

## B. Potential Improvements

Below are potential improvements that could be made to the riverfront area. The improvements vary from those that could exist in the current conditions to those improvements that would require efforts for facilities to be constructed. The Borough could also consider a phased approach to development. Initial, lower-cost improvements such as small watercraft launches and emergency access could be prioritized, followed by mid-level investments like a fishing pier and scenic overlook/river trail, along with long-term consideration of a boat dock facility – should dredging become financially viable.

### 1. Personal Watercraft Launch

Personal Watercraft consists of the use of equipment such as Kayaks, Canoes, Paddleboards, Rowboats & Pedalboats, Inflatable Rafts, and lightweight aluminum fishing boats with electric trolling motors. A launch point for these types of watercrafts requires minimal infrastructure and water depth (1 to 3 feet). The launch point would require a sloped gravel or concrete ramp or low-profile floating dock that extends into the deeper portions of the river. These launch points would occupy approximately 40 to 60 feet of shoreline and could be placed in multiple locations along the available riverfront area.

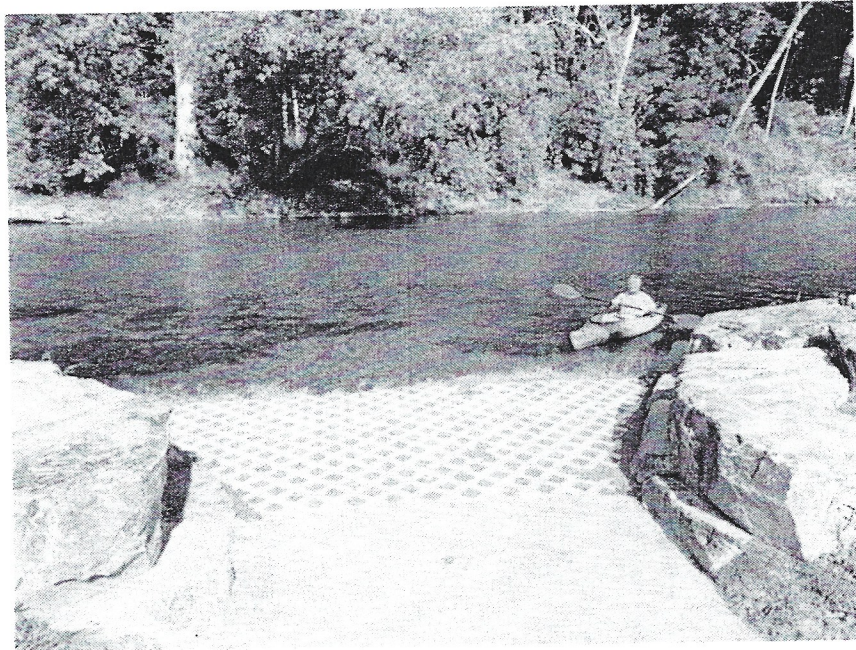


Photo source: Chesapeake Bay Magazine, online. September 21, 2021.

<https://www.chesapeakebaymagazine.com/1st-kayak-launch-of-new-deer-creek-water-trail-opens-in-harford-co/>

## BACKGROUND

Gilmore & Associates, Inc., in collaboration with S.T. Hudson Engineers, Inc., recently completed a hydrographic survey of approximately 3,500 feet along the Morrisville, PA shoreline of the Delaware River to evaluate feasibility of enhancing access to the river. The stretch of river surveyed extends from the Route 1 bridge to the Borough Limits at East Post Road. Access to the River has been an asset that neighboring communities have leveraged for recreation, tourism and economic growth for many years. Morrisville Borough has this unique resource through ownership of four (4) properties along this stretch of the Delaware River. These properties currently sit as wooded, vacant, lots occupying approximately 1,100 feet of the total 3,500 feet of shoreline. Additionally, the remaining length of the shoreline is owned by the Morrisville Municipal Authority and private companies. Both parcels represent over 55-acres of potential waterfront redevelopment property.

The purpose of this study was to evaluate the riverbed conditions for potential boat docks, personal watercraft launches, emergency service access and other riverfront amenities, such as fishing piers or scenic overlooks. The following information outlines the findings from the hydrographic survey, provides potential improvements, and potential funding sources.

### A. Survey Findings

Enclosed with this report is the single-beam hydrographic survey, performed by S.T. Hudson Engineers, Inc. on March 10, 2025. This survey was conducted during low-tide of the river to accurately assess the shallowest depths of water. A summary of the survey is as follows:

- The survey identified shallow and tidal water depths, ranging between 0 and +3 feet relative to Mean Lower Low Water (M.L.L.W.). All depth measurements are referenced to MLLW, which is the standard tidal datum used by NOAA and coastal engineers. MLLW represents the average height of the lowest daily tide over a 19-year tidal cycle and serves as a conservative baseline for evaluating water depth. This ensures that depth readings reflect the shallowest expected conditions—providing a reliable reference for waterfront infrastructure planning. In this location, only a few isolated areas reach slightly over 4 feet.
- The survey identified the “Edge of Channel” for the federally maintained navigation channel to vary from approximately 250-feet to 400-feet from the shoreline. The “Centerline of Channel” identified depths varying between 4 feet and 12 feet.
- The survey identified the location of the existing sewer treatment plant outfall being located approximately halfway between the top and bottom limits of the survey area.

Based on these findings, the current riverbed conditions render the area unsuitable for docking recreational motorboats, particularly during low tide, when water levels fall below the safe minimum depth of 3 feet for motorboats.

## 2. Fishing and Observation Pier

With the edge of the maintained navigation channel approximately 250 feet from the shoreline at the shortest distance, this portion outside the channel limits, allows for structures to be constructed in the open area as no boats are able to utilize this area. A fishing or observation pier could be installed from the shoreline toward the deeper portions of the river before reaching the edge of the channel to support shoreline fishing, wildlife viewing, and passive recreation.

The pier would be a fixed or floating structure, constructed of materials that could vary from wood to concrete, extending to 150 feet from the shoreline. The pier would be a minimum of 8 feet wide and could accommodate features, such as: benches and shaded seating areas, handrails for safety, ADA-compliant access, fishing rod holders, and informational signage about river ecology and history. This structure would serve as a public gathering space, ideal for families, seniors, school groups, and visitors.



Photo Source: Only In Missouri online, "11 Under Appreciated State Parks in Missouri You're Sure to Love".  
<https://www.onlyinyourstate.com/nature/missouri/under-appreciated-state-parks-in-mo>

### 3. Scenic River Walking Trail

Morrisville currently owns and maintains a walking trail along the levee, extending from the Calhoun Street Bridge to the Bridge Street Bridge. This walking trail could be extended from Bridge Street along the entire length of the river shoreline to the Borough limits at E Post Road. The trail could consist of a gravel trail along the shoreline, to portions of the trail extending out into shallow areas of the river on a fixed or floating structure. This trail and structure could accommodate benches, lighting, trash receptacles, informational signage, and would be ADA-accessible. A trail of this nature provides for passive recreation and access to the natural environment the riverfront area provides.



Photo Source: Schuylkill River Development Corporation <https://www.schuylkillbanks.org/landmarks/boardwalk>

### 4. Emergency Services Access Point

Similar to the small watercraft launch, a launch point could be constructed along this area of the riverfront to provide access for emergency services. A sloped concrete ramp could be constructed to provide water rescue teams to enter the Delaware River to provide emergency services should any water related emergencies arise. It should be noted that any projects within the limits of the river, would require varying levels of permitting through the U.S. Army Corps of Engineers, environmental reviews, and state-level approvals, which could affect the costs and timelines of a project.

## 5. Boat Dock Facility

Given the existing depth at low tide, the construction of a traditional boat dock facility for larger motorized vessels is not feasible. However, construction techniques exist, such as dredging, to modify the riverbed depths to accommodate a docking facility. A narrow channel from the dock to the main channel could be created and marked with buoys. This process would include excavating the riverbed to increase the depths of water during low tide. Based on the survey, approximately 4 feet of the riverbed would be required to be dredged. Depending on the selected size of the facility, this would need to be completed for roughly 400-500 feet of the shoreline to accommodate a 200–250-foot floating dock. A dock of this length would be able to accommodate up to 18 boats, measured at 26-foot in length.



*Photo Source: Conserving the Nature of the Northeast, "Something in the water" by Bridget Macdonald. October 23, 2018. <https://medium.com/usfishandwildlifeservicenortheast/something-in-the-water-78d17e678b9a>*

## C. Project Costs

Project costs for these types of potential projects can vary greatly. For those improvements that can utilize the existing riverbed conditions, costs could be as low as \$50,000.00 to install a sloped ramp area providing access to the river, whereas costs in the \$1,000,000.00 to \$2,000,000.00 range could be seen for more significant improvements like a fixed fishing pier or scenic walking trail. To construct a more traditional boat docking facility, costs could be upwards of \$5,000,000.00 for dredging and construction of a floating dock structure. To more accurately estimate the costs for these projects, concept plans and additional feasibility analysis, such as geotechnical evaluations, would be needed to establish quantities and costs.

### **Summary of Estimated Costs**

Improvement Level	Estimated Cost Range
Low-cost (small launches, ramps)	\$50,000 – \$250,000
Moderate (piers, trails, observation areas)	\$1,000,000 – \$2,000,000
High (dredging & full dock facility)	\$5,000,000+

#### **D. Funding Sources**

For a project such as this, that would provide recreational opportunities, connections to natural resources, and offer alternate modes of transportation, several grant funding opportunities exist. Funding may be available through programs such as the PA Department of Conservation and Natural Resources (DCNR), the Department of Environmental Protection (DEP), Department of Community and Economic Development (DCED), U.S. Fish and Wildlife Service (USFWS), the Delaware River Basin Commission (DRBC), and county-level open space or tourism initiatives. Additionally, if the project includes enhancements to public access, pedestrian/bicycle linkages, or non-motorized connectivity, it may qualify for support through the Pennsylvania Multimodal Transportation Fund (MTF), particularly if bundled with broader infrastructure improvements such as ADA paths or trail connections.

#### **E. Conclusion**

The hydrographic survey shows that while a traditional large vessel boat dock facility may not be readily feasible, Morrisville Borough has a unique opportunity to transform its riverfront into an accessible, eco-friendly public space. Features like personal watercraft launches, a central fishing and observation pier, and a scenic river trail can meet community demand for recreation and bring social, economic, and environmental benefits. These improvements would revitalize the shoreline, enhance river access, and position Morrisville as a destination for waterfront activity. By investing in infrastructure, the Borough can promote public access, wellness, and sustainability. This study provides insights into opportunities for the Borough and prospective private developers to utilize the riverfront as a community and regional asset.

Gilmore & Associates is proud to support this effort and is available to assist with furthering concept development, geotechnical investigations, seeking funding, and other planning efforts toward potential improvements. If you have any questions or comments, please feel free to contact this office.

# Appendix A

## Topographic Survey Plan