Poplar Island Environmental Restoration Project

General Reevaluation Report (GRR) and Supplemental Environmental Impact Statement (SEIS)

Civil Works Review Board
September 22, 2005

Overview

- Study Authority and Background
- Existing Project
- Planning Constraints and Alternatives Considered
- Recommended Plan
- Cost
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- Sponsor's Support
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Study Authority

- Section 537, Water Resources Development Act (WRDA) of 1996:

  " The Secretary shall carry out a project for the beneficial use of dredged material at Poplar Island, Maryland,…"

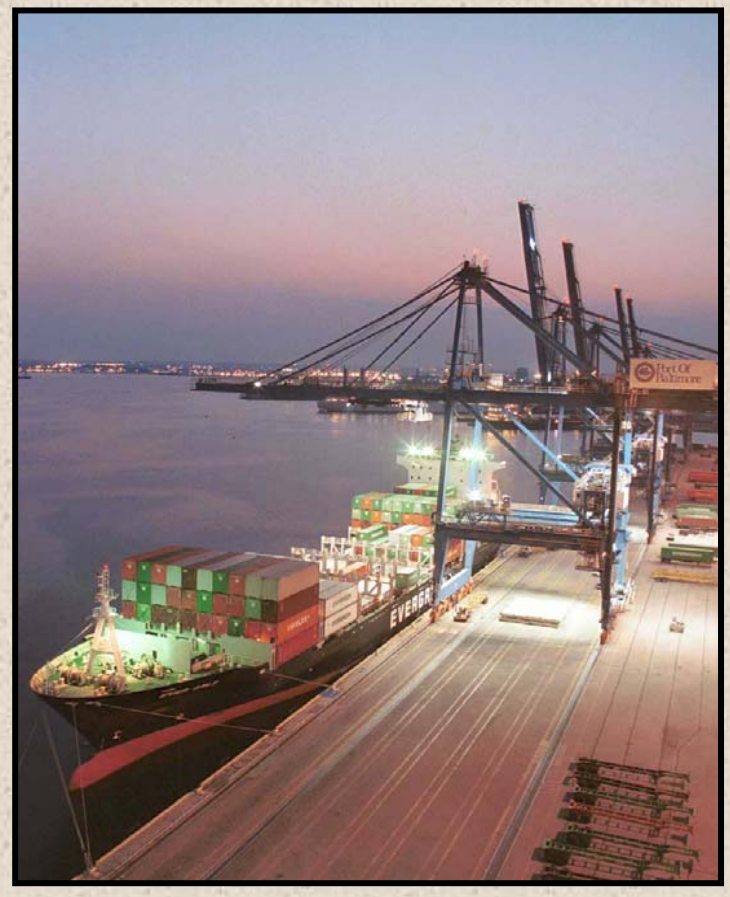
- Section 318, WRDA 2000 modification:

  "(1) to provide that the non-Federal share of the cost of the project may be provided in cash or in the form of in-kind services or materials; and (2) to direct the Secretary to credit toward the non-Federal share…the cost of design and construction work carried out by the non-Federal interest before the date of execution of a project cooperation agreement…"

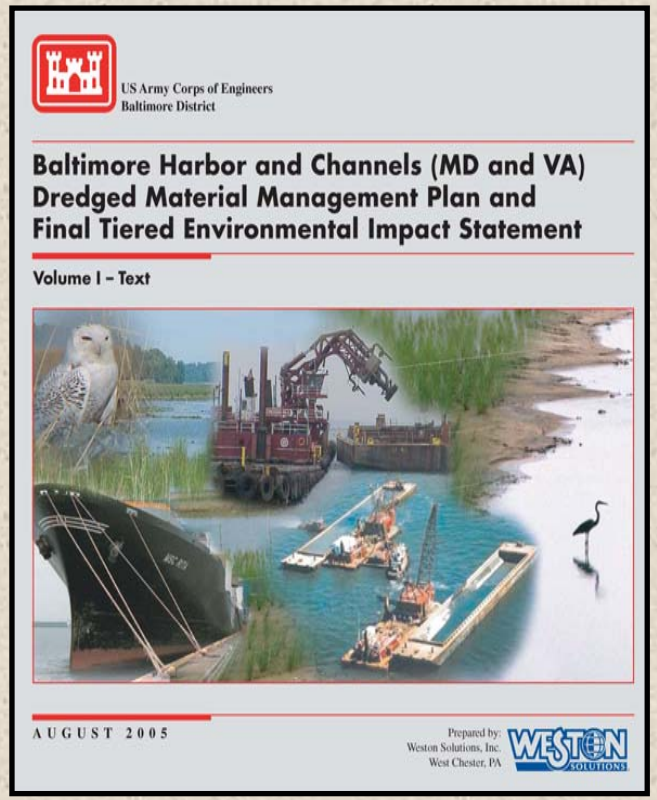
Study Sponsor

<u>Non-Federal Sponsor:</u>

The Maryland Port Administration (MPA), under the auspices of the Maryland Department of Transportation (MDOT)

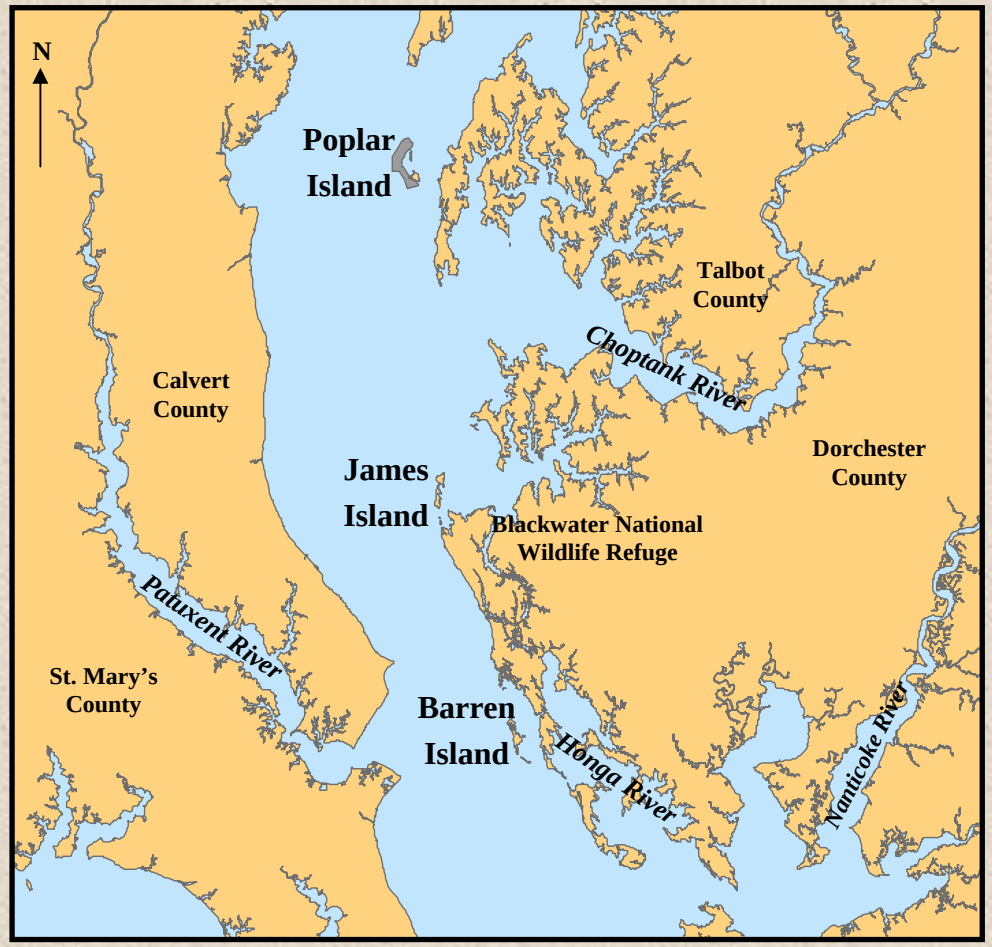


Need for the Proposed Project



- DMMP identified a 56 mcy dredged material capacity shortfall over 21 years
- Current placement capacity for the Upper Chesapeake Bay approach channels will become limited beginning in 2010
- Both the *Federal Dredged Material Management Plan (DMMP) and Tiered EIS* and the State of Maryland DMMP recommended a study of the expansion of Poplar Island
- USACE guidance requires evaluation of existing placement sites first

Bridging the Dredged Material Capacity Shortfall



Poplar Island expansion could:

- Accommodate the near-term placement capacity shortfall
- Allow time for the additional beneficial use projects, such as island restoration projects at James and Barren Islands and wetland restoration in and around Blackwater National Wildlife Refuge, to be approved and come on-line

Purpose and Scope of the Poplar Island GRR/SEIS

To Evaluate:

- Physical Expansion of the Island
  - Lateral Expansion
  - Vertical Expansion
  - Combination of Lateral plus Vertical Expansion
- Actions Required to Complete the Existing Project
- Acceptance of Dredged Material from Other Channels
- Recreational/Educational Components

Objectives of the Poplar Island GRR/SEIS

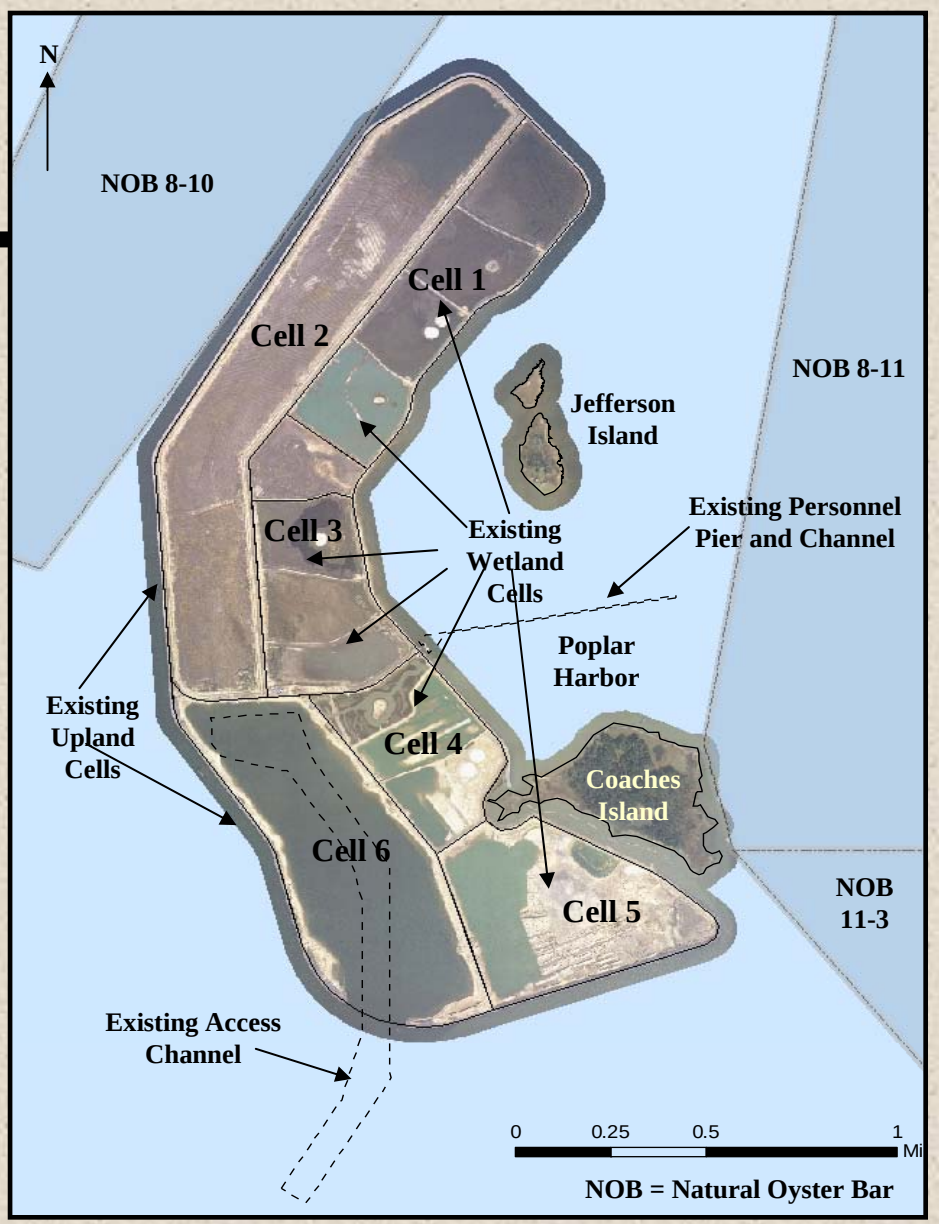
- Restore marsh, aquatic, and terrestrial island habitat for fish, birds, reptiles, amphibians, and mammals
- Maintain consistency with existing Poplar Island project
- Respond to Public and Agency concerns
- Protect existing island ecosystems in Poplar Harbor by reducing erosion
- Increase and optimize capacity for dredged material placement
- Evaluate recreation and education opportunities

Project Location

Existing Project
September 2004

Existing PIERP

- 1,140 acres
- 50 percent wetland habitat
- 50 percent upland habitat
- Capacity: 40 mcy
- Projected site life: dredged material placement until approximately 2015

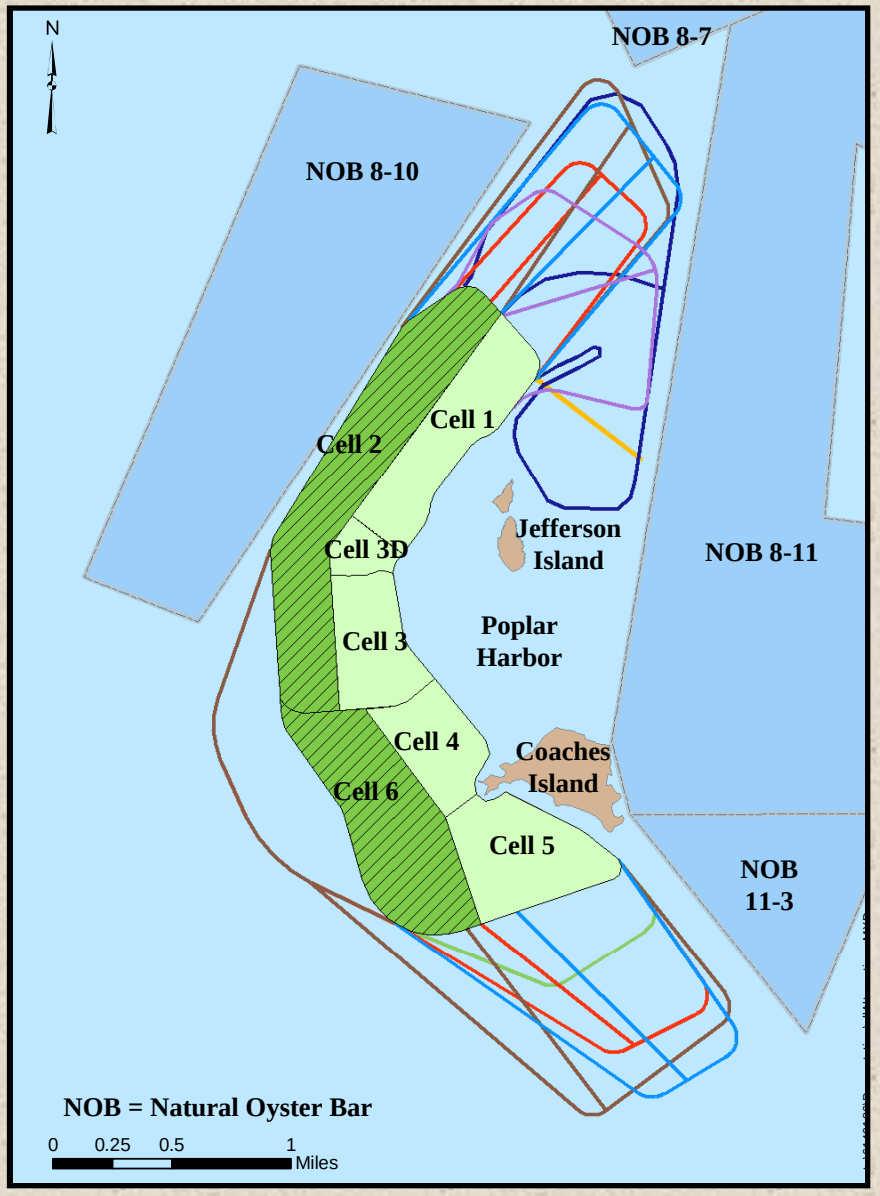


Key Planning Assumptions

- Minimum of 50 percent wetland/open-water habitat in lateral expansion
- Annual dredged material inflow consistent with current projections
- Provides sufficient dredged material capacity to accommodate short-term need
- Accurate estimates of available sand borrow quantities
- Wetlands not constructed over borrow areas
- Island Community Units (ICU) analysis estimated value of environmental benefits for created habitat and not value of habitat lost from construction
- Avoid Natural Oyster Bars and Poplar Harbor

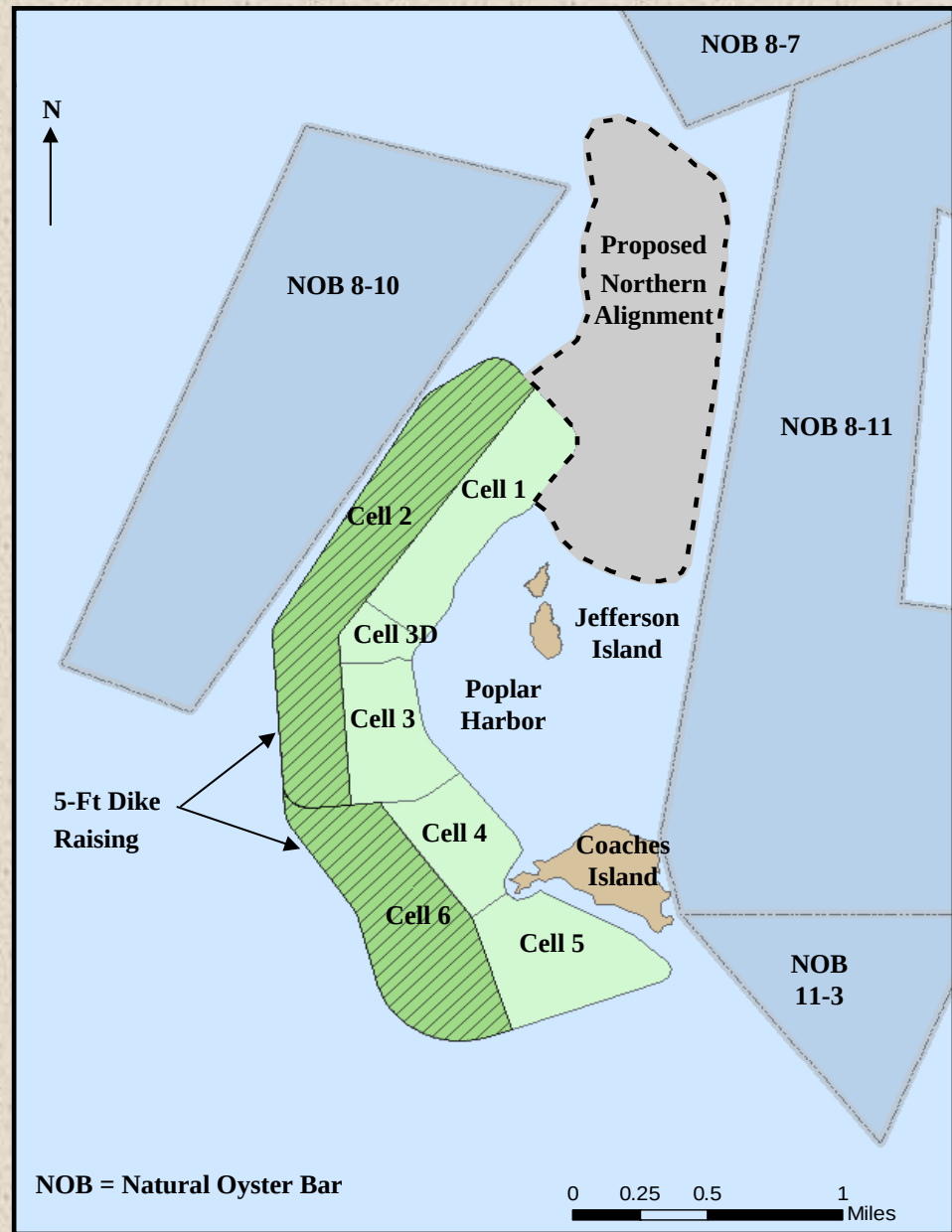
Development of Expansion Alternatives: Initial Evaluation and Screening

- Seven initial alignments to north, south, and west; plus breakwater
- Engineering suitability of site
- Capacity and cost of alignments
- Use of area by watermen
- Local concerns regarding viewshed, noise, and keeping height comparable to area topography
- Environmental concerns regarding open water, shallow water, Bay bottom habitat, oyster bars, and shellfish beds

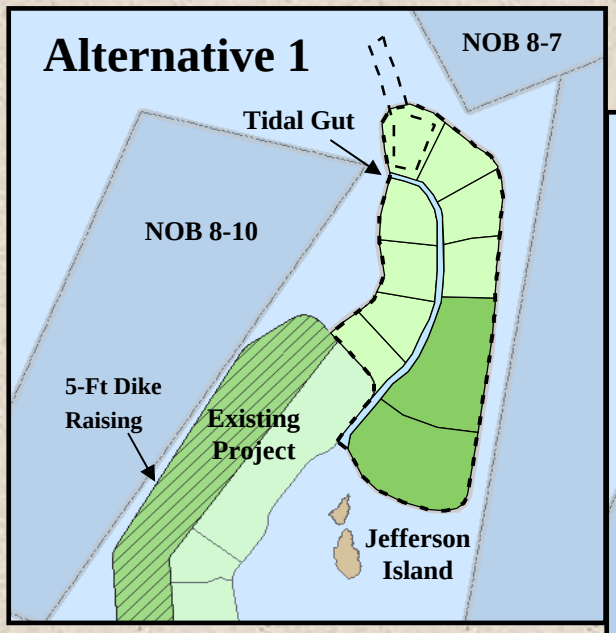


Development of Alternatives

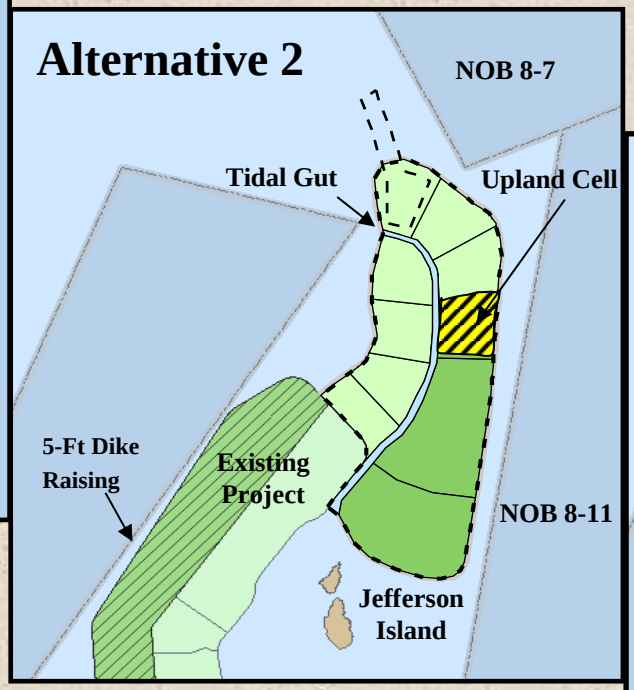
- Combination of lateral and vertical expansion
- Multiple heights for dike raising: +5-ft, +10-ft, +15-ft
- Variety of habitat proportions: 100%, 70%, 60%, 50%, or 30% wetland habitat
- Optimized for:
  - Environmental benefits of the restored wetland and upland habitats
  - Dredged material capacity
  - Cost considerations



Alternatives Considered



60% Wetlands,
40% Uplands

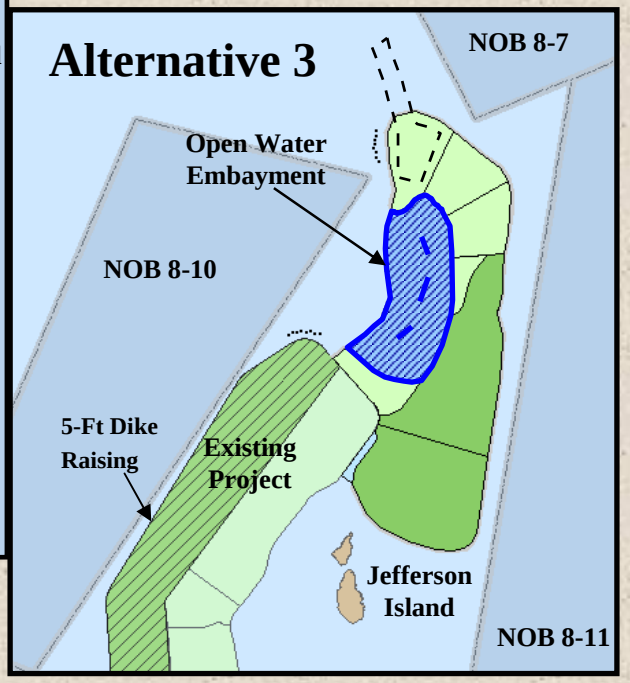


50% Wetlands,
50% Uplands

Wetland Cells

Upland Cells

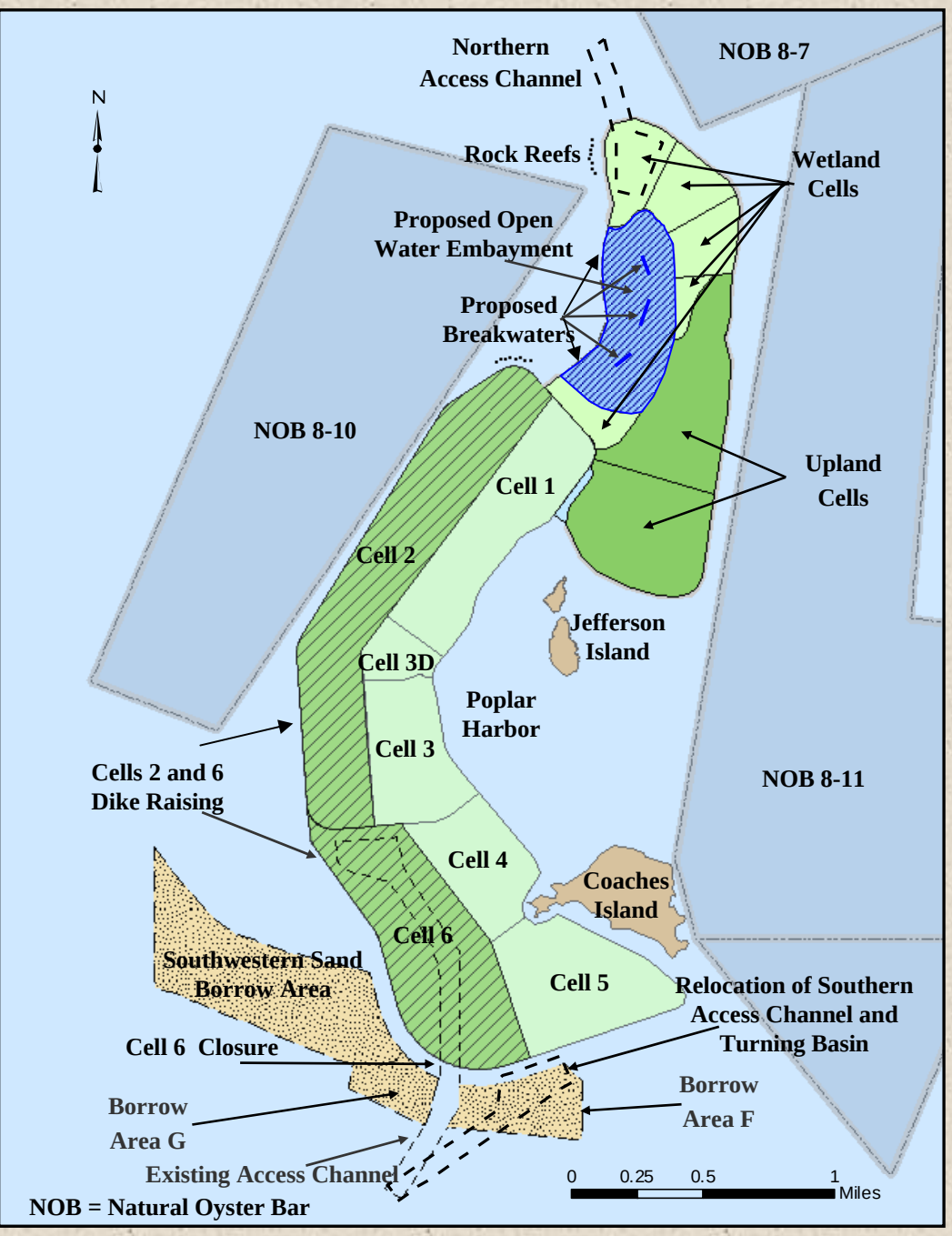
NOB = Natural Oyster Bar



24% Open-Water Embayment,
29% Wetlands, 47% Uplands

Alternatives Considered

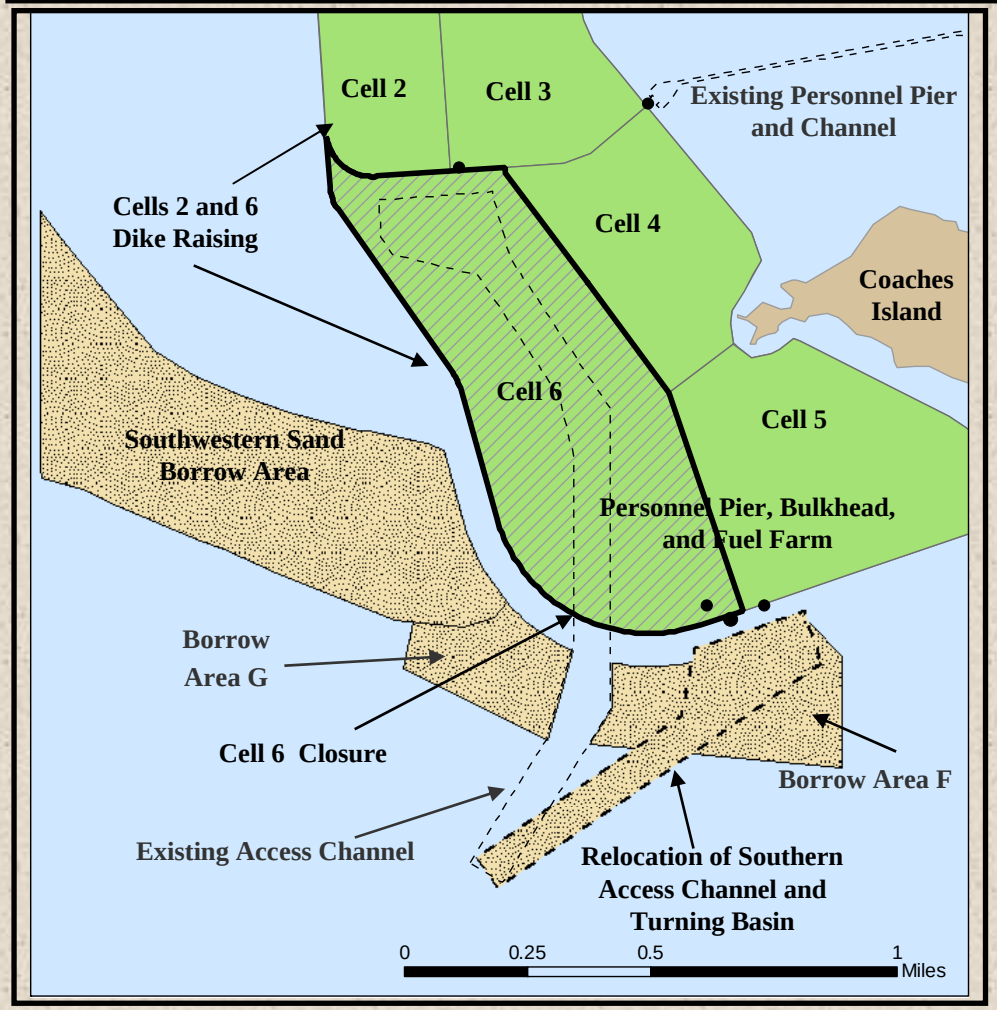
	Alternative 1	Alternative 2	Alternative 3
Impact Area (acres)	600	600	470
Wetlands (acres, %)	315, 60%	275, 50%	165, 29%
Open-Water (acres, %)	None	None	130, 24%
Southwestern Borrow Required (acres)	91	49	19
Capacity (mcy)	29	30	28
Additional ICUs	9,045	8,118	9,768
Cost per ICU	$70,800	$79,043	$63,579



Summary of the Recommended Plan

1. 575-acre lateral expansion with open-water embayment
2. A 5-ft vertical expansion of the existing upland cells
3. Incorporate actions required to complete the existing project
4. Accepting dredged material from southern approach channels to the C&D Canal
5. Development of recreational and educational components

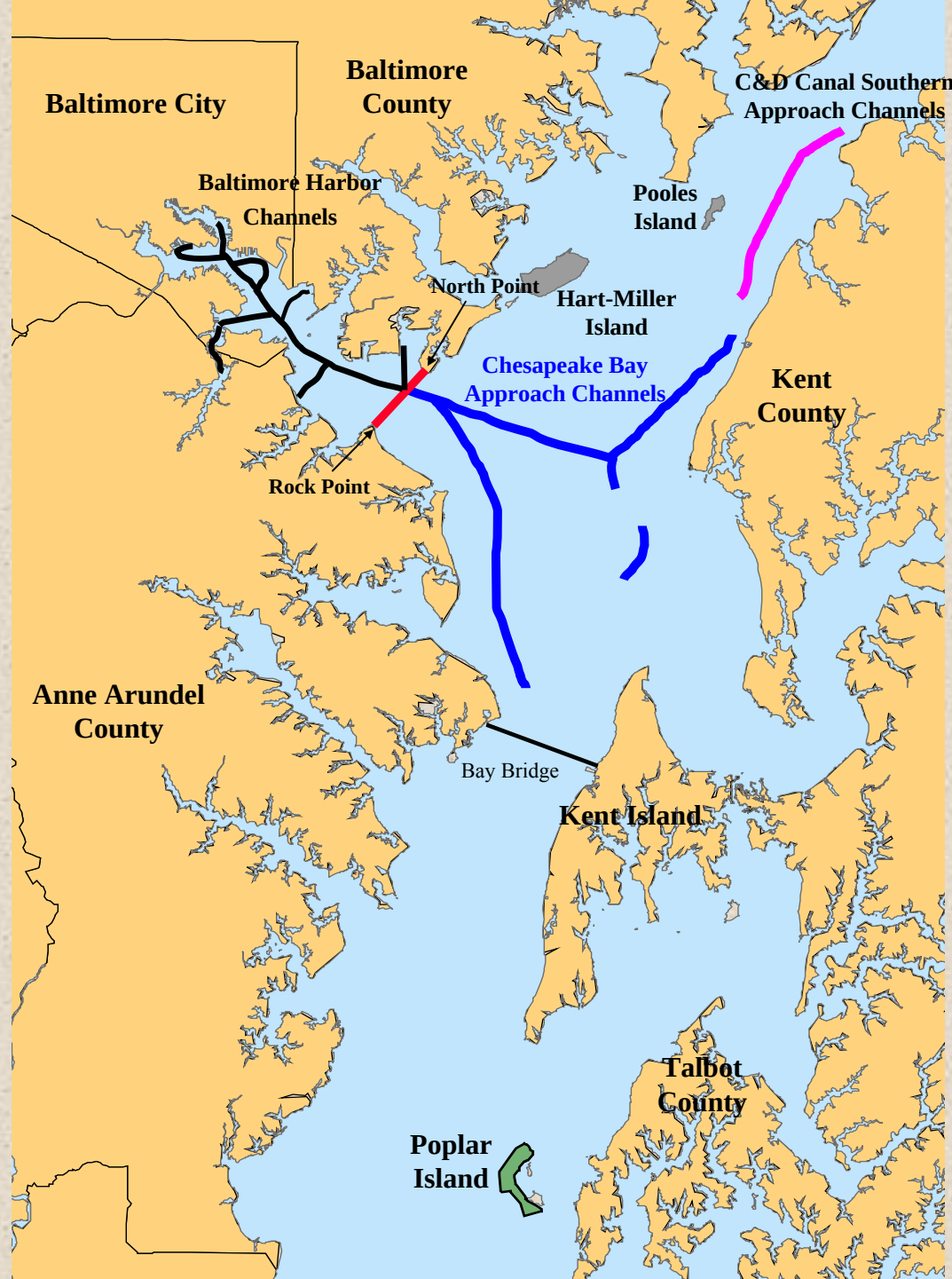
Actions to Complete the Existing Project



- Close Cell 6
- Realign southern access channel
- Construct new pier, bulkhead, and discharge structures
- Temporarily raise the upland dikes from 23 ft to 25 ft (Cells 2 & 6)

Approach Channels to the Port of Baltimore

- Eight Chesapeake Bay approach channels are authorized for placement at Poplar Island
- Material from Baltimore Harbor **WILL NOT** go to Poplar Island
- Recommend that material from the southern approach channels to the C&D Canal (approximately 1.2 million cubic yards per year) be placed at Poplar Island



Recreational/Educational Opportunities

Must be consistent with the goal of the project to restore *remote island habitat*, and could include:

- Public tours of the island
- Self-guided/interpretive nature trails and boardwalks
- Bird watching areas
- Environmental education program
- Research opportunities for universities
- Continued volunteer opportunities

Federal cost must be less than 10% of total project cost.

Cost for the Recommended Plan

- Cost for the existing project is $375.5 million
- Cost for the expansion is $242.3 million
- Total cost for the project is $617.8 million
  - $463.4 million Federal (75 percent)
  - $154.4 million non-Federal (25 percent)
- To date, the MPA has provided approximately $59.3 million in cash plus in-kind services to the existing project.

Costs provided in October 2004 price levels

Independent Technical Review

ITR was conducted by USACE-Philadelphia District

- Plan Formulation
  - Clarify the screening process, Cost Effectiveness/Incremental Cost Analysis, ICU analysis, and selection of the recommended plan
- Hydrodynamics and Coastal Design
  - Evaluate alternate rock toe dike designs as a value engineering option
  - Conduct additional Hydrologic & Hydrodynamic analysis related to the open-water embayment and breakwater/reef structures

HQ Policy Review Comments

- Incorporation of open-water embayment into the recommended plan
- Formulation of recreational/educational components
- National Ecosystem Restoration (NER)/National Economic Development (NED) trade-off analysis
- Completion of Section 106 coordination
- Cost estimate – embayment updates and escalation factors

Agency and Public Comments/Issues

Agency Comments:

- Support for open-water embayment; but questions remain as to its location, design, and long-term maintenance
- Loss of open-water, shallow water, and Bay bottom habitat
- Dredging impacts from sand borrow
- Creation of wetlands over borrow areas

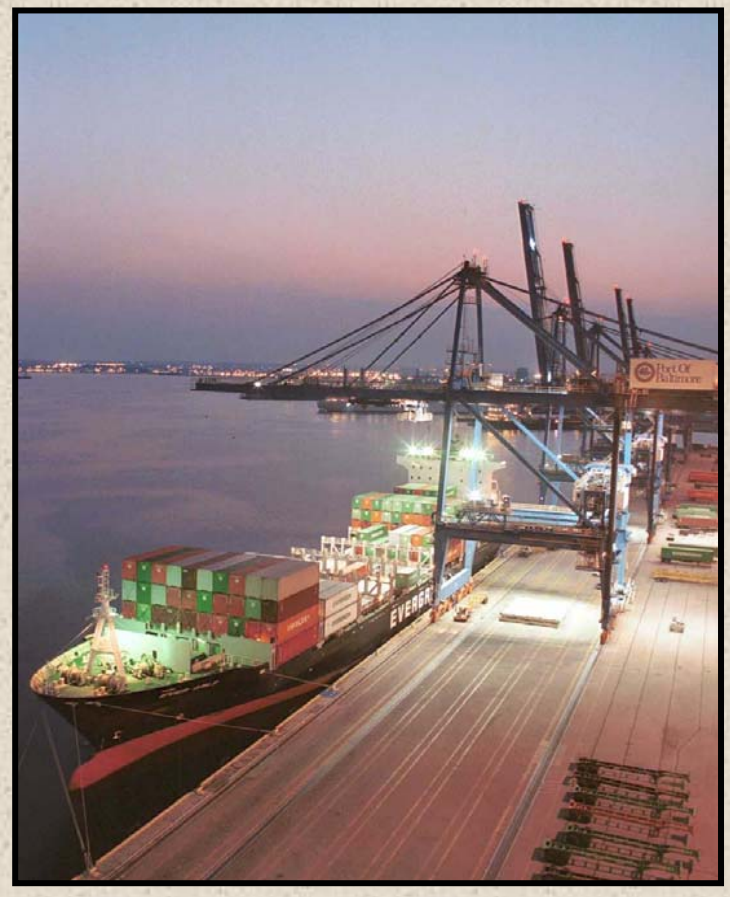
Public Comments:

- Loss of commercial crabbing areas
- Viewshed, noise, and light impacts to Jefferson and Coaches Islands and the mainland
- Potential for future expansion

Sponsor Support

<u>Non-Federal Sponsor:</u>

The Maryland Port Administration (MPA), under the auspices of the Maryland Department of Transportation (MDOT)



North Atlantic Division Position

- Concurrence with NAB District Commander's findings & recommendations
- Confirm that the report complies with all applicable policy & laws in place at this time.
- Anticipate favorable response to the draft Chief's Report recommending expansion of Poplar Island.
- Poplar Island Expansion shows the public our commitment to the environment, particularly watersheds and sets an example for other stakeholders to collaborate with the Corps.
- A showcase for Regional Sediment Management (RSM)

Quality Assurance Briefing: North Atlantic Division

- QC Report dated 7 Sept 2005
- Discussion on resolution of issue of open-water embayment design feature to be added to recommended plan. An example of collaboration with another agency to develop a watershed plan.
- NER/NED trade off analysis
- Review Certification Signatures for entire study team and QC team members are listed.

Certification of Legal & Policy Compliance

- **Legal certification of GRR made by NAB District Counsel on 7 Sept 2005.**
- **Policy Compliance: External ITR conducted by NAP . EITR certification includes signature of review team. All comments have been resolved by NAB and are documented in EITR report.**
- **NER/NAD tradeoff, Project life and cost estimate updates are examples of EITR comments.**

Civil Works Review Board

Significant Policy Review Concerns

Poplar Island Environmental Restoration project

Mark Matusiak

Office of Water Project Review

Policy and Policy Compliance Division

Washington, DC – 22 September 2005

Poplar Island Environmental Restoration project

HQUSACE Policy Compliance Review Team Recommendation

Release the report/FEIS for S&A Review & EPA Filing

Significant Policy Issues for Poplar Island Study

- Cost Effectiveness and Incremental Cost Analysis
- Cost-sharing of Recreation Features
- Trade-off of NER/NED

Policy Compliance Review – Significant Issue

Issue/Concern: Cost Effectiveness and Incremental Cost Analysis.

Reason/Basis: HQUSACE requested additional information concerning the CE/ICA for the expansion plan, including the proposed open-water embayment.

Significance: The open water embayment was proposed by NMFS late in the formulation process, and consequently CE/ICA was not completed in time for the draft GRR.

Resolution: CENAB has incorporated the open-water embayment into the final GRR, and CE/ICA has been performed.

Resolution Impact: The issue is resolved.

Policy Compliance Review-
Significant Issue

Issue/Concern: Cost-sharing of Recreation Features

Reason/Basis: HQUSACE questioned whether the proposed Poplar Island visitor's center is in compliance with Exhibit E-3 of ER 1105-2-100, checklist of cost-shared facilities.

Significance: Exhibit E-3 lists those project features that may be cost-shared by the Corps.

Resolution: CENAB clarified that the proposed operations building for the Poplar Island project, including conference rooms, lab space and restrooms could be made accessible to visitors on a limited basis. The operations building is an integral feature of the Poplar Island beneficial use project, and is appropriate for Corps cost-sharing.

Resolution Impact: The issue is resolved

Policy Compliance Review-Significant Issue

Issue/Concern: Trade-off of NER/NED

Reason/Basis: HQUSACE requested clarification of the trade-offs considered between NER and NED values in identifying the recommended plan.

Significance: The trade-offs between NER and NED values that were considered during plan formulation should be explained in the GRR, in accordance with paragraph 2-4.f of ER 1105-2-100.

Resolution: The final GRR contains a analysis of the trade-offs between environmental benefits (NER) and dredged material capacity (NED).

Resolution Impact: The issue is resolved.

Systems/Watershed Context

- Scarcity
  - Over 10,500 acres of remote island habitat lost in the last 150 year.
- Connectivity
  - Provides feeding & resting area for migrating shorebirds and waterfowl.
  - Provides connection between deep, open water predator finfish & marsh dependent forage species.
- Special Species Status
  - Nesting - Bald Eagle, Least Tern.
  - Observed – Royal Tern, American Oystercatcher, Northern Harriers, Spotted Sandpiper.
- Plan Recognition
  - Coastal America 2003 Partnership Award.
  - Contributes to the goals of the Chesapeake Bay Program watershed partnership

USACE Environmental Operating Principles

The Recommended Plan will:

1. **Strive to achieve environmental sustainability** by creating a diverse, productive self-sustaining ecosystem that will replace this rapidly vanishing remote island habitat.

2. **Recognize the interdependence of life and the physical environment** by creating habitats representative of typical wetland and uplands in the Chesapeake Bay region that will promote interaction and exchange with the surrounding ecosystems.

3. **Seek balance and synergy among human development activities and natural systems** by managing sediments that originate from land use practices within the watershed to restore ecosystem habitat while providing safe, efficient, and reliable navigation; by maintaining consistency with the existing aesthetics of the region; and by promoting recreational and educational use of the project.

4. **Accept responsibility and accountability under the law** to ensure that the project complies with all applicable Federal, state, and local laws, continues extensive environmental monitoring, and utilizes adaptive management practices.

USACE Environmental Operating Principles Cont'

The Recommended Plan will:

5. **Seek ways and means to assess and mitigate cumulative impacts to the environment** by minimizing environmental consequences to important regional resources, such as open-water, shallow water, and Bay bottom habitats, while providing direct and indirect environmental benefits through creation of scarce island wetland and upland habitats.

6. Since the inception of the PIERP, the Poplar Island Work Group, which is comprised of a diverse group of stakeholders, has provided oversight and technical expertise to the Project Delivery Team, allowing them to **Listen to, respect, and learn from perspectives of individuals and groups interested in Corps activities and create win-win solutions**

7. Through extensive and on-going consultation, coordination and outreach with other Federal and State agencies, scientific experts from universities, local government, and the public, the recommended plan will continue to **Build and share an integrated scientific, economic, and social knowledge base**

Lessons Learned - Engineering

- Conduct extensive geotechnical investigations early in the study to determine foundation conditions and quantify sand borrow requirements and sources (Reconnaissance Study)
- Avoid placing wetlands over borrow areas
- Include a defined area for equipment access and on-going operations in the impact analysis ("Study Area")
- Differentiate between temporary dike height and final design height, and be clear that uneven relief will be required in upland cells for de-watering and runoff
- Develop a procedure to approve and document cell design changes and adjustments (Adaptive Management Plan)

Lessons Learned – Stakeholder Involvement

- Develop relationships with and seek input from with key stakeholders early in the process (monthly PDT meetings to discuss project status and address concerns)
- Conduct specific information meetings for target groups affected by the project (meetings with the Maryland Watermens Association, Talbot County Council, and Coastal Conservation Association)
- Keep stakeholders at all management levels informed of project status (project was discussed at Bay Enhancement Working Group, Management Committee, and Executive Committee meetings)

Lessons Learned - Environmental

- Define upland habitat goals and habitat expectations for wetland/upland transition area (Adaptive Management Plan)
- Allow for flexibility of target acreages related to habitat goals (Adaptive Management Plan)
- Incorporate a Wildlife Management Plan to control nuisance species as well as protect species of interest (Adaptive Management Plan)
- Define targeted community types rather than specific target species for habitat creation goals (ICU Analysis)
- Include underwater habitat related to the exterior dike armor stone as a benefit (ICU Analysis)

Lessons Learned:
North Atlantic Division

- **Authorities for future watershed studies need to be broader to capture all available opportunities and benefits.**
- **Watersheds also pose a challenge for the budget process. Example: Navigation or Environmental business line?**

Project Summary

The Recommended Plan:

- Benefits the Environment and Navigation
- Is Integrated with Watershed Purposes
- Supports USACE Environmental Operating Principles
- Integrates Lessons Learned and Adaptive Management
- Has National Recognition and Public Support