



SEDIMENT TO SOLUTIONS  
**CHANNELING INNOVATION**



**2018 MRN/SWANA Mid-Atlantic Annual Conference  
Innovative Reuse and Beneficial Use of Dredged Material  
June 20, 2018**

- Maryland Port Administration (MPA) Dredging and Dredged Material Management
- Beneficial Use of Dredged Material & Innovative Reuse of Dredged Material
- Other Resources



## Port of Baltimore



Over 30 million tons of cargo annually



Over 100,000 Jobs connected to the port

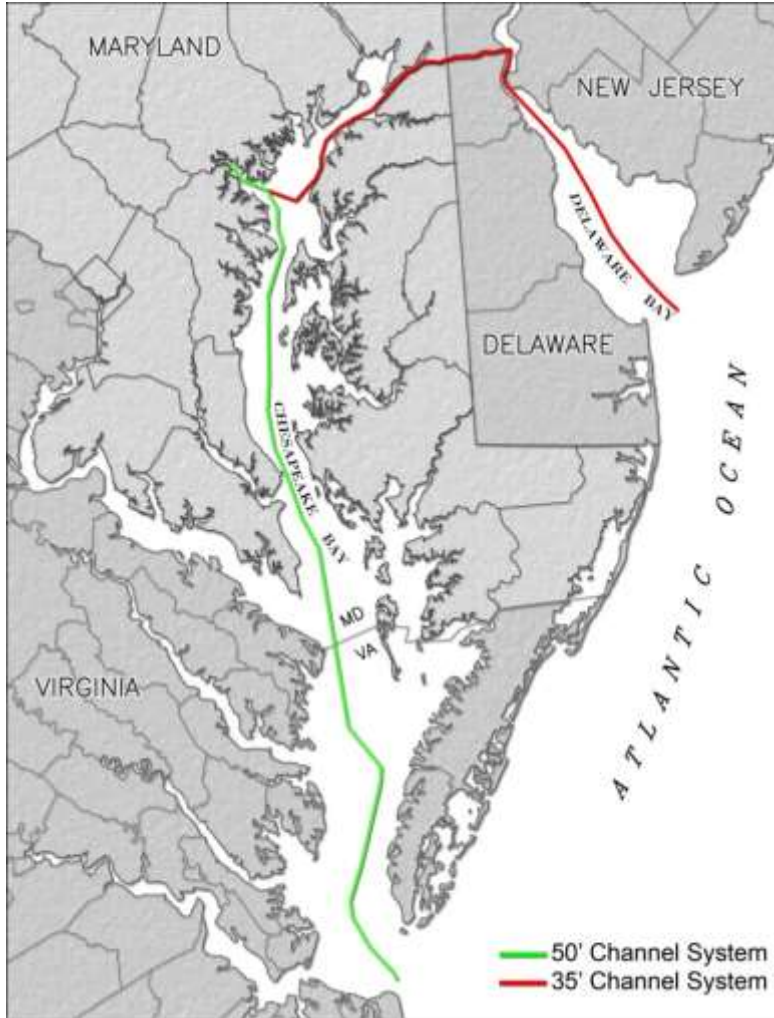


Contributes nearly \$3 Billion in annual wages & salaries



# Dredged Material

## WHY DREDGE?

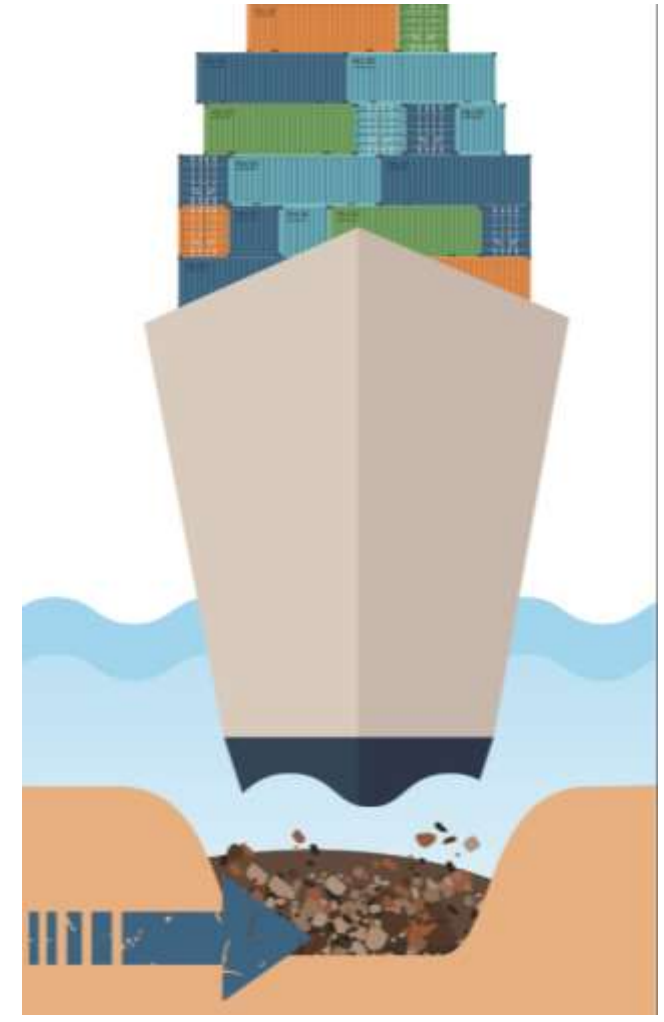
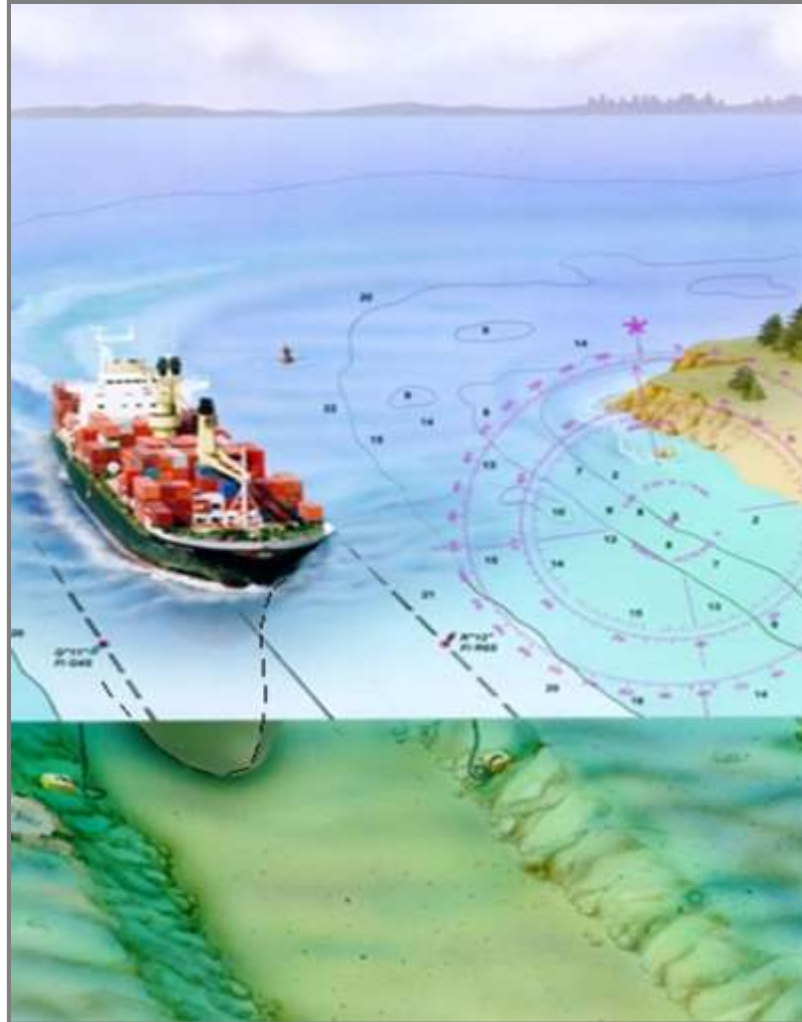
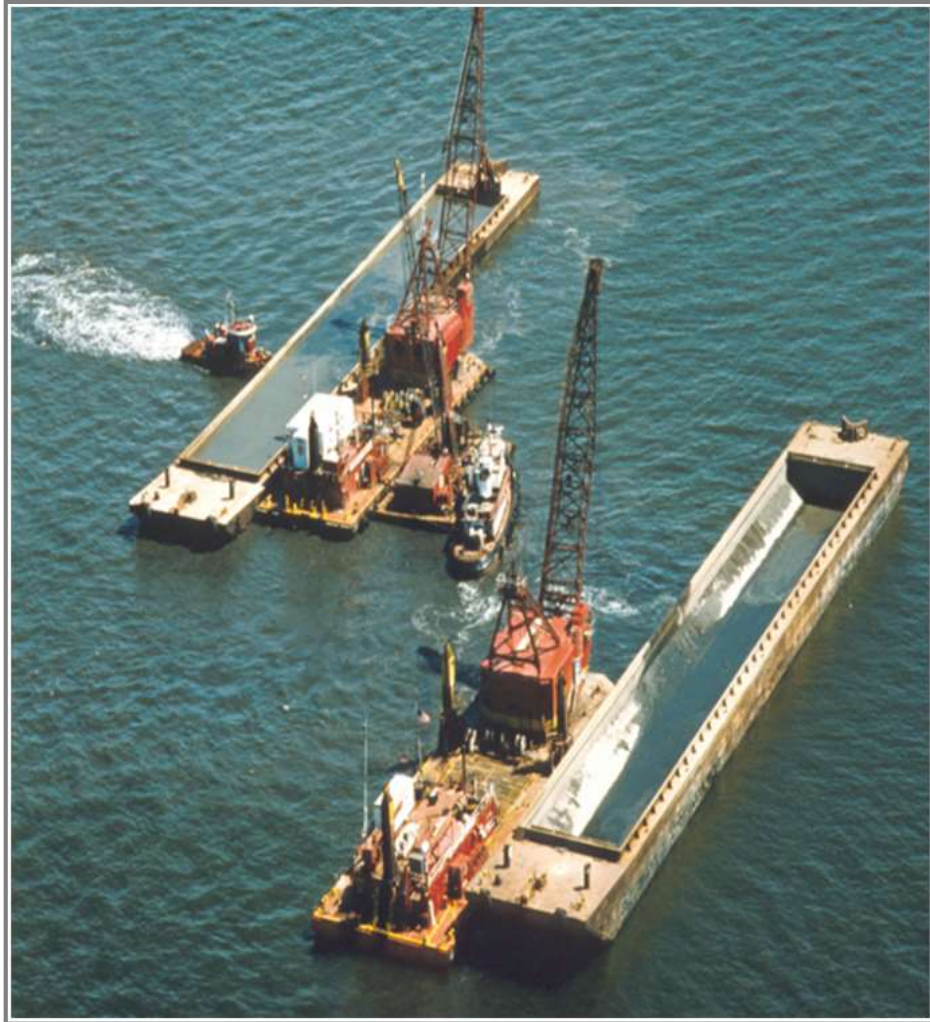


- Port of Baltimore's **marine highway**:
  - Maintaining a 50' depth keeps channels clear, safe and allows the Port to remain open for business.
- Annual maintenance & management
  - Over 130 miles of dredged channels serve the Port of Baltimore (Army Corps of Engineers)
  - Long-term placement capacity a challenge (MDOT MPA)
- Up to 5 million cubic yards (mcy) removed per year



**MDOT MPA Long-Term Innovative Reuse Goal:**  
Recycle **500,000 cy/year** of Harbor Channel Sediment

# Dredging Shipping Channels



# Dredged Material WHERE DOES IT GO?



# Dredged Material WHAT'S IN IT?



- **Physical Characteristics**

- Fine-grained Silts and Clays; some Sands
- Estuarine sediments (contains salts)
- Initial moisture content: 70-80% water by weight before dewatering

- **Chemical Characteristics**

- Metals – majority are not at levels of concern
- Organic Compounds – infrequently detected
- Bay & Harbor material may contain Sulphides
  - Acidification & low pH – potential for leaching of metals



# Dredged Material INNOVATIVE REUSE & BENEFICIAL USE



## Innovative Reuse and Beneficial Use



Building  
Materials



Habitat  
Restoration



Manufactured  
Topsoil



Site  
Reclamation



# Dredged Material INNOVATIVE REUSE & BENEFICIAL USE



## 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:**

- (i) The restoration of underwater grasses;
- (ii) The restoration of islands;
- (iii) The stabilization of eroding shorelines;
- (iv) The creation or restoration of wetlands; and
- (v) The creation, restoration, or enhancement of fish or shellfish habitats.”

# Dredged Material BENEFICIAL USE



Poplar Island



# Dredged Material INNOVATIVE REUSE



- **MDE Guidance/Screening Criteria - August 2017**
- **Governor Hogan issued Waste Reduction/Resource Recovery Executive Order**
  - June 2017 - Recognizes dredged material as a resource, calls on state agencies to be leaders in reuse
- **Robust Outreach and Education Continues**
  - Generating support, promoting awareness and building partnerships
- **MDOT MPA Completing Studies: Testing Topsoil & Fill Material Blends**
  - Geo-technical and environmental tests underway
- **Partnering with Maryland State Highway Administration (SHA)**
  - Add Dredged Material to SHA Recycled Materials Specification
  - Revise SHA Furnished Topsoil Specification
    - Remove prohibition on use of “dredge spoil”
- **Conducting Field Demonstrations / Small Scale projects**

- **MDOT MPA is working with several partners to develop demonstration projects**
  - Goal: to execute meaningful demonstration-scale projects that will help further the Innovative Reuse (IR) Program
- **Currently evaluating projects using dried dredged material from Cox Creek DMCF for:**
  - Alternative Daily Cover (ADC) at Landfill
  - Engineered Fill
  - Small test nursery – vegetation growth
- **Exploring Alternative Sediment Management Opportunities at Hart-Miller Island**
  - Hart-Miller Island North Cell Development

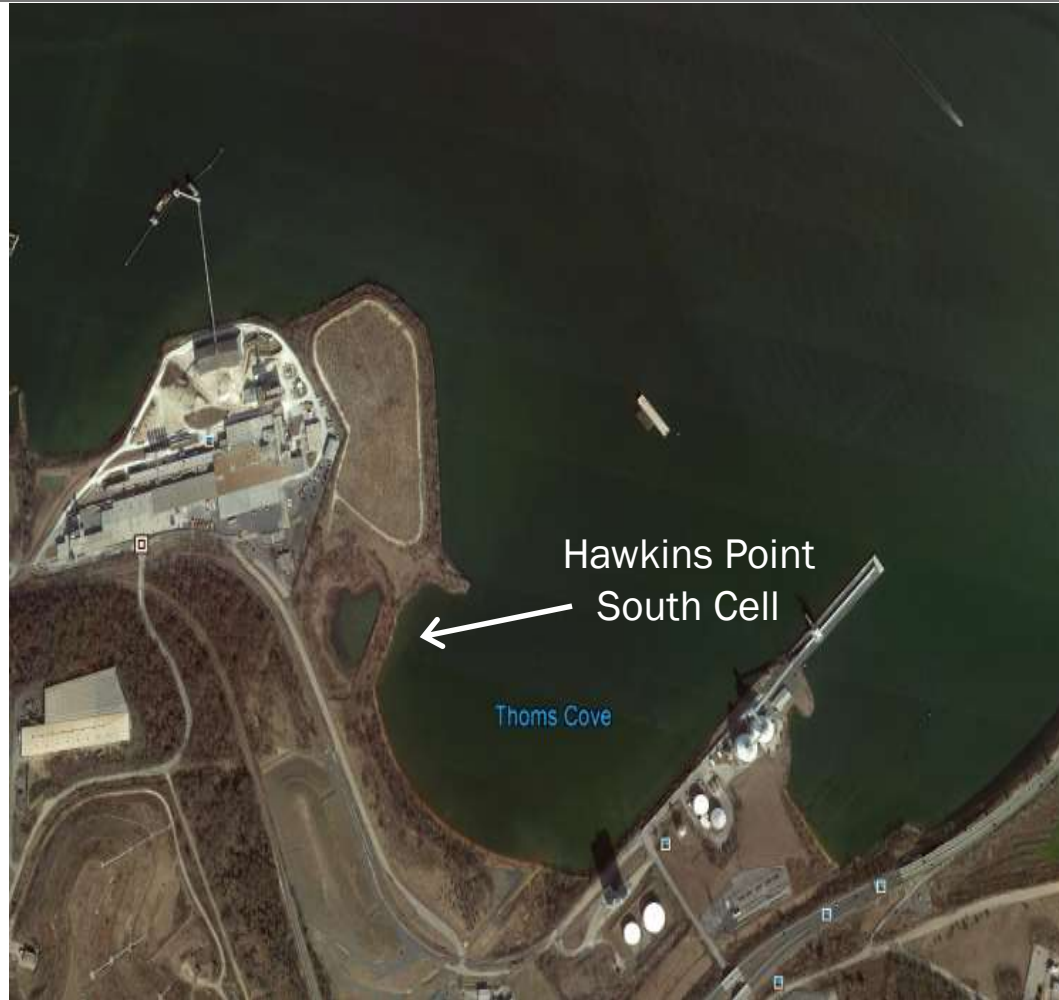
# Alternative Daily Cover: Quarantine Rd Landfill



- Using dried dredged material from Cox Creek DMCF as ADC at the Quarantine Road Landfill – Baltimore City
- MDE has provided a letter to Baltimore City Department of Public Works (DPW) approving the use of the material for this demonstration project



# Engineered Fill: Hawkins Point



- Hawkins Point site is owned by MDOT MPA. Site needs to be filled and graded.
- Approximately 19,000 cy of material is needed to close the South Cell; combination of stockpiled IR material at Cox Creek and on-site berm material.

# Nursery Plots at Cox Creek DMCF



# Upland Restoration HMI Pilot Project Considerations



Pilot project will be located in a part of the North Cell that has been consistently dry; in this case the upper northwest corner.

Location will be readily accessible by people who already visit HMI - near the beach on the northern edge of the outer dike.



Area will be large enough to study and to create viable habitat but small enough to manage; approx. size = 20 acres.



# Additional Resources...



- **MDE Dredging/Dredged Material Management website:**  
<http://mde.maryland.gov/programs/Marylander/Pages/dredging.aspx>
- **MDOT MPA GreenPort Dredging website:**  
<http://www.mpa.maryland.gov/greenport/Pages/dmmp.aspx>
- **Maryland Environmental Service Dredging website:**  
<https://www.menv.com/services/110>
- **Port of Baltimore: Sediment to Solutions Video:**  
<https://www.youtube.com/watch?v=yiVhs5P0Zjg&t=5s>
- **Regulatory Workgroup Final Report:**  
[http://www.mpa.maryland.gov/greenport/Documents/FINAL\\_REPORT\\_IBR\\_WORKGROUP.pdf](http://www.mpa.maryland.gov/greenport/Documents/FINAL_REPORT_IBR_WORKGROUP.pdf)

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