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# Lake Waterford Dredging & Shoreline Enhancement Project Public Meeting

Project No. P468700  
Contract No. P468715

Presented by:  
Anne Arundel County Department of Public Works  
with the Department of Recreation and Parks  
September 13, 2023



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# Important Meeting Information / Comments

- Tonight's meeting will be audio and video recorded.
  - You will only hear the voices of the presenters.
- For questions and comments, please use the Q&A function at the top or bottom of your device screen.
  - All questions will be answered at the end of the presentation.
  - Any questions that cannot be answered tonight will be added to the Q&A document provide to the Office of Planning and Zoning.
- For up to 2 weeks after tonight's meeting, send questions and comments to:
  - <https://www.aacounty.org/departments/planning-and-zoning/development/community-meetings/past-meetings-comments/>
  - Comment period will be two weeks from this meeting or until September 27.



# Introductions

- Department of Public Works
  - Melissa Harlinski, Project Manager
- Department of Recreation and Parks
  - Bruce Bruchey, Project Manager
- BayLand Consultants & Designers, Inc.
  - Keith Tate, PE, Senior Project Manager
  - Christopher Stepp, PE, Design Team Leader



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# Agenda

- Background
- Plan of Action
- Sedimentation
- Dredged Material Management
- Dredging and Shoreline Enhancement Project
  - Design Goals
  - Design Elements
- Project Schedule
- Questions & Answers



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# Background

- Lake Waterford Park and Adaptive Recreation Complex
  - Location: Pasadena Road and Baltimore-Annapolis Boulevard (MD 648).
  - 108 acres of diverse recreational and natural areas.
  - 12-acre Lake.



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Department of Recreation and Parks  
*Lake Waterford Park*



# Background

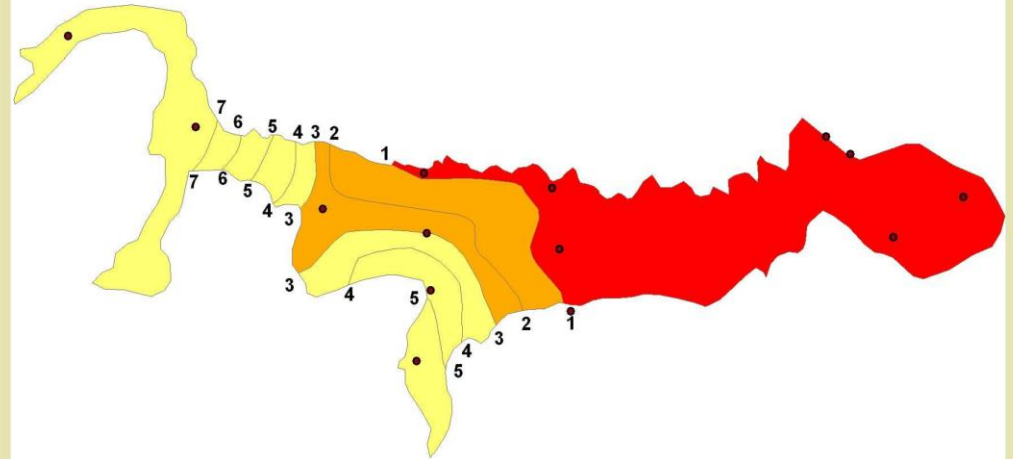
- 2009-2010, fish kills and degraded water quality observed during fish stocking.
- Initial studies:
  - Water quality sampling
  - Fisheries investigations
  - Aeration assessment
  - Other related work
- Multi-agency task force review.



# Background

- 2012 study findings:
  - Sediment oxygen demand is high, suppressing dissolved oxygen (DO) levels.
  - Aeration and other remedies viewed as short-term or ineffective.
  - Dredging accumulated sediment provides long-term gain in DO and fishery health.
  - Requires dredged material placement (DMP) site and funding.

Oxygen concentration deep waters – 20 June 2011



Concentration contours shown in mg/L



# Background

- 2011, DNR stopped fish stocking due to on-going fish kills.
- 2011-2020, DRP staff observed fish kills in 7 of 10 years.
- 2019, County Health Department closed the Lake from 7/3/2019 to 10/16/2019 due to a toxic blue green algae (cyanobacteria) bloom.
- 2019 and 2020, Magothy River Association (MRA) water quality testing indicated oxygen dead zones in the Lake.
- 2020, MRA observed persistent summer algae bloom.
- 2020, Chesapeake Biological Lab (CBL) measured excess nutrients in the Lake sediment.
- These incidents indicate a worsening of Lake conditions.





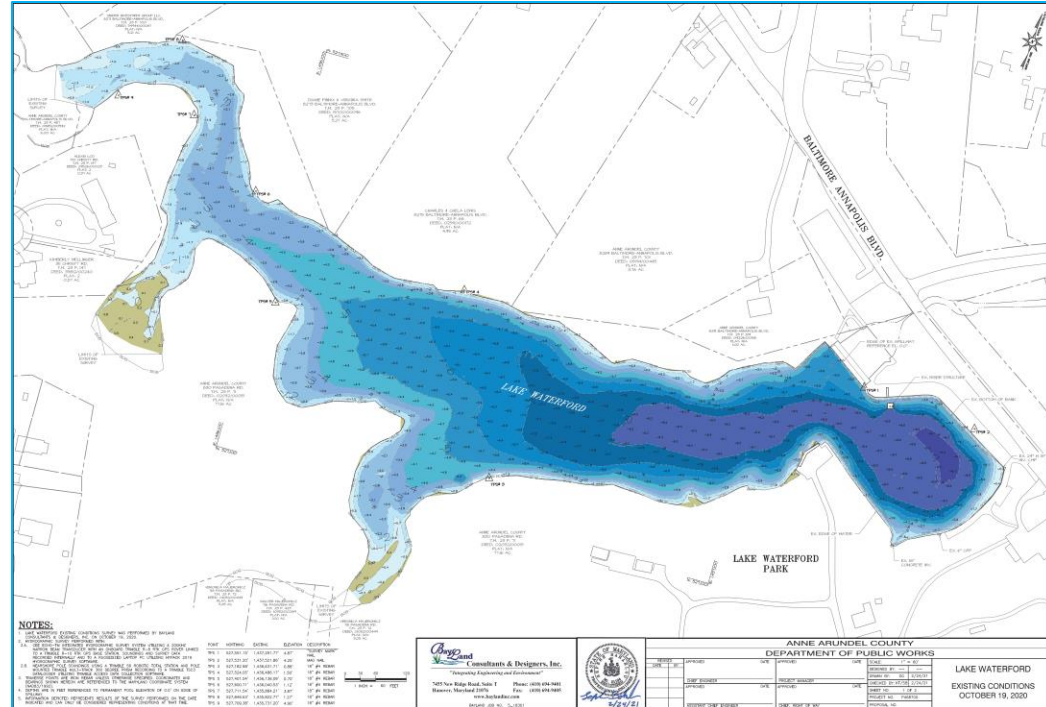
# Plan of Action

- 2021, BayLand was hired to evaluate and develop a dredging action plan.
  - October 2021 – Water Quality Planning Study
  - November 2022 – Sediment Characterization and Management
  - December 2022 – Preliminary Project Plan
  - May 2023 – Dredged Material Placement (DMP) Site Options



# Sedimentation

- Total lake sediment accumulation is 65,000 CY.
- Annual sediment accumulation is 2,200 CY/year (220 truckloads).
- Water depths decreased an average of 3.3' across the Lake; some places lost up to 8' in depth.
- The Lake is projected to be half filled with sediment within 6 years.
- Water quality will worsen without dredging.



# Dredged Material Management

- Both South County DMP Site and Maryland Port Administration (MPA) Cox Creek Dredged Material Containment Facility (DMCF) are permitted and operational.
- Sandy dredged material can be used beneficially along the Lake shoreline.
- Shoreline improvements should be made along with the dredging.



# Dredging and Shoreline Enhancement Project

## Design Goals

- Dredge accumulated sediment to bolster in-lake and Magothy River water quality.
- Restore open water fish habitat.
- Expand shoreline wetlands using dredged material.
- Improve access to the water's edge using dredged material.
- Increase recreational fishing and wildlife observation areas using dredged material.
- Satisfy Dam Safety requirements.
- Reinstate fish stocking and put-and-take fishery.
- Improve overall recreation and natural resource value of the Lake and Park.

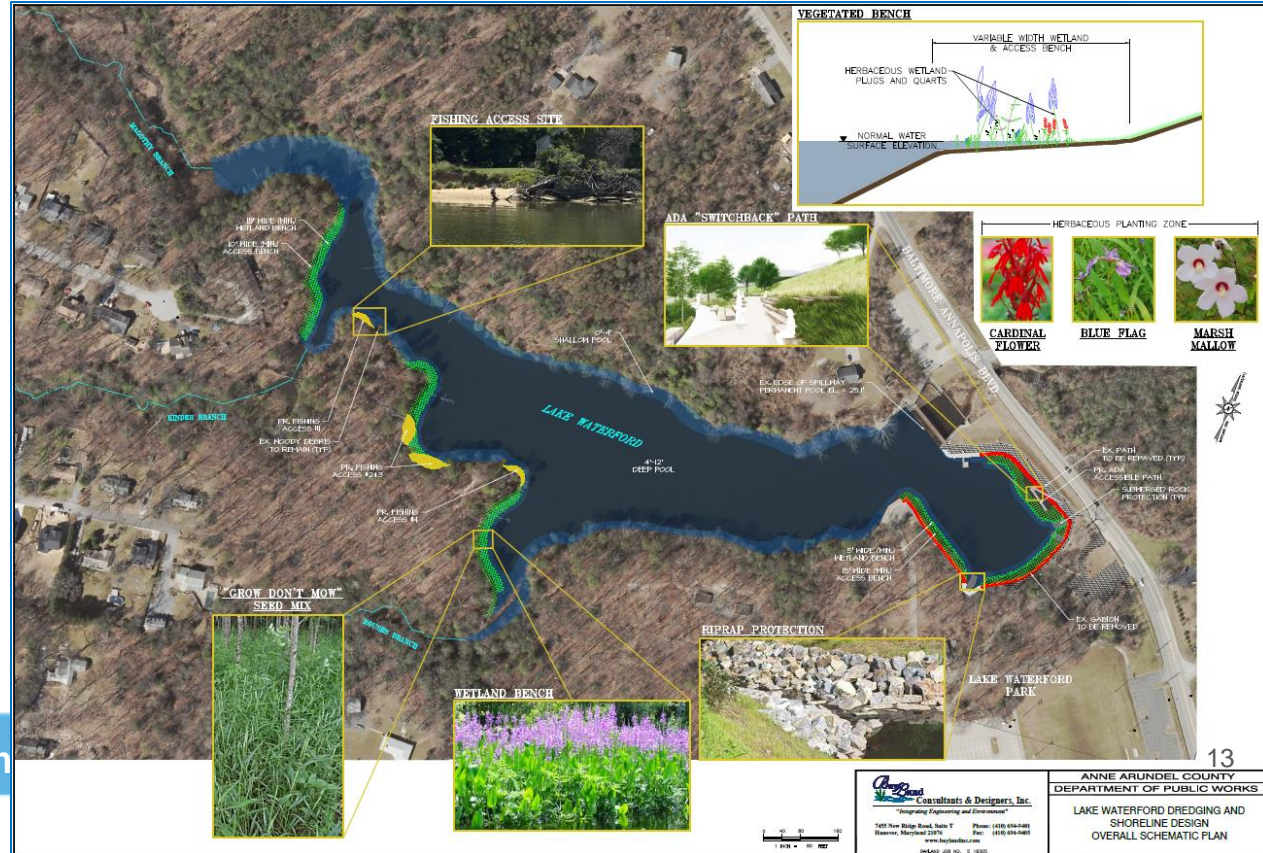


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# Dredging and Shoreline Enhancement Project Design Elements

- Lake-wide Dredging
- Wetland Bench
- Remote Fishing
- Primary Fishing and Basin Access



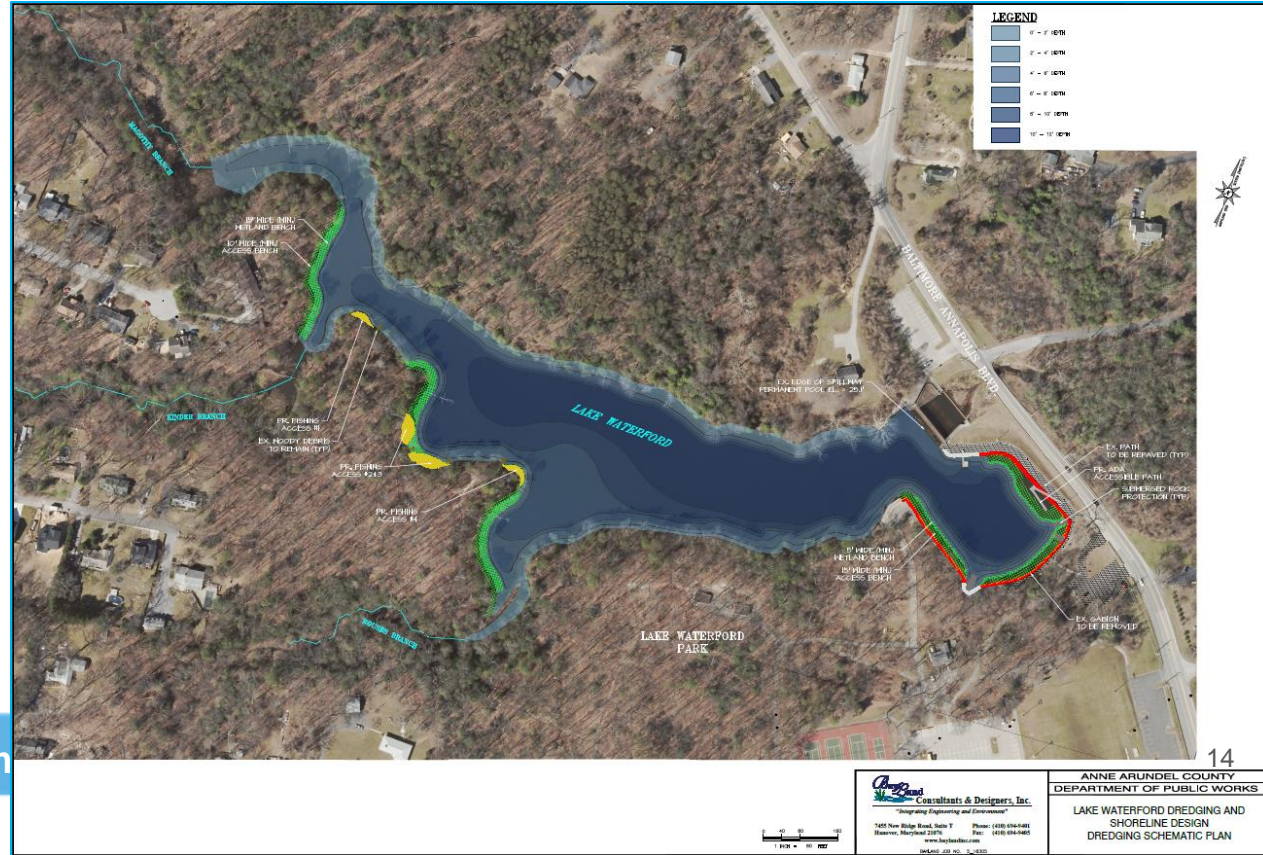
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ANNE ARUNDEL COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 LAKE WATERFORD DREDGING AND  
 SHORELINE DESIGN  
 OVERALL SCHEMATIC PLAN

# Design Elements – Dredging Plan

- Dredge Lake to historic depths (2'-12' deep).
- Remove 50,000 CY of accumulated sediment.
- Provide 15' no-dredge buffer to preserve existing Lake edge habitat.
- Restore 10 million gallons (MGAL) of reservoir capacity and open water fish habitat.



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# Design Elements – Material Transfer Area

- Small parking lot at the downstream end of the Lake is ideal for material transfer area.
- 45,000 CY will be dredged and trucked to an approved placement site.
- All dredging will occur on-Lake to minimize Park and environmental impacts.



# Design Elements – Wetland Bench

- Construct 800 LF vegetated wetland benches with sandy dredged material.
- Extend bench 15' into Lake with an outboard depth of 6".
  - Benches will up-take nutrients, settle solids, and provide fringe habitat for fish, waterfowl, and wildlife.
  - Benches will help protect hikers, waders, and anglers from sudden drops in shoreline water depths.
- Lower Lake 2'-3' to construct benches in-the-dry.



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# Design Elements – Remote Fishing Access

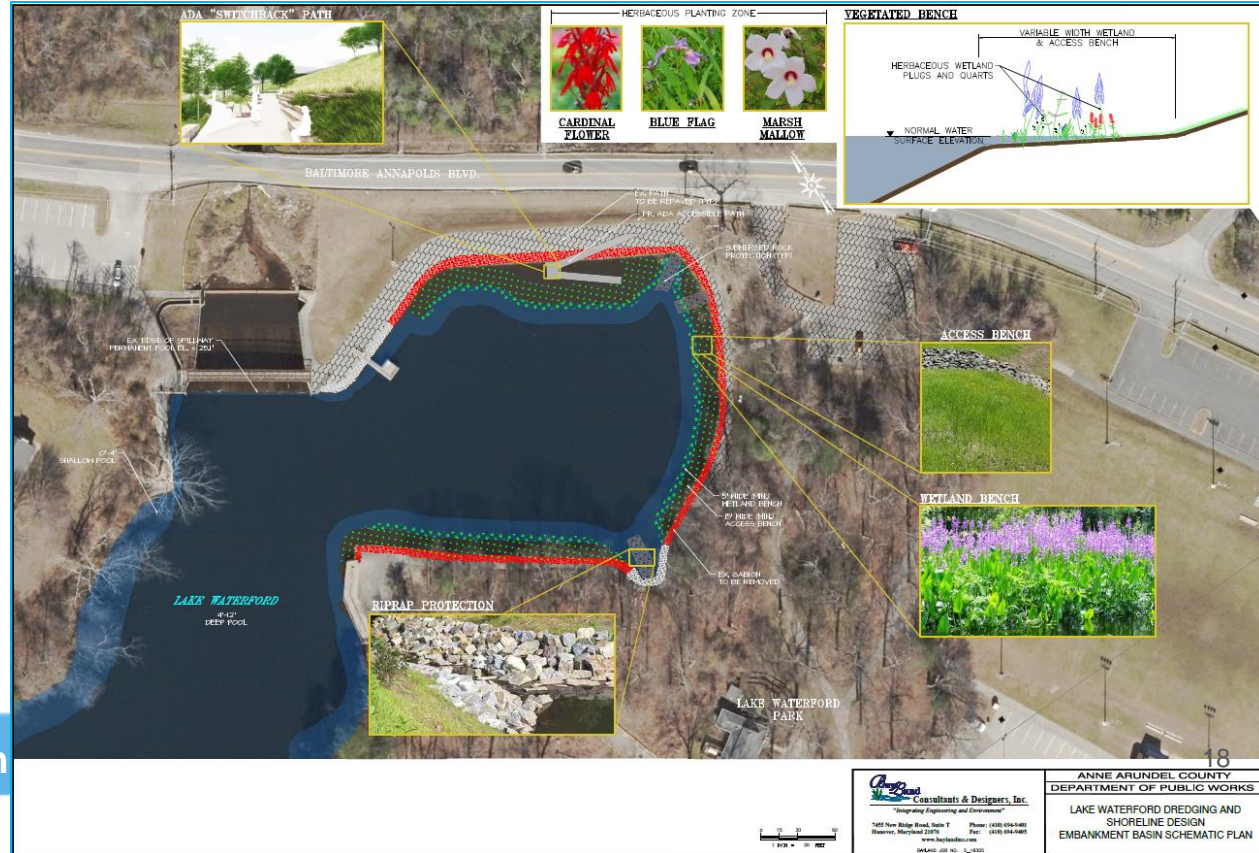
- Construct four remote fishing sites with sandy dredged material.
- Create in-the-dry fishing into 6'-8' deep water.
- Provide 60'-90' of unobstructed fishable shoreline at each location.
- Lower Lake 2'-3' to improve constructability.

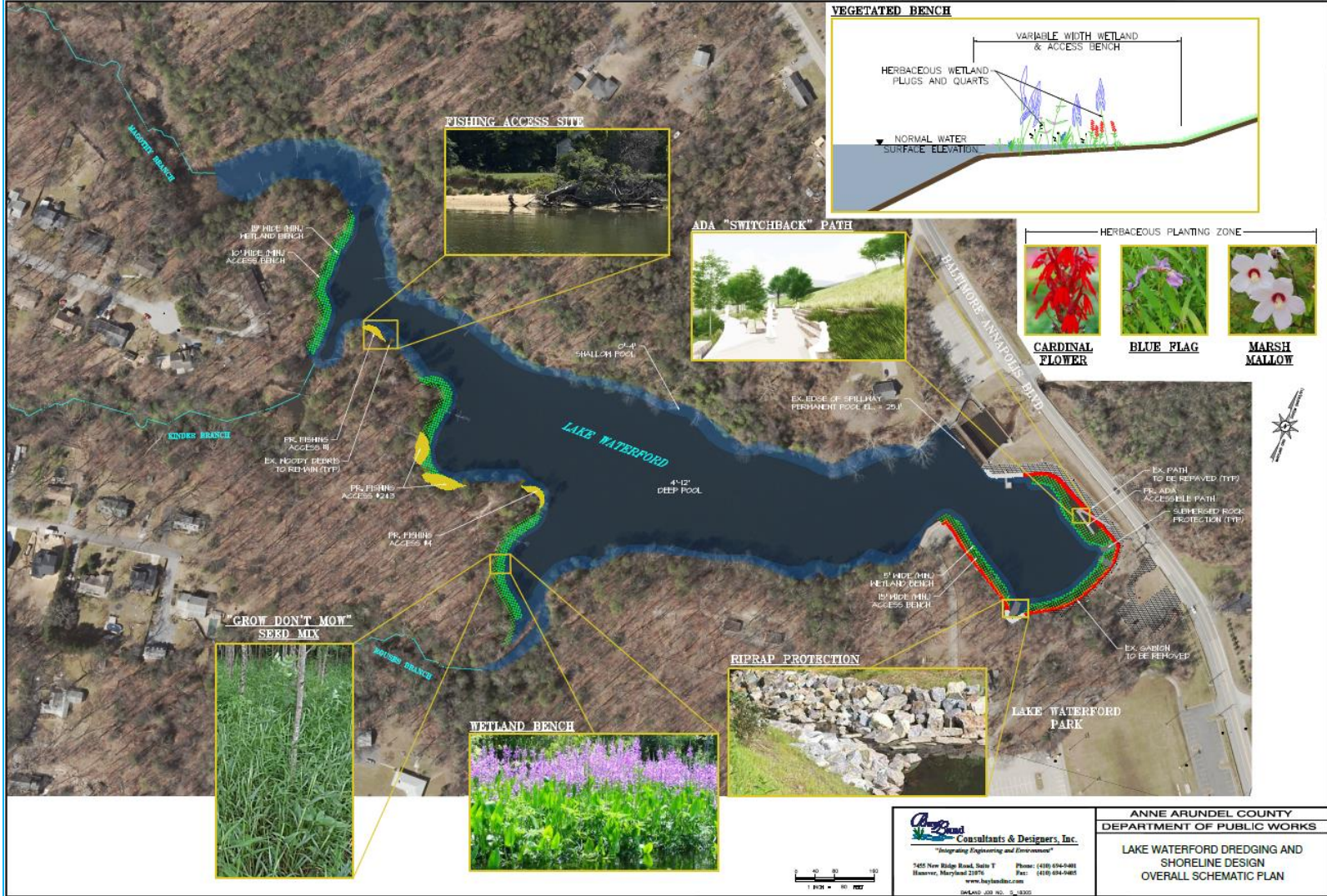


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# Design Elements – Primary Fishing and Basin Access

- Remove gabions around the entire basin.
- Construct 15' wide access bench with 5' wetland safety bench around the entire basin.
- Provide ADA access to the edge of Lake.
- Level and repave asphalt path on embankment crest.
- Remove and replace existing gate valve to facilitate Lake lowering.
- Satisfy Dam Safety requirements.





**BayBand**  
 Consultants & Designers, Inc.  
*"Integrating Engineering and Environment"*

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SCALE: 25% (SHEET NO. 5-8325)

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 DEPARTMENT OF PUBLIC WORKS

**LAKE WATERFORD DREDGING AND SHORELINE DESIGN**  
 OVERALL SCHEMATIC PLAN

# Dredging and Shoreline Enhancement Project

## Design Goals **Met**

- ✓ Dredge accumulated sediment to bolster in-lake and Magothy River water quality. **50,000 CY removed.**
- ✓ Restore open water fish habitat. **10 MGAL reservoir capacity restored.**
- ✓ Expand wetlands using dredged material. **10,300 SF new wetlands created.**
- ✓ Improve access to the water's edge using dredged material. **1,800 LF new access created.**
- ✓ Increase recreational fishing and wildlife observation areas using dredged material. **4 remote fishing sites, 700 LF embankment/basin access.**
- ✓ Satisfy Dam Safety requirements. **Gabions removed, embankment crest repaved, gate valve replaced.**
- ✓ Reinststate fish stocking and put-and-take fishery. **Initiate following project completion.**
- ✓ Improve overall recreation and natural resource value of the Lake and Park.



# Community Meeting per Code § 17-2-107

- Funding: Anne Arundel County Capital Improvement Project
- Address: 830 Pasadena Road, Pasadena 21122
- Property Owner: Anne Arundel County
- Tax Account Numbers: 372290053454, 300000477574
- Tax District: 3
- Council District & Representative: 3 – Nathan Volke
- Tax Map/Block/Parcel: 23/5/147,71
- Grading Permit Number: TBD
- Zoning: OS Open Space, R1 Residential, R2 Residential
- Critical Area: No
- Water & Sewer Type: No Planned Service
- Impacted Schools: Pasadena Elementary, Chesapeake Bay Middle, Chesapeake High (no open enrollment disturbance)
- Number of Proposed Lots: None
- Type of Proposed Product: Lake Restoration Project
- Approximate Road Configuration: Not Applicable
- Limits of Disturbance: 13 Acres
- Modifications Anticipated: None
- Approximate Location of Environmental Features On-Site: Wetlands (Kinder and Rouses Branch), FIDS (covers 70% of the lake area), Perennial 100 Foot Stream Buffer (Rouses Branch)
- Impacts of Proposed Development on Environmental Features: Increase wetlands and improve water quality
- Conceptual Stormwater Management: Water quality treatment provided via Lake



# Project Schedule

2023	1 month	Incorporate County and citizen comments into 30% design.
2023/2024	6 months	Secure MPA Cox Creek DMCF for material placement.
2023/2024	12 months	Complete design; federal, state, local permitting; construction plans and specifications.
2024/2025	12 months	Construct project.



# Questions & Answers

- Contact Information:

- Melissa Harlinski, Project Manager

[pwharl45@aacounty.org](mailto:pwharl45@aacounty.org)

410-222-4126 office

- Bruce Bruchey, Project Manager

- Comments/Questions: [drp\\_capital-projects@aacounty.org](mailto:drp_capital-projects@aacounty.org)

- Link to Video Presentation and Meeting Minutes:

- <https://www.aacounty.org/departments/planning-and-zoning/development/community-meetings/past-meetings-comments/>



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## Bureau of Watershed Protection and Restoration

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## Bureau of Highways

**General Inquiries:** (410) 222-7321

**Snow Line:** (410) 222-4040

**Email:** [hwyscustomercare@aacounty.org](mailto:hwyscustomercare@aacounty.org)

## Customer Relations:

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