

Bristol Harbor Protection Team Report to the Town Council

Bristol Harbor Protection Project

Date: April 14, 2026

Executive Summary

The Bristol Harbor Protection Team (BHPT) recommends that the Town engage the U.S. Army Corps of Engineers to update the 1981 Bristol Harbor study to provide a basis for the design and funding of a potential harbor protection device considering the recurring and increasing frequency and costly disruptive impact to our waterfront shoreline, businesses and residential properties.

Background

On May 28, 2025, the Town Council authorized the Harbor Commission to assess existing and future coastal risks to Bristol Harbor and to evaluate the feasibility of implementing a wave protection device at the entrance to the harbor. The Harbor Commission subsequently established the Harbor Protection Team. Bristol Harbor is vulnerable to storm surge, wave action and erosion due to prevailing wind conditions, aging infrastructure, and projected sea level rise. These risks threaten public safety, marine operations, natural resources, and public and private investment along the waterfront.

As part of its work, the BHPT reviewed historical documentation, including the federally authorized Bristol Harbor Breakwater Study completed in 1981 by the U.S. Army Corps of Engineers (USACE) and discussed project funding and implementation pathways. The Committee reached out to community stakeholders to determine if there is local support for the project.

Based on this review, the BHPT concludes the town should approach the U.S. Army Corps of Engineers to update the original 1981 Bristol Harbor Study. An updated federal feasibility study would reflect current coastal conditions, modern engineering practices, environmental considerations, regulatory frameworks, and future climate projections.

Summary of the 1981 U.S. Army Corps of Engineers Harbor Study

In 1981, the U.S. Army Corps of Engineers (USACE) completed a federally authorized harbor protection study for Bristol Harbor. The study was authorized by the United States Congress in the 1968 Rivers and Harbors Act.

Existing Conditions at the Time of the Study

The study documented that Bristol Harbor was exposed to significant wave action generated by prevailing southwesterly and southerly winds. These conditions resulted in:

- Hazardous navigation during moderate to severe storm events
- Damage to docks, moorings, and shoreline infrastructure
- Operational limitations for recreational and commercial marine users
- Reduced effectiveness of public facilities, including launch ramps and waterfront assets

The study noted that the harbor lacked protection against incoming wave energy and that storm conditions regularly exceeded safe operating thresholds.

Alternatives Evaluated

The USACE evaluated multiple structural alternatives based on the technology and materials available at the time, including various breakwater alignments, lengths, and configurations. These alternatives were assessed based on their ability to:

- Reduce wave heights within the harbor
- Improve navigational safety
- Limit adverse impacts to sediment transport and water quality
- Meet federal engineering and economic justification criteria

USACE Recommended Plan

The study ultimately recommended construction of a stone breakwater designed to reduce storm wave energy into Bristol Harbor.

The project was authorized with a federal-local cost share, with approximately 64 percent federal participation and 36 percent local participation, contingent upon the Town meeting sponsorship and funding requirements.

Current Status and Relevance

Although the project was authorized, it was never constructed. Since completion of the study, coastal conditions, regulatory frameworks, and engineering practices have evolved. Sea level rise, increased storm intensity and frequency and modern environmental considerations were not incorporated into the original analysis. Additionally, the economic impact of storm damage to Bristol Harbor has increased since 1981.

Background and Purpose

The BHPT adopted a Charter to clarify its initial charge and determined the purpose is to provide an evidence-based assessment with recommendations to the Bristol Town Council for commissioning the study of viable harbor protection strategies and provide on-going support as required.

Findings and Key Considerations

- Bristol Harbor remains exposed to significant wave action, particularly from prevailing SW/SSW winds, limiting safe navigation and harbor use.
- Documented storm events over the past several decades have caused repeated damage to docks, shoreline infrastructure, marine facilities, and roadways and bike paths. This has negative impacts on recreation, commerce, and tourism.
- Salt marsh, sea grass and other environmental resource areas within and adjacent to the harbor are endangered by wave action. (E.G. Mill Pond and Silver Creek)
- Sea level rise and future storm projections from NOAA, CRMC, and USACE indicate increasing vulnerability if no action is taken.
- Modern harbor protection strategies now include nature-based, hybrid, submerged, and multifunctional systems that were not evaluated in the original study.
- A federally led study would increase the likely hood that potential future cost-sharing and funding opportunities can be secured.

Potential Project Pathways

BHPT identified two primary pathways for advancing a harbor protection project: a federal pathway led by the U.S. Army Corps of Engineers and a locally led pathway managed by the Town with state and federal coordination.

1). Federal Project Pathway

Under this pathway, the Town would request that USACE update the original 1981 harbor study.

2). Local Project Pathway (Town-Led)

Under a locally led pathway, the Town would independently advance a feasibility study using local, state, or grant funding. Key elements include:

- Procurement of engineering and coastal consulting services
- Coordination with CRMC and USACE for permitting and review
- Responsibility for securing full funding for study and construction

Recommendation

The BHPT recommends that the Town Council authorize appropriate Town officials to engage the U.S. Army Corps of Engineers to request an update to the 1981 Bristol Harbor Breakwater Study.

Specifically, the Committee recommends:

1. Initiating discussions with USACE to determine the scope, process, and requirements for updating the prior study under current federal programs.
2. Include and evaluation of harbor protection alternatives, including structural, hybrid, and nature-based solutions.
3. Using the updated study as the technical basis for future funding applications.

Next Steps

To advance this recommendation, the Advisory Committee proposes the following next steps:

1. **Formal Outreach to USACE**

Request a preliminary meeting with the U.S. Army Corps of Engineers to discuss options for updating the Bristol Harbor study, including applicable programs, timelines, and potential cost-sharing requirements. The project could be advanced through the *Continuing Authorities Program (CAP)*, based on its inclusion in the River and Harbor Act of 1968.

2. **Town Coordination**

Coordinate among the Town Council, Harbor Commission, and Community Development Department to establish a single point of contact and confirm Town support for initiating the process.

3. **Community Engagement**

Continue to document and organize community input, including letters of support, stakeholder statements, and photographic evidence of storm impacts. The concept of constructing a harbor protection device received strong support from Bristol residents during the October 20, 2025, Comprehensive Plan Workshop. The potential harbor protection device should be included in the Comprehensive Plan Update.

4. **Funding Strategy Development**

Determine potential funding pathways to support both the study phase and potential future design and construction phases with support from BHPT.

Respectfully submitted:

Bristol Harbor Protection Team

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Attachments

- **Attachment A:** Potential Funding Pathways Chart
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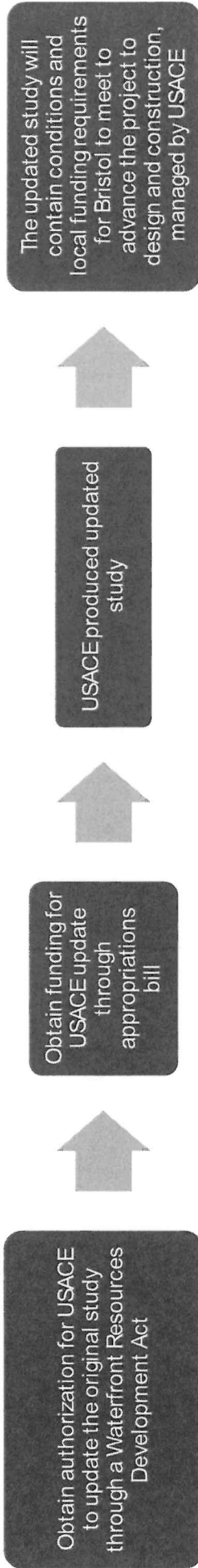
Attachment A: Potential Funding Pathways Chart

Bristol Harbor Protection Potential Funding Pathways

Original Project Path



Project path through the Federal Government



Project path through the Local Government

