BUILDing Resilience

Maryland DNR's approach to the beneficial use of dredged material

Jackie Specht

Marsh Resilience Summit

February 5, 2019

Beneficial Uses

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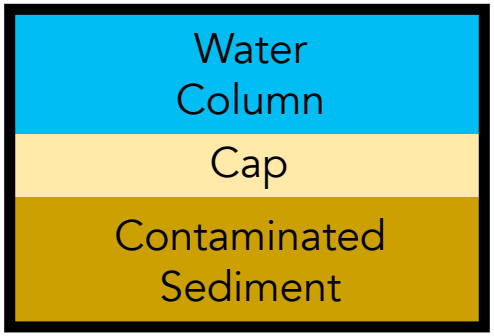
Capping



Living shorelines & marsh creation

Shellfish & SAV habitat

Beach nourishment

Thin-layer placement

Island restoration

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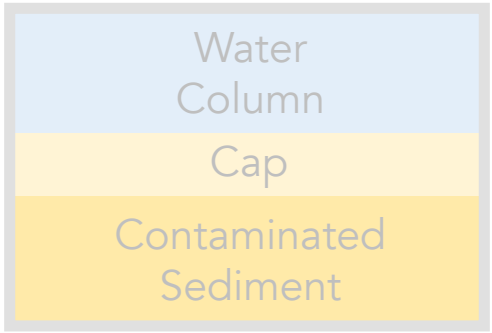

Living shorelines & marsh creation

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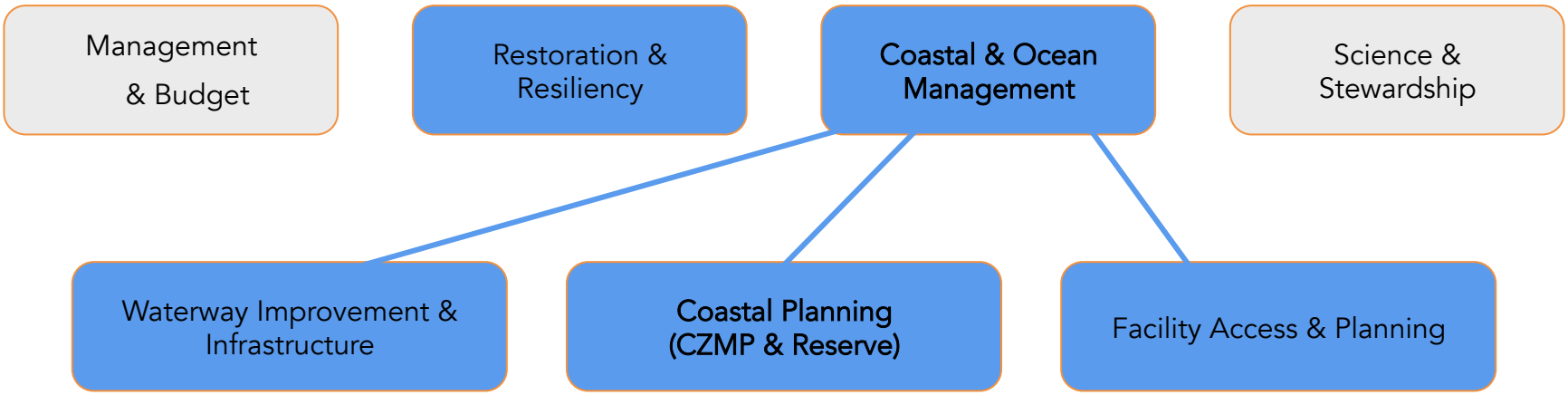
Chesapeake & Coastal Service



Mission: Help the millions of coastal residents in Maryland, and the businesses and governments that serve them, prepare for a future of economic growth and environmental change.

How: Through an integrated program of science, technical and financial services built upon collaborative partnerships with federal, state, and local agencies, the private sector, and citizens.

Resiliency with Dredged Material

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Ferry Point Park (2014)

- Dredged material for living shoreline restoration
- Improved public access
- Improved coastal resilience
- Saved $1.4 million through reduced transportation and fill costs

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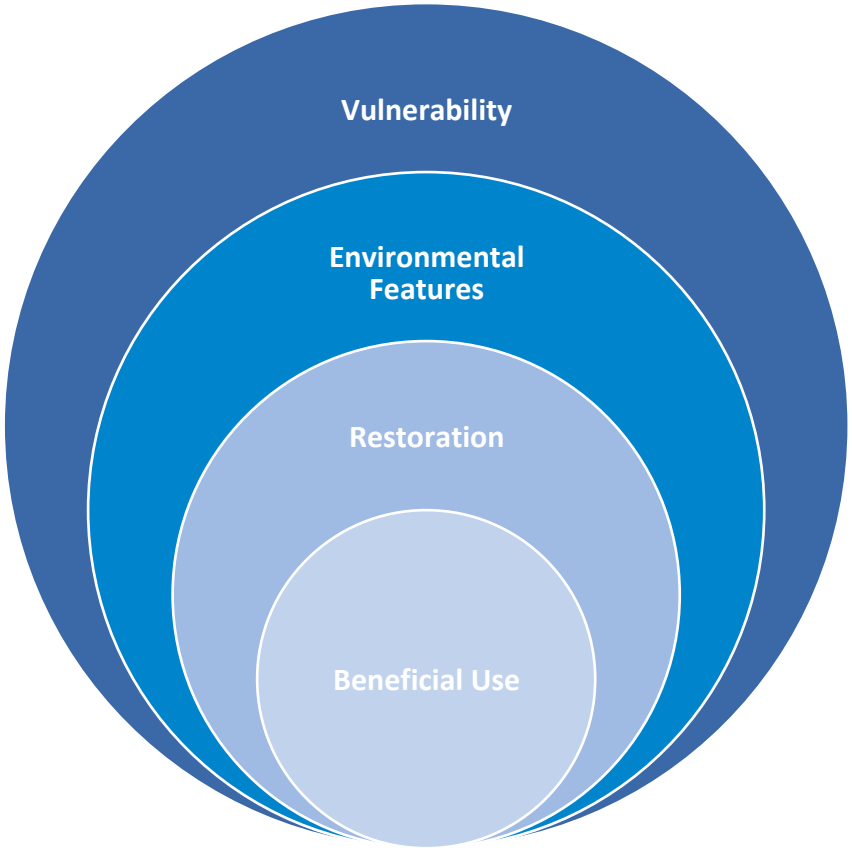

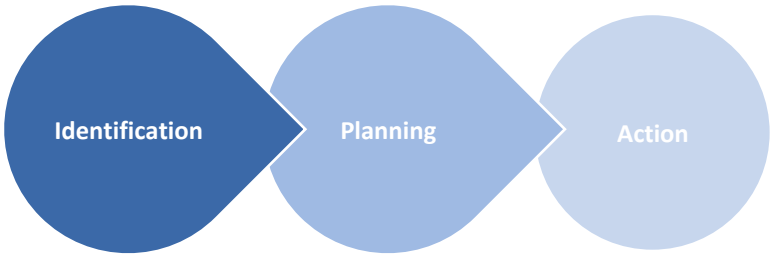

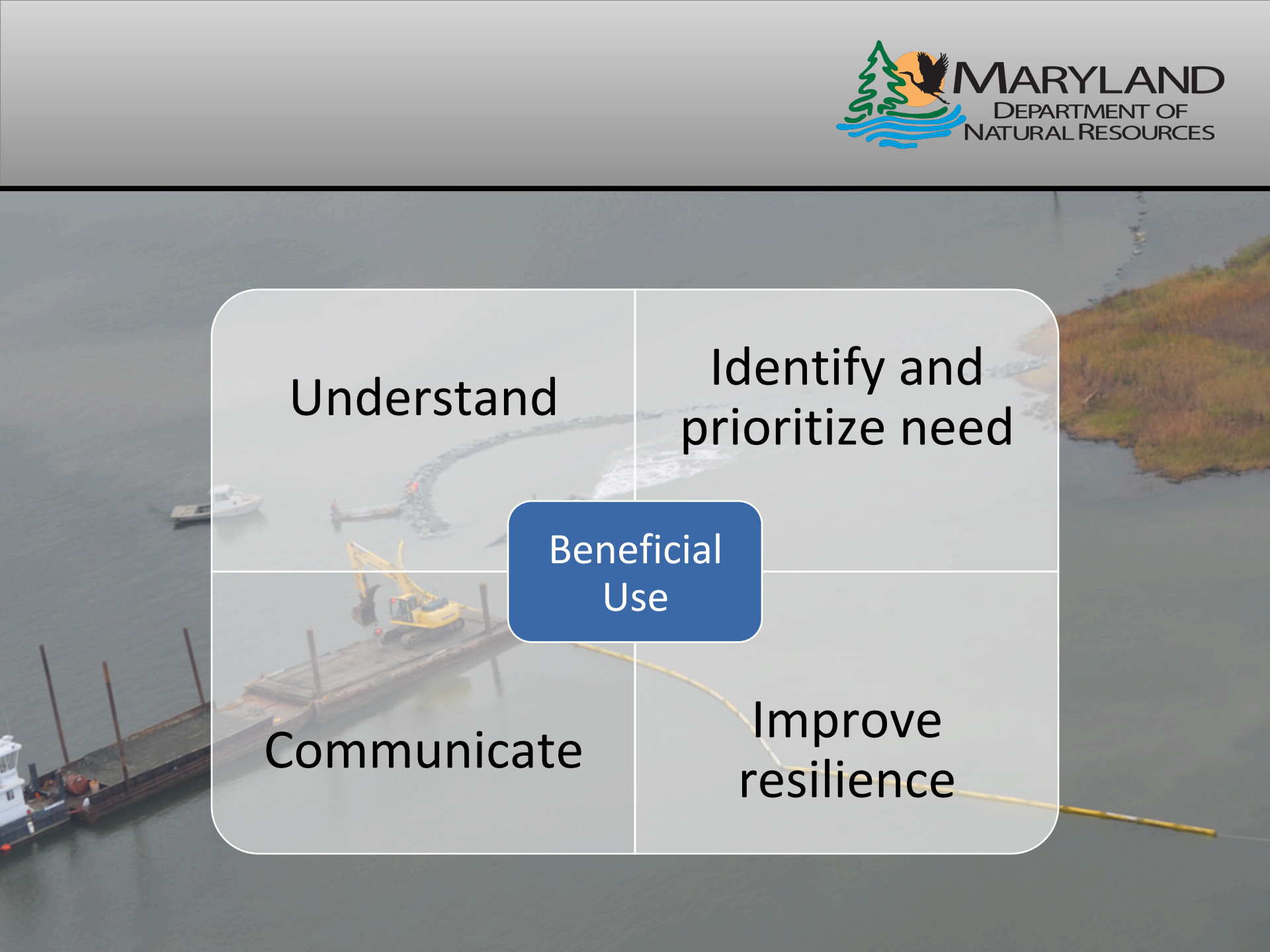
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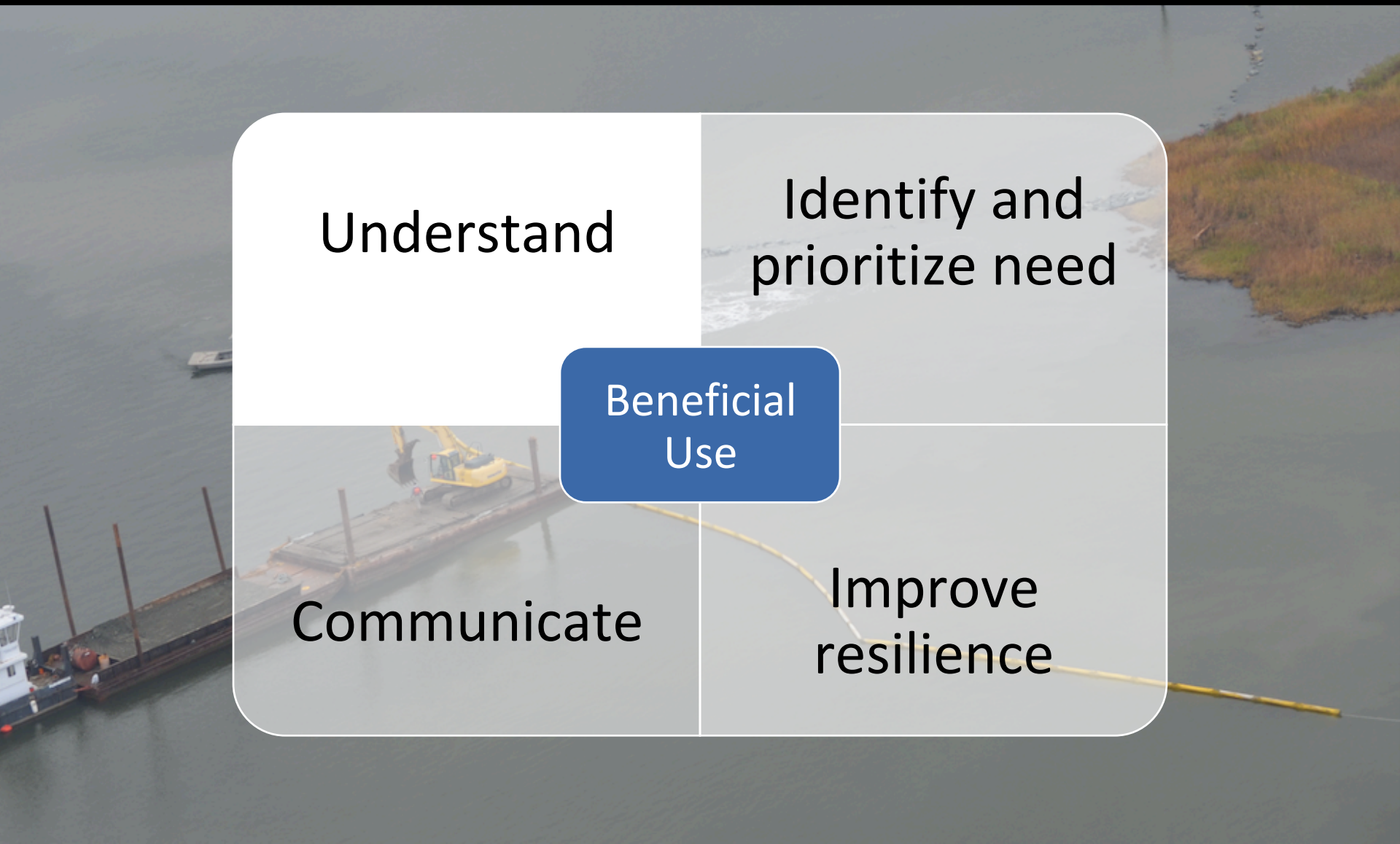

Understand

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Department of Natural Resources

Subject: **Dredged Material Placement on State-Owned Land Managed by the Department of Natural Resources**

Policy Number:

Effective Date:

Approved: **Date:**

I. Purpose

The purpose of this policy is to provide clear guidance to all DNR Units regarding the placement of dredged material on State-owned land managed by the Department.

II. Scope

This policy applies to all lands held in fee-simple ownership by the State through the Department and its principal land managing Units.

This policy does not apply to privately owned lands where DNR holds only a legal interest in the property. Examples include conservation easements held by the agency on large tracts of private forestland, or public access rights on private property.

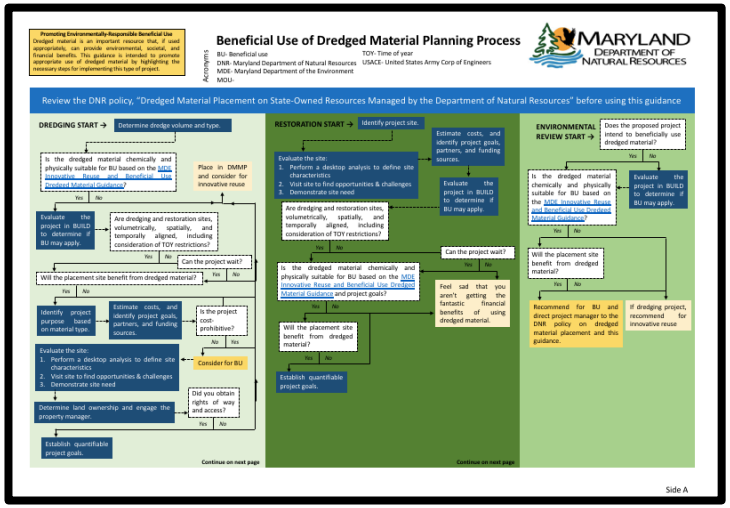
All projects involving requests to place dredged material on land held by the Department received after the effective date are subject to all requirements, conditions and approvals outlined in this policy. "Dredged material" means earth, sand, silt, sediment, shell, rock, soil, waste matter, or other material excavated or dredged from the Chesapeake Bay and its tributary waters, the Atlantic Coastal Bays and their tributary waters, the Atlantic Ocean, or other waterbodies in Maryland.

III. Policy

DNR's networks of public lands protect human health and well-being; conserve critical habitat for fish and wildlife; provide outdoor recreation opportunities; and safeguard scenic, cultural and historic resources. These lands are for the use and benefit of all of Maryland's citizens. In order to sustain these vital ecological, economic and recreational functions for future generations, it is the policy of the Department that:

1. The Department will deny all requests to deposit or redeposit dredged material on DNR land in upland contained placement facilities.

2. The Department may authorize the deposit or redeposit of dredged material on DNR land for beneficial uses if all of the following conditions are met:



Beneficial Use of Dredged Material Guidance Outline

Document purpose (This paragraph will not be included in the guidance, this is for your own understanding as you review the outline. Some of these points will be included in the disclaimer or background sections): The guidance document is intended to supplement the dredged material placement policy and provide clear and concise instructions on how beneficial use (BU) of dredged material will be implemented on state resources. Details are intended to be specific to the processes that exist within DNR so that current and future employees can use the guidance to efficiently learn how to implement BU at DNR. The guidance will be focused on addressing tidally-influenced coastal areas where material is dredged and placed by DNR, but the concepts can be applied elsewhere. This document is an outline for the guidance, so language and formatting are not final.

Acknowledgements

Disclaimer

This will be in reference to the geographic scope of the guidance, and the intent for this being an internal document.

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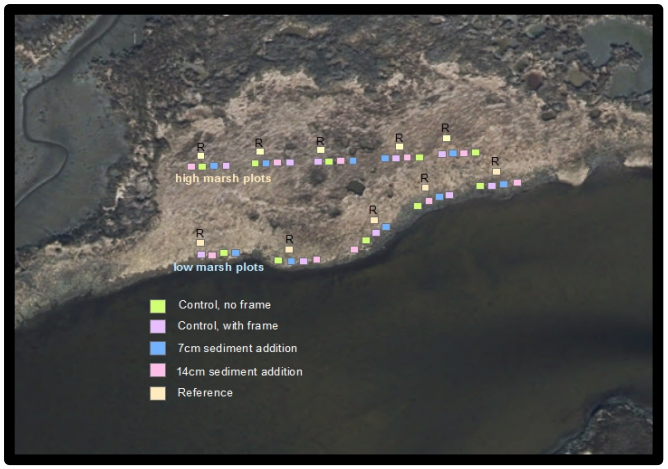
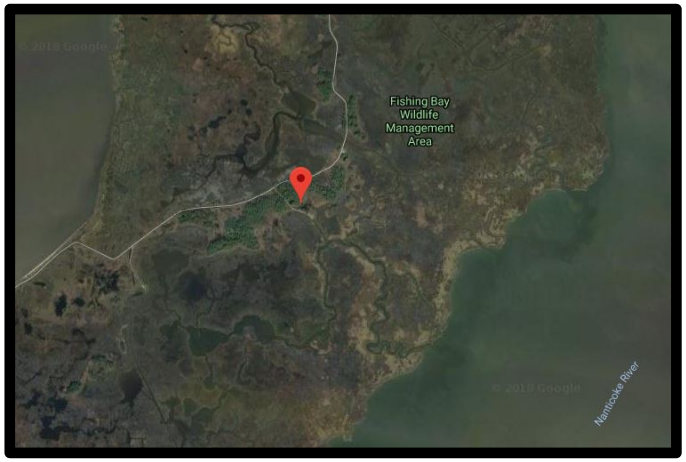
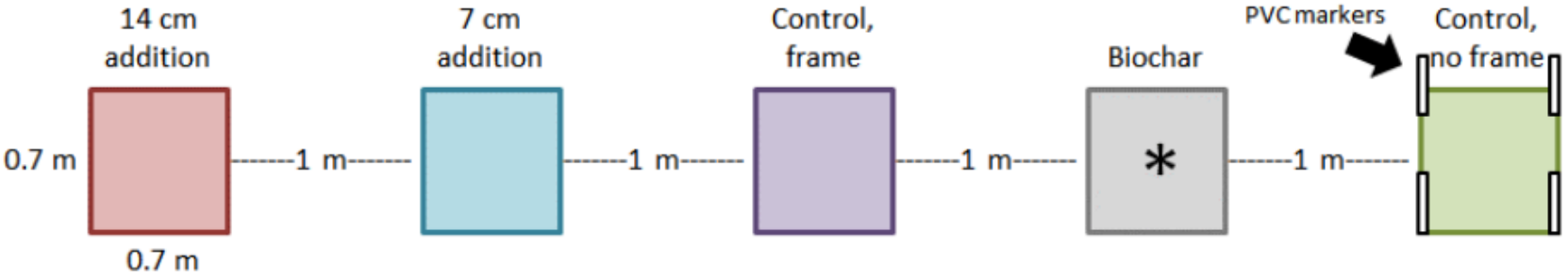
NERRS Science Collaborative project to understand TLP





Low elevation block: place near lower elevational limit of marsh at your marsh, in areas with low (10-50%) cover of marsh vegetation.



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DRAFT

Maryland Department of Natural Resources

Marsh Elevation Enhancement Planning Considerations

Prepared by:

Jackie Specht
NOAA Coastal Management Fellow

November 2018

MARYLAND DEPARTMENT OF NATURAL RESOURCES | Chesapeake & Coastal Service | NOAA

Elevation Enhancement Desktop Analysis User Guide

This guide is intended to walk the user through an elevation enhancement desktop analysis using the Maryland Coastal Atlas to determine if a site is a suitable location for elevation enhancement. The Maryland Coastal Atlas is an online mapping and planning tool that allows state and local decision-makers to visually analyze and explore data for coastal and ocean planning activities. Here, the Maryland Coastal Atlas will be used to assess a site for the *need* for elevation enhancement based on climatic influences, the *value* of resources that would be lost if restoration does not occur, and the *damage* that may occur to the surrounding resources due to elevation enhancement. A story map demonstrating a step-by-step example of how the assessment is performed at a specific location is available at the Thin-Layer Placement Site Selection Desktop Analysis.

Project planning

1. Determine project purpose

A. Dredging:
- ❑ Briefly describe site need and project purpose (e.g. navigation channel, hydrology) ♦

B. Restoration:
- ❑ Briefly describe site need and project purpose (e.g. vegetation, hydrology, habitat, wildlife, marsh resilience, social/community) ♦

2. Desktop analysis to assess site characteristics and feasibility

- ❑ Aerial photo review (historical & current)
- ❑ Soil surveys
- ❑ LiDAR
- ❑ SAV
- ❑ Shellfish
- ❑ Resiliency concerns
- ❑ Sea-level rise projections and vulnerability
- ❑ Topographic data
- ❑ Tidal datum
- ❑ Section 106 (historical) items
- ❑ Hydrology and energy dynamics
- ❑ Marsh migration corridors
- ❑ Invasive species distribution
- ❑ Infrastructure
- ❑ Site access
- ❑ Property ownership and neig
- ❑ Public use
- ❑ Placement distance from dre

Elevation Enhancement Lessons-Learned

Through a series of interviews with elevation enhancement practitioners across the country, the below lessons-learned were documented. Interviews were conducted with individuals with diverse professional backgrounds, including research scientists, project managers, permitting entities, funders, and land managers. The gathered lessons-learned reflect experiences interviewees had during implementation of pilot elevation enhancement projects that can be used to inform future projects.

Key Lessons

➢ It is important to remember that **all projects are unique**. The suggestions made in this section may not apply to all projects nor be beneficial to all projects. Each project should be considered individually based on the biological, chemical, physical, social, and financial needs of the project in order to determine appropriate implementation.

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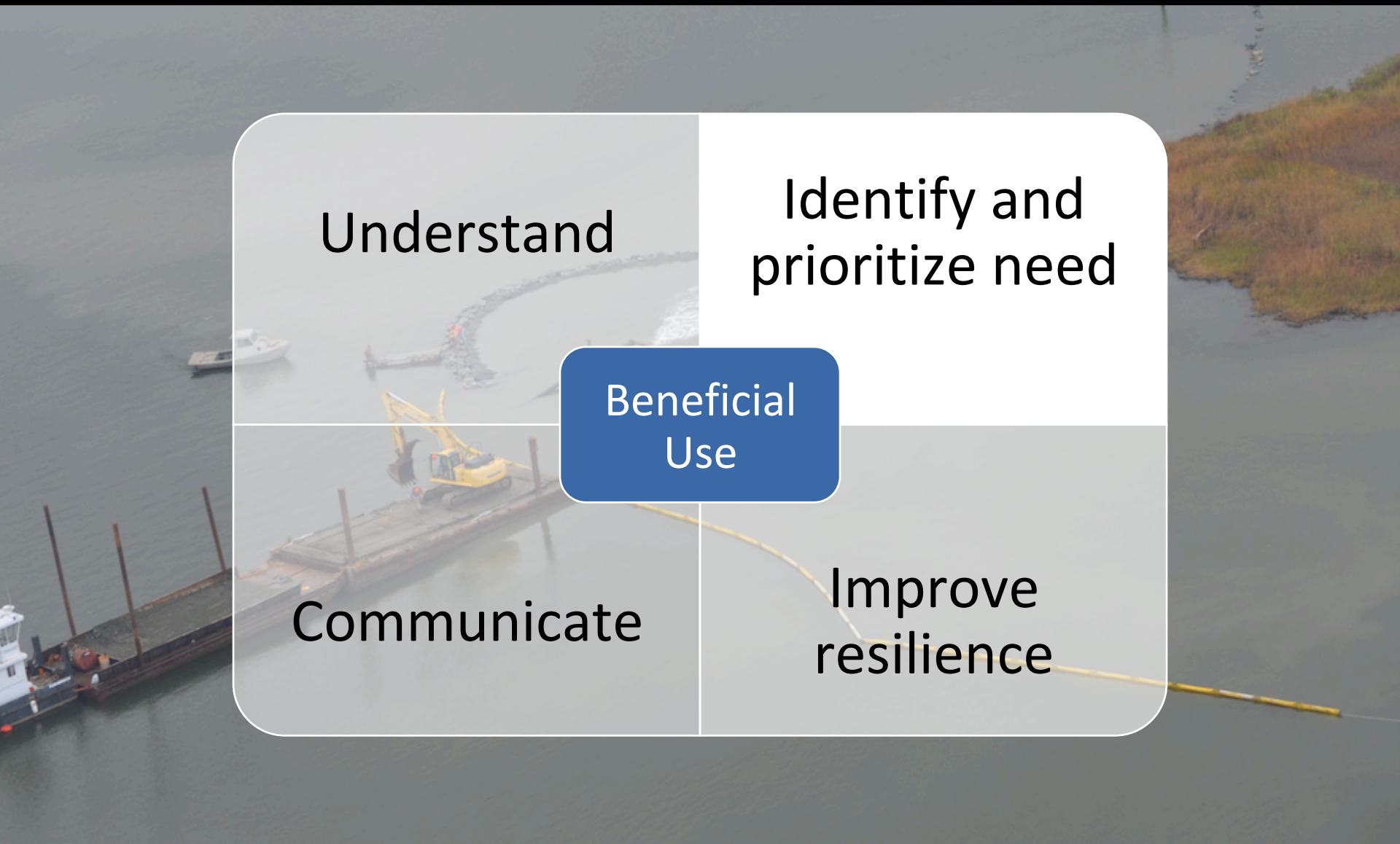

Identify and prioritize

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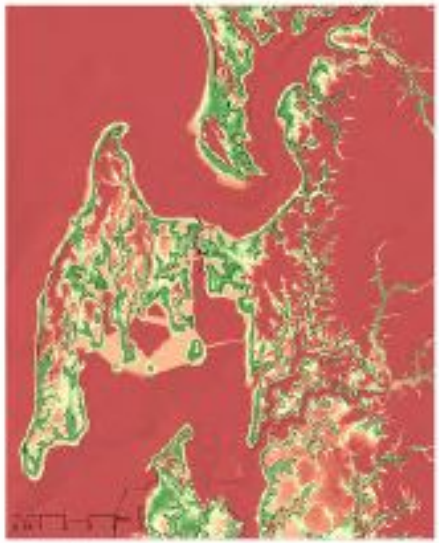
SUITABILITY MAP OUTPUT

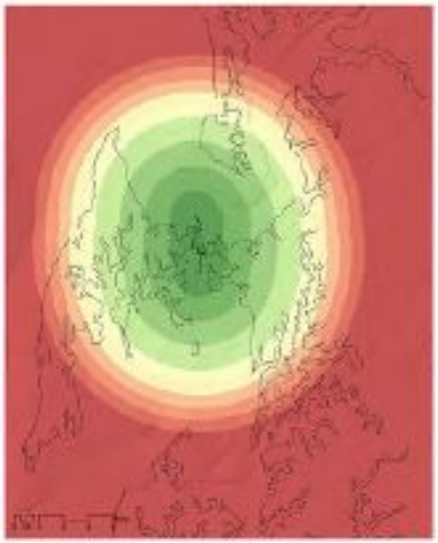
Kent Narrows

1 2 3 4 5 6 7 8 9 10

Low Suitability — High Suitability



Landform



Dredge Proximity

Beneficial Use

Coastal Risk

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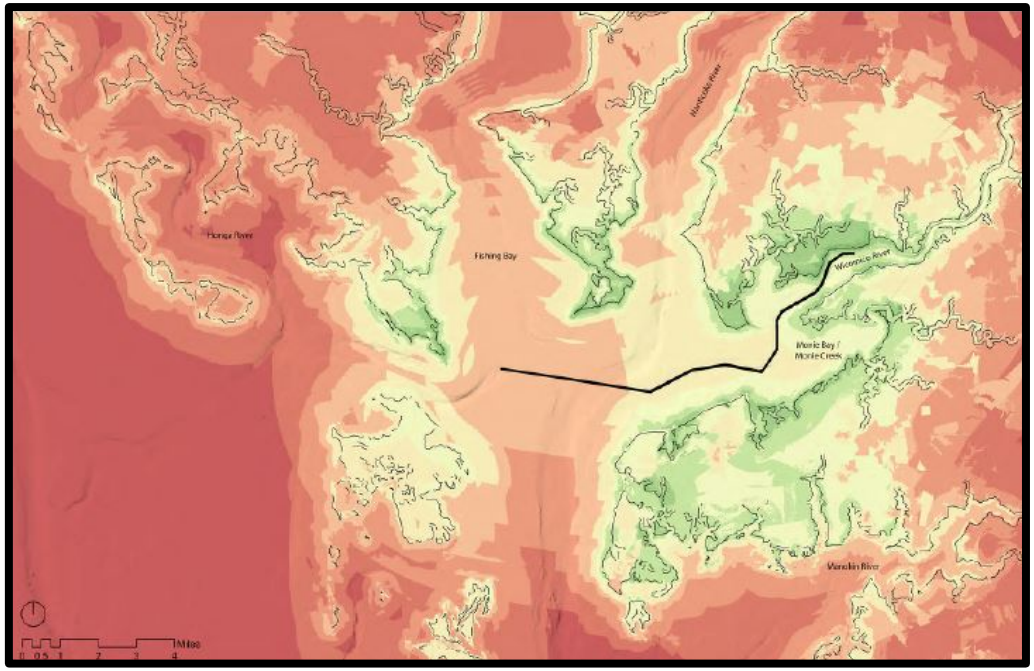

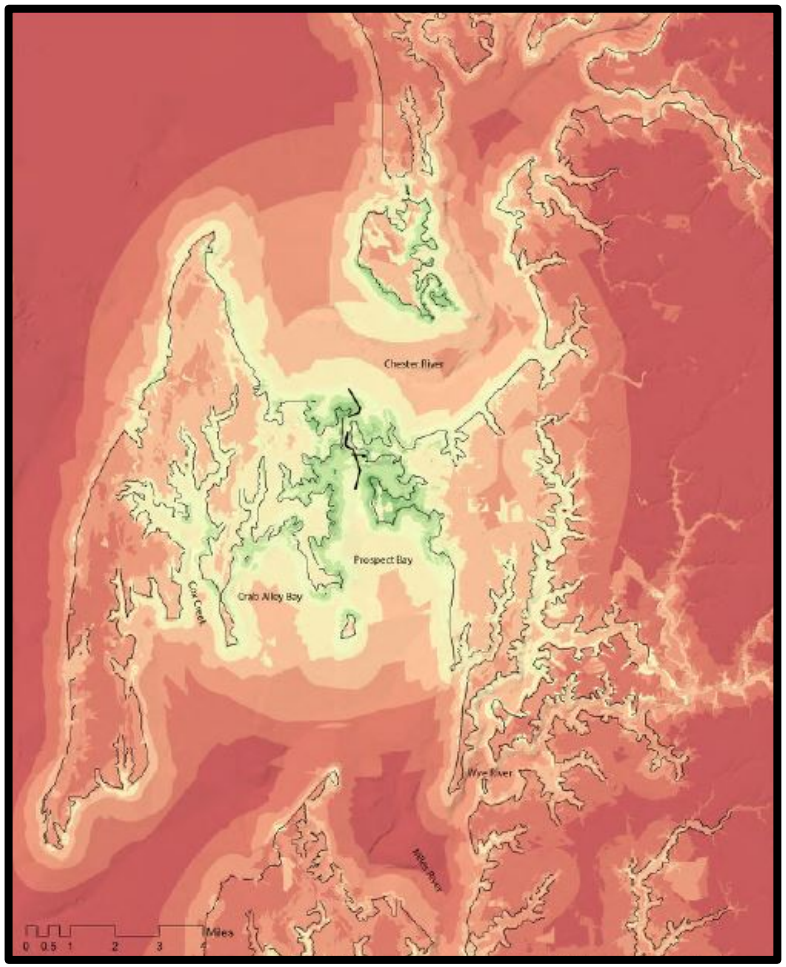

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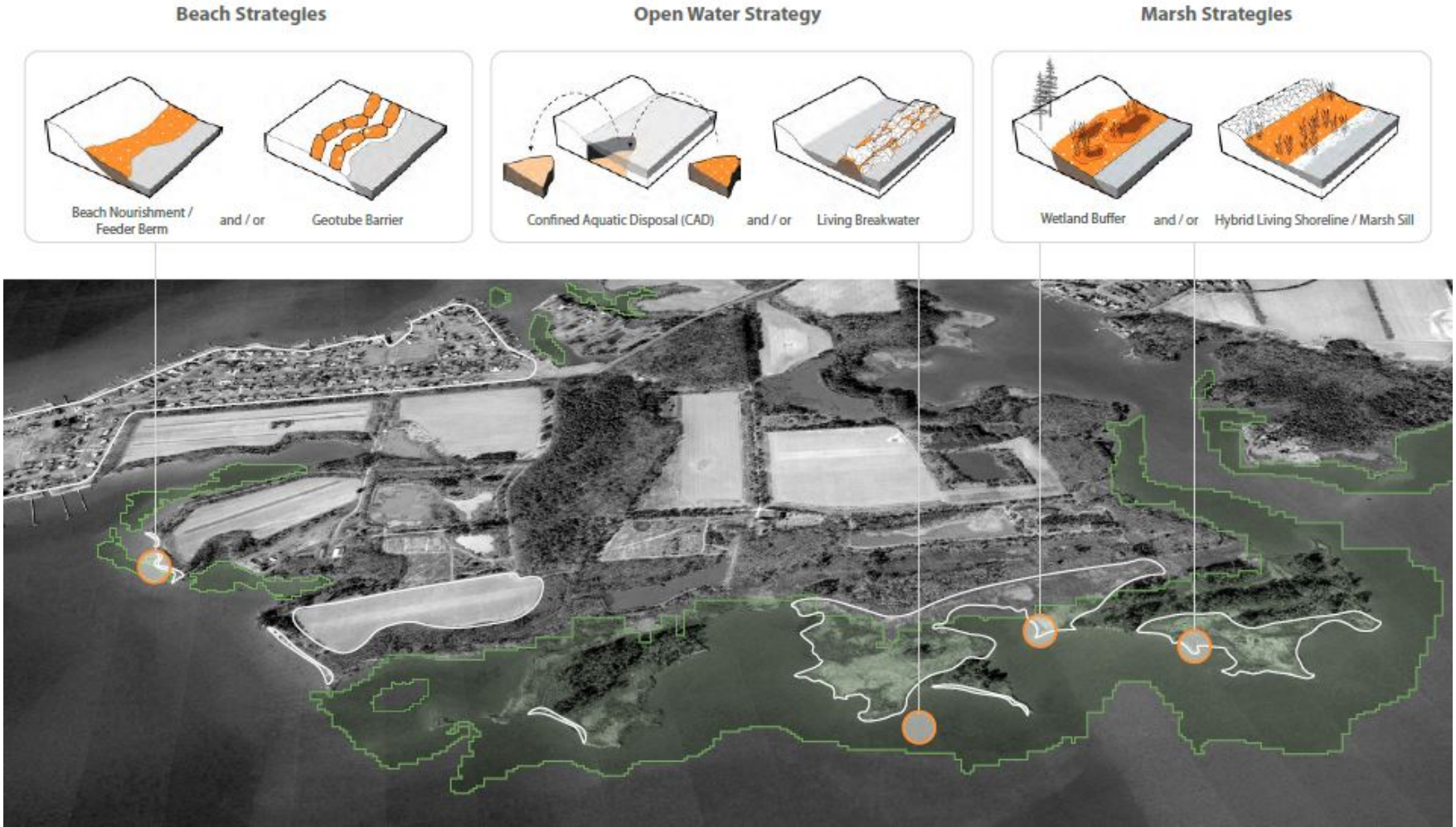
CRAB ALLEY NECK NORTH I BENEFICIAL USE STRATEGIES



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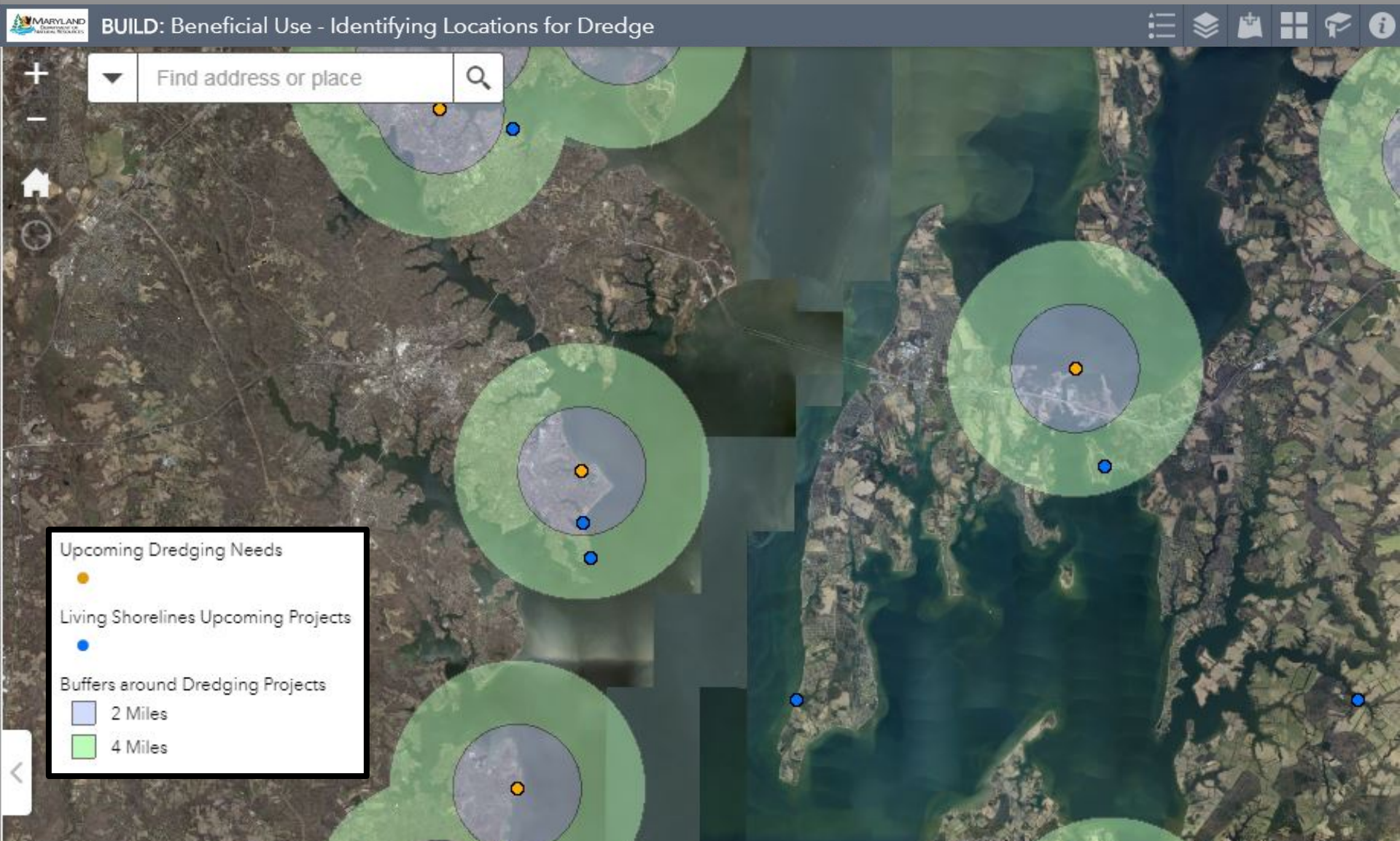

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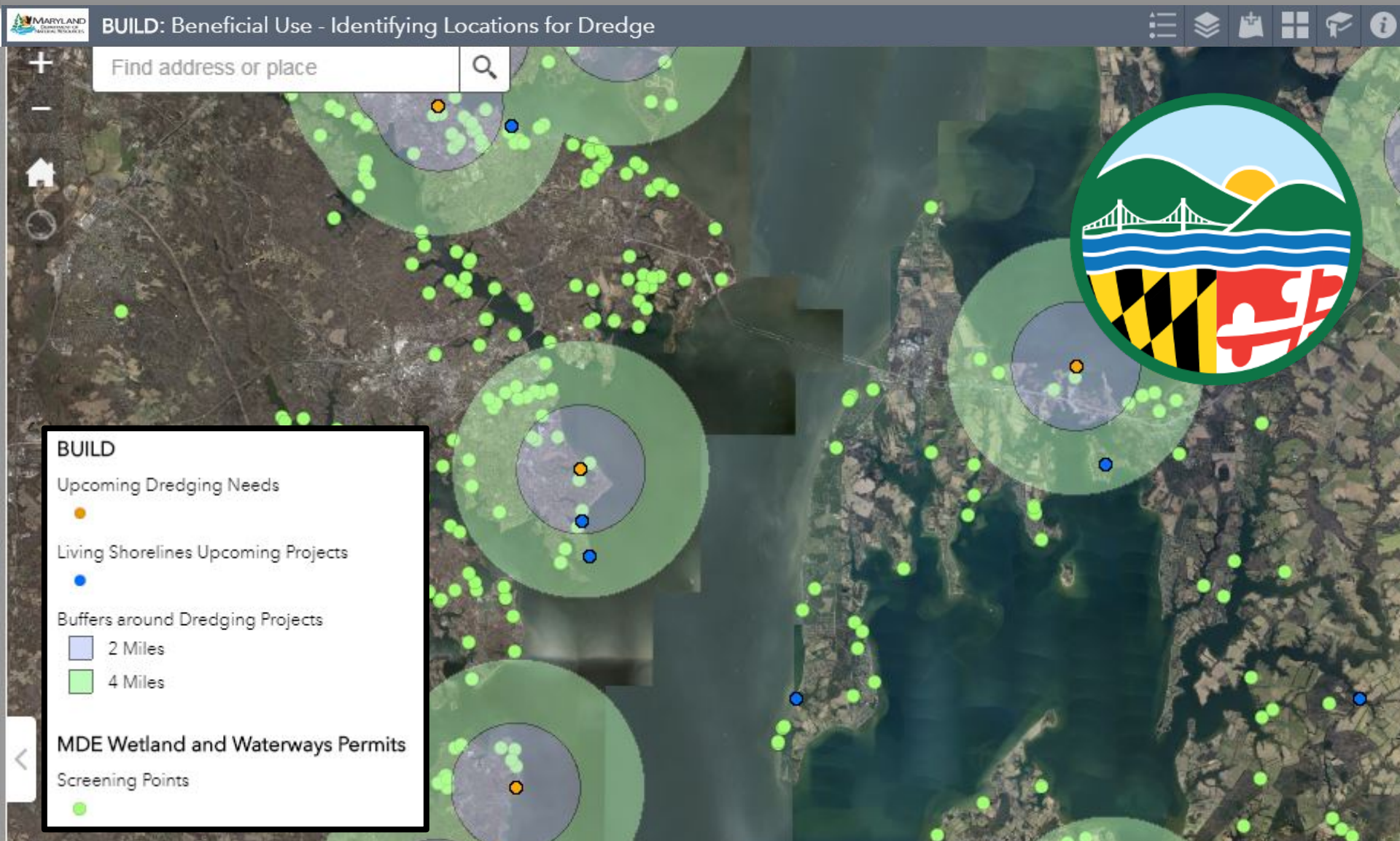

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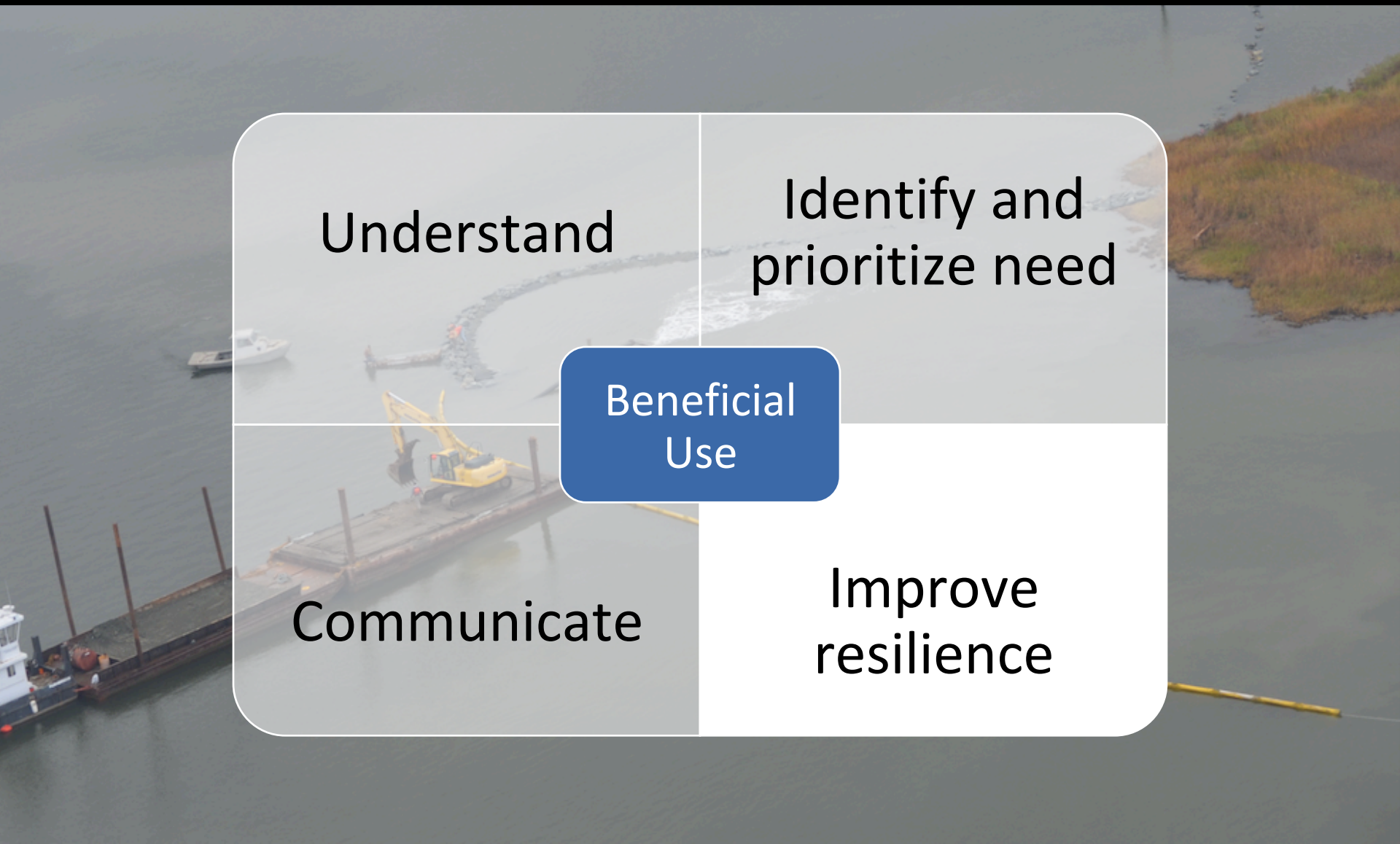

Improve resilience

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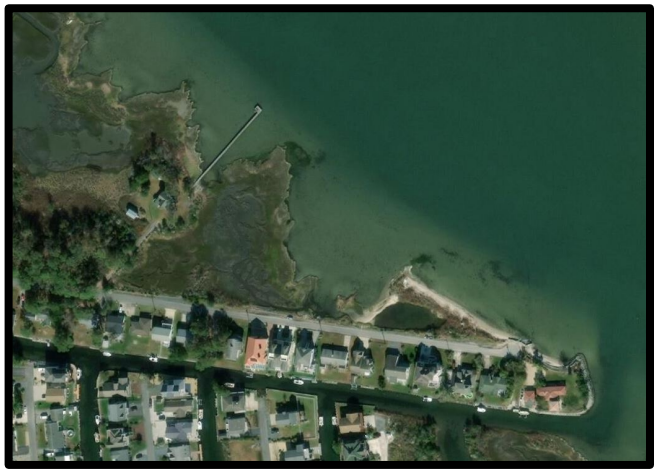
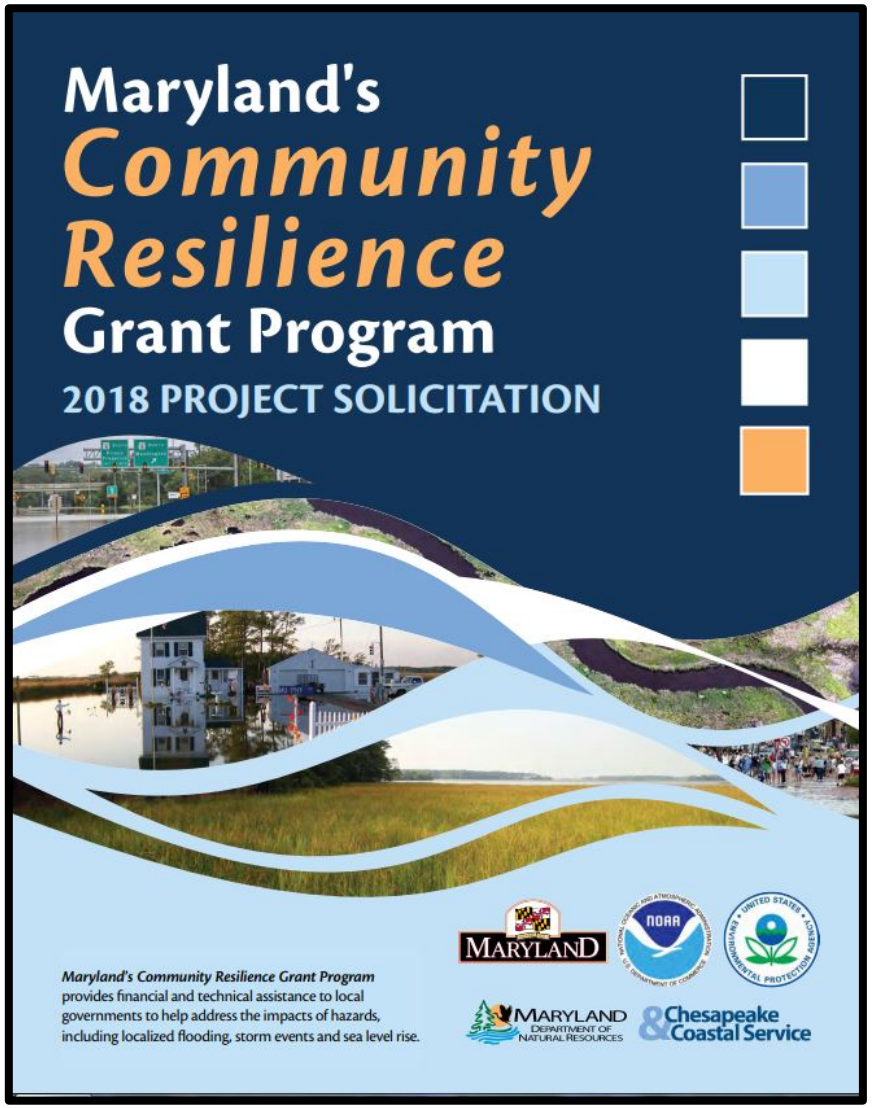
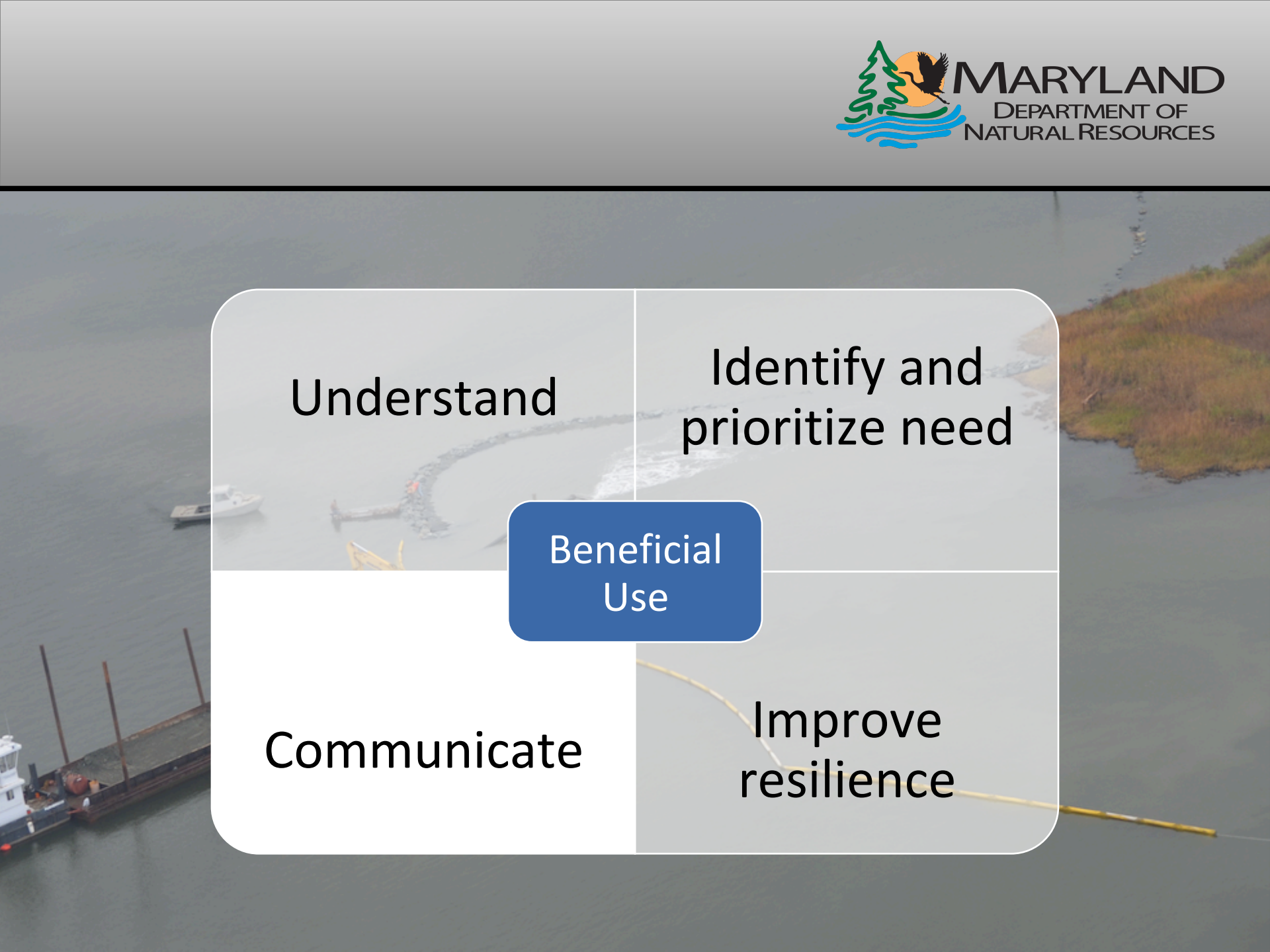
Hurst Creek

Selsey Road



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Beneficial Use of Dredged Material

In 2001, Maryland passed the Dredged Material Management Act and defined Maryland's "Beneficial Uses" of dredged material, including marsh enhancement, beach nourishment, shoreline stabilization, and island restoration. These beneficial uses can increase shoreline and community resilience while dramatically reducing the financial costs of dredged material disposal and coastal restoration projects. For beneficial use projects to occur, dredging and restoration projects must be aligned in space and time, and the dredged material must be suitable per the Maryland Department of the Environment guidelines for the given restoration project. The Chesapeake and Coastal Service (CCS) is pursuing opportunities to better align dredging and restoration to realize those benefits.

Beneficial use opportunities are supported and managed at Chesapeake and Coastal Service in five ways:

Policy and guidance

To ensure that dredged material is placed and utilized in environmentally responsible ways, the department is developing a policy, "Dredged Material Placement on Resources Managed by the Department of Natural Resources", that will be accompanied by a process guidance, "Beneficial Use of Dredged Material Planning Process", both expected to be complete in spring 2019. Before pursuing a project that may beneficially use dredged material, the policy and guidance will help project planners understand the requirements and recommendations for implementing these types of projects. To learn more, contact Jackie Specht at jackie.specht@maryland.gov or (410) 260-8801.

Demonstration projects

Chesapeake and Coastal Service believes in the value of beneficially using dredged material. Through the Living Shorelines program, the Waterways Improvement Fund, and the Community Resilience Grant Program, Chesapeake and Coastal Service is

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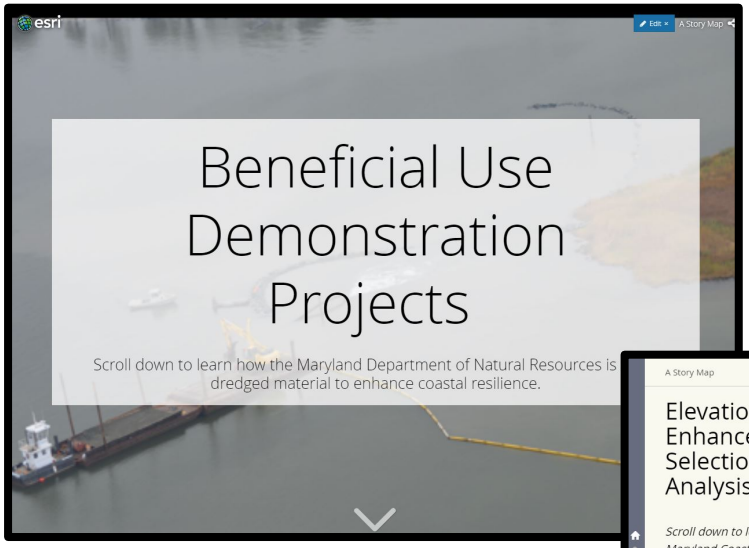

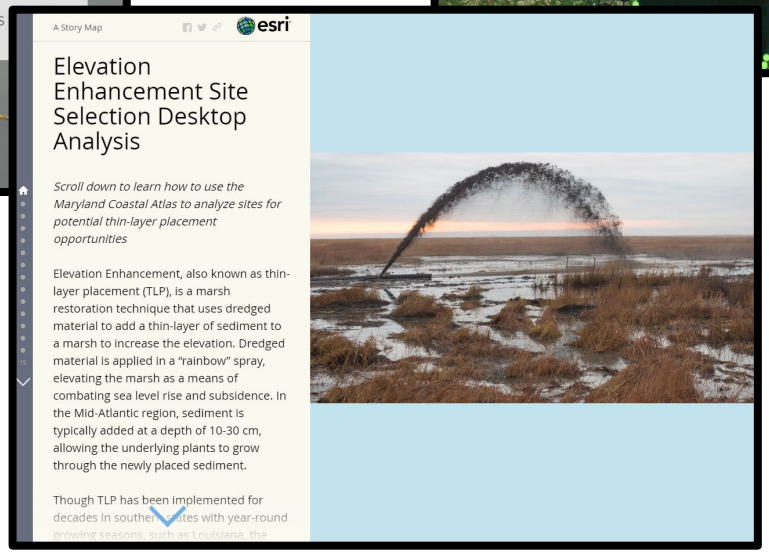

Looking forward

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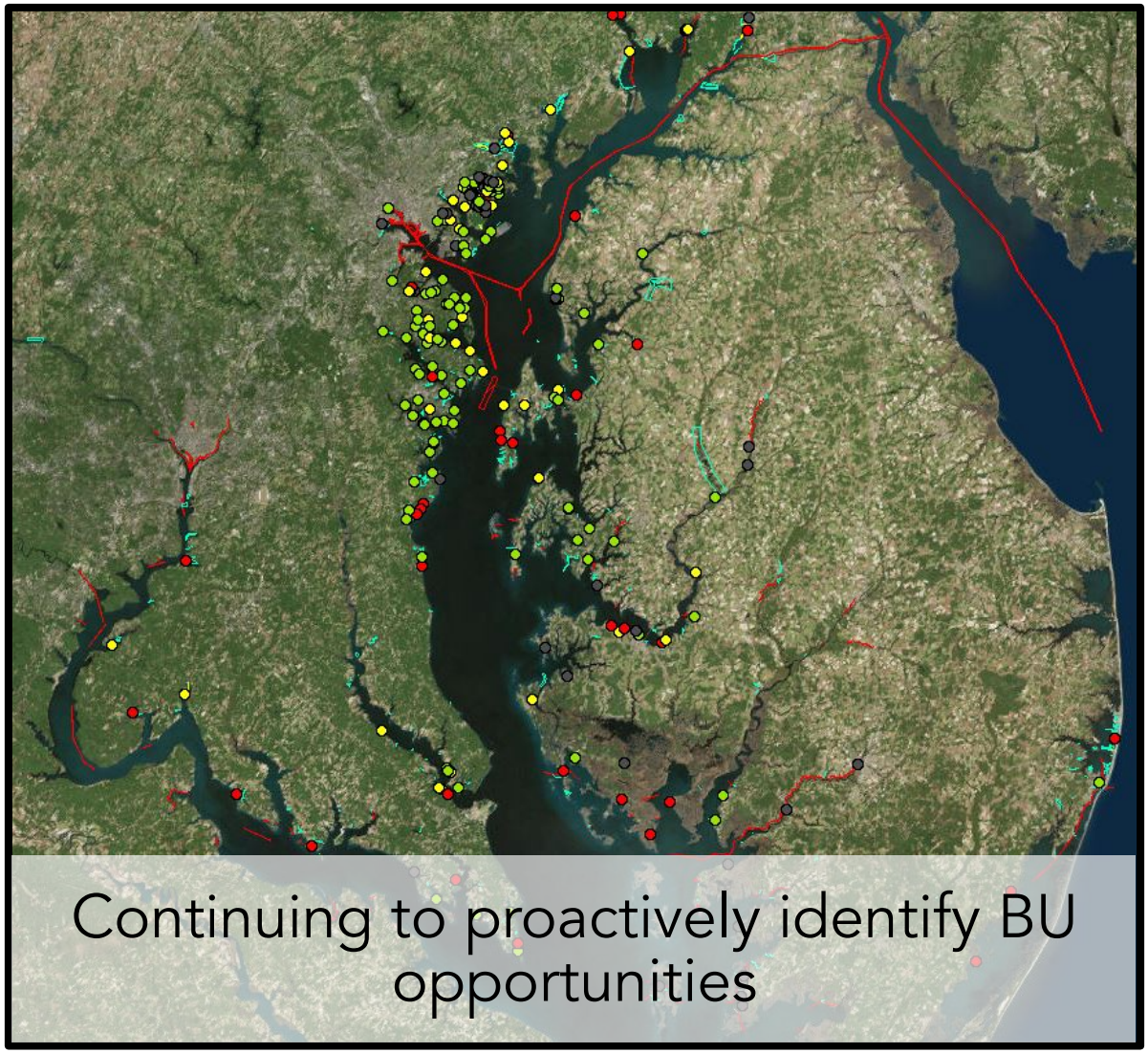
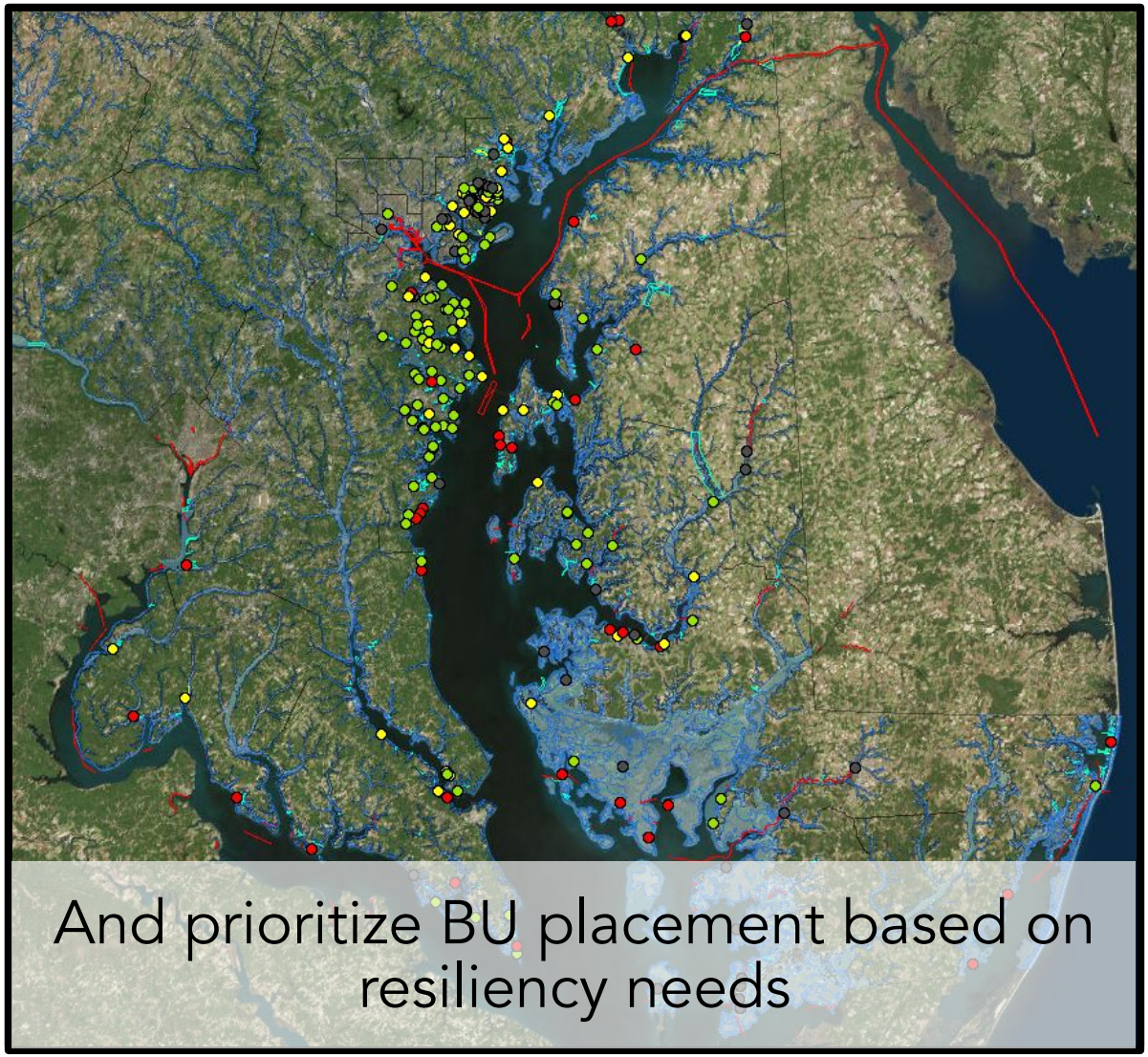


Continuing to proactively identify BU opportunities

Looking forward



And prioritize BU placement based on resiliency needs

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Thank you!

Questions? jackie.specht@maryland.gov