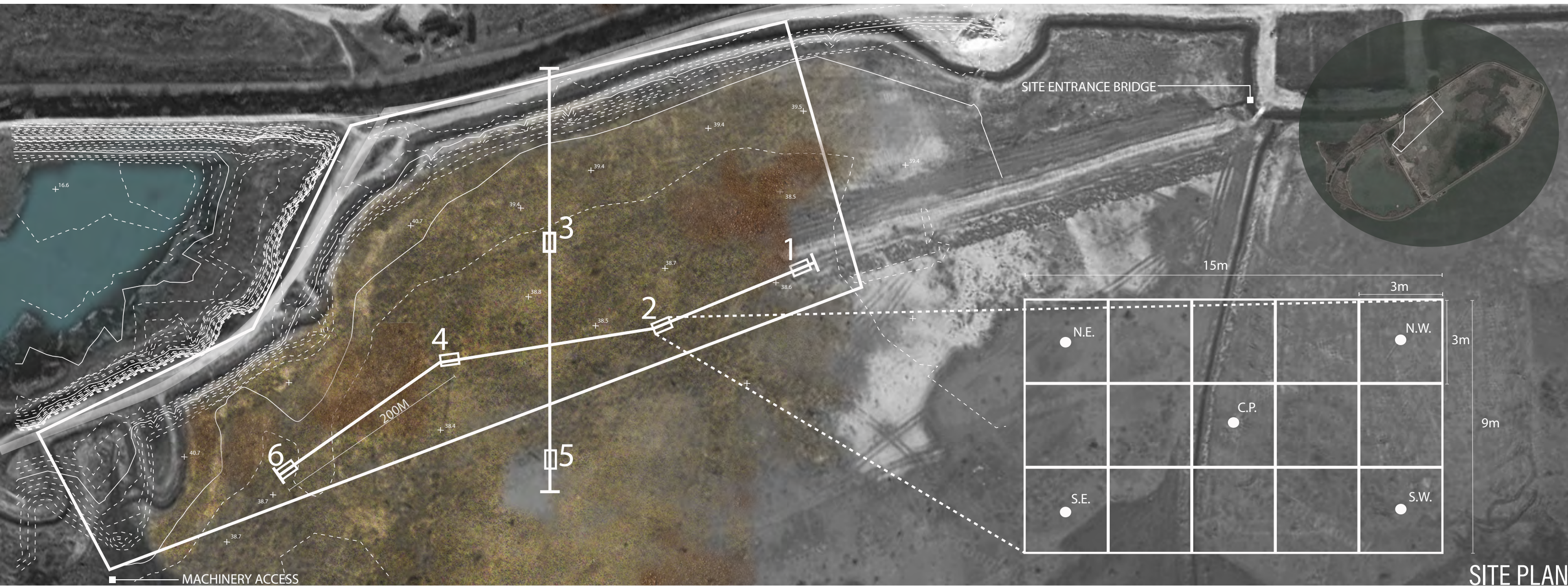
VISIBILITY

Many innovative reuse and beneficial use projects are not publicly visible. However, increased visibility ensures greater oversight, transparency, and strengthens stakeholder engagement.

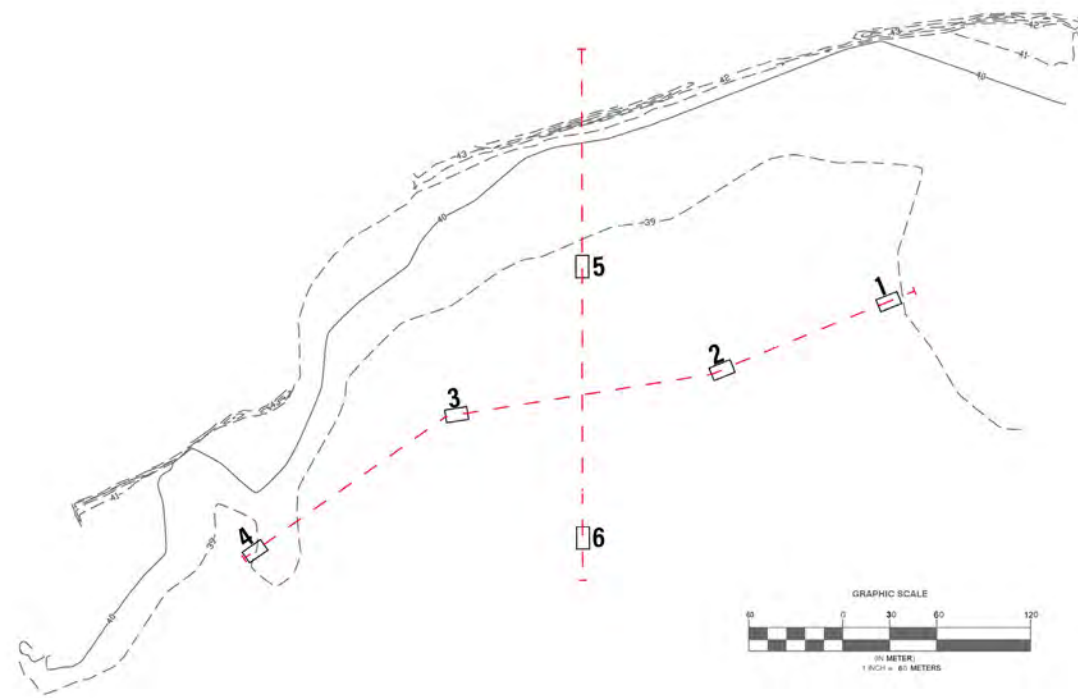


COST

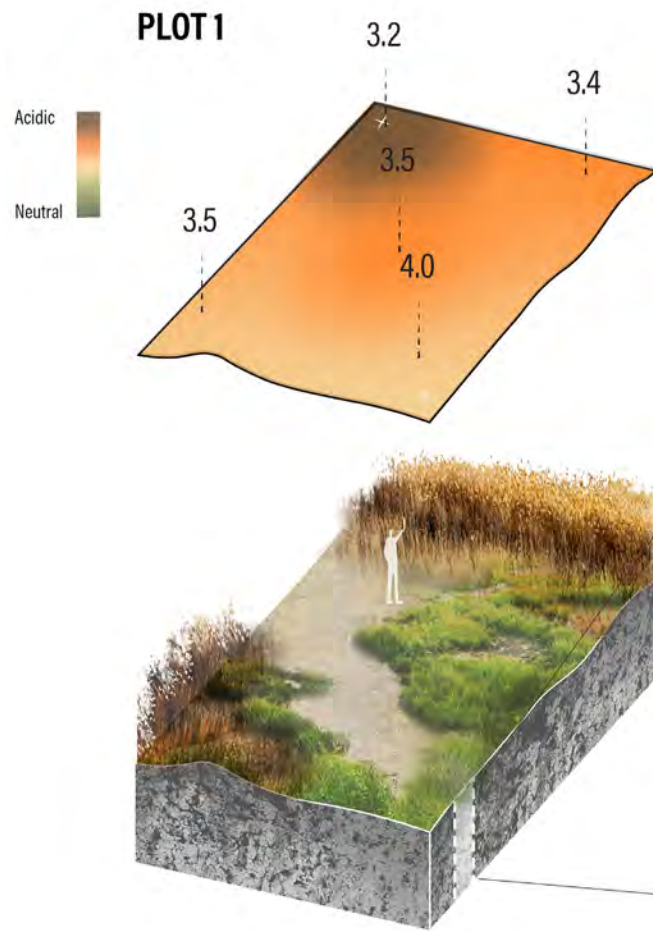
The costs of innovative reuse and beneficial use projects are typically shared between local and federal government. Additional cost-sharing arrangements can be developed when projects provide co-benefits (social, ecological, and/or economic) to targeted stakeholders.



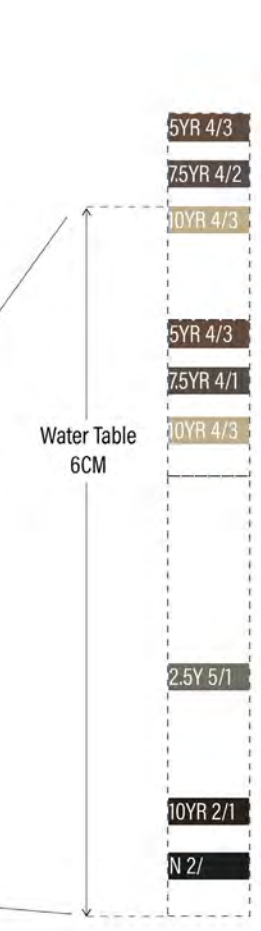
SITE PLAN



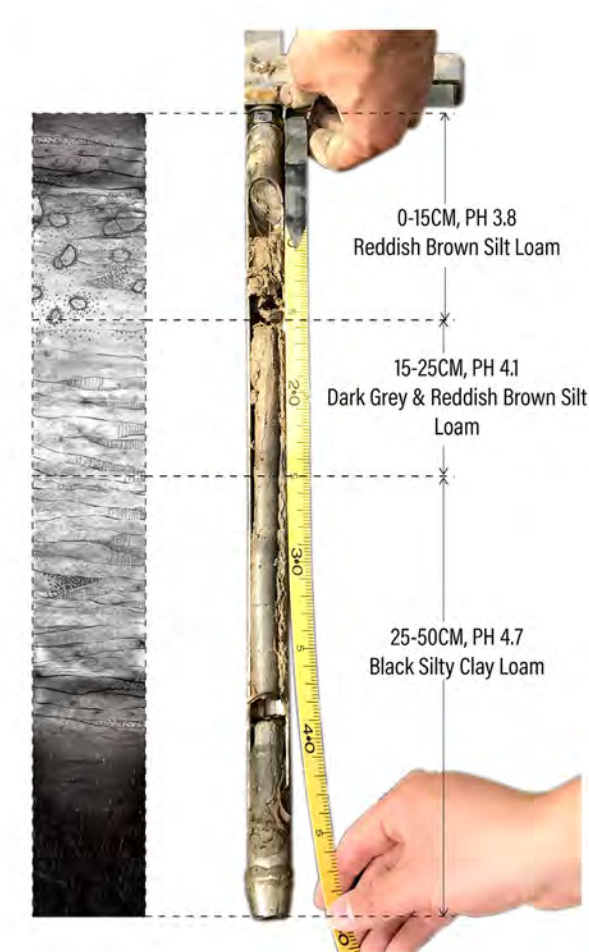
Key Map



PH & Ground Cover



Soil Quality



SITE RESEARCH

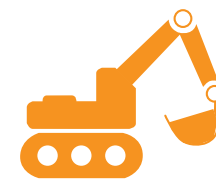
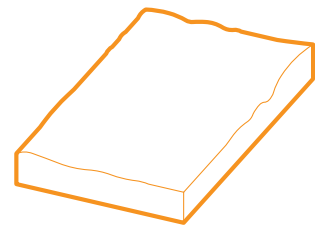




Create Habitat

Educate and Engage

Minimize Costs



Hydrology

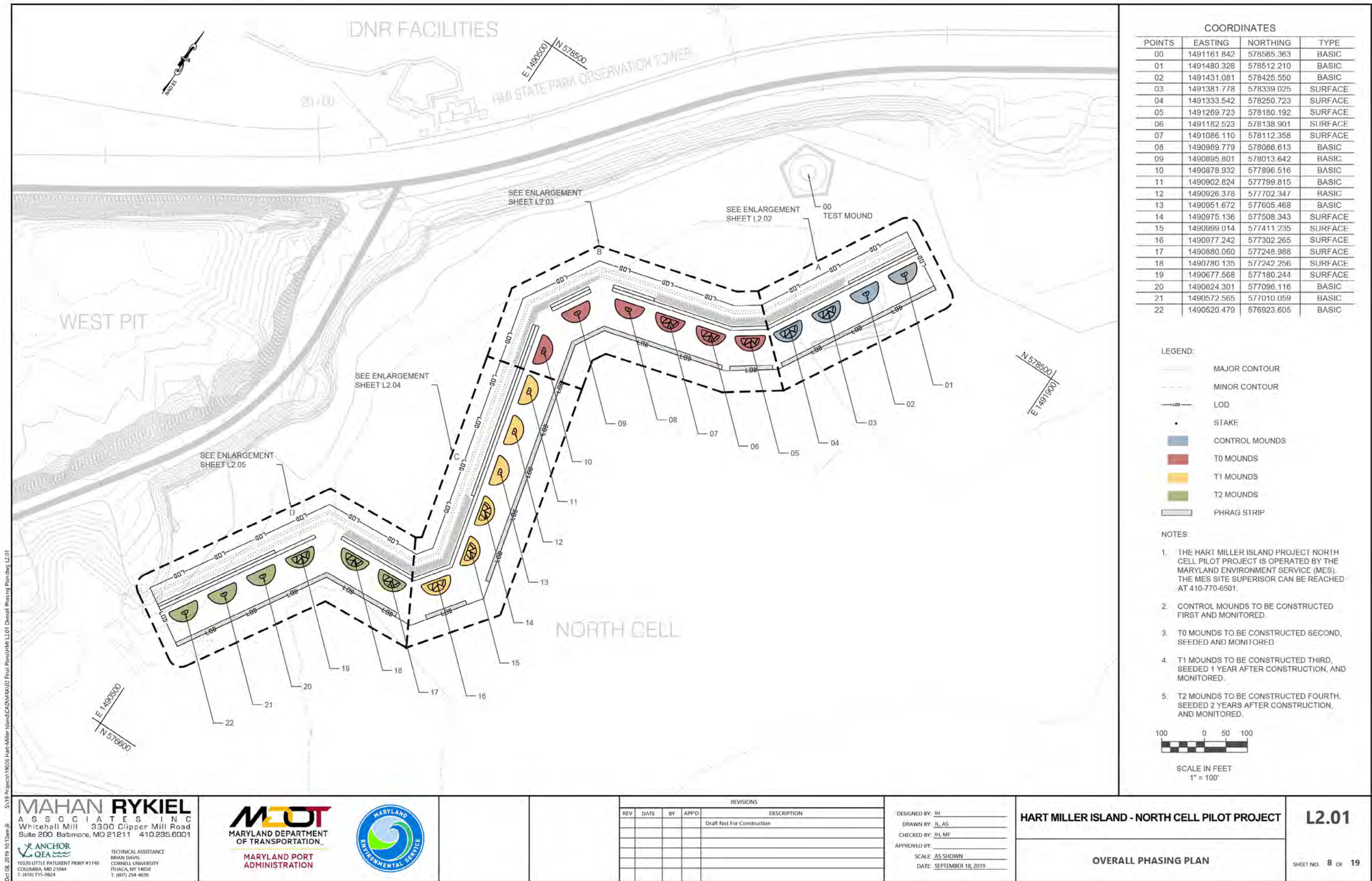
Soil

Vegetation

Machinery

Phasing



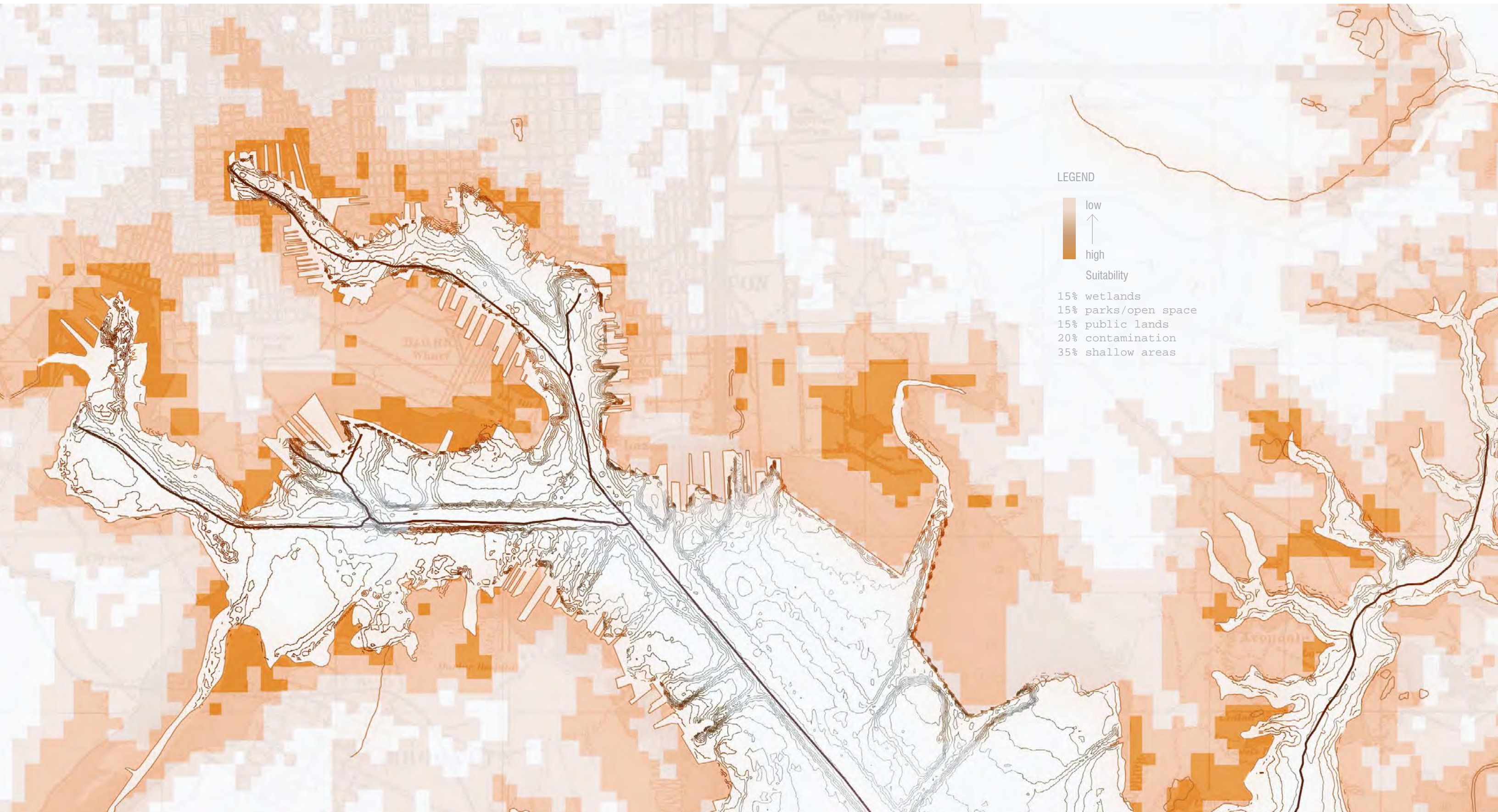


TB0 - Basic Test Mound/Year 0
Amendment + Vegetation

TA0 - Basic Test Mound/Year 0
Vegetation

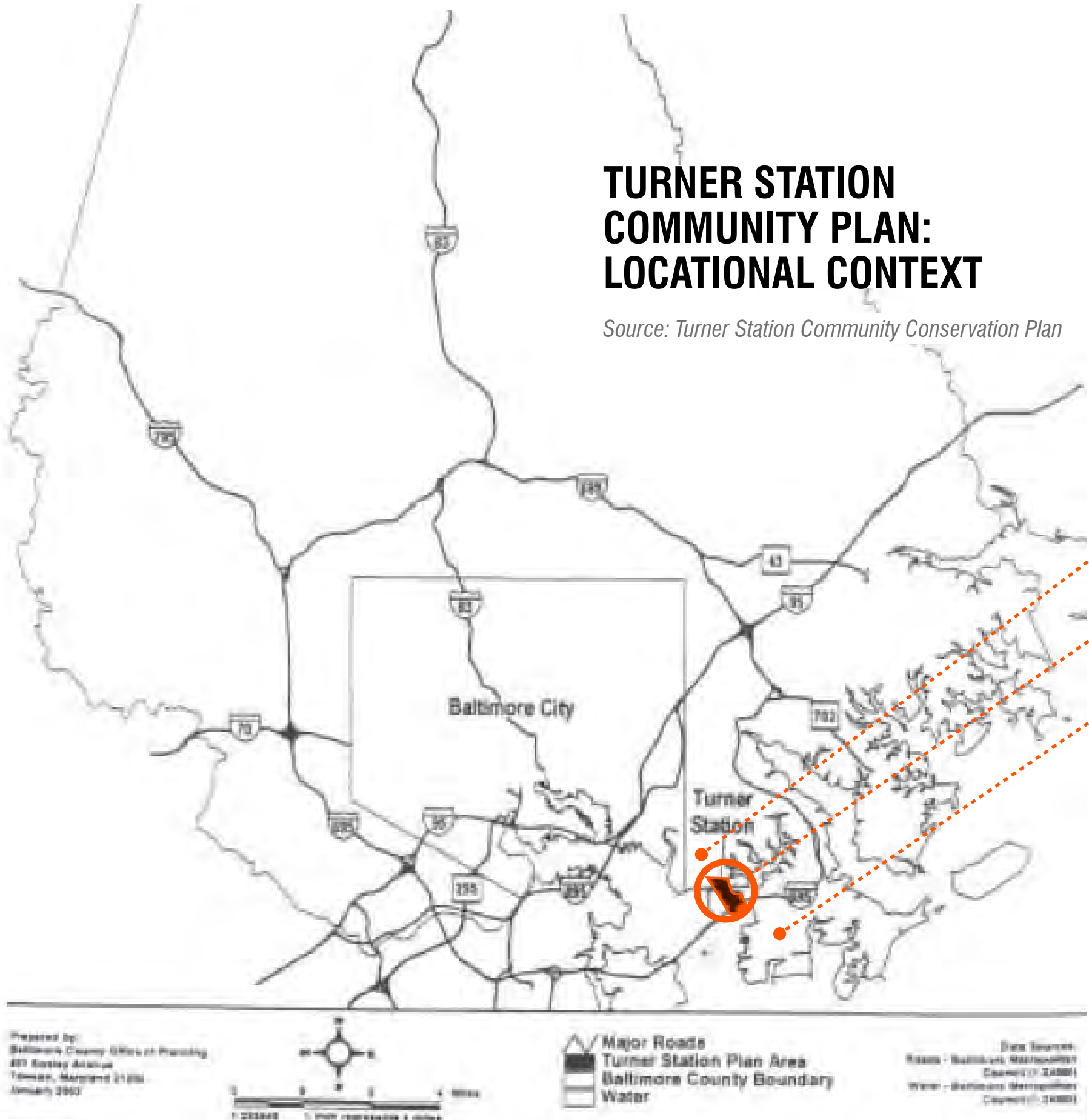
TA0 - Habitat Test Mound/Year 0
Amendment + Vegetation





TURNER STATION COMMUNITY PLAN: LOCATIONAL CONTEXT

Source: Turner Station Community Conservation Plan



DUNDALK MARINE TERMINAL

TURNER STATION

SPARROWS POINT





▲ The Consent Decree in 1974 was a significant moment for civil rights in the steel industry, a movement that started in the 1940s



◀ Among the workers drawn to Sparrows Point to work during World War II, was Day Lacks, husband of Henrietta, who lived in Turner Station.



◀ Preparing for 'tap,' L Furnace Keeper, Charles Woods, is one of many African American men who has worked in the Bethlehem Steel Mill on Sparrows Point.



▲ *Fleming Beach, Opening Day at Sollers Point. 1964*



▲ *Edward Alston (left), & James Lewis, Turner Station Residents, crabbing. Sep. 13, 1947*

TURNER STATION CONSERVATION TEAM

Gloria Nelson

TSCT President

- + *Original Harbor Team member since 2003*
- + *Served on Diesel Emissions Round Table*
- + *MPA Dray Truck Program community representative*
- + *COPR Community Work Group representative*
- + *Greenports Congress Participant, 2018*

Larry Bannerman

TSCT Board Member

- + *Innovative Reuse Committee member since 2011*
- + *Served on Diesel Emissions Round Table*
- + *MPA Dray Truck Program community representative*
- + *COPR Community Work Group representative*
- + *Greenports Congress Participant, 2018*



FLEMING PARK

Clean Up Party

VOLUNTEERS NEEDED!

Service
Learning
Hours for
Students!

Saturday, April 27, 2019
8:00 AM to 12:00 PM
Rain or Shine!

Meet at:
FLEMING PARK SENIOR CENTER
641 Main Street

For more information
call, Gloria Nelson,
President of Turner Station
Conservation Teams
at 410-302-2903

• FUN • MUSIC • GAMES • FOOD •



Turner Station
Conservation Teams

In Partnership with...



MAHAN RYKIEL
ASSOCIATES INC



CHESAPEAKE BAY FOUNDATION
Saving a National Treasure



Turner Station
Recreation Council



Through the Design with Dredge program, the proposed design for **FLEMING PARK** in Turner Station will aim to innovatively reuse and beneficially use maintenance channel dredged material from the Baltimore Harbor to support public health, habitat restoration, coastal resiliency, and environmental justice. ——— **DESIGN WITH DREDGE**

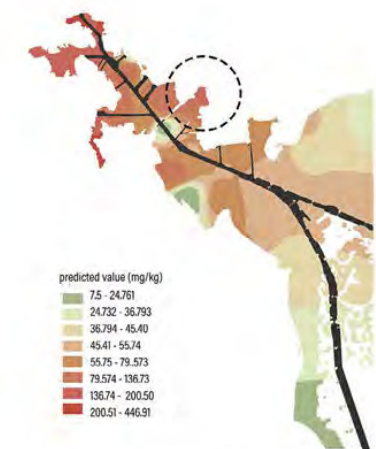
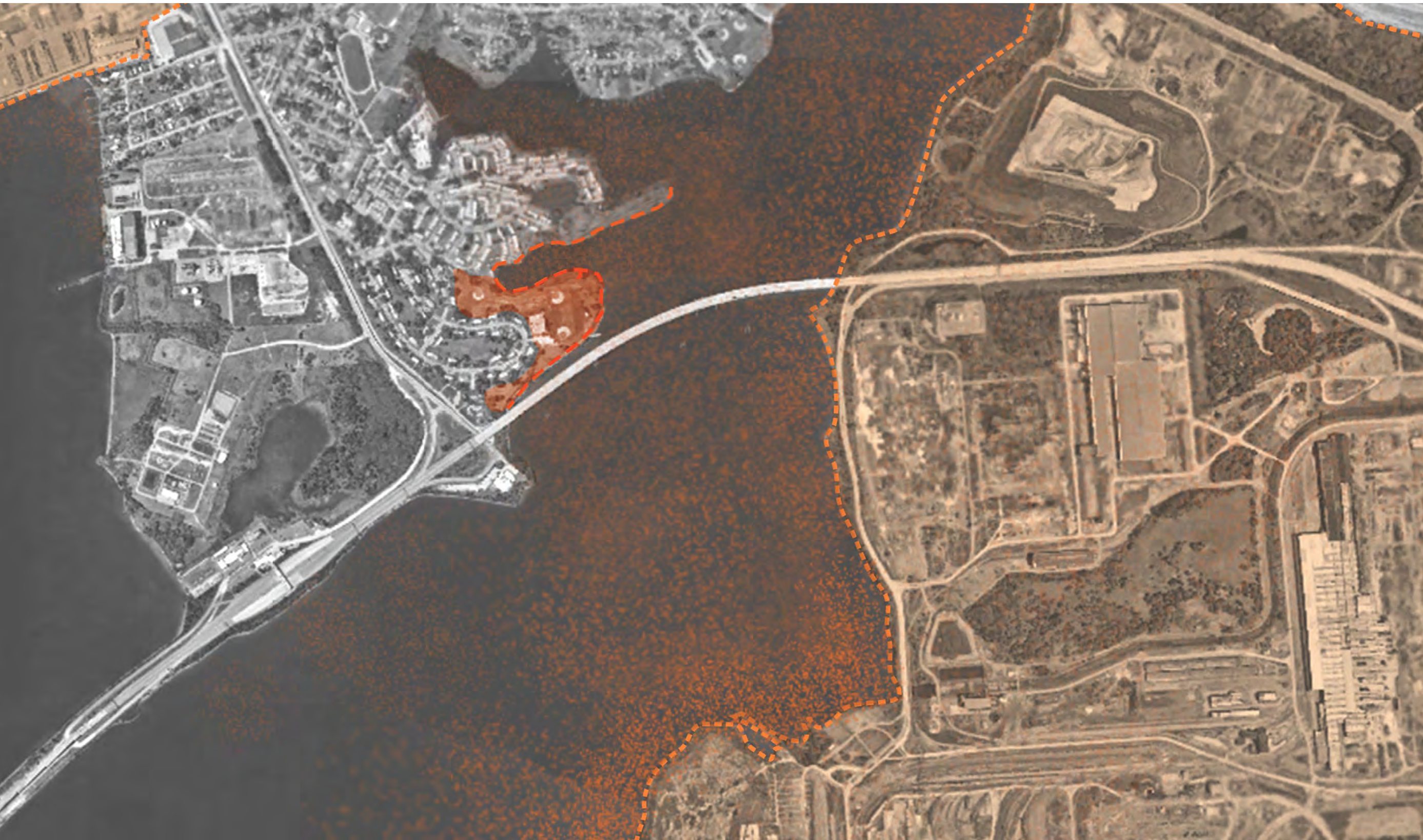




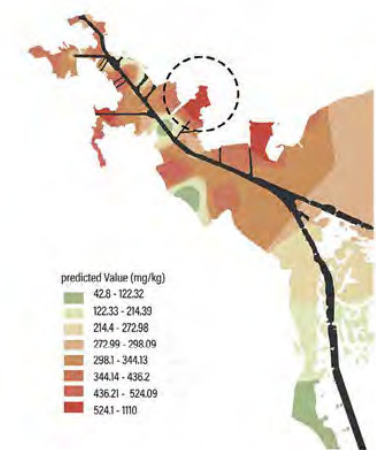
FLEMING PARK: COALITION MEETINGS/EVENTS

	DATE	LOCATION	PERSON
1	July 18, 2017	Fleming Park Tour	Environ. Students, MPA
2	July 18, 2017	Site Visit	Mahan Rykiel + Community
3	June 1, 2018	Fleming Park Tour	Timothy Wheeler - Bay Journal
4	June 19, 2018	Fleming Park Tour	Senator Johnny Ray Salling
5	June 28, 2018	TPA - Sparrows Point	Aaron Tomarchio, VP Corp. Affairs
6	September 28, 2018	Broadway Diner	Johnny O - Candidate Count Exec.
7	October 4, 2018	DNR - Annapolis	Nicole Carlozo, Resiliency Planner
8	November 9, 2018	Fleming Park Tour	William Baker, Pres. CBF
9	November 26, 2018	Sollers MPC-TSCT Mtg.	Received \$30,000 Donation
10	December 11, 2018	Sollers MPC	Victoria Streitfeld - Honeywell
11	January 16, 2019	Phone Conversation	Victoria Streitfeld - Honeywell
12	January 22, 2019	Balto. County Rec. & Parks	Barry William, Dir. Rec. & Parks
13	January 23, 2019	Annapolis	Legislative Reception
14	January 28, 2019	MDE Headquarters	Matt Rowe, Asst. Dir.
15	January 31, 2019	Eastern Voc. Tech School	Johnny O's Town Meeting
16	February 5, 2019	MPA Headquarters	Chris Correale, Dir. Dredging Prog.
17	February 19, 2019	Fleming Park Tour	Kelsey Brooks, MD Sea Grant
18	February 20, 2019	Todd's Office - Eastpoint Mall	Councilman Todd Crandell
19	February 26, 2019	MPA Innovative Reuse Mtg.	MPA Committee
20	March 11, 2019	Sollers MPC	Outreach Meeting- Community
21	April 27, 2019	Fleming Park Clean Up	Ports America & Community

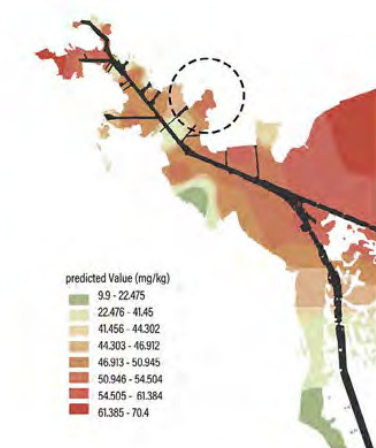
21 COALLITION MEETINGS/EVENTS
SINCE JULY 2017



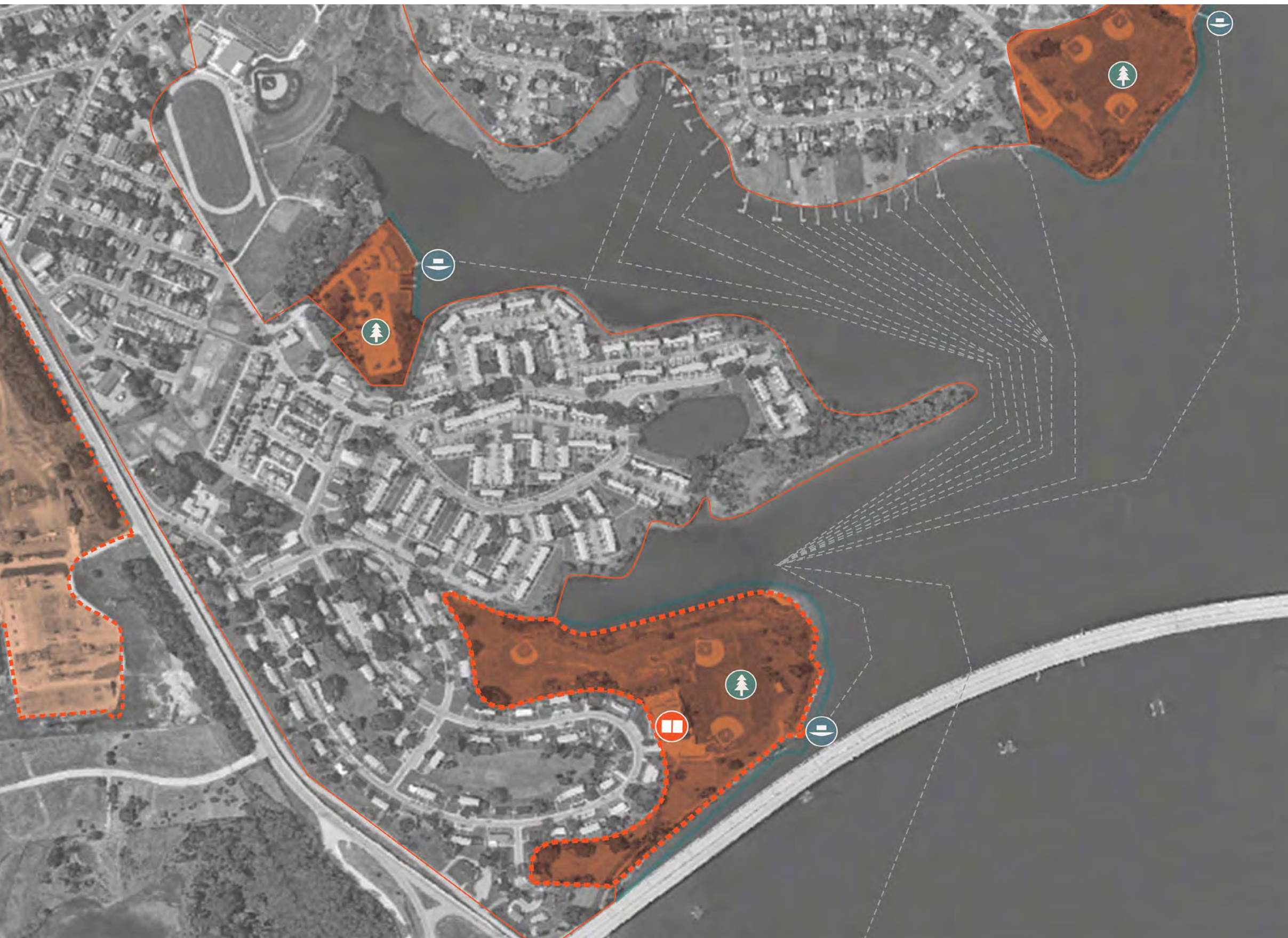
Zinc



Copper

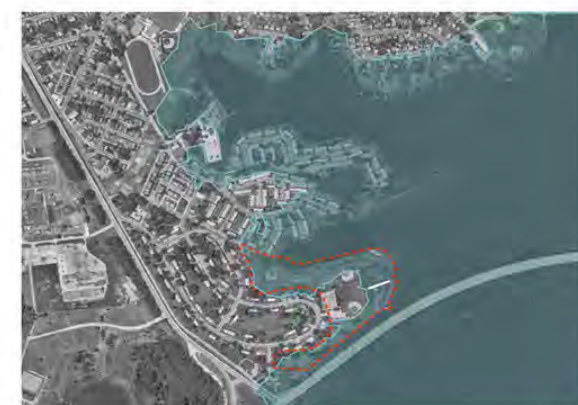


Nickle



King tide
2150 / 4ft
2100 / 2ft
2060 / 1ft

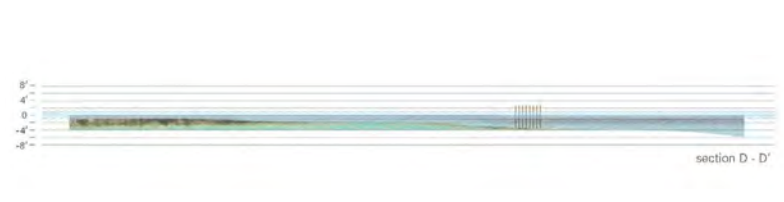
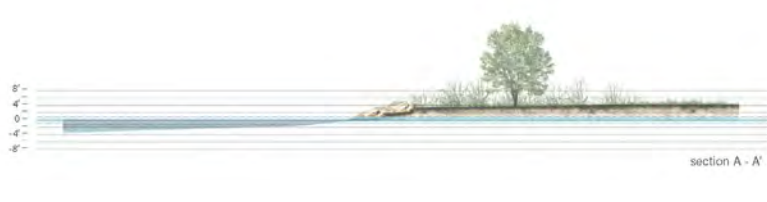
Sea Level Rise



King tide
annual 2% flooding risk prediction

Flooding Risk









BOARD WALK

+



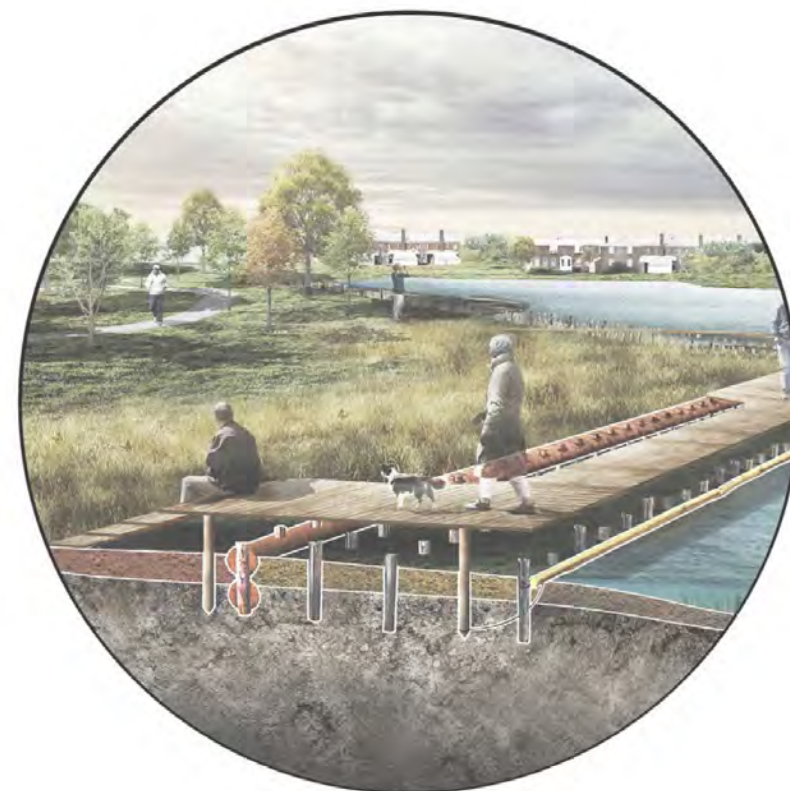
THIN LAYER PLACEMENT CONTAINMENT

+

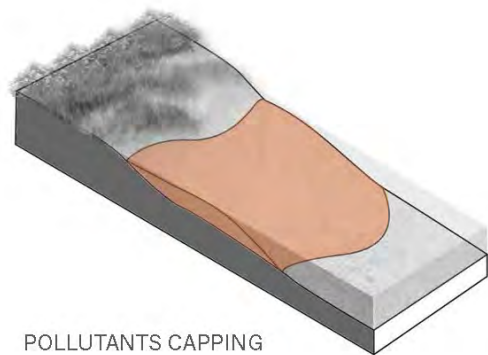


THIN LAYER PLACEMENT PUMPING

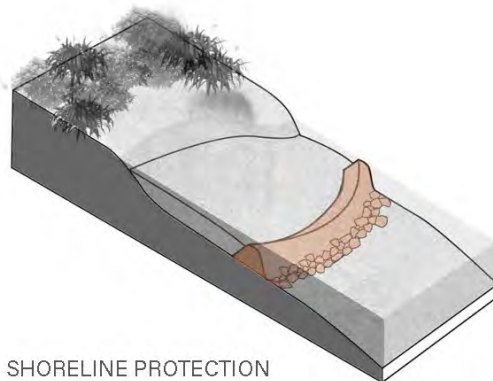
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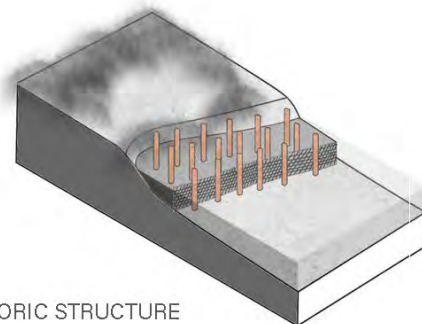
HYBRID PUBLIC LANDSCAPE



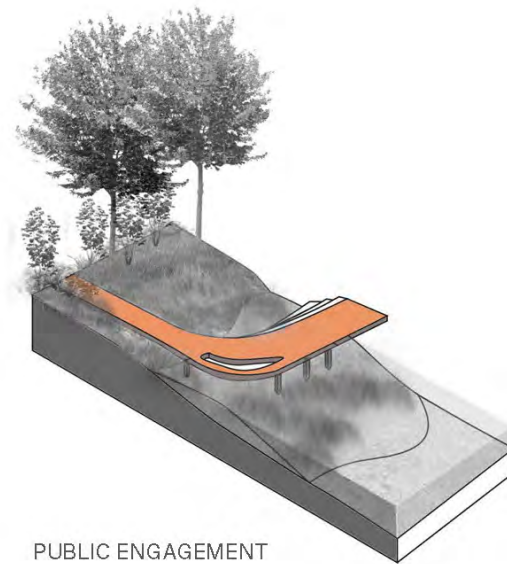
POLLUTANTS CAPPING



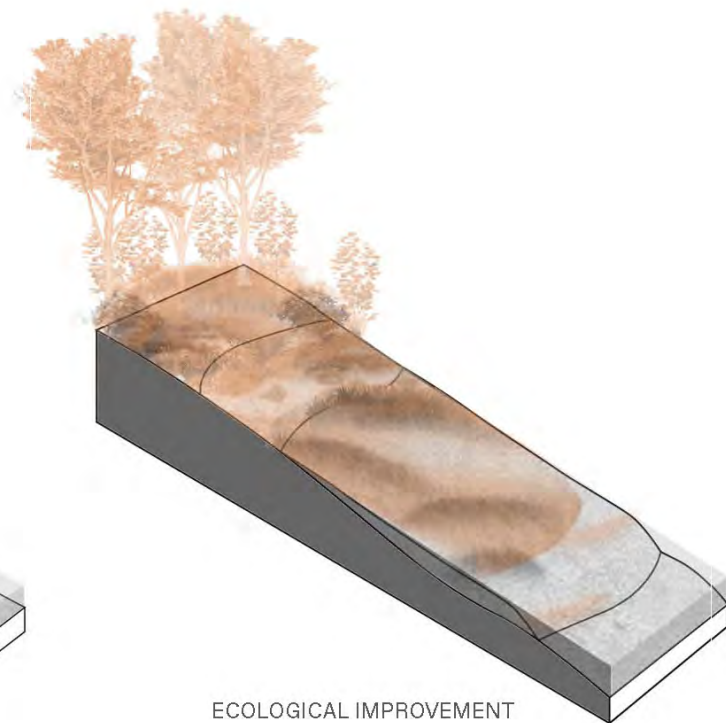
SHORELINE PROTECTION



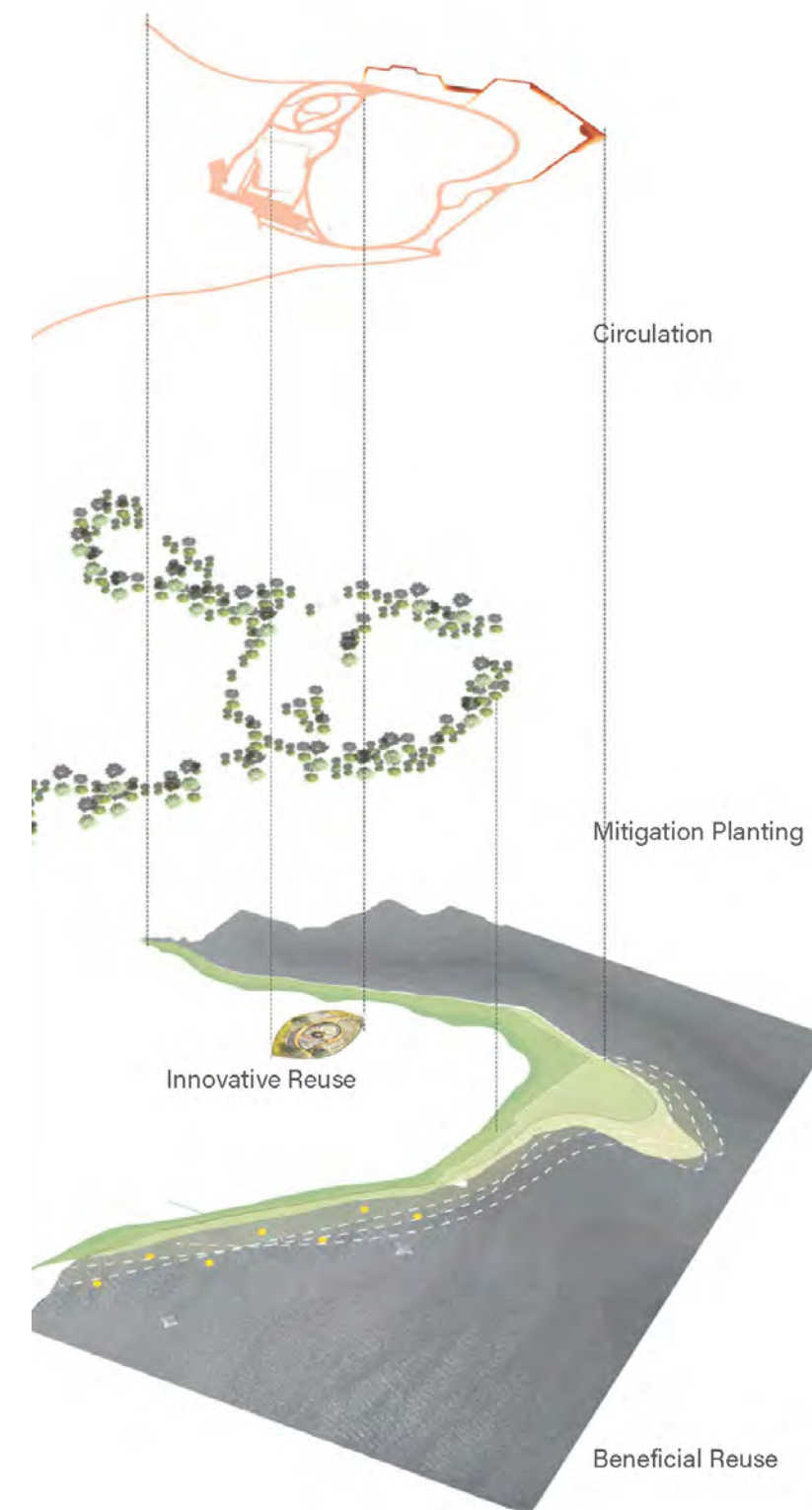
PRESERVE HISTORIC STRUCTURE



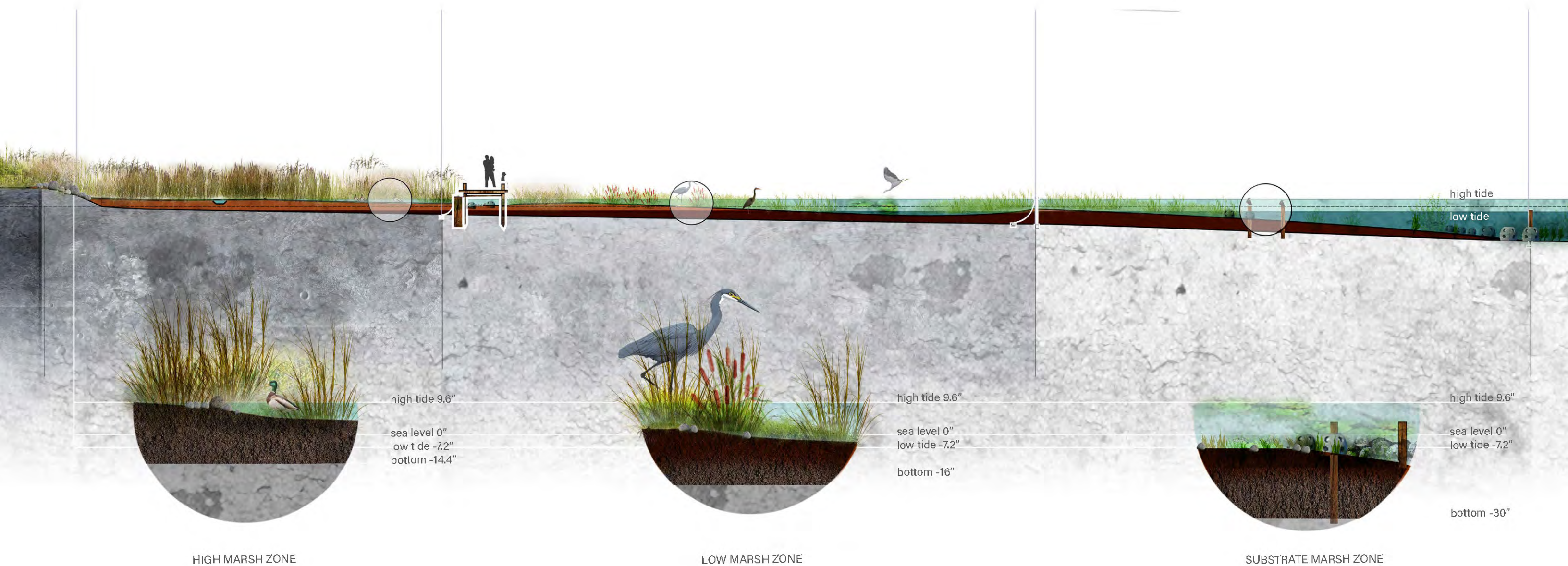
PUBLIC ENGAGEMENT



ECOLOGICAL IMPROVEMENT













12 LETTERS OF SUPPORT

Fleming Senior Center Council

641 Main Street
Dundalk, MD 21222
410.887.7225 (12-4p)

Donald L. Jones, President
Selma Saunders, V. President
Carolyn McArthur, Secretary

March 9, 2018

Thomas P. Smith,
Chief Operations and Regulatory Davison,
U.S. Army Corps of Engineers

Re: Water Resources Development Act of 2016, Beneficial Use of Dredge Material

The Pilot Project is specially designed to:

- o Reduce Storm damage to property and infrastructure.
- o Promote Public Safety
- o Stabilize and Enhance Shorelines
- o Promote Recreation
- o Reduce costs of dredging by beneficial use of dredged material

The Fleming Senior Center Council supports all of the objectives of the WRDA Pilot Program.

The shoreline along Fleming Park has long suffered erosion and property damage to our neighbors. The shoreline is the first line of defense. We join in support with the members of the Turner Station Conservation Teams, which are partnering with the MPA Harbor Team and the Innovative Reuse Committee. We have received information from community wide meetings regarding maintenance dredging of the Baltimore shipping channel.

The benefits, requirements and specifications of this project encourages us to extend our full support to the Pilot Project.

Sincerely,



Donald L. Jones
President of the Fleming Senior

The mission of Baltimore County is to maintain the integrity of the unique history and support Baltimore County Senior Citizens the community. The primary focus services which will ensure the highest



Great Lakes
Dredge & Dock
Company, LLC

2122 York Road
Oak Brook, Illinois 60521
(630) 574-3880

12 March 2018

Mr. Thomas P. Smith
USACE
Attn: CECW-CO-OD
441 G Street NW
Washington DC 20314

RFP – Pilot Project for Beneficial Use under WIIN – Fleming Park

Mr. Smith;

Thank you for your acceptance of this proposal. As you know, Fleming Park for some time. We are pleased to offer a project which we believe meets all the requirements of the Corps and will be a challenge, but also believe a long term view of project collaborations that will show long term savings.

Best regards,

Great Lakes Dredge & Dock Company, LLC



Bill Hanson



Larry Hogan
Governor
Boyd K. Rutherford
Lt. Governor
Pete K. Rahn
Secretary
James J. White
Executive Director

April 5, 2019

Dear Fleming Park Project Partners,

RE: Fleming Park Restoration Project in Turner Station Community, Baltimore County, MD

On behalf of the Maryland Department of Transportation Maryland Port Administration (MDOT MPA), please consider this letter of enthusiastic support for the Fleming Park restoration project. MDOT MPA recognizes the dedication and creativity of the project partners, which has resulted in a strong coalition of support for this unique effort with far-reaching environmental, economic and social benefits to the Turner Station community, whose perseverance has shaped the history and culture of Baltimore County.

The MDOT MPA Innovative Reuse Strategy serves as a roadmap for the long-term sustainable management of dredged material removed from channels serving the Port of Baltimore. The Innovative Reuse Strategy tasks MDOT MPA to work with partners to implement dredged material demonstration projects in accordance with Governor Larry Hogan's Executive Order (EO 01.012017.13), which recognizes dredged material as a valuable resource that can be innovatively or beneficially reused. Additionally, the June 2017 release of the Maryland Department of the Environment (MDE) guidance document and technical screening criteria provides a transparent pathway for reusing dredged material in a method that is safe for human health and the environment.

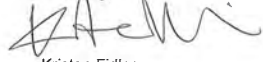
The conceptual design for the Fleming Park restoration project was developed through the award winning MDOT MPA-sponsored *Design with Dredge* collaborative design research internship that generated various ways in which dredged material could be reused in the Baltimore region. The Fleming Park design seeks to reuse dredged material in both upland and in-water applications that build on the Port of Baltimore's Innovative Reuse Program goals, while providing ecosystem restoration, coastal resiliency and public health benefits to the Turner Station community.

The beneficial use of dredged material in the Baltimore Harbor has never been conducted, despite the strong expression of interest by governmental and non-governmental entities alike. The project partners have demonstrated their ability to coalesce a diverse group of supporters, most notably Baltimore County who owns the park property. The robust community outreach and stakeholder engagement that the project partners have conducted includes frequent interaction with the citizens of Turner Station who have and continue to play an integral role in refining the project design.

World Trade Center, 401 E. Pratt Street, Baltimore, MD 21202 | 800.638.7519 | TTY 800.201.7165 | marylandports.com

If the Fleming Park restoration plan moves forward, it would be the first of its kind in Maryland and serve as a model for other Harbor communities in pursuit of environmental projects that mitigate for current and future climate change impacts. As such, the MDOT MPA team is willing to provide in-kind services and technical support to assist with the required sediment characterization and material screening using MDE guidance for the reuse of dredged material. MDOT MPA firmly believes that the Fleming Park restoration project will provide a valued benefit to the community and the Baltimore Harbor region.

Sincerely,



Kristen Fidler
Director, Harbor Development

Turner Station Conservation Teams, Inc.

323 Sollers Point Road
Turner Station, MD 21222
Website: <https://www.turnerstation.org/>

President: Gloria E. Nelson
Vice President: Edyth Brooks
Secretary: Maurisha Graves White
Treasurer: Joyce Curbean



March 8, 2018

Greetings,

Re: Water Resources Development Act of 2016, Beneficial Use of Dredge Material

The Pilot Project is specifically designed to:
Reduce Storm damage to property and infrastructure.
Promote Public Safety
Stabilize and Enhance Shorelines
Promote Recreation
Reduce costs of dredging by beneficial use of dredged material

Our community of Turner Station and the organization Turner Station Conservation Teams, supports all of the objectives of this WRDA Pilot Program.

Our shoreline has long suffered erosion and we have suffered property damage and loss of life due to tropical storms. The shoreline is our first line of defense. Members of the Turner Station Conservation Teams also serve as members of the MPA Harbor Team and the Innovative Reuse Committee. We bring information regarding maintenance dredging of the Baltimore shipping channel back to the community for understanding and discussion. Our February 26, 2018 community meeting hosted an expert to explain dredging and dredge containment facilities.

With understanding of the benefits, requirements and aspects of this project, the Turner Station Conservation Teams gives it our full support.

Sincerely,
Gloria Nelson
President
Turner Station Conservation Teams



JOHN A. OLSZEWSKI, JR.
County Executive

BARRY F. WILLIAMS, Director
Department of Recreation and Parks

January 29, 2019

To Whom It May Concern,

RE: Fleming Park: Coastal and Community Resiliency Project, Baltimore County, MD

With this letter, the Baltimore County Department of Recreation and Parks submits its enthusiastic support for the Fleming Park project. The Department of Recreation and Parks own and stewards the Fleming Park property on behalf of the citizens of the County. This project has the potential to serve as a replicable model for shoreline restoration, community resiliency, and economic development throughout the County, which is home to 219 miles of tidal shoreline and 2,145 miles of streambanks. In addition, the Fleming Park project supports the State's larger climate resiliency efforts as reported by the Maryland Climate Change Commission, as well as the State's waste reduction and resource recovery goals formalized by Maryland Governor Larry Hogan's Executive Order (EO 01.012017.13) by innovatively reusing dredged material for wetland restoration and marsh creation.

The diverse coalition of support already built by the project partners including the Turner Station Conservation Teams, Chesapeake Bay Foundation, Mahan Rykiel Associates, and others cuts across sectors and subject matters. The coalition's success is a sign of their shared commitment to the project and the growing need to take creative action to address community resiliency and flood risk management. This need is especially acute in Turner Station where legacies of labor, industry, and innovation overlap at the water's edge.

Emerging technologies in landscape architecture, ecological design, and sustainable construction present new methods for cost-effective project implementation that align with environmental justice and water quality goals, as well as the updated regulatory guidance for dredged material management prepared by the Maryland Department of Environment. As such, the Department of Recreation and Parks enthusiastically supports the Fleming Park project and the coalition of partners working to advance it. Our team is prepared to leverage our resources to this end, providing access to the site for sampling, design, field work, etc., and hope that others will join in this effort to realize a truly innovative and community-based project that serves as a model for Baltimore County and the entire Chesapeake Bay.

Sincerely,



Barry F. Williams
Director

9831 Van Buren Lane, Cockeysville, Maryland 21030
Phone: 410-887-3871 | Fax: 410-825-3305 | TDD: 410-887-5319
www.baltimorecountymd.gov



CHESAPEAKE BAY
FOUNDATION

The Nature
Conservancy



MDOT
MARYLAND DEPARTMENT
OF TRANSPORTATION

MAHAN RYKIEL
ASSOCIATES INC

12 LETTERS OF SUPPORT



Larry Hogan, Governor
Boyd Rutherford, Lt. Governor
Mark Balton, Secretary
Joanne Throwe, Deputy Secretary

To Whom It May Concern,

RE: Fleming Park: Urban Thin Layer Placement Pilot Project, Baltimore County, MD

I am writing to express interest in a workshop that will support the execution of the Fleming Park Urban Thin Layer Placement (TLP) Pilot Project. TLP has been implemented for decades in southern states, such as Louisiana, and shown success as a marsh restoration and resiliency enhancement technique. Currently, there is only one thin-layer placement project in Maryland, at the Blackwater National Wildlife Refuge. Though this project is exhibiting positive results, there is a still a need to explore opportunities to pilot this restoration technique in Maryland. TLP pilot projects are vital in furthering our understanding of how to implement this technique across the state, aiding in the protection of our rapidly sinking marshes.

The Maryland Department of Natural Resources (DNR) is currently evaluating ways to proactively identify environmentally- and economically-sound beneficial uses of dredged material. While TLP is still being developed as a marsh restoration technique, it has the potential to complement DNR's work to protect and preserve our natural resources and support beneficial use of dredged material. The Fleming Park project has the potential to serve an important role in these efforts by simultaneously reducing dredged material waste, enhancing a marsh, and promoting community resilience.

As a NOAA Coastal Management fellow I have been specifically tasked with "address[ing] on-the-ground examples of thin-layering projects to be able to advance the monitoring and science behind this practice and technology". Through this work I have conducted interviews and attended workshops focused on developing and understanding TLP best practices. With an appreciation for the importance of creating a shared pool of TLP knowledge to enable successful implementation, I am dedicated to participating in conversations that will assist the Fleming Park project.

Best regards,

Jackie Specht
Jackie Specht, NOAA Coastal Management Fellow
Chesapeake and Coastal Service

Tawes State Office Building -- 580 Taylor Av
410-260-8DNR or toll free in Maryland 877-620-8DNR -- dnr.n



JUL 20 2018

To Whom It May Concern,

RE: Fleming Park: Urban Thin Layer Placement Pilot Project, Baltimore County, MD

On behalf of the Water and Science Administration (WSA) at Maryland Department of the Environment (MDE), please consider this letter enthusiastic support for the Fleming Park project. Last year, MDE issued guidance for the innovative and beneficial reuse (IBR) of dredged material to support the State's larger waste reduction and resource recovery goals formalized by Maryland Governor Larry Hogan's Executive Order (EO 01.01.2017.13). The Governor's EO specifically highlights IBR of dredged material and building partnerships for sustainable materials management.

The Fleming Park project is cutting-edge, real world implementation of Maryland's waste reduction and IBR goals that also meets local community needs and aspirations. By using dredged material thin layer placement techniques to create wetlands as well as incorporating upland reuse for public recreation the Fleming Point project will provide multiple ecosystem and community health benefits. At the same time, the living shoreline component of this project builds climate resiliency into the design to create a dynamic land-water interface that can adapt to changing environmental conditions and protect the community from storm related impacts.

WSA regulates impacts to tidal wetlands and other waters of the State and recognizes the difference between projects designed to improve water quality and projects designed to minimize impacts to water quality. Fleming Park will improve water quality conditions in the urban environment and create a treasured community asset for generations. As such my team and I are committed to working with the designers to see this project to completion.

Best Regards,

Matthew Rowe
Matthew Rowe, Assistant Director
Water and Science Administration

1800 Washington Boulevard | Baltimore, MD 21230 | 1-800-455-6101 | 410-537-3000 | TTY Users 1-800-755-2258
www.mde.maryland.gov

C. A. DUTCH RUPPERSBERGER
2ND DISTRICT, MARYLAND
REPLY TO:
2415 RAUBURN HOUSE DRIVE BUILDING
WASHINGTON, DC 20516
4000 225-3081
FAX: (202) 225-3084
376 WEST PADDEN ROAD, SUITE 200
TOWSON, MD 21204
(410) 628-2701
FAX: (410) 628-2708
www.dutch.house.gov

Congress of the United States
House of Representatives
Washington, DC 20515-2002

September 5, 2018

Mr. Thomas P. Smith
Chief, Operations and Regulatory Division
United States Army Corps of Engineers
Directorate of Civil Works
Operations and Regulatory Community of Practice
Attn: CECW-CO-OD
441 G Street, NW
Washington, DC 20314

Dear Mr. Smith:

I am writing to express my full support for the application submitted by the Turner Station Conservation Team to receive funds for the Fleming Park Urban Thin Layer Placement Pilot Project. The acquisition of a grant for this project will support innovative reuse and beneficial use of dredged material.

The Fleming Park Project aims to use dredged material from the Baltimore Harbor federal navigation channel to create enhanced wetland ecosystems for Fleming Park's intertidal zone as well as landforms for a children's play area. This project will promote public safety, recreation, reduce storm damage, and stabilize and enhance both shorelines and the communities surrounding them. The Turner Station community has a rich, historical relationship with the Chesapeake Bay, and this cutting-edge pilot project will restore the community's access to its waterfront, after years of limited access.

I trust you will give the Turner Station Conservation Team's grant application the utmost consideration, and ask that you keep me informed as awards are made. Thank you for your attention to this matter.

Sincerely,

C.A. Dutch Ruppensberger
C.A. Dutch Ruppensberger
Member of Congress

COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEES
EXPENSE
STATE, FOREIGN OPERATIONS, AND RELATED AGENCIES
HOMELAND SECURITY
TWITTER: @C.A.DUTCH
FACEBOOK: C.A. DUTCH
INSTAGRAM: CADUTCH

Design with Dredge Partners
July 20, 2018
Page 2

project implementation, Baltimore County recognizes the need for cross-sector collaboration that engages industry experts, regulators, and community stakeholders in direct dialogue.

As such, the County enthusiastically supports the research, outreach, and vision of the Design with Dredge program, which includes among its collaborators the Turner Station Conservation Teams, Chesapeake Bay Foundation, Mahan Rykiel Associates, Cornell University, the Maryland Port Administration, and others. In furtherance of the important work of this established coalition, Baltimore County is prepared to participate positively in a discovery and due diligence process to explore the Fleming Park shoreline restoration and community resiliency pilot project in Turner Station. The County is hopeful that through its collaboration with the Design with Dredge program it can improve the quality of the environment and the quality of life for its residents and set an example for the kind cost-effective, co-benefit projects that are essential to a vibrant Chesapeake Bay region.

Sincerely,

Donald I. Mohler, III
Donald I. Mohler, III
Baltimore County Executive



DONALD I. MOHLER III
County Executive

July 20, 2018

Dear Design with Dredge Partners,

The County would like to express its appreciation for the work you have done to build a coalition of support aimed at pioneering community-based shoreline restoration and resiliency strategies that beneficially and innovatively use and reuse dredged material. The diversity of your coalition including local community organizations, regional non-profits, government agencies, and private sector experts is a testament to your dedication and model for the type of collaboration necessary to realize cutting edge projects. To that end, we are happy to write you this letter of support with the intention that it can garner additional resources to propel the partnership and its projects forward and bring environmental, economic, and social benefits to the County, its citizens, and the entire Chesapeake Bay region.

Baltimore County is home to 219 miles of tidal shoreline and 2,145 miles of streambanks, which provide its residents with a range of recreational opportunities, economic advantages, and unparalleled natural beauty. These natural assets also heighten the risk of flood events in the County and increase annual environmental management costs. As such, the County is excited to explore the potential of innovative landscape strategies and project opportunities that beneficially use and innovatively reuse dredged material to enhance coastal resiliency, public recreation, habitat restoration, and economic development, such as the community-supported shoreline restoration effort proposed for Fleming Park in Turner Station. Your support will be critical to ensure that the County and its partners have the resources and expertise to effectively advance the design, project management, data analysis and technical evaluation of these cutting edge strategies and to quantify the environmental, economic, and social benefits they offer to the County, its citizens, and the entire Chesapeake Bay region.

Emerging technologies in landscape architecture, ecological design, and sustainable construction present new methods for cost-effective project implementation that align with environmental justice and water quality goals, as well as the updated regulatory guidance for dredged material management prepared by the Maryland Department of Environment and the Governor's 2017 Waste Reduction/Resource Recovery Plan Executive Order (01.01.2017.13). To realize the social, ecological, and economic benefits associated with the beneficial use and innovative reuse of dredged material in public landscape projects and to resolve any hurdles to

Historic Courthouse | 400 Washington Avenue | Towson, Maryland 21204-4665 | Phone 410-887-2450 | Fax 410-887-4049
dun@baltimorecountymd.gov | www.baltimorecountymd.gov



March 8, 2018

Mr. Thomas P. Smith
Chief Operations and Regulatory Division
U.S. Army Corps of Engineers
Directorate of Civil Works
Operations and Regulatory Community of Practice
Attn: CECW-CO-OD
441 G Street, NW
Washington, DC 20314

Re: RFP for Beneficial Use of Dredged Material - Fleming Park Project

Dear Mr. Smith:

TradePoint Atlantic (TPA), the owner, manager and developer of Sparrows Point, the former home of Bethlehem Steel in Southeast Baltimore County strongly supports the Turner Station Conservation Team submission to the USACE RFP. TPA has taken on the challenge to clean up and remediate the environmental impact of a century of steel-making to prepare the site for re-development.

As we work to remake and reposition Sparrows Point into a global center of excellence and a leading tri-modal transportation, distribution, manufacturing and logistics hub, we look forward to working closely with the Turner Station community to help realize the benefits of their proposed project. Real world applications of beneficial reuse of dredge material are critical to the future and successful operation of the Port of Baltimore, and as a private terminal within the port, we strongly believe in opportunities to demonstrate the beneficial reuse of dredged material.

Successful implementation of the Fleming Park project will create new avenues for industry partners like TPA to beneficially use and innovatively reuse dredged material. TPA sees the proposed Fleming Park pilot project as a vehicle to enhance our collaboration and partnership opportunities with the Turner Station community. The Fleming Park project is unique because it aims to return social, economic and environmental benefits to the community and the Baltimore-Chesapeake Region, a mission of both TPA and Turner Station Conservation Team.

Sparrows Point has a rich shared legacy with the Turner Station community, and we are proud to continue that legacy as we explore a unique opportunity to collaborate on this important project. We urge your support and thank you for your careful consideration.

Sincerely,

Aaron Tomarchio
Aaron Tomarchio
SVP, Administration & Corporate Affairs



CHESAPEAKE BAY
FOUNDATION

The Nature
Conservancy



MAHAN RYKIEL
ASSOCIATES INC

Fleming Park Project Goals:

- Optimize and diversify dredged material management options in Maryland by developing a community-based co-benefits pilot project that achieves Maryland Department of Transportation Maryland Port Administration (MDOT MPA) IRBU Strategy goals, as well as expanding permitting and regulatory pathways for IRBU of dredged material that is approved by the Maryland Department of the Environment (MDE) and federal regulatory agencies
- Reduce flood risk and strengthen resiliency of adjacent property, communities, and infrastructure by stabilizing and protecting shorelines with natural and nature-based features.
- Restore aquatic habitat by removing Phragmites and other invasive species, nourishing and re-grading intertidal environments with the goal of using dredged material, revegetating intertidal areas with appropriate native plants, and placing reef balls offshore to support oysters and other aquatic species.
- Enhance public health and safety by addressing possible pollutants in Bear Creek and/or Fleming Park.
- Support community recreation and workforce development by increasing access to high quality public parkland, environmental education opportunities, and green jobs training.

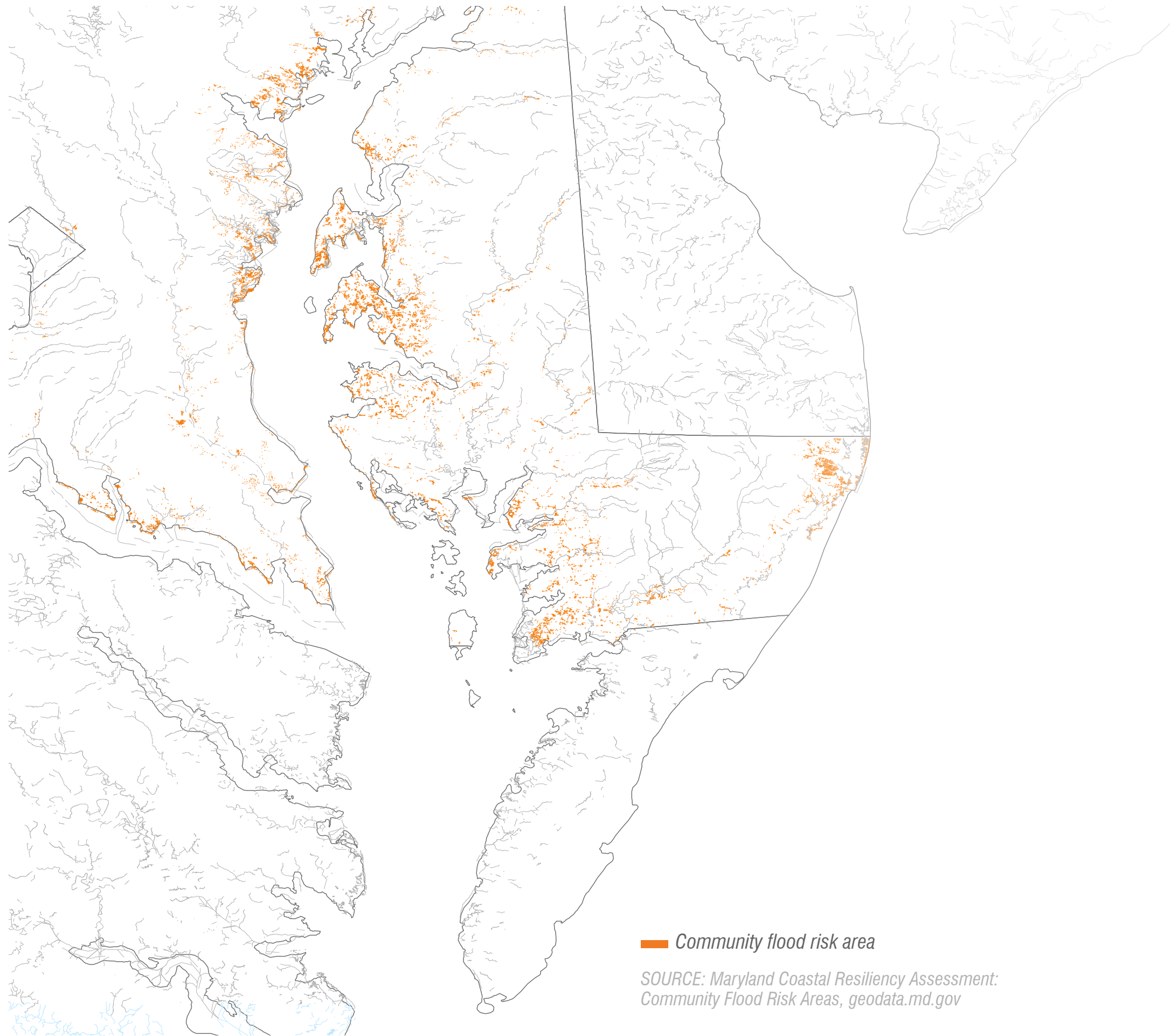
Coir Log

Boardwalk Pile

Silt Curtain

LOW MARSH DREDGED MATERIAL

SUBSTRATE ZONE DREDGED MATERIAL



SOURCE: Maryland Coastal Resiliency Assessment:
Community Flood Risk Areas, geodata.md.gov



ENVIRONMENTAL

- + 1,300 F of enhanced shoreline
- + 11,000 SF of restored substrate marsh zone
- + 17,000 SF of restored low marsh habitats
- + 20,000 SF of restored high marsh habitats



ECONOMIC

- + Direct economic benefits through stormwater nutrient management & flood risk reduction
- + Indirect savings on future losses from storm damage
- + Increase in local real estate values and development interest



SOCIAL

- + Increase in local/regional capacity for risk management
- + Fostered partnerships between community-based non-profits, private industries, and the philanthropic community
- + A new destination for public gatherings, events, and recreation



Thank you

Isaac Hametz

Principal & Research Director,
Mahan Rykiel Associates
ihametz@mahanrykiel.com

