CBP Modeling Workgroup Quarterly Review

July 17, 2019

The Conowingo Dam

Pilot Program for Beneficial Reuse of Dredged Sediment and Assessment of Sustainable Long-Term Solutions

TODAY'S DISCUSSION

1	Data Gap Analysis
2	Proposed Core Locations
3	Modeling
4	Innovative Reuse and Beneficial Use Steps
5	Questions

FIGURE OF HISTORICAL SEDIMENT SAMPLING LOCATIONS

- Historical sampling results provide preliminary characterization; significant data gaps exist
- Maximum core depth approximately 4 meters - no cores at depth
- Limited analytical suite performed
- Evaluating applicability of using grain size as a surrogate for nutrient concentration

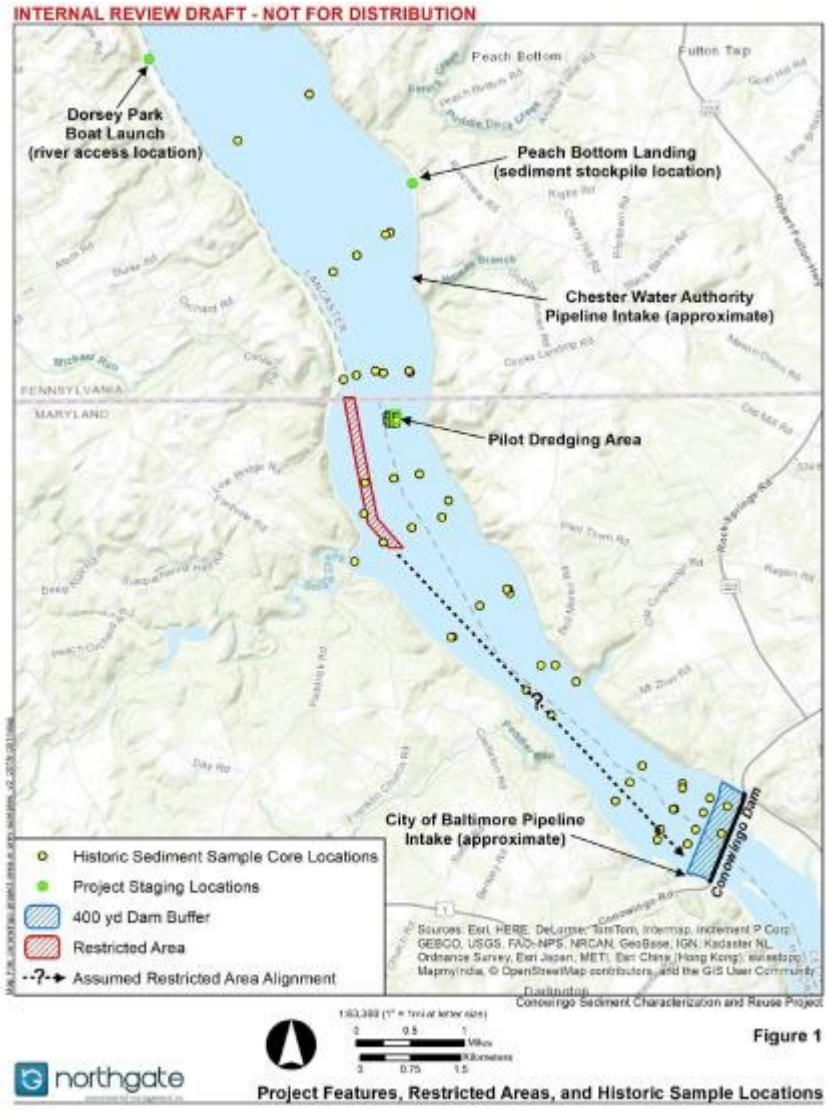
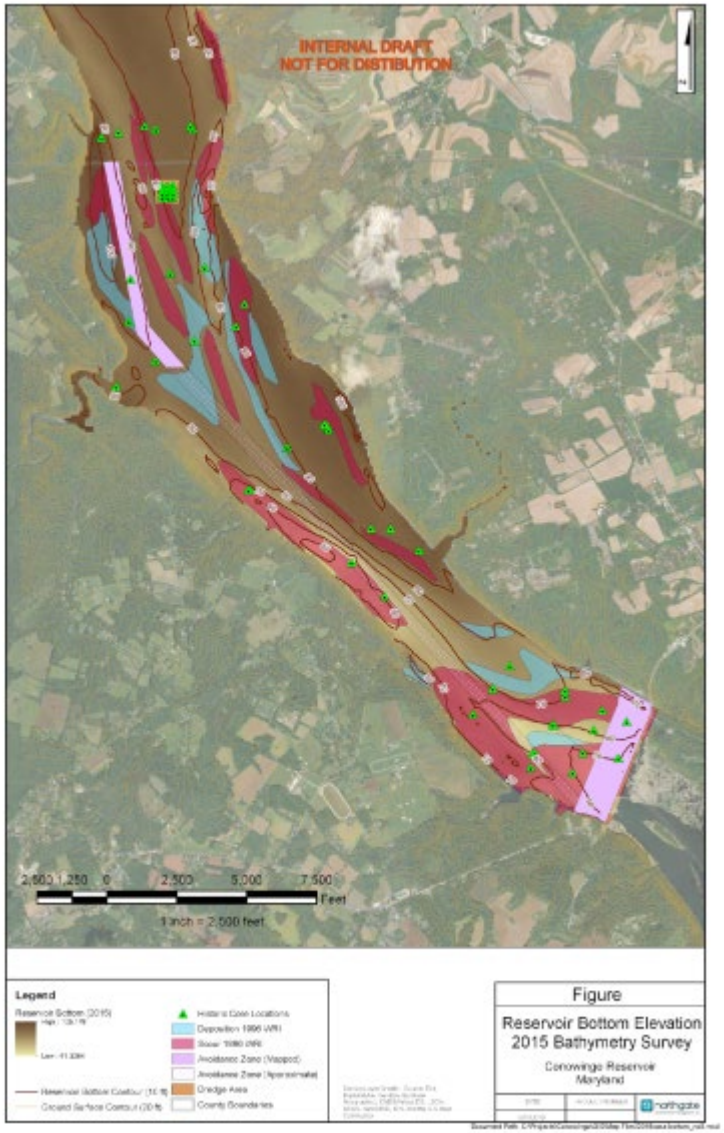
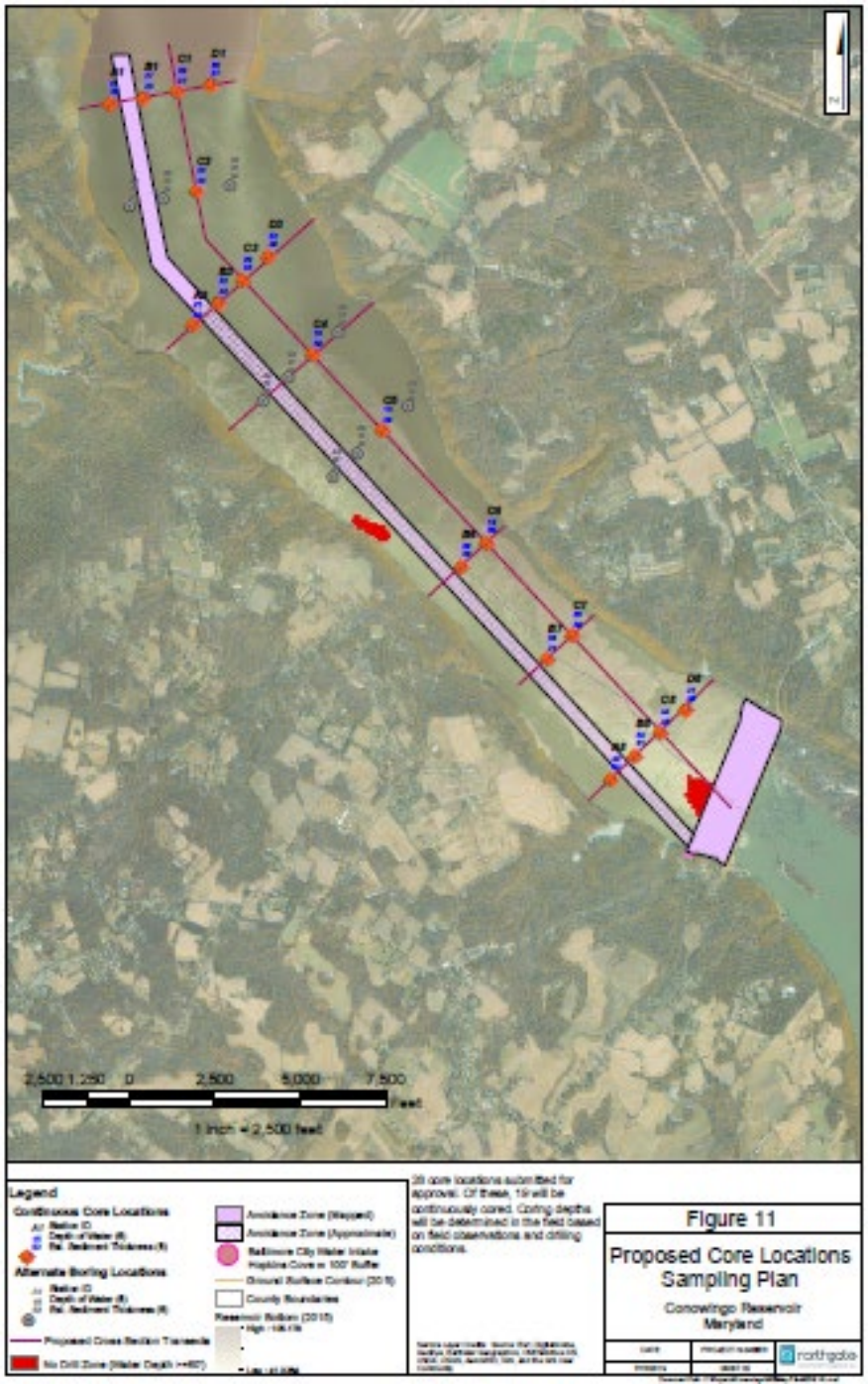


FIGURE OF SCOUR AND DEPOSITION

- Based on available information areas of deposition are concentrated in the northern portion of the reservoir while scour is more dispersed with two significant areas of scour in the southern portion of the reservoir
- Current bathymetry appears consistent with scour and deposition areas and the channel in the center of the reservoir





PROPOSED CORE LOCATIONS DRAFT SAMPLING PLAN

- 750 feet of core/150 core samples
- Supports development of lithologic cross sections
- Provides IR/BU Guidance Document required chemical analysis from continuous cores at 19 locations
- May support predictive modeling efforts related to downstream sediment and nutrient flux

MODELING

1. **Model of Chesapeake Bay Watershed:**
    a. HSPF model - owned and developed by the Chesapeake Bay Program: inputs to model of nutrient load from Conowingo Reservoir

2. **Models of Conowingo Reservoir:**
    a. ECOMSED 3-D model - owned by Exelon and developed by HDR - access requested.
    b. ADH 2-D model - owned and developed by the USACE - access requested.

INNOVATIVE REUSE/BENEFICIAL USE DEMONSTRATION PROJECT

- **1,000 cy of sediment to be dredged**
- **2 Phases of IR/BU Demonstration Project**
  - Stage 1 - Bench Scale Testing - will evaluate the suitability of material for intended use.
  - Stage 2 - Full Scale Testing - end uses that pass Stage 1 will be tested at full scale where manufactured projects will be produced and further tested.
- **Navigate Maryland's "Innovative Reuse and Beneficial Use of Dredged Material" regulatory pathway**
- **Economic analysis of potential cost offsets of manufactured products**
- **Economic assessment of market appetite for manufactured products**

Questions / Discussion

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