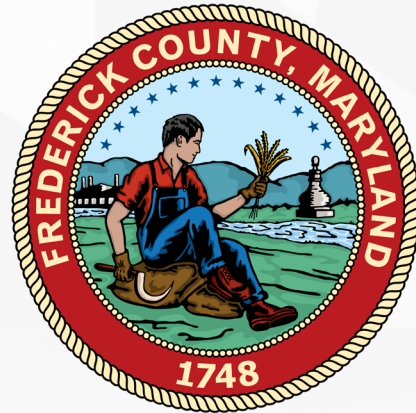


Lake Linganore Dredging Project: Transforming Sediment from Problem to Purpose



Project Team



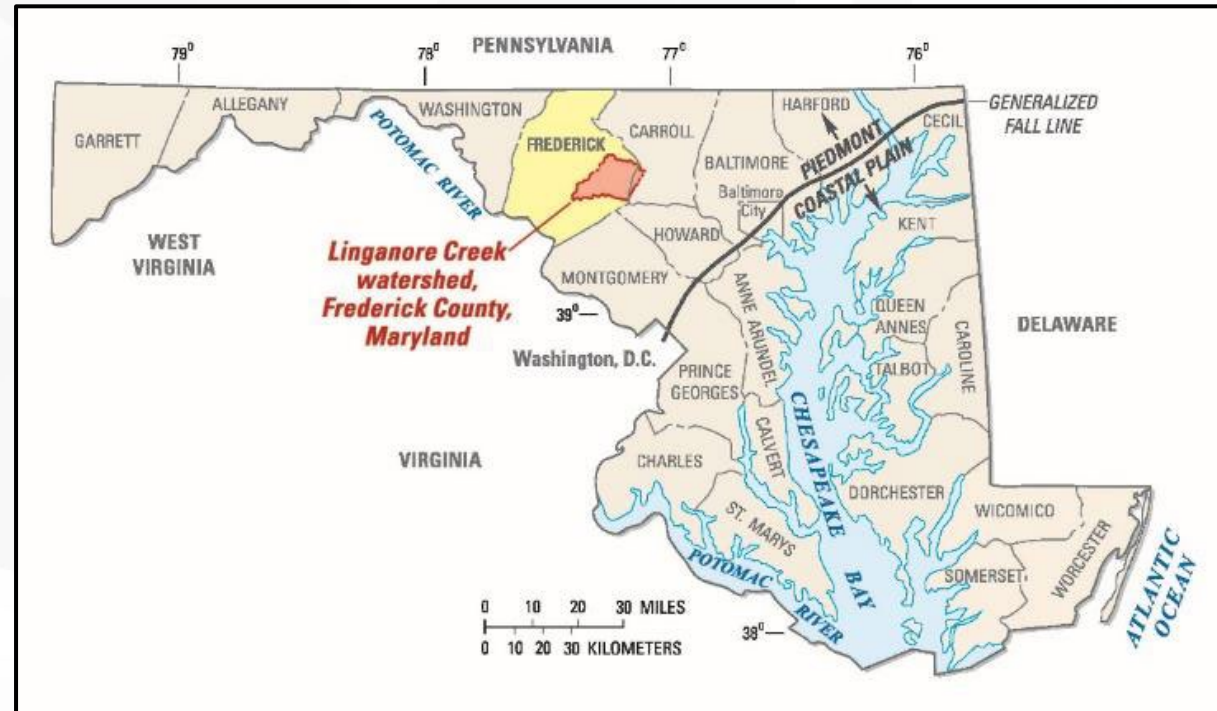
LAKE LINGANORE
ASSOCIATION



**MOBILE DREDGING
& VIDEO PIPE**
A Carylon Company

Lake Linganore Location

- Located in Frederick County, Maryland
- 89 square mile watershed
- Mostly agricultural with increasing development



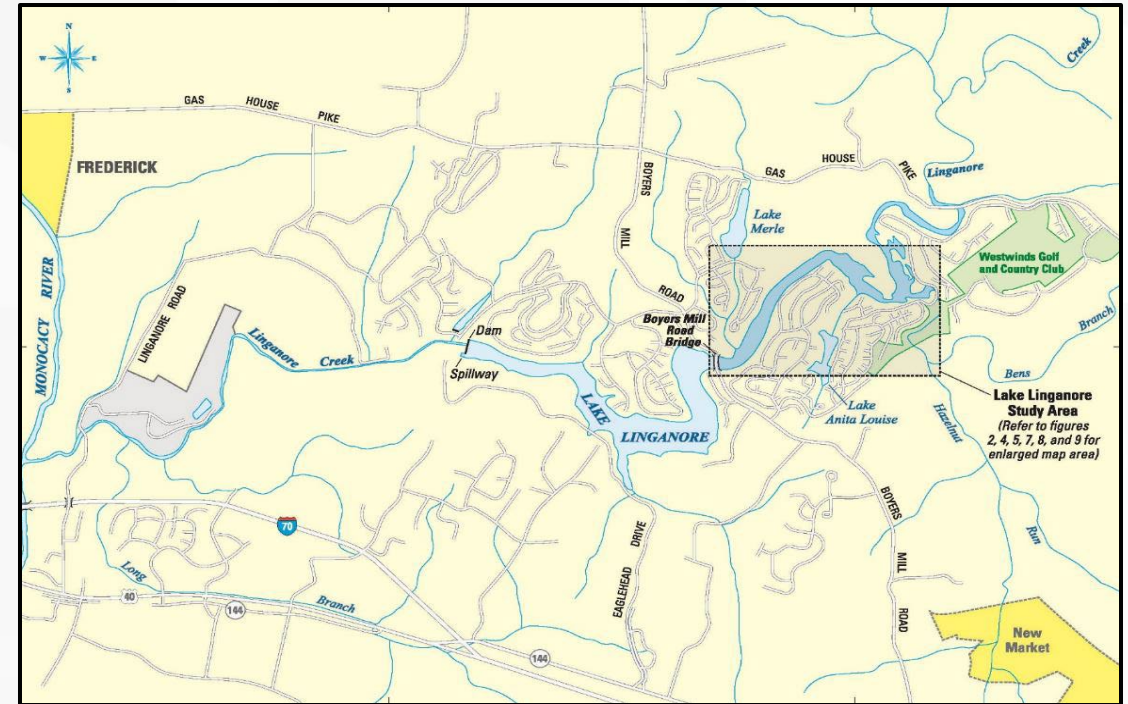
Lake Linganore Background

- Man-made, 209-acre lake
 - Constructed in 1972
 - No previous dredging of accumulated sediment
- Source of drinking water for local jurisdictions
- Recreation and aesthetics for growing communities surrounding the lake



Project Background

- USGS (2013) study showed upper reach of lake lost approximately 65% of original storage capacity
 - Approximately 350,000 cy of sediment
- Majority of sediment accumulation in upper reach of lake



Dredging Purpose

- Dredging to improve water storage capacity and depth for recreation
- Removal focused on depositional material since original 1972 grades
- Removal of spit formations
- Restoration of historic conditions



Innovative Reuse

- Innovative Reuse and Beneficial Use of Dredged Material Guidance Document governs testing and reuse
- Material reuse as landfill cover provided secondary benefit to County
 - Cost savings - maximized removal potential within limited budget
 - Long-term need for clean and consistent cover material



Maryland
Department of
the Environment

Maryland Department of the Environment
in collaboration with
Maryland Department of Transportation
Maryland Port Administration

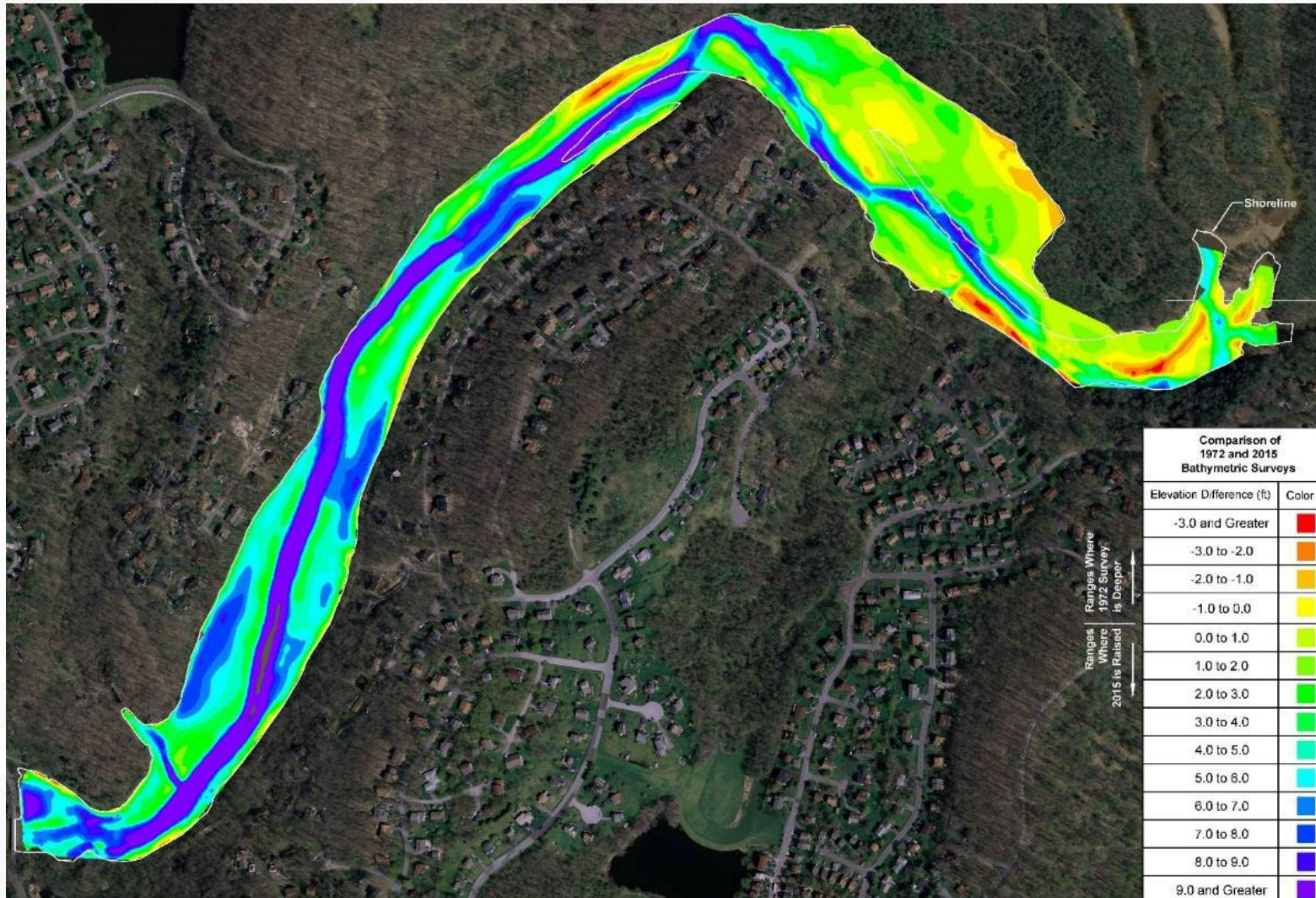
Innovative Reuse and Beneficial Use of Dredged Material Guidance Document

December 2019

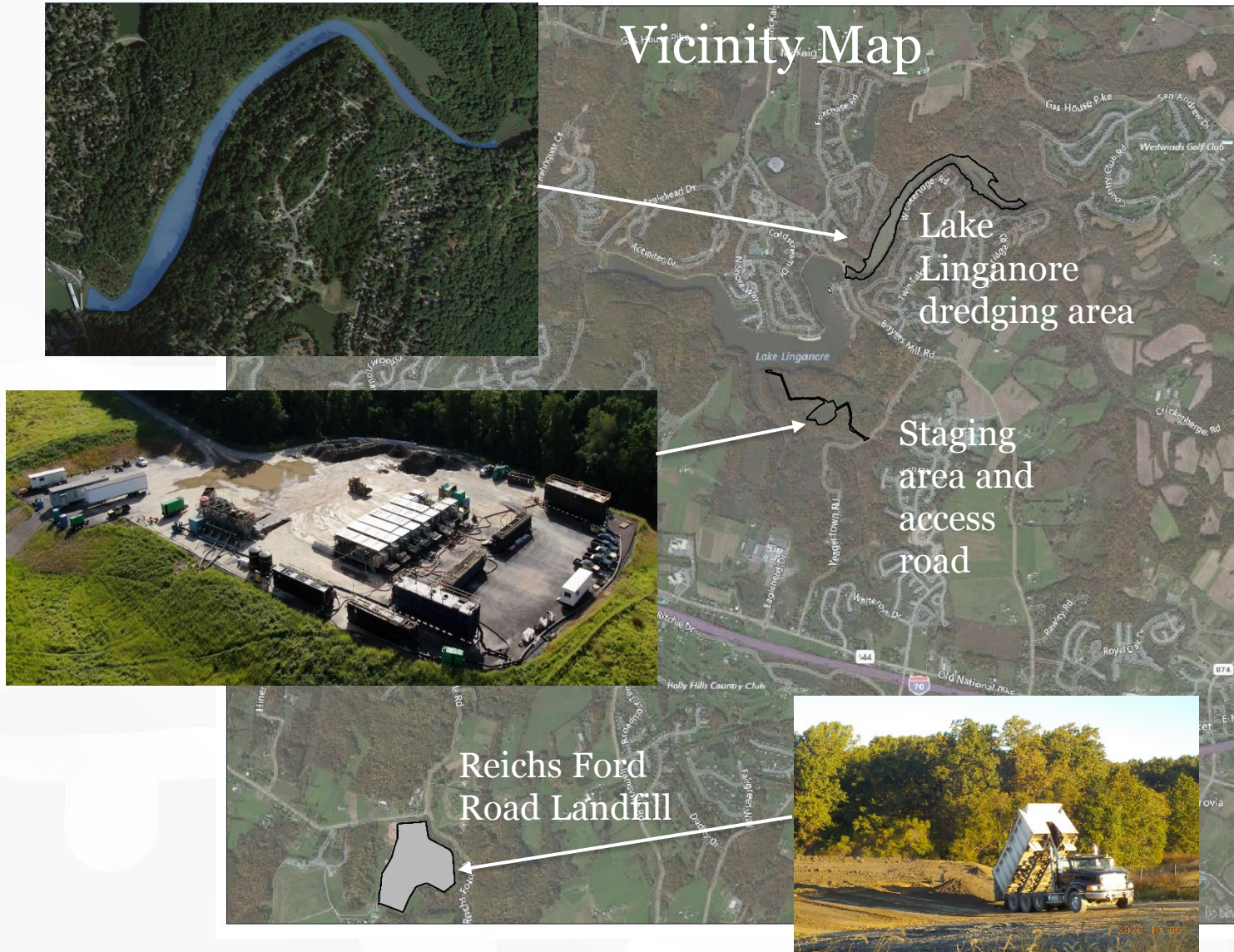
Maryland Department of the Environment

1800 Washington Boulevard | Baltimore, MD 21230 | www.mde.maryland.gov | 410-537-3000

Sediment Thickness



Project Scope



- Hydraulic dredging of sediment
 - Quantity determined by budget constraints
- Mechanical dewatering at upland staging area
- Material stockpiled at Frederick County Landfill for use as cover material

Hydraulic Dredging

- Approximately 150,000 cy of sediment hydraulically dredged from lake
- Dredged material pumped 1-2 miles to upland staging area

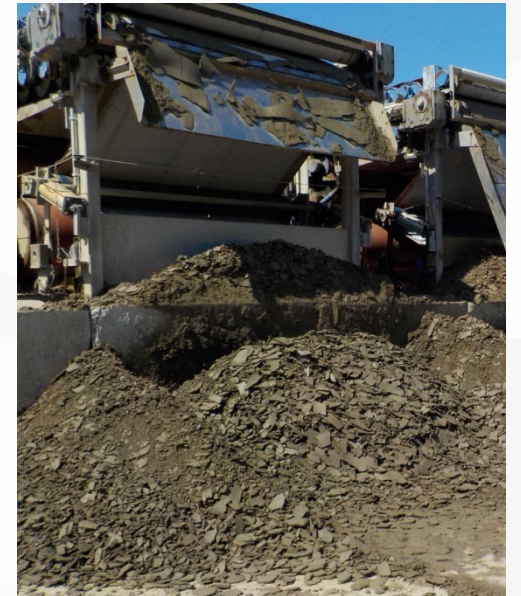


Staging Area



- Property leased from private landowner
- 1-2 miles and significant elevation increase from dredge location
- 2.2-acre paved area

Mechanical Dewatering



- Performed by separating different sizes of sediment through shaker screens, sand separators, and belt filter presses

Return Water

- Clarifier tanks used to remove remaining solids before discharge
- Clear water discharged back to the lake
- Turbidity monitoring requirements
- State regulation of polymer usage



Material Stockpiling

- Dewatered material loaded into trucks for transport to Frederick County Landfill
- Material stockpiled to be used as daily or final cover
- Three stockpiles utilized existing available space within facility to maximize long-term storage

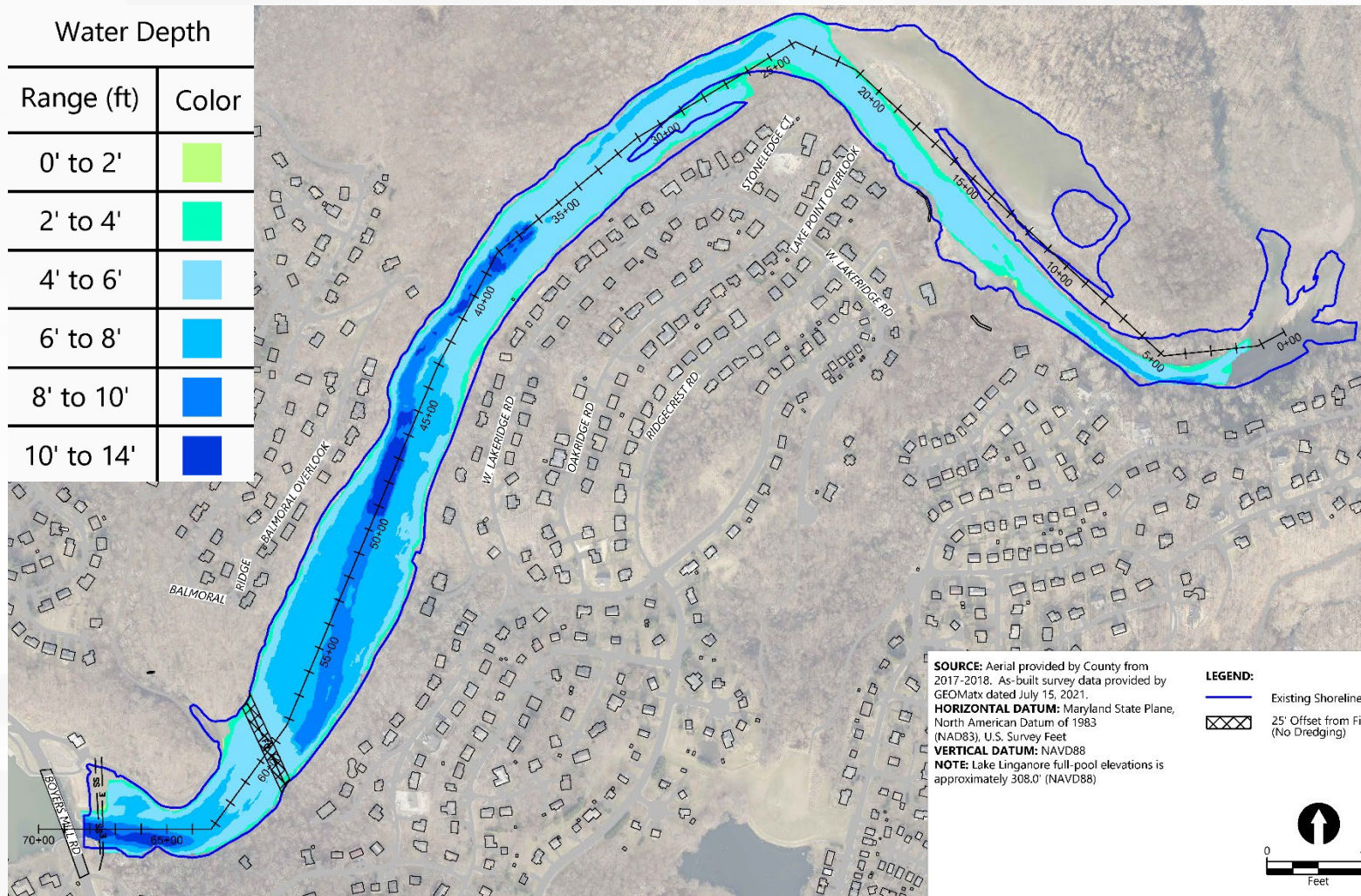


Landfill Cover

- County landfill needed reliable and consistent cover material
- Dredged material provided known source and was thoroughly evaluated using state guidelines
- Suitable for alternative daily cover and final cover
- Storage permitted outside lined footprint
 - No loss of landfill capacity



Conclusion



- ~150,000 cy of sediment that was impacting water storage capacity and recreational access successfully dredged from lake
- Dredged material innovatively reused as landfill cover

Questions



* Photo credit AM Custom Aerials

Stephanie Lindley
Maryland Environmental Service
Lead Environmental Specialist

slindley@menv.com

240-278-2184