



Perry's Victory and International Peace Memorial

Environmental Assessment

FINAL

November 2020

Cost: \$84,000



Midwest Region



National Park Service

**Restore North and South Seawalls at Perry's Victory to
Safeguard Site Project, Ottawa County, Ohio
PEVI-200745**

Environmental Assessment
Final
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Acronyms and Abbreviations

ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effects
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DOW	Division of Wildlife
EA	Environmental Assessment
EST	Eastern Standard Time
HUC	Hydrological Unit Code
IF	Isolated Find
IGLD 85	International Great Lake Datum of 1985
Jacobs	Jacobs Engineering Group Inc.
LF	linear feet
Monument	Perry's Victory and International Peace Memorial Monument
N/A	not applicable
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRHP	National Register of Historic Places
ODNR	Ohio Department of Natural Resource
ODOT	Ohio Department of Transportation
OHPO	Ohio Historic Preservation Office
PEPC	Park Planning, Environment, and Public Comment
PEVI or Park	Perry's Victory and International Peace Memorial
PST	Positive Shovel Test
SAV	submerged aquatic vegetation
SEARCH	Southeastern Archaeological Research, Inc.
SH	State Highway

U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
VIA	Visual Impact Analysis

Chapter 1 – Introduction / Purpose and Need

Perry's Victory and International Peace Memorial (PEVI or Park), managed as a unit of the National Park Service (NPS), is a tribute to a pivotal United States naval victory in the War of 1812 and a lasting peace between former enemies. The Park consists of a 352-foot-tall column (Monument) on South Bass Island in Lake Erie, surrounded by 25 acres of landscaped grounds. The PEVI Monument was built by a nine-state commission between 1912 and 1915 using matching federal funds. Twenty-one years after it was built, Congress charged NPS to preserve and manage the Monument. It is visible for miles and stands as a reminder not only of the events of the War of 1812, but also as a symbol of international peace between Great Britain, Canada, and the United States.

The Park spans a narrow isthmus (approximately 750 feet wide) between the Village of Put-in-Bay and the eastern portion of South Bass Island (**Figure 1-1**). Seawalls on either side of the isthmus are functionally necessary to protect the cultural resources of the Park due to its proximity to Lake Erie and the relatively low elevation of the Park. NPS proposes to restore 3,322 linear feet (LF) of the North and South Seawalls to protect the Park and implement associated improvements (the Proposed Action).

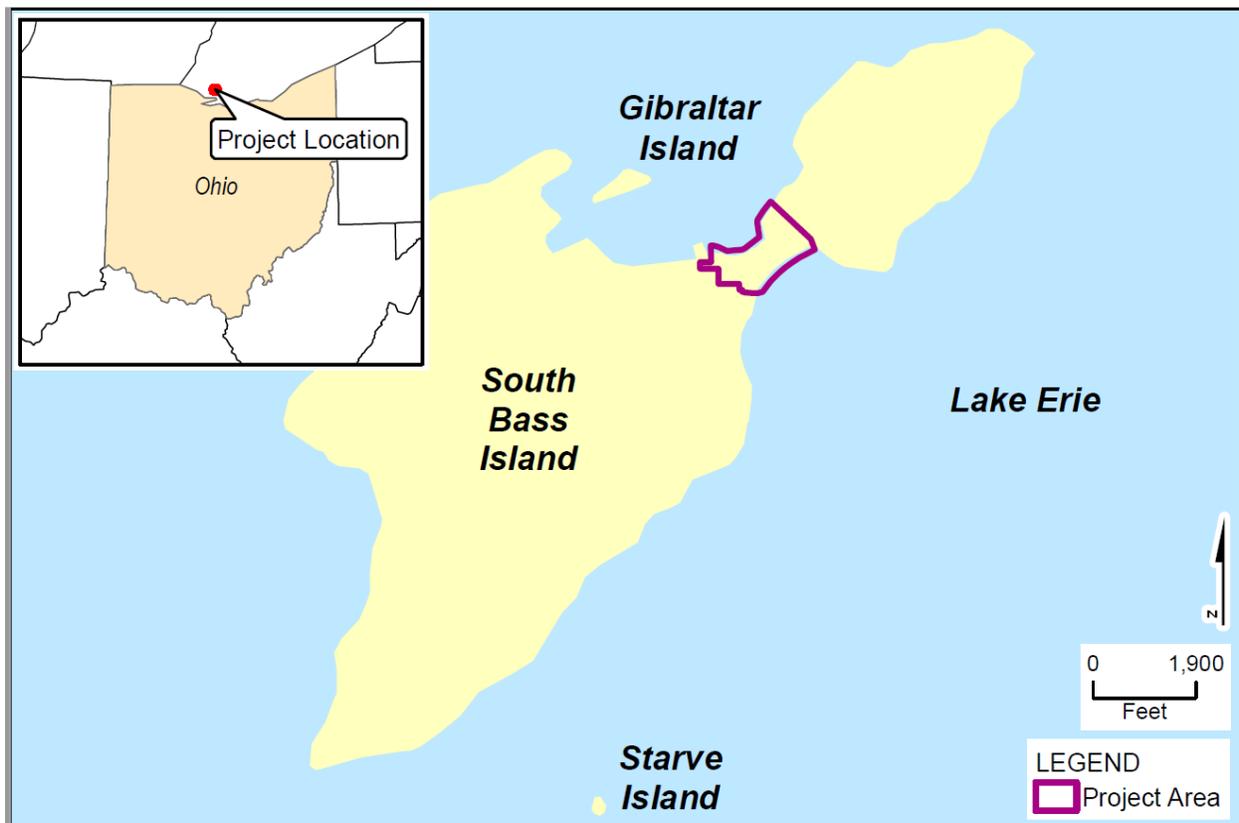


Figure 1-1. Project Location

NPS prepared this Environmental Assessment (EA) to analyze the potential effects of implementing the proposed seawall restoration, stormwater system upgrades, and visitor experience enhancement activities at PEVI. It has been prepared in compliance with the National Environmental Policy Act of 1969, as amended (NEPA) (42 United States Code [U.S.C.] 4321 et seq.); the Council on Environmental Quality (CEQ) regulations implementing NEPA, as amended [Title 40 of the Code of Federal Regulations (CFR) Part 1500 to 1508]; the National Historic Preservation Act of 1966, as amended (NHPA) (54 U.S.C. § 300101, et seq); and the NPS Director's Order-12 (as reflected in the DO-12 Handbook). The NEPA process ensures that environmental impacts of proposed federal actions are considered in the decision-making process and that the public has an opportunity to participate. On July 17, 2020, NPS notified the Ohio Historic Preservation Officer (OHPO) and the Advisory Council on Historic Preservation (ACHP) in advance that the NEPA process would be used in substitution of Section 106 of the NHPA, in accordance with the implementing regulations 36 CFR 800.8 (c).

Concurrently, as described in Chapter 5, NPS has conducted consultation in accordance with Section 7 of the Endangered Species Act of 1973.

1.01 Purpose and Need

The purpose of the proposed project is to protect the Park and create safe conditions for visitors by restoring the seawalls, limiting wave overtopping, and managing stormwater at the Park. The proposed project would protect the cultural resources, help ensure the health and safety of the public, and enhance the visitor experience while preserving the setting of the Park.

Two concrete seawalls to the north and south of the Park have deteriorated or been severely undermined as a result of the harsh marine environment. The existing seawalls allow waves to overtop and water to inundate the site. Existing stormwater drainage outlets allow Lake Erie to flow backward into the stormwater system and inundate the Park. The existing stormwater system also is not adequately sized to manage large rainfall events. As a result of these conditions, the Park is frequently flooded during high water levels and rainfall events, soil stability surrounding the seawalls and the Monument is jeopardized, and visitor use of the Park grounds is diminished. Furthermore, State Highway (SH) 357 becomes impassable and visitor access is impeded.

These conditions threaten the nationally significant Monument, the cultural landscape, and associated historic buildings. Park visitor and island resident safety is also threatened by frequent inundation of SH 357.

1.02 Objectives

Alternative(s) identified for detailed analysis must meet objectives to a large degree and resolve the purpose of and need for the Proposed Action. The following objectives were identified by the planning team:

- Reduce flooding to protect the cultural resources of the Park, such as the Monument
- Improve operational efficiency and sustainability by reducing maintenance associated with flooding
- Maintain viewsheds and the cultural landscape
- Improve the visitor experience at the site
- Improve visitor safety

1.03 Relationship to Park Planning Effort

This proposed project supports the NPS priority of maintaining the fundamental resources and values at PEVI and serves as a component of the Park's planning portfolio. The planning team relied on the Park's previous planning and master plans for guidance in developing the alternatives, including the Long-Range Interpretive Plan (NPS 2011), Foundation Document (NPS 2012), Cultural Landscape Treatment Plan (CLTP), and EA (NPS 2018). These documents provide the Park with a vision and clear direction for sustained long-term management, interpretation, and preservation of the overall character and historic features of the designed landscape with priorities on natural and cultural resources conditions and visitor use and experience. The Park's long-term planning goals include conducting preventative maintenance to ensure the condition of the Monument does not degrade over time and the surrounding landscape is maintained in good condition. The 2012 Foundation document (NPS 2012) noted the poor condition of the North and South Seawalls and the need for restoration or replacement in the next 5 to 10 years.

The 2012 Foundation document (NPS 2012) also addresses needs related to visitor experience and the ability to safely access views of the island. This proposed project addresses the flooding and wave overtopping that impedes access for greater than 24 hours during typical storm and wave events and diminishes visitor experience (Jacobs 2020).

The planning goals included in the Park's long-term management strategies aided in developing alternatives and were incorporated in the planning team's decisions on alternatives that were considered.

1.04 Park Background

The Park is approximately 8 miles northeast of Port Clinton, on Put-in-Bay Island in Ottawa County, Ohio. Beginning in 1911, a nine-state commission used federal funds to build the Monument, which was completed in 1915. Twenty-one years after it was built, Congress charged NPS to preserve and manage the Monument.

The Park site spans a narrow isthmus between the Village of Put-in-Bay to the west and the former agricultural area on the east side of South Bass Island. Although devoted to farming and viticulture in the past, much of the island has been converted to summer housing and resorts. The Park grounds divide the residential and commercial areas of the Village from the less populated and largely residential east end of South Bass Island.

The Park was established to honor those who fought in the Battle of Lake Erie during the War of 1812, and to celebrate the long-lasting peace among Great Britain, Canada, and the United States. The Park contains the Monument, a 352-foot-tall Doric column. The Monument overlooks Lake Erie and the longest undefended border in the world and was designed by Joseph H. Frelander and A.D. Seymour in the Beaux Arts style. In 1931, the Monument was completed after construction and funding challenges delayed its completion. In 1936, NPS was charged by Congress to preserve and manage the Park.



Photo 1-1. View of Perry's Victory and International Peace Memorial from the sidewalk along the South Seawall.

The Park site was assembled from the various individual properties, and that encompassed the original 14.5 acres or historic core. After NPS acquired the property and designated it a national monument, the boundaries of the Park changed to the current 25-acre Park.

NPS added acreage to the east and west of the original site boundary beginning in 1959. NPS also realigned part of the South Seawall in 1977 through 1978 and removed most of the road that formed the original western boundary in 2001 through 2002. Historically, the boundaries included Chapman Avenue on the west side (no longer exists); seawalls to the north and south, and a slight ridge to the east, formed by the topography and defined by large tree plantings.

1.05 Park Significance

The Park is significant as a symbol of international peace and as a reminder of the ongoing cooperation between former enemies. It was an engineering marvel of its time and an architectural statement to memorialize the battle as well as the centennial of

lasting peace between Great Britain, Canada, and the United States. Commissioned by nine states and located on South Bass Island, the Park is symbolic for being within sight of the undefended border. The Park is also significant because it serves as a tomb for three American officers and three British officers killed in the Battle of Lake Erie on September 10, 1813. Their remains lie in a domed room at the center of the base of the Monument.

1.06 Impact Topics

Impact topics associated with the proposed seawall restoration project were identified and discussed during an internal scoping meeting and refined after a public open house meeting. They reflect resources of concern that may be affected by project alternative(s) reviewed in the EA. The topics also follow NPS guidelines on topics that should be considered in conducting a NEPA analysis.

The following impact topics were retained for further analysis: water resources and floodplains; shoreline processes; cultural resources; and human health, safety, and use, which includes visitor use and experience. A brief rationale for the selection of each impact topic is provided and each impact topic is discussed in detail in Chapter 3, Affected Environment.

Topics that were expected to experience negligible or no effect have not been retained and are included below as "Impact Topics Considered and Not Retained for Further Analysis."

1.06.1 Impact Topics Retained for Further Analysis

Water Resources and Floodplains. Due to the location of the Park on South Bass Island, storms and subsequent flooding have periodic effects on the landscape and historic features. The stormwater system is passive and is not adequately sized to manage large rainfall events, resulting in flooding. Flooding and ponding also result from wave overtopping and seawall deterioration. Water resources at the project site include Lake Erie and one palustrine emergent wetland. The Proposed Action would cause temporary impacts as a result of construction workspaces in Lake Erie and permanent impacts as a result of fill placement in Lake Erie and draining of the palustrine emergent wetland. Therefore, this topic was retained for further analysis.

Shoreline Processes. The Proposed Action would raise the two seawalls 12 to 24 inches above the existing height of the seawall. An 80-LF extension of the South Seawall would also be added adjacent to the Village of Put-in-Bay beach. Concerns over the potential increase in debris accumulation, sediment transport, and erosion along the shoreline have been raised; therefore, this topic was retained for further analysis.

Cultural Resources. Cultural resources, including the Memorial, are within the Area of Potential Effects (APE) and could be impacted by the Proposed Action. The Memorial was listed in the National Register of Historic Places (NRHP) in 1979. A Visual Impact Analysis (VIA) (CH2M 2020f) was conducted for the historic property to evaluate if the

Proposed Action has the potential to impact historic viewsheds. This topic was retained for further analysis because significant cultural resources under NEPA and historic properties under Section 106 of the NHPA could be affected by the Proposed Action.

Human Health, Safety and Use. SH 357 crosses the Park and is the only road connecting the east and west sides of South Bass Island. Flooding and stormwater ponding impede vehicular access across South Bass Island and pedestrian access throughout the Park. Erosion of the existing seawall has the potential to undermine the highway. Site conditions require ongoing maintenance, including the repair of hazardous sinkholes and spalled concrete. Construction of the proposed project would result in temporary partial and full road closures that would disrupt access across South Bass Island. Temporary utility shutdowns and the presence of heavy equipment on land and in Lake Erie which would temporarily impair the aesthetics of the Park grounds. A new sidewalk and interpretive plaza along the North Seawall would provide visitors better access to the Park and improve the experience. Therefore, human health, safety, and use was retained for further analysis.

1.06.2 Impact Topics Considered and Not Retained for Further Analysis

Soils and Geology. The Proposed Action would result in minor and temporary impacts to soils and geology. Therefore, this topic was not retained for further analysis.

Vegetation. The Park consists primarily of manicured lawn with ornamental trees. No sensitive vegetation is present. A submerged aquatic vegetation (SAV) survey was conducted for the project, which determined that SAV community is sparse and lacks species diversity (EnviroScience 2020). Any disturbances to aquatic beds would be temporary; therefore, this topic was not retained for further analysis.

Special-status Species. A freshwater mussel survey was conducted for the project, which detected no live mussels to be present (EnviroScience 2020). Suitable habitat for federal- and state-listed special-status species, including the Lake Erie water snake (*Nerodia sipedon insularum*), the northern long-eared bat (*Myotis septentrionalis*) and the Indiana bat (*Myotis sodalis*), would be disturbed as a result of construction. The Proposed Action includes the removal of three volunteer trees, temporary disturbances to the Park lawn, and temporary and permanent disturbances to water resources. The Proposed Action would implement protection measures recommended by the U.S. Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resource (ODNR), including tree-clearing timing restrictions and inspection of construction areas by a biological monitor (USFWS 2020; ODNR DOW 2020b). Species avoidance and minimization measures will be adhered to as agreed upon by NPS, USFWS, and ODNR DOW and as specified in conditions of the issued permits for the project. Adverse impacts to special-status species are not anticipated; therefore, this topic was not retained for further analysis.

Environmental Justice. The Village of Put-in-Bay is home to minority and low-income populations; however, environmental justice was not retained as an impact topic for the following reasons:

- The Proposed Action would not result in any identifiable adverse human health effects. Therefore, there would be no adverse effects on any minority or low-income populations.
- The Proposed Action would not disproportionately affect any minority or low-income population or community.
- The Proposed Action would not result in any identified effects that would be specific to any minority or low-income community.
- The Proposed Action is not anticipated to impact the socioeconomic environment or alter the physical or social structure of the nearby communities.

Air Quality. The Proposed Action would have no impact on air quality. Ambient air quality standards would be achieved and maintained in accordance with applicable state and federal regulations. Therefore, this topic was not retained for further analysis.

Natural Soundscape. The NPS mission includes preservation of natural soundscapes associated with national park units as indicated in NPS Management Policies (2006) and Director's Order 47: Sound Preservation and Noise Management (NPS 2000). The Proposed Action does not introduce additional noise or traffic; therefore, this topic was not retained for further analysis.

Lightscape. In accordance with NPS Management Policies (2006), NPS strives to preserve natural ambient lightscares of parks. The Proposed Action would potentially add lighting to sidewalks along the North and South Seawalls. This lighting is not anticipated to emanate from Park facilities and would not impact natural night skies. Therefore, this topic was not retained for further analysis.

Chapter 2 – Development of Alternatives

This chapter describes how NPS evaluated alternatives to address the purpose of and need for the PEVI Repair of North and South Seawalls discussed in Chapter 1. It also describes Alternatives Considered but Not Evaluated Further, the No Action Alternative and the Proposed Action.

NPS developed, screened, and evaluated a range of alternatives using a three-step process. In each step, the range of alternatives to address the deteriorating seawalls and stormwater drainage problems was narrowed and refined based on a range of advantages, disadvantages, operational efficiencies, and cost. Although the Put-in-Bay Public Beach is not part of the Park or on NPS property, modelling was done to confirm if the Park's seawalls were affecting the beach. Even though the modelling did not indicate that the seawalls were the cause of the beach's erosion, some design options such as a submerged berm were initially considered and modelled as a potential way to mitigate erosion and flooding issues experienced at the beach and the old Superintendent's House. These alternatives, or in some cases components of alternatives, were considered and dismissed as described in Section 2.01.

During the first step, alternatives to restore the deteriorating seawalls and improve stormwater management onsite were identified and screened based on:

- Consistency with the project's purpose and need.
- Feasibility of construction.
- Preservation of the historic integrity of the site and consistency with cultural resource treatment recommendations.
- Avoidance and minimization of impacts to the adjacent lands and waters to the greatest extent possible.
- Resiliency in design to minimize overtopping during future storm events.

In the second phase of the alternative's evaluation, seawall and stormwater management alternatives were further developed, and a value engineering analysis was conducted (CH2M 2020d).

As a final step in developing the Proposed Action, NPS performed additional modeling to identify the shoreline areas subject to the highest wave elevations and the greatest risk of waves overtopping. Outside of these areas, wall heights were minimized. Storm events were modeled to identify effects on flooding. NPS also conducted an underwater condition assessment to determine where seawalls could remain in place with repairs rather than being restored or reconstructed. This would reduce costs and minimize potential construction impacts. Finally, NPS considered additional site rehabilitation treatments recommended in the Cultural Landscape Treatment Plan (NPS 2018) for improved visitor experience that would serve the Park and be efficiently incorporated into the Proposed Action.

2.01 Alternatives Considered but Not Evaluated Further

2.01.1 Public Beach Mitigation Alternative (as a component)

As described earlier, NPS originally considered design options to reduce erosion and protect the Park's shoreline and the old Superintendent's House. The public has also raised concerns about erosion and debris accumulation at the nearby beach as described in Chapter 5. NPS did not proceed with additional design options at the public beach for the following reasons:

- Wave modeling of the proposed seawall alternatives predicts that the Proposed Action will not cause increased debris deposition or erosion at the beach. Wave modeling was used to assess the wave interactions with the existing and proposed seawalls as part of the *Impacts of Future Seawall Elevation Increase Report* (CH2M 2020e). The debris deposition experienced along the shoreline is an existing condition related to it being one of the few natural shorelines on the island (where shoreline stabilization structures have not been built). The erosion experienced along the shoreline in the vicinity of the beach is due to the exposure of the site to offshore waves.
- Design options must address the purpose and need of the project. The purpose and need of the project is to restore the seawalls, limit wave overtopping, and manage stormwater at the project site to protect cultural resources and the setting of the Park, ensure the health and safety of the public, and enhance the visitor experience. Reasonable, feasible alternatives (40 CFR 1508.1(z), effective September 14, 2020), must meet the purpose and need for the project.
- NPS's jurisdiction is limited to the Park's legal boundaries. Erosion along adjacent shorelines is outside the scope of this project and the modeling cited above has shown it is not related to NPS's properties. Therefore, Public Beach alternative components were not evaluated further.

2.01.2 Seawall Restoration Alternatives

Alternative Seawall Construction Materials. NPS considered alternative seawall construction materials for their construction feasibility, consistency with historic preservation goals, resiliency, and construction-related impact. The steel sheet pile bulkhead was eliminated because it would require a higher wall, affecting the site setting and preservation of the historic landscape. Shallow bedrock could affect the wall's long-term viability.

A rubble-mound wall was eliminated because it would have a large footprint and would require significant in-water fill increasing the impact to aquatic resources, or it would encroach into the existing core of the Park. The rubble-mound wall would also be at a higher elevation than the Galveston profile wall, potentially affecting the historic landscape, and would require more long-term maintenance for the Park. As a result, alternative seawall construction materials were not evaluated further.

Patch Repairs to Seawalls. Under this alternative, only patch repairs would be performed along the entire length of all seawalls. Patch repairs would retain the existing

seawalls and result in the least disturbance during construction but would not change the height of the seawalls and therefore not address overtopping issues. The existing historic concrete would largely remain in place and continue to deteriorate. This would increase long-term maintenance and would provide a less aesthetically pleasing solution. This would not satisfy the project's purpose and need and would not provide resiliency in preventing or reducing overtopping and flooding. Therefore, patch repairs along the North and South Seawalls were not evaluated further as a standalone alternative.

Raise Existing Seawall (Demolish Top Portion of Seawall). This alternative would demolish and replace only the top portion of the seawalls and would leave the existing foundations intact. This alternative would increase the seawall height, providing greater resiliency to storm surge and waves, and reducing overtopping. However, it would rely on the bottom 8 feet of existing concrete wall and the foundation in sections of the seawalls that are severely undermined. This alternative would not provide resiliency to storm surge and waves in portions of the seawalls with the most significant deterioration. Therefore, this alternative was not evaluated further as a standalone alternative.

Raise Seawall (Demolish to Foundation). This alternative would replace the North and South Seawalls in their entirety and would increase the seawall height, providing greater overall resiliency to storm surge and waves, and reducing overtopping. However, it would retain all existing foundations, including sections constructed in 1976, that are severely undermined. As with the alternative to demolish the top portion of the seawall, this alternative would not provide resiliency in portions of the seawalls with the most significant deterioration. Therefore, this alternative was not evaluated further as a standalone alternative.

Raise and Replace Seawall and Foundation. This alternative would demolish and replace the seawalls and foundations in their entirety. The seawall height would increase, providing greater resiliency to storm surge and waves, and reduce overtopping. This alternative would result in the greatest disturbance to adjacent shorelines and waters during construction. It would replace foundations in areas where it is not warranted, adding to the overall cost of the project. Therefore, this alternative was not evaluated further as a standalone alternative.

2.01.3 Stormwater Management Alternatives

Underground Storage Vault Integrated with the Seawall. This alternative would provide an underground concrete storage tank and pump adjacent to a seawall. The storage tank would hold stormwater until it could be pumped to the lake. This alternative was eliminated from further consideration because it would require significant excavation and landscape disturbance during construction and have significant pumping requirements over the long-term.

Aboveground Surface Storage. Under this alternative, a detention basin would be designed to store stormwater. It would result in localized flooding and ponding in the Park and function as a designed version of the existing conditions. As a result, it would

not fully meet the project purpose and need and could contribute to environmental impacts. Therefore, this alternative was not evaluated further.

Green Infrastructure. Green infrastructure is an approach to stormwater management that protects, restores, or mimics the natural water cycle by using plant or soil systems, permeable surfaces or substrates, stormwater reuse, or landscaping to reduce runoff or ponding of stormwater. Green stormwater infrastructure options such as bioretention, permeable pavement and rainwater harvesting were considered and dismissed. Bioretention, or vegetative beds, were not retained because of their potential to alter the appearance of the Park's low-lying landscape with the Monument as a focal point. Permeable pavement also was not retained as an alternative because of limited paved area in the Park that could be replaced with permeable pavement and the high cost and impacts that would be associated with Ohio Department of Transportation (ODOT) roadways. Rainwater harvesting to support irrigation would not be economically feasible and was not evaluated further.

Stormwater Detention. This alternative would include partial or full detention of stormwater. The stormwater would be collected through existing catch basins and connected to underground infiltration system that would delay the discharge of stormwater. Partial and full detention were dropped from further consideration because they rely on Lake Erie to be at mean water level for the detention basins to empty, meaning the site would continue to flood during a storm event with a high lake level. Partial detention also had the disadvantage of capturing only a limited volume (less than 25 percent) of runoff from frequent, higher intensity storms (on average, returning once every 10-years and lasting for 24-hours). As a result, this alternative would not effectively meet the project purpose and need and was not evaluated further.

2.02 Alternatives Retained for Analysis

2.02.1 No Action Alternative

Under the No Action Alternative, existing conditions would remain and worsen and operations and maintenance of these concerns at the Park would continue or increase. The seawalls would not be repaired or restored and would continue to deteriorate. The stormwater management system would not be modified, backflow from Lake Erie would not be limited and stormwater would continue to inundate the Park during high water levels and rainfall events, contributing to flooding, affecting soil stability surrounding the seawalls, and degrading the integrity of significant cultural resources such as the Monument. Post-flood cleanup activities would need to continue, and SH 357 would continue to flood and be impassable during high water events. Under the No Action Alternative, new sidewalks, additional lighting, and new interpretive elements would not be constructed, limiting improvements to visitor experience and accessibility.

2.02.2 Proposed Action

At the conclusion of the alternative's evaluation, NPS developed a Proposed Action that would restore or extend the seawalls, improve stormwater management, protect cultural resources, and enhance the visitor experience. The Proposed Action applies different

restoration and repair methods to different sections of the seawalls depending on the predicted wave action and how badly the wall has deteriorated. The Proposed Action includes the following components.

Restore Seawalls

Seawall restoration activities would provide partial or full replacement of 3,322 LF of the existing North and South Seawalls, provide 80 LF of new seawall by extending the length of the South Seawall, and patch repairs to the South Seawall (**Figure 2-1**). It includes elements from several of the alternatives considered and is tailored to meet varying seawall restoration needs. All of the restoration activities would be designed with a Galveston profile, consistent with the existing seawall design, because it could provide protection with a relatively small footprint and lower wall height than other alternatives.

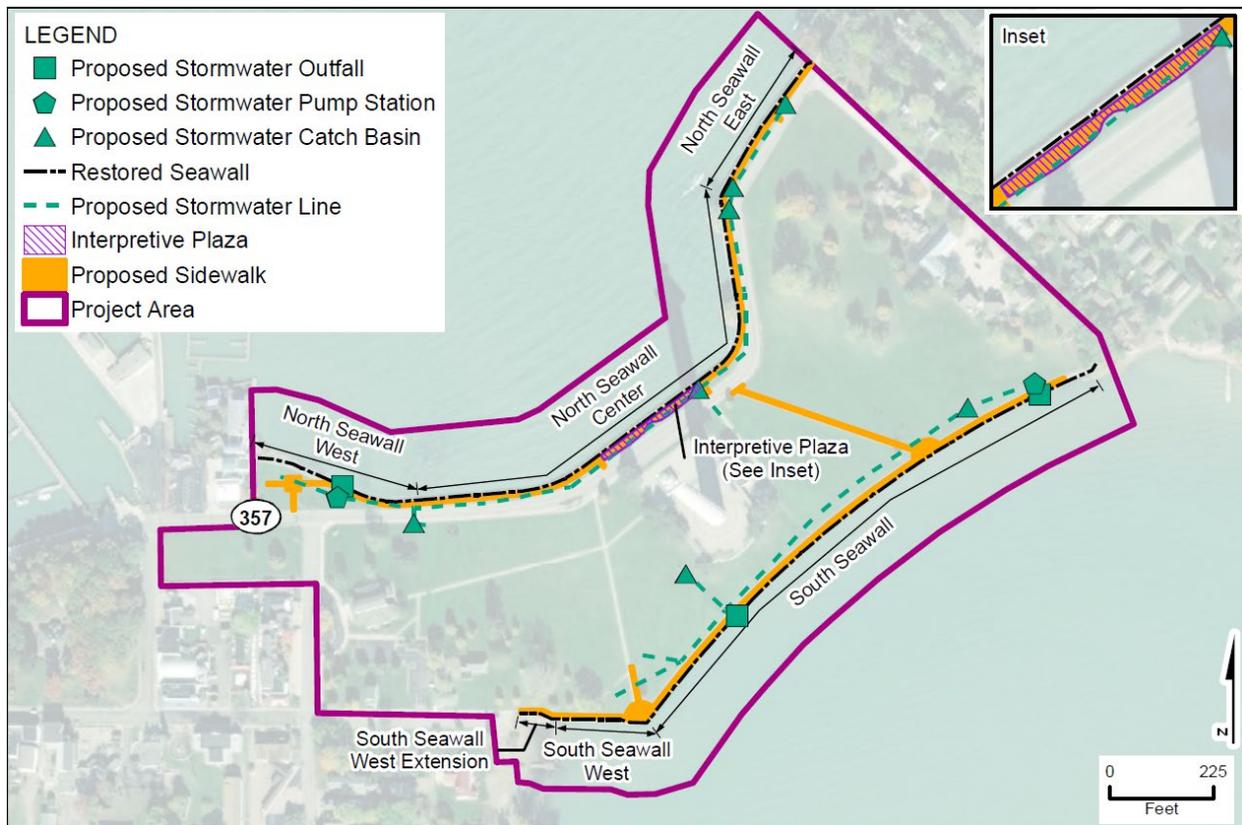


Figure 2-1. Components of the Proposed Action

North Seawall

The North Seawall (1,851 LF) would be restored in 2021 with different restoration approaches applied to different portions of the seawall, depending on the condition and the specific flood protection needed at a location. The western section of the North Seawall (North Seawall—West; 367 LF) would be partially demolished (removed above the water line) and a new seawall constructed, up to 12 inches above the existing height.

The eastern section of the North Seawall (North Seawall—East; 341 LF) would be partially demolished and a new seawall constructed which would be up to 24 inches above the existing height.

The center section of the North Seawall (*North Seawall—Center*) is severely undermined and would be fully demolished. A new seawall would be constructed (1,143 LF), which would be typically 12 inches above existing height. It would smoothly transition to meet the proposed height of the eastern and western sections. A 128-LF curved segment of the North Seawall—Center section would be realigned. This segment would extend 14.95 feet into Lake Erie at the center and result in 0.02-acre or 325 cubic yards of fill in Lake Erie.

South Seawall

The South Seawall would be restored in 2022. The South Seawall (1,270 LF) would be partially demolished and then rebuilt to a new elevation (**Figure 2-1**), which would be typically 18 inches above the existing height. One void on the South Seawall would also be repaired.

The western end of the South Seawall (South Seawall—West; 201 LF) would be partially demolished and rebuilt to a new elevation, which would be typically 18 inches above the existing height. The South Seawall—West section would also receive patch repairs of cracked and spalled concrete. Spalled concrete is where part of the concrete has delaminated or broken away.

The South Seawall—West section also would be extended (South Seawall—West Extension) by 80 feet for enhanced flood protection, replacing the riprap currently placed along the shoreline. An extension measuring 8 LF would occur in Lake Erie, resulting in 0.001-acre or 2 cubic yards of fill in Lake Erie. The rest of the extension would be placed landward of the lake.

Improve Stormwater Management

As part of the Proposed Action, the stormwater system would be upgraded to increase its capacity, prevent lake water from backflowing on the site, and convey Park stormwater and water that overtops the seawalls to the lake through a combination of gravity outlets and pumping stations. The improvements would include new drainage pipes; two new pump stations, one on the north side of the Park and one on the south side; and replacing nine catch basins with improvements sized to manage larger flow volumes. A new 10-inch outfall would be drilled into the North Seawall and two 10-inch outfalls would be added on the South Seawall. The locations of new pipe, and catch basins are shown on **Figure 2-1**.

Stormwater improvements would also include a new vortex separator to provide treatment of stormwater runoff from the sidewalk along the North Seawall and SH 357. A vortex separator is a treatment system where stormwater flow in a circular fashion, resulting in settling and separation of suspended solids and other debris that would otherwise be carried into Lake Erie. Finally, flap gates would be installed at the stormwater outlets in the seawalls to prevent stormwater backflow from Lake Erie.

Protect Cultural Resources

In developing the Proposed Action, each project element was evaluated, selected, and designed to maintain the cultural landscape and culturally significant key viewsheds after construction. Seawall elevations and the location of aboveground elements were carefully considered so as not to obstruct the six key viewsheds identified as contributing to the cultural landscape (NPS 2018). Two additional viewsheds were assessed to evaluate the potential for impacts from the proposed pump stations. Each element was also evaluated and designed to assure that the cultural landscape of the Park would be maintained following construction. Elements were designed to be consistent in appearance with existing site elements.

Seawall and stormwater elements of the Proposed Action protect cultural resources by reducing the frequency and extent of flooding, which in turn protects the Monument and cultural landscape.

Enhance Visitor Experience

The Proposed Action also includes features recommended in the Cultural Landscape Treatment Plan (NPS 2018) to enhance visitor access to PEVI and promote a greater understanding of the Park's cultural resources and historic significance. New sidewalk would be installed along the North Seawall, a 128-LF section of the North Seawall would be realigned, and step-lighting would be installed in the North and South Seawalls. These actions would improve pedestrian safety and provide new access for visitors. The existing sidewalk along the South Seawall would be replaced (**Figure 2-1**).

An interpretive plaza in the form of an expanded sidewalk engraved with artistic images of historic ships from the Battle of Lake Erie in the War of 1812 would be added adjacent to the North Seawall. The interpretive plaza would create a new focal point directly in front of the Monument. Visual aids would encourage visitors to engage with the history of the Park and the Monument.

Other features that would be added to enhance the visitor experience include benches and trash receptacles throughout the Park.

2.03 Proposed Action Construction Activities

2.03.1 Construction Phasing and Work Areas

Construction is scheduled to occur over 2 years with North Seawall construction occurring from April to September 2021 and South Seawall construction occurring from April to September 2022. Stormwater improvements, sidewalks, lighting, the interpretive plaza and landscape restoration on the north side of the Park would occur during 2021 and improvements on the south side of the Park would occur in 2022.

Figure 2-2 shows the planned staging area near the entrance to the Park at the Peace Garden Lawn. This temporary upland staging area would support the contractor's offices and provide a place to store materials and equipment during both construction phases. During construction, the work areas and staging area would be fenced off and

closed to public and visitor access. Access to the PEVI Monument and Visitor Center is not expected to be affected by construction.

South Seawall construction would be split into two phases, with construction of the Seawall—West Extension and repairs to South Seawall—West occurring between April and June 2022 to minimize impacts to the Public Beach. The remaining South Seawall construction would follow.

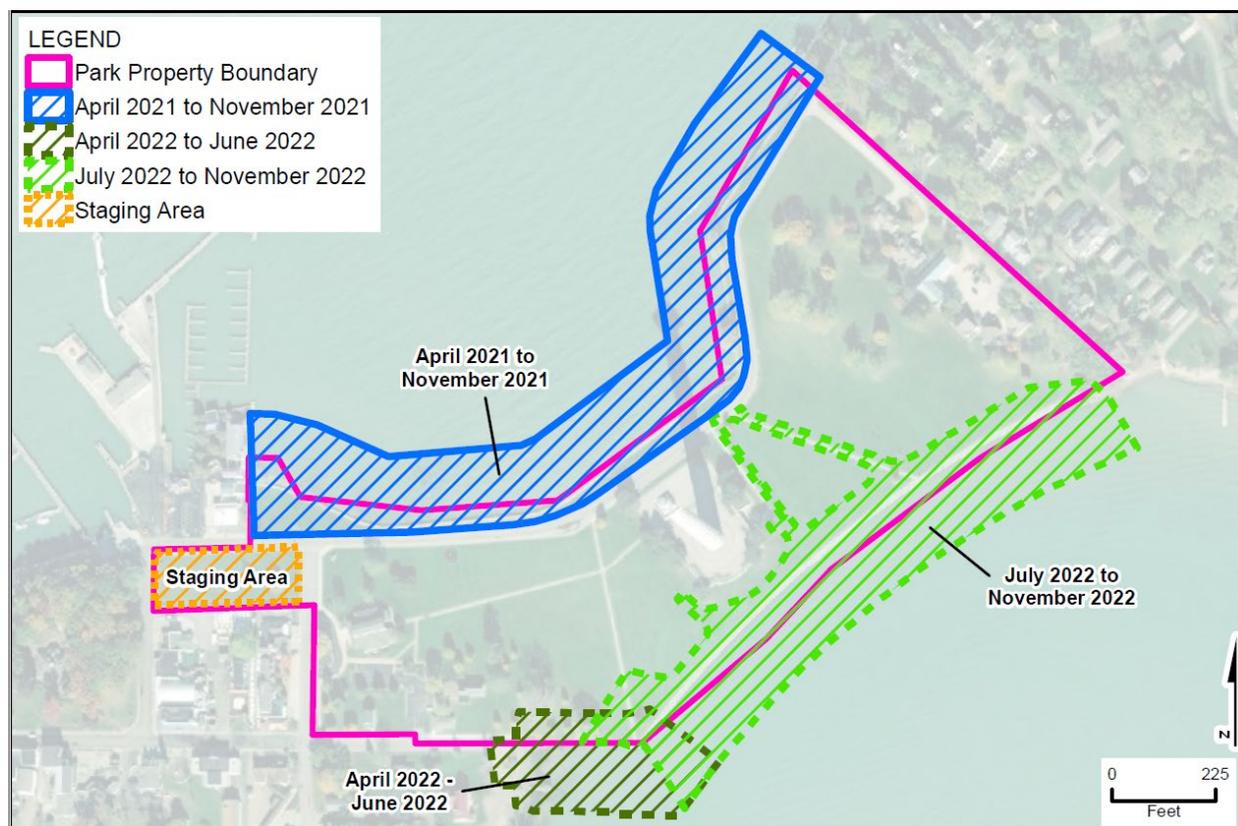


Figure 2-2. Construction Workspaces and Phasing

2.03.2 Seawalls

Seawall construction methods will vary depending on whether the seawall is being completely replaced, partially replaced, or constructed as a new segment. Heavy equipment would be required and could include barges, cranes, concrete trucks, and wire saw cutters. Temporary in-water construction workspaces will be established (approximately 10.4 acres), which could include a soldier-pile wall or cofferdam that would be installed during construction of the center section of the North Seawall. Construction methods may be altered or refined by the contractor performing the work.

An avoidance buffer of 15 feet (5 meters) from the extent of each submerged archaeological resource will be established during construction activities.

Complete Seawall Replacement

The center section of the North Seawall is the only portion of seawall that would be completely demolished and replaced. The contractor would install a shoring and excavation system on the landward side of the existing North Seawall—Center section, consisting of soldier piles with concrete lagging, to stabilize sediments in the construction area. This shoring system protects and stabilizes the roadway throughout construction. After the shoring and excavation system is installed, the existing seawall would be demolished, and then barriers would be installed lakeward of the new wall alignment, to allow the contractor to excavate to bedrock, shown on **Figure 2-3**. The barriers would allow the contractor to perform underwater excavation and protect the construction from waves.

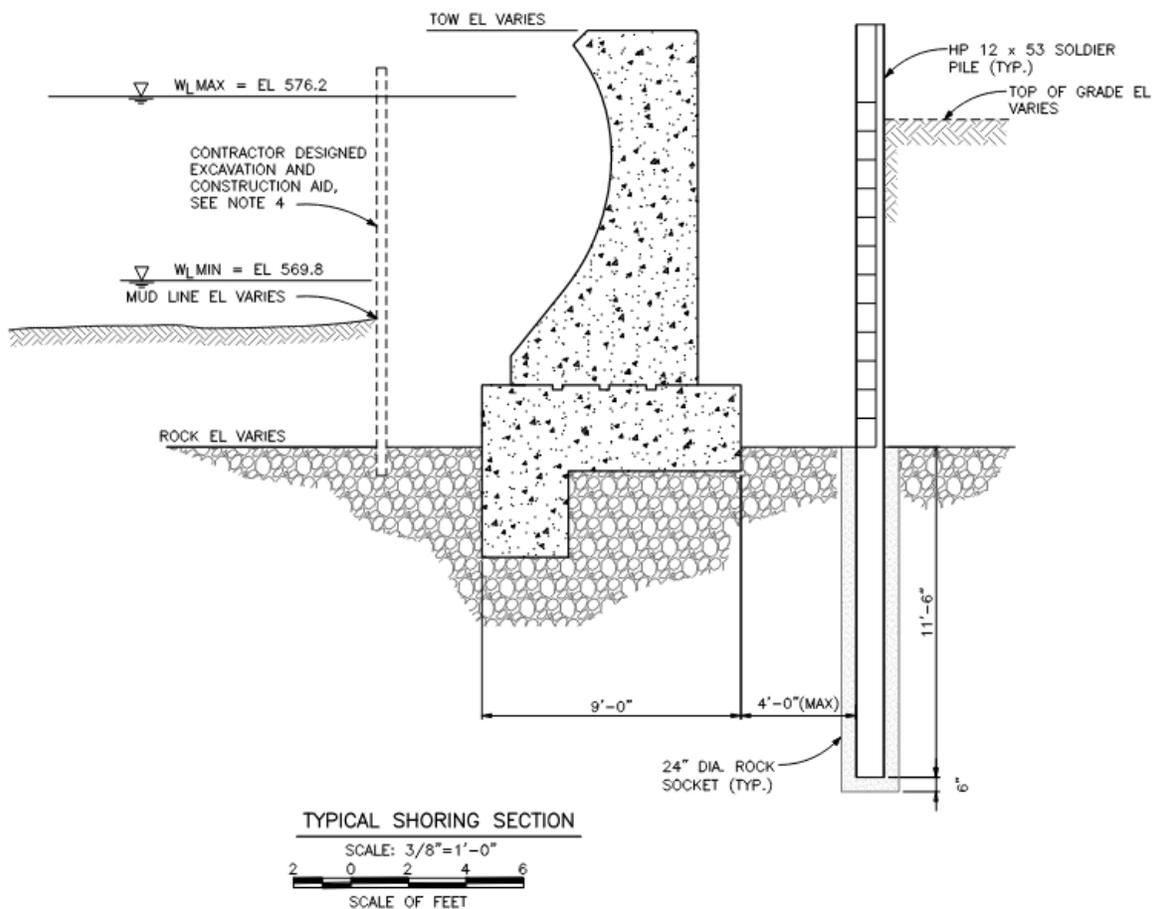


Figure 2-3. Typical Shoring System

The foundation would be installed underwater from a barge through a watertight pipe to avoid washout of cement from turbulent water. After the foundation has cured, formwork would be constructed to serve as a mold, the formwork would be dewatered, and the curved portion of the wall would be cast-in-place. As an alternative to cast-in-place, the contractor could precast sections of the wall or foundation. Regardless of the method

used, the work would likely be performed using a barge from the waterside of the wall. A turbidity curtain would be placed in the lake to contain any material that gets into the water.

Following installation of the North Seawall—Center, the formwork would be removed, the shoring system would be cut to a few feet below finished grade. The area between the shoring system and the new seawall would be filled to the finished elevation. On the water side of the seawall, the mudline would be restored to the original elevation with the original, excavated sediment. Final construction methods could be modified by the contractor selected to perform the construction.

The 128-foot realigned section of the North Seawall—Center section, would be constructed in a similar way. However, the existing wall would be used for shoring (**Figure 2-4**) and removed below grade after construction is completed.

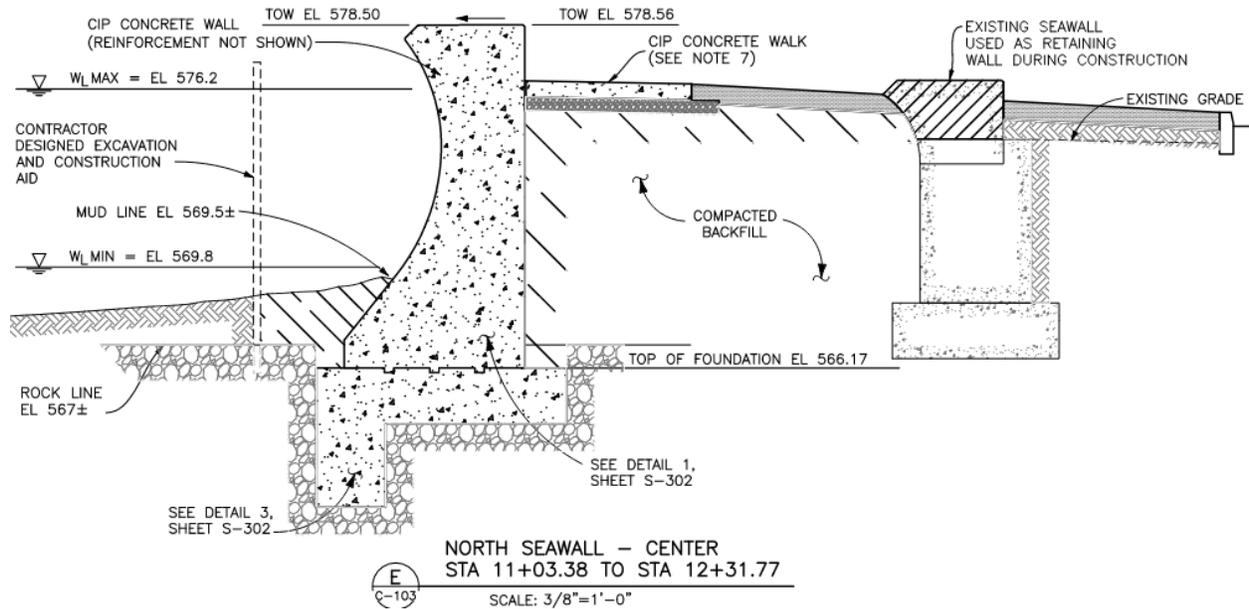


Figure 2-4. Existing Seawall Used as Shoring

Partial Replacement

The top 3-foot section of the North Seawall—East, North Seawall—West, and the South Seawall would be demolished and replaced to a new elevation. The wall would be cut with a saw and the concrete would be removed from the land side. The cut would occur approximately at lake level, so additional structures would not be required to maintain dry conditions. A turbidity barrier would be placed on the lakeside of the seawall. The removed pieces of concrete would be placed on either a truck and transported off the island on the ferry or the contractor may place them on a barge and remove the material from the island over water. Once the concrete has been removed the new wall section would be formed, reinforcement would be placed, and concrete would be poured. The concrete would be pumped from land or barge.

New Seawall

The South Seawall—West Extension would be constructed by excavating a trench and stockpiling the existing shoreline material on the beach. Temporary shoring would be used to maintain a vertical or near vertical face along the sides of the trench. The contractor will dewater the area and install formwork. The forms would be pumped with concrete. The work would be performed using trucks and excavators from the beach and land. The rock fill for the berm in front of the wall would be transported to the island by truck or barge and moved into positions using excavators.

Patch Repairs

Patch repairs would occur along the South Seawall and South Seawall—West. This underwater work would be performed by a diver. The loose and deteriorated concrete would be removed to sound concrete, formwork applied, and then filled with concrete from a watertight pipe.

2.03.3 Stormwater Improvements

The existing stormwater system would be improved with the installation of new pipes, catch basins, pump stations, and a vortex separator. Excess excavated material would be stored onsite for reuse, and any material not used at the end of construction would be transported by truck off the island. Construction debris would also be transported by truck.

On the north side of the Park, where the new stormwater pipe would be placed under SH 357, the road and curb would be restored to match the adjacent roadway. Disruptions to road traffic during construction would be minimized.

In addition, a new 10-inch stormwater outfall would be drilled into the North Seawall and two 10-inch stormwater outfalls on the South Seawall. Existing outfalls to be abandoned would be plugged with concrete.

2.03.4 Sidewalks, Lighting, and Interpretive Plaza

Sidewalk, lighting, and interpretive plaza construction would be performed landside. An excavator would be used to fill and cut the surface for the sidewalk and interpretive plaza elevations. Trenched material would be used for fill as needed. The excavator would also be used to trench the lighting conduits. Any trenched material not used at the end of construction would be transported by truck off the island.

2.04 Proposed Action Impact Avoidance and Minimization

NPS places strong emphasis on avoiding, minimizing, and mitigating adverse environmental impacts that could result from construction or other changes in a historic landscape. To help ensure the protection of natural and cultural resources and the quality of the visitor experience at the Park, protective measures would be implemented as part of the Proposed Action. Impact mitigation is not part of the Proposed Action as a result of impact avoidance and minimization measures implemented.

The Proposed Action underwent an iterative design process to avoid and minimize impacts to water resources. Unavoidable permanent and temporary water resource impacts have been minimized to the greatest extent practicable. Erosion and sediment control measures would be implemented to avoid and minimize sedimentation, and other impacts that may temporarily affect water resources. Temporary shoring and best management practices for in-water work, including turbidity curtains would be implemented to reduce sedimentation and impacts to water quality.

Special-status species protection measures will be adhered to as agreed upon with USFWS, and ODNR DOW and as specified in the conditions of the permits issued for the project (USFWS 2020; ODNR DOW 2020b). Protection measures include seasonal tree-clearing restrictions for Indiana and northern long-eared bats and biological monitoring as agreed upon by NPS and ODNR DOW for the Lake Erie watersnake.

An avoidance buffer of 15 feet (5 meters) from the extent of each submerged archaeological resource would be Established during construction activities to limit unintentional disturbances associated with barge traffic or mooring during construction.

The extent and duration of project-related disturbances would be minimized to protect the natural resources and minimize impacts to visitors to the Monument and Visitor Center during construction. Temporary construction workspaces would be restored through turf seeding, as appropriate, to replace landscaped areas that were affected by construction.

Chapter 3 – Affected Environment

This chapter provides an overview of existing resources at the Park. The affected environment includes the overall project area as described in Chapter 2 and shown on **Figure 3-1**. As part of this EA the affected environment includes the 24-acre Park property, adjacent shoreline, and approximately 10.4 acres of temporary in-water workspace. The Park is comprised of 25 acres of landscaped grounds, including the 352-foot-tall Monument, approximately 6 acres of well-tended lawn, the Visitor Center, the Monument plaza, walkways, Park maintenance buildings, and the North and South Seawalls. The Park is used as a resting spot and walkways for visitors. The open spaces in the Park attract casual visitors year-round but are also commonly frequented by visitors who picnic in the Park during summer. SH 357 crosses the Park and is the only road connecting the east and west sides of South Bass Island. The neighboring properties use this road through the Park as the only access to essential services on the island.

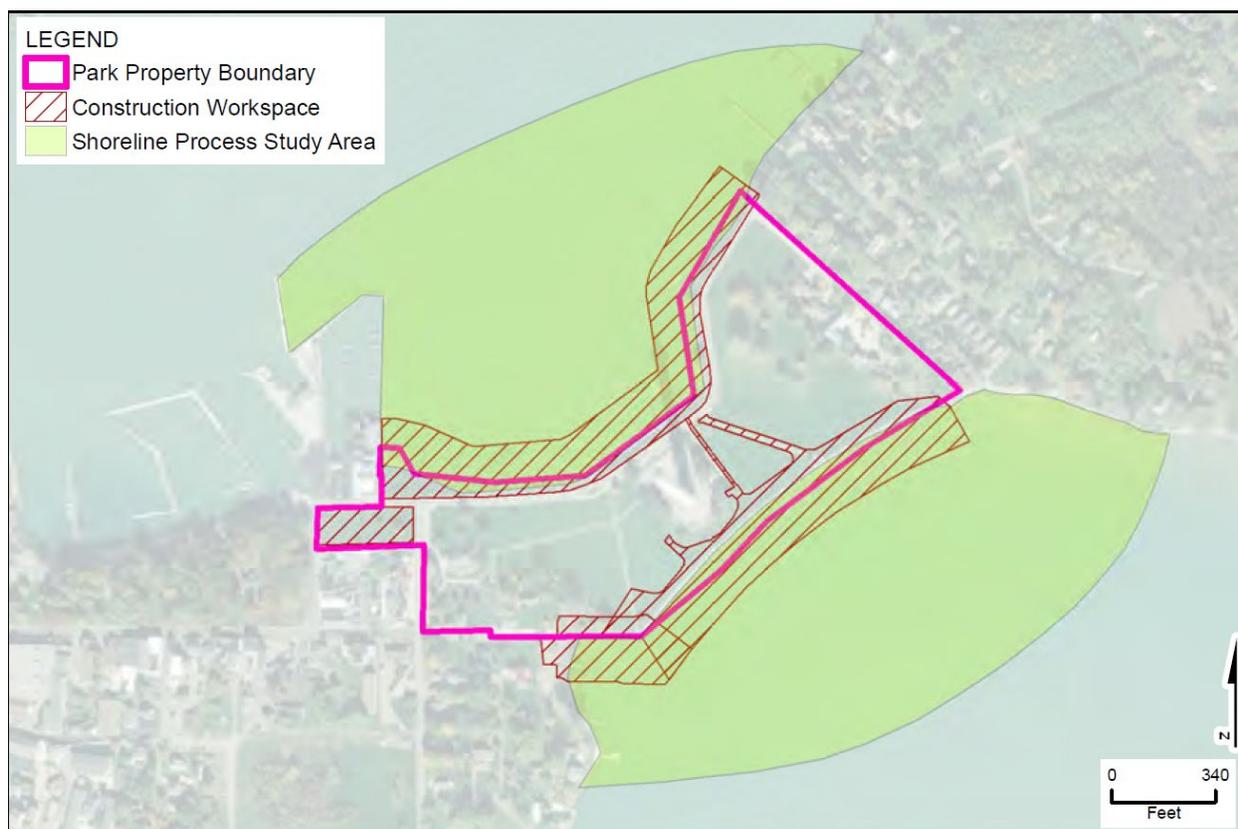


Figure 3-1. Affected Environment Study Area

In compliance with NEPA and the NPS NEPA Handbook (2015), the resources described here were identified as impact topics in Chapter 1 and are resources and conditions potentially affected by the Proposed Action. Their selection was based on

Park-specific resource information, issues raised by agencies and the public during scoping; federal laws, regulations and Executive Orders; NPS Management Policies, topics specified in the NPS NEPA Handbook (2015); and existing site conditions. Existing site conditions result from past and present actions, including projects in the Park or the adjacent shoreline.

Natural resources described below include water resources and floodplains, and shoreline processes. Cultural resources include archaeological resources and a cultural landscape, which includes historic viewsheds, buildings, and structures. Existing conditions are also described for the human health, safety, and use.

3.01 Water Resources and Floodplains

Lake Erie is the dominant water resource affecting the Park. The level of Lake Erie fluctuates generally by 1 to 3 feet throughout the year. Due to inadequate height of the existing seawalls, when the lake rises to an elevation above 571 International Great Lake Datum of 1985 (IGLD 85), flooding from wave overtopping can occur at the Park. Historic water level measurements were reviewed from a National Oceanic and Atmospheric Administration (NOAA) weather station in Marblehead, Ohio, approximately 9 miles south of the Park. According to the 49-year-long water level measurement data set at NOAA's Marblehead Station, monthly mean, maximum, and median lake levels at the project site are estimated to be 572.0, 576.2, and 569.89 feet IGLD 85, respectively. During high surge events, the storm-induced water level can fluctuate as much as 5 feet in 2 hours (FEMA 2009; CH2M 2020b).

The project lies in the Lake Erie Watershed (Hydrological Unit Code [HUC] 041202000300) and the Pelee Island Watershed (HUC 041202000100). Based on Ohio's Water Quality Standards (OHC 3745-1-07) Lake Erie is designated as an exceptional warmwater habitat, superior high-quality water, public water supply, agricultural water supply, industrial water supply, and a bathing water. The water quality of Lake Erie adjacent to the Park is high enough that visitors come to walk along the seawall in summer months. Runoff from the Park flows directly to Lake Erie through the existing stormwater system, or infiltrates and indirectly enters the lake water column. No other water bodies (i.e., rivers, streams, or tributaries) were identified in the project area. Lake Erie and the adjacent shorelines in the project area provide poor quality wildlife habitat as indicated by a Lacustrine Qualitative Habitat Evaluation Index narrative score of 28 (CH2M 2020a).

One 0.01-acre palustrine emergent wetland occurs in the project area near the South Seawall. This wetland has an Ohio Rapid Assessment Method quantitative score of 18, which is within the range of a category 1 wetland (CH2M 2020b). Category 1 wetlands support minimal wildlife habitat and have minimal hydrological functions. They are characterized by low species diversity, no significant habitat or wildlife use, limited potential to achieve beneficial wetland functions, and a predominance of nonnative species (Mack 2001).

Groundwater on South Bass Island is recharged by precipitation and infiltration, with groundwater flow generally toward the lake. The depth to the water table varies, as

water flow and recharge can be influenced by lake levels due to the karst geometry and close proximity of Lake Erie. Lake levels can impact the existing stormwater systems depending on whether the outfalls are above or below the lake water surface elevation. When lake levels are below the water surface, the outfalls do not drain effectively and as a result the water backs up through the catch basins, increasing upland flooding (Jacobs, 2020). The water table is shallow at the Park. During the wetland delineation, the water table was observed within the top 24 inches of the soil and the surface. As a result, the shallow water table also limits the amount of groundwater infiltration, contributing to flooding and ponding (Jacobs, 2020).

Most of the Park is mapped in the Federal Emergency Management Agency (FEMA) 100-year floodplain (Zone AE – EL 577.4 feet), with small portions of the northeast and southwest ends of the Park in the 500-year floodplain (Zone X) (FEMA 2020) (**Figure 3-2**). Typical floodplain functions such as flood storage, flood conveyance, wildlife habitat, erosion reduction, sediment trapping, and pollutant removal are limited in the Park as a result of constructed features (NPS 2018). These features include significant disturbance by development, layers of fill, and landscaped Park grounds., onsite as a result of wave overtopping and stormwater system deficiencies. 13 inches (Jacobs, 2020). insufficient stormwater infrastructure in place, flooding in the Park regularly occurs during large storm events and when lake levels are elevated.

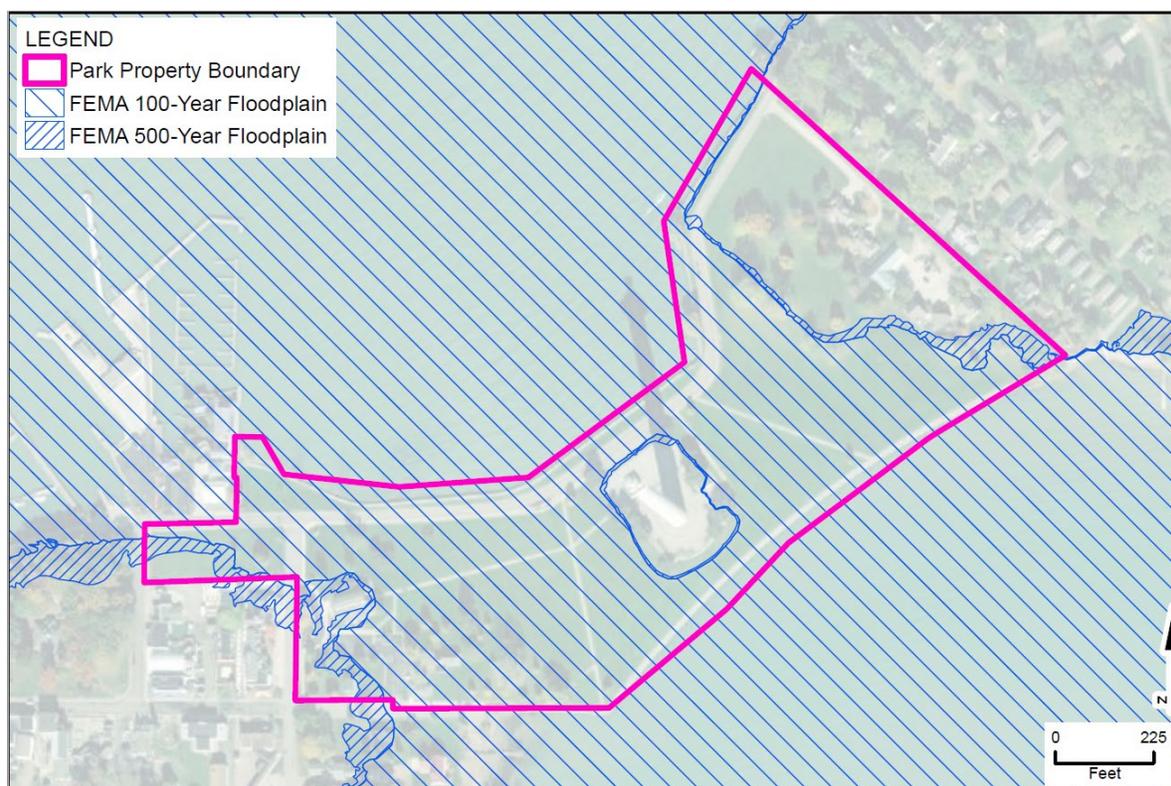


Figure 3-2. FEMA Floodplain

3.02 Shoreline Processes

3.02.1 Background

Shoreline processes describe how coastal lands are formed or evolve from the effects of wind-generated waves and water level variations. As waves travel toward land, their speed varies with the local water depth resulting in waves bending toward shallower water. Waves are also affected by wind speed, direction, and the horizontal length of open water that wave-generating winds can blow. The combination of water depth and wind determines the angle at which waves travel onshore which can influence the formation of shorelines. The role water depth has on the angle of waves moving toward shore increases in shallower water. When waves approach land at an angle they remove sediment from one location and naturally replenish it with sediment from an up-shore source. Currents and other water patterns also affect this natural process of sediment transport. Shorelines that do not have an up-shore source of sediment, will eventually experience erosion.

Wave energy is typically higher during winter months, compared to summer months, with higher wave events during the winter removing sediment from a shoreline. During the summer, when wave energy is lower, sediment is typically replenished from up-shore locations. High lake levels and increased frequency of storms also contribute to higher wave energies, which contribute to sediment loss from a shoreline.

Shoreline processes are also affected by hard structures such as seawalls, riprap, revetments, retaining walls, and bulkheads. When waves hit a hard structure, some of the wave energy will be absorbed by the structure and some will be reflected into the water body. The angle of reflection determines if wave energy is sent back into the water or toward surrounding shorelines. Armored shoreline structures are often required to protect a site from overtopping or erosion; however, its presence may influence neighboring shorelines.

Shorelines that are soft, armored with vegetation, sand, and other natural shoreline systems also modify local shoreline processes, although typically less than hard armoring. Soft shorelines are at high risk of erosion and debris accumulation due to being exposed and unprotected from offshore waves.

3.02.2 Shoreline Processes in the Project Area

Offshore wave data from sites near South Bass Island were used to characterize wave conditions at the Park. Waves in the Park's vicinity are predominantly from the west-northwest direction and from the north-northeast during Northeasterly storms (CH2M 2020b). Middle Bass Island protects the Park, which results in lower waves on the north side of the Park compared to the south side. The highest waves reaching the south side of the Park are from the southwest direction, and the highest waves to on the north side of the Park are from the north-northwest direction.

The northern and southern shorelines of the Park are armored by two concrete seawalls that are Galveston shaped, a concave seawall with a convex trim. The North Seawall is approximately 1,900 feet long and extends the length of the north Park boundary

parallel to SH 357. It ranges in height from 577.2 to 578.6 feet IGLD 85. The South Seawall is approximately 1,500 feet long and is built on a historic marsh. It ranges in height from 577.5 to 577.6 feet IGLD 85. Both seawalls are functionally necessary to protect the cultural resources of the Park due to the proximity to Lake Erie and the relatively low elevation of the Park. When wave hit the seawall, their energy is reflected with a higher wave elevation rebounding back into the Lake. This reflection is what provides protection from shoreline erosion. Due to the low-lying nature of the site, the seawalls are required to provide flood protection and shoreline stabilization. Prior to the construction of the seawalls, the site was marsh wetland with natural shoreline. The water depth to the north and south of the Park is inconsistent, which results in waves not breaking uniformly. This creates localized areas of erosion and varying impact on the seawalls. For example, this localized erosion has contributed to undermining at the foundation of the North Seawall—Center and caused sinkholes on the inshore face of the wall, which is a hazard to visitors, SH 357 and the overall stability of the wall. This undermining has been observed to expose the underside of the seawall up to 3.5 feet, which is a serious structural concern for stability and causes the creation of sinkholes on the inshore face of the wall, as fill is allowed to continuously migrate underneath the seawall and is drawn into the lake through wave action. Approximately eight major sinkholes along the inshore face have required repair in recent years with stone fill. Minor sinkholes are commonly observed following major storm events.

Due to increased lake levels in Lake Erie, the Park experiences frequent wave overtopping because the seawalls were designed for lower lake levels and wave heights. The overtopping causes flooding onsite and wash over of debris, which collects in the lawn, both creating significant maintenance issues. The high wave impacts create pressure on the seawalls, which have caused pieces of the seawall to break away. This debris either enters the site over the seawall or is carried down shore by wave action.

The lands to the east of the South Seawall have a shoreline with a width of approximately 15 feet of unprotected sand shoreline. There are armored structures along this shoreline, which include a series of docks perpendicular to the land, un-engineered riprap, scattered stone, and vegetation. These conditions continue for 2,000 feet to the east with uniform sand. There are no known shoreline concerns at this property.

The property immediately to the west of the South Seawall is a Public Beach. The beach is approximately 90 feet long and 100 feet to 130 feet wide of unprotected shoreline, with frequent buildup of debris such as driftwood, trash, sticks, and larger branches. As wind and waves carry across the lake, the waves concentrate in the bay and at the Public Beach, which is unprotected from waves or debris coming ashore. To the west, the beach continues as private property, with concrete blocks perpendicular to the shoreline armoring the property boundary. West of the private beach there are a series of docks and riprap stone. Continuing west this shoreline continues to vary in width and structure type. The armored shoreline up-shore of the beach interrupts sediment transport. As a result, the beach is not naturally replenished through shoreline processes, which contributes to erosion.

East of the North Seawall there is a band of unprotected sand approximately 10-feet wide. The sand's width varies with high and low water events such as those associated with rainfall and low- and high-pressure storms. At the end of the North Seawall there is riprap stone that transitions into what appears to be engineered riprap. However, the transition immediately east of the North Seawall is scattered riprap for approximately 130 feet. Further east of this shoreline is a series of docks. There are no known shoreline concerns at this property.

To the west of the North Seawall, the Keys Restaurant and Marina extends 550 feet into Lake Erie, which disrupts the continuous shoreline. The Keys Restaurant foundation extends approximately 175 feet, with the rest of the extension being unprotected boat slips. This orientation of the restaurant creates an "L-shape" with the North Seawall, interrupts sediment transport and creates a point for sediment buildup. The waves that break on the existing seawall in this L-corner reflect back along Keys Restaurant foundation and can contribute to isolated erosion. Because wave heights in this area are small, the waves do not propagate far offshore, less than 300 feet. The site is unprotected from offshore waves, which also can contribute to erosion and unacceptable wave energy for mooring.

In summary, existing conditions at the Memorial and neighboring site are affected by shoreline processes. An armored structure constructed along the shoreline, can protect and stabilize the land. However, an armored structure can also deplete the shoreline of natural sources of sediment, force sediment transport patterns down shore, and contribute to erosion and accretion. Erosion can also result from a lack of protection from offshore wave energy. Sediment and other debris moved by waves is repelled by armored structures (or will overtop) and can migrate along the shoreline between armored structures, in these unarmored locations, debris is a typical observation.

3.03 Cultural Resources

Cultural resources, including one property, are located within the APE and were identified using baseline resource information on file including the 1976 NRHP nomination and 2014 additional documentation for the Memorial (NRHP Reference No. 66000118 and 15000185), the CLTP completed in 2018, and through the completion of a Phase I Archaeological Survey in June 2020 (Busch 1976; Harvey 2014; NPS 2018; SEARCH 2020). A historic property is a building, district, object, site, or structure that is included in, or eligible for inclusion in, the NRHP.

The APE is where the federal action, or undertaking, may cause alterations in the character or use of historic properties. The APE is equivalent to the affected environment, but specific to the consideration of historic properties under the NHPA (36 CFR 800). The APE is composed of approximately 28 acres of onshore and nearshore areas that extend approximately 150 feet from the wet faces of both the North and South Seawalls. The defined APE and affected environment include all construction activities described in Section 2, and considers the potential for changes to historic views and viewsheds that are significant to the historic property and enjoyment of the Park. The terms APE and project area are used interchangeably in this assessment.

Built between 1911 and 1915, the Memorial was listed in the NRHP in 1979 as a historic structure. The original nomination focused on the Memorial structure and plaza and designated the Memorial structure and original 14.5-acre land grant as a historic property (Busch 1976). After the property was listed in the NRHP in 1979, it was amended in 2015 by an expanded period of significance to 1911 through 1963 and a boundary increase from 12.1 to 14.5 acres and gained two additional contributing resources and two noncontributing resources (Harvey 2014).

Presently, the Memorial is listed as a historic site in the NRHP under Criterion A in the areas of Social History, Politics, and Government; under Criterion C in the areas of Architecture and Engineering; and under Criteria Consideration F: Commemorative Properties for its design, age, and symbolic value. The property has three contributing resources: the historic site, the Superintendent's Residence building (now Men's Dormitory), and the Memorial structure. Of the three contributing resources, the Memorial is the predominate feature that conveys the significance of the property.

The noncontributing resources are the Ranger Operations Center and a storage garage. The seawalls were recorded in the NRHP amendment as noncontributing features of the site, but they are not individually counted in the noncontributing resource count in the amendment. The seawall locations are important to the historic site because they mark the boundary of the original historic core of the Park, but the seawall structures do not contribute to the historic property. The seawall structures were built in 1979, more than a decade after the period of significance (1911 to 1963) concluded and are noncontributing resources (Harvey 2014; NPS 2018).

In 2018, the CLTP provided additional details on the contributing and noncontributing resources of the historic site by recording the property as a cultural landscape. The CLTP is a management tool that helps NPS care for the historic property. The CLTP documented the cultural landscape, and its contributing and noncontributing features. Many of these features are not counted individually in the NRHP nomination or amendment, because they were discussed as part of the site. Some of the features are outside of the historic property boundary but are important to the function of the Park. The CLTP refers to the historic property as the historic core to differentiate from the greater Park boundary.

The CLTP describes six historic viewsheds, which are a significant contributing feature to the site and Park. While the Memorial is the central feature of the historic property, historic viewsheds are important to the visitor's use and experience because they convey the feeling associated with significant events in American military history that occurred during the Battle of 1812 on Lake Erie. Moreover, the CLTP identified rehabilitation as the preferred treatment approach to the landscape and recommended that NPS work to manage and maintain these views (NPS 2018).

In June 2020, a Phase I Archaeological Survey was conducted that identified 11 archaeological resources. One precontract bifacial stone tool was found on land, and 10 isolated finds (IF) were encountered during the maritime survey. One historic-age midden was identified in the literature review but was not encountered during the

survey. None of the resources were recorded as an archaeological site nor do they qualify as historic properties (**Table 3-1**). No other significant cultural resources, traditional cultural properties, or historic properties were identified in the project area.

Table 3-1. Archaeological Resources Identified by the Phase I Survey

Isolated Find Identification	Description	NRHP Eligibility
IF 01*	Log with Fastener	All of the archaeological resources are not eligible for listing in the NRHP and do not qualify as historic properties.
IF 02*	Cut Timber	
IF 03*	Submerged Logs	
IF 04*	Cut Log	
IF 05*	Rail Track	
IF 06	Concentration of Iron Fasteners	
IF 07	Rock Revetment	
IF 08	Three cut blocks	
IF 09	Mooring Block	
IF 10	Radiator	
PST	Precontact Bifacial Stone Tool	

Notes:

* Associated with historic rail dock used during the construction of the Memorial.

Results from the Phase I Survey (SEARCH 2020)

Locations are restricted information and are not allowable in public documents.

One historic-age midden was previously identified and is not listed in this table.

All resources are in the project area.

IF was from the maritime survey.

PST = Positive Shovel Test from Terrestrial Survey

In summary, the current effort identified one cultural landscape with six contributing viewsheds that qualifies as a historic property and 11 archaeological resources in the APE. Archaeological resources will be discussed further in Section 3.04.1. The NRHP-listed Memorial property, including historic buildings, structures, and viewsheds, will be discussed as Cultural Landscape in Section 3.04.2. That section includes discussion of all contributing and noncontributing features as described in the CLTP (Busch 1976; Harvey 2014; NPS 2018).

NEPA requires federal agencies to consider how a federal action may affect cultural and historic resources in the project area (40 CFR 1508.8), while the purpose of Section 106 of the NHPA is for federal agencies to consider the effects of their undertaking on historic properties and afford the ACHP the opportunity to comment on such undertakings (36 CFR 800.1). This EA substituted the NEPA process and documentation for the Section 106 process, in compliance with 36 CFR 800.8(c).

3.03.1 Archaeological Resources

Although previous baseline documentation did not identify any significant archaeological resources within the APE, this area had not been surveyed in its entirety. Therefore, the NPS contracted for a Phase I Archaeological Survey of the terrestrial and underwater areas within the APE for the identification of archaeological resources. The Phase I archaeological investigation of the 27-acre project area was conducted between June 1 and 10, 2020. A total of 8 acres of the project area were onshore and 19 acres were nearshore (SEARCH 2020). The investigation was conducted under Archaeological Resources Protection Act Permit 2020-04 and OHC 149.54 Archaeological Research Permit (2020-OTT-498396).

Locations in the terrestrial and maritime project area exhibiting a high, moderate, or low level of archaeological sensitivity were tested. A terrestrial shovel testing grid was overlaid on 8 acres of the revised APE, and subsurface testing occurred at regular intervals of 15 meters. The maritime survey visually inspected the lake bottom along the North and South Seawalls and documented exposed cultural resources.

Soils in the terrestrial portion of the project have been heavily disturbed, likely the result of fill and of activities that occurred during the construction of the Monument and subsequent Park. The shovel tests conducted in the terrestrial portion of the project area consisted of modern debris, including plastics, clear bottle glass, metal wire, and two recent United States coins—a dime dated 1986, and a penny dated 1975. These materials supported previous investigations that indicated the project area had been highly disturbed for many years with filling and grading.

Only one shovel test recorded in the southeastern portion of the terrestrial project area contained a single prehistoric bifacial stone tool. The stone fragment is likely the byproduct of making a stone tool. NPS indicated that the location of the positive shovel test was subjected to heavy fill buildup as recently as the 1980s. The bifacial tool was most likely transported to the location and displaced by borrow and fill excavations that occurred during previous construction events.

The nearshore or submerged project area extends approximately 150 feet seaward from each seawall. A total of 10 submerged IF, referred to as IF 1 to 5, were discovered during the maritime survey. IF 1 to 5 are submerged IF are likely related to a historic rail dock that was built in 1912, just prior to the construction of the Monument. IF 1 to 5 are disturbed and out of context from the original historic rail dock location and are not recommended eligible for listing in the NRHP. IF 6 to 10 are not related to the rail dock and were iron fasteners from an undetermined source or were boat moorings (SEARCH 2020).

In addition, the literature review identified one historic period midden, reported to be in the project area. The historic-age midden was encountered as part of a 1993 sewer line trench and is in the southwestern portion of the project. The midden was not encountered during the Phase I survey, but the area was found to be heavily disturbed. The southwestern portion of the project area was most likely a redeposited portion of an

early Put-in-Bay town dump that was used as fill in this area prior to the late 1970s reconstruction of the seawalls (SEARCH 2020).

In total, the investigation encountered one precontact lithic on shore, and yielded 10 IF of historic materials related to the remnant rail dock and maritime-related activities nearshore, as well as modern debris. None of the cultural material encountered during the survey is significant, nor is it eligible for inclusion in the NRHP. No archaeological resources that qualify as historic properties are present in the project area (**Table 3-1**).

Archaeological resources that are anticipated to experience changes are discussed further in Chapter 4.

3.03.2 Cultural Landscapes

One historic property—the Memorial—was identified in the APE. The Memorial forms the historic core of a 25-acre Park of which 14.5 acres are designated as the historic property (**Figure 3-3**). The Memorial is listed in the NRHP and was further documented in the CLTP completed by NPS in 2018, which is one of the baseline documents used in this assessment (NPS 2018). The historic site and historic core are interchangeable definitions; historic core is terminology specific to the CLTP (NPS 2018).

The NRHP-listed Memorial contains one historic site, one contributing structure—the Memorial, and one historic building—the Superintendent's Residence (now Men's Dormitory). All contributing resources have good historic integrity. The historic property is nationally significant under Criterion A in the areas of Social History, Politics, and Government; under Criterion C in the areas of Architecture and Engineering; and under Criteria Consideration F: Commemorative Properties for its design, age, and symbolic value (NPS, 2018). The Memorial Monument, a 352-foot-tall granite column (Photos 3-1 to 3-3) commemorates the Battle of 1812 and Commodore Oliver H. Perry's victory against the British on September 10, 1813. It is a symbol of international peace between Great Britain, Canada, and the United States.

As previously discussed, the property contained one historic structure—the Memorial—when it was listed in the NRHP on July 25, 1979 (Busch 1976). On April 28, 2015, the boundary was increased, the contributing and noncontributing resources count was increased, and the period of significance was extended from 1911 through 1945 to 1911 through 1963 by NRHP amendment (Harvey 2014). In 2018, the CLTP was prepared to address the entirety of the Park, including the 14.5 acres of the NRHP-listed historic site of the Memorial, or historic core, as well as the surrounding lands acquired by the NPS for the Park, for a total of 25 acres. This CLTP listed rehabilitation as the preferred preservation treatment approach and recommended that NPS work to maintain and manage the historic views or viewsheds. Six historic viewsheds contribute to the visitor use and experience of the historic core (**Figure 3-3**) (**Table 3-2**).

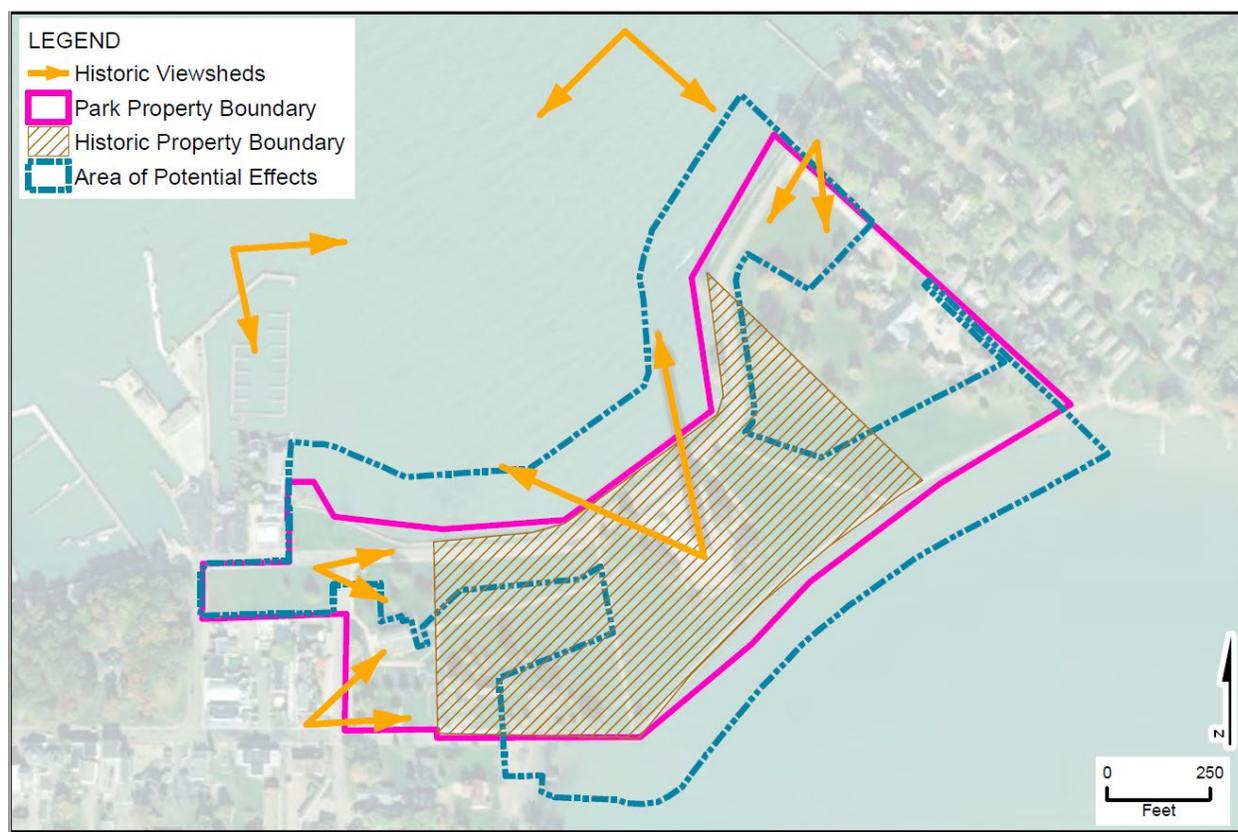


Figure 3-3. Contributing Viewsheds to the Historic Property
Source: NPS, 2018

The CLTP defines three management zones: historic core, visitor access/Park administration, and Park housing/maintenance. The historic core is flanked to the east by the visitor access/Park administration zone, while the Park housing/maintenance zone is to the east. All identified cultural resources are in the historic core. Shown as the pink-dashed polygon on **Figure 3-2**, the historic core is defined by the historic property boundary and is comprised of both contributing and noncontributing features. Contributing features convey a feeling associated with the period of significance, while noncontributing features lack the necessary characteristics to convey the period of significance (1911 to 1963). The historic core retains all aspects of historic integrity, while the perimeter has experienced some diminishment in historic integrity from new construction, demolition, and modifications.

For the purposes of identification, the cultural landscape features are organized into the following categories found in the CLTP: buildings and structures, circulation, setting, small-scale features, spatial organization, topography and grading, vegetation, and views and viewsheds, but are not ranked in any order of importance (NPS 2018) (**Table 3-2**). These categories differ from the NRHP historic property types but are inclusive of them. **Table 3-2** details the cultural landscape features by contributing and noncontributing features. A contributing feature retains sufficient historic integrity to

convey the property's significance, while a noncontributing feature lacks the necessary aspects of historic integrity to contribute to the property. The NRHP addendum listed three contributing and two noncontributing resources. These resources are underlined in **Table 3-2**.



Photos 3-1 to 3-3 (clockwise from top left). Detail of Doric column capital; structures and setting; detail of Beaux Arts landscape feature at base of column.

Table 3-2. Contributing and Noncontributing Features of the Historic Core

Cultural Landscape Category	Contributing Feature	Noncontributing Feature
Buildings and Structures	<ul style="list-style-type: none"> • <u>Perry's Victory Memorial structure</u>—including the granite coping around the plazas and the planters • <u>Superintendent's Residence (Men's Dormitory)</u> • <u>Site</u>—including general locations of seawalls 	<ul style="list-style-type: none"> • Perry's Victory Memorial—Granite pavers, concrete band that replaced brick, replacement brick in brick accents, and river gravel • <u>Storage building</u> built between 1994 and 2014 • <u>Ranger Operations Center</u> (former Public Restroom, then Park Headquarters) • North and South Seawalls—design and material

Table 3-2. Contributing and Noncontributing Features of the Historic Core

Cultural Landscape Category	Contributing Feature	Noncontributing Feature
Circulation	<ul style="list-style-type: none"> • Bayview Avenue • Delaware Avenue • Trace of Chapman Avenue • Two main diagonal sidewalks • Restroom access sidewalk and stairs • Sidewalk to the lower plaza stairs • Both sets of stairs to the lower plaza 	<ul style="list-style-type: none"> • Short diagonal sidewalk that replaced the wood boardwalk in the 1970s • Park utility sidewalk • Sidewalk between the Visitor Center and the Memorial
Setting	<ul style="list-style-type: none"> • Character of historic properties and lands adjacent to the site that are important to the setting for the Memorial • Trees that mark the general area of the east boundary 	<ul style="list-style-type: none"> • Visitor Center and associated features • Vacant block, which resulted from the removal of wood frame houses and trees that stood in the block between Chapman and Toledo avenues, was a boundary for the historic core
Small-Scale Features	<ul style="list-style-type: none"> • Granite benches and granite urns on the upper plaza, and the general location of flagpoles and floodlights 	<ul style="list-style-type: none"> • Trash cans, bike racks, signs, replacement floodlights, other lights, utility boxes, and 2008 flagpoles

Table 3-2. Contributing and Noncontributing Features of the Historic Core

Cultural Landscape Category	Contributing Feature	Noncontributing Feature
Spatial Organization	<ul style="list-style-type: none"> • General openness • Horizontal plane of open lawn at each side of the column • Flat planes of the Memorial's plazas • Emphasis on the Memorial column's verticality • Placement of trees at the east, west, and south of historic core • Originally had double row of barberry hedges at edge of lawn 	<ul style="list-style-type: none"> • New trees
Topography and Grading	<ul style="list-style-type: none"> • Level topography • Earthen berm around Memorial plazas 	<ul style="list-style-type: none"> • Granite retaining walls added to the Memorial plaza 1984 to 1985 • Missing earthen berm on the eastern side of the Memorial
Vegetation	<ul style="list-style-type: none"> • Manicured lawn • Patterns of large tree massing on the east and west boundaries of the historic core, four Norway maple trees and 15 remaining Austrian pines 	<ul style="list-style-type: none"> • Grass panels in the upper plaza planters • Shape and scale of remaining Austrian pines, which have outgrown their original size/scale and their original clipped, conical shape, and now lack integrity of design

Table 3-2. Contributing and Noncontributing Features of the Historic Core

Cultural Landscape Category	Contributing Feature	Noncontributing Feature
Views and Viewsheds	<ul style="list-style-type: none"> • View 1 from the observation platform to the North • View 2 from Gibraltar Island to the Southeast • View 3 from Lake Erie Battle site to the Southwest • View 4 from Bayview Avenue to the East • View 5 from Bayview Avenue to the West • View 6 from Chapman Avenue to the East 	<ul style="list-style-type: none"> • N/A

Notes:

Contributing and noncontributing features are listed as presented in the CLTP (NPS, 2018).

Similar features, such as Park furniture, are counted as one group.

Underlined features are listed as contributing or noncontributing resources in the 2015 NRHP addendum (Harvey 2014). All noncontributing features listed in table are noncontributing resources to the NRHP-listed historic site.

N/A = not applicable

Historic viewsheds are best described as part of the setting, which includes the character of adjacent shorelines and lands and their effect on the historic integrity of the property. As shown in **Table 3-2**, the property has six contributing viewsheds: the Gibraltar Island viewshed, used by Commodore Perry as a lookout point during the Battle of 1812; the Lake Erie battle site to the Memorial viewshed; the Bayview and Chapman Avenue viewshed; two Visitor Center viewsheds; and the historic core's observation platform viewshed (**Figure 3-2**). Of the features listed in **Table 3-2**, the six viewsheds plus two additional views were assessed in the VIA, but the two additional views do not contribute to the historic property. The additional views were assessed because NPS uses the historic core for interpretive activities, and the Proposed Action includes a minimal increase in height of the seawalls. The views help orient visitors to important activities and events in American history.

Based on review of baseline documents and present site conditions, NPS determined that findings and recommendations presented in the CLTP remain applicable, and no substantial changes have occurred since completion of the CLTP in 2018 (NPS 2018).

The cultural landscape and its contributing features remain with good historic integrity of association, design, feeling, location, material, setting, and workmanship

Cultural landscape features that are anticipated to experience changes from the Proposed Action will be discussed further in Chapter 4. The Memorial and the Superintendent's Residence will be unaffected by the Proposed Action and did not require further analysis. The six viewsheds assessed by the VIA and contributing features that require consideration of adverse effects from the project, are discussed further in Chapter 5.

3.04 Human Health, Safety, and Use

The Park consists of landscaped areas, sidewalks, roads, maintenance roads and buildings (**Figure 3-3**). The well-maintained open space around the Visitor Center and Memorial plaza, including the United States/Canadian/British flags, walkways, and seawalls, attract casual visitors to the Park. These open spaces offer venues for limited interpretation presented in easily digested formats such as wayside exhibits, roving interpretation, self-guided tours, living history or ranger demonstrations, and special events. These activities are available in comfortable venues with shade, benches, and overlooks, which encourage use of the Park as a resting spot and for walking.

PEVI has two visitor contact stations—the Monument and the Visitor Center—and 25 acres of groomed landscape between the two seawalls. When open, the Monument is the main attraction for Park visitors, with approximately 150,000 visiting each season. The Visitor Center is the primary contact station, where rangers, volunteers, and Eastern National associate's welcome visitors, provide orientation to the Park and the island, and deliver informal interpretation. Visitors access the Monument from adjacent roadways and sidewalks throughout the Park. Parking is available at the Visitor Center and in front of the Monument.

As described in Section 3.4.2, the Visitor Center is sited between two viewsheds that contribute to the cultural landscape. One viewshed is located to the south at Chapman Avenue, and the other is in the north at Bayview Avenue. The viewsheds provide an opportunity for visitors to view the Memorial and its surroundings in proximity to the Visitor Center, parking, and entrances to the Park.

The core interpretive programs for the Park are children's programs offered twice daily, hourly talks, evening programs three times a week, living history encampments, black powder musket firing demonstrations on weekends and cannonade firings one weekend a month. The Park also hosts several special events throughout the summer months, each with interpretive/educational components (NPS 2011).

Visitors enter the Monument through the rotunda where six officers from the War of 1812 are interred. Once inside the rotunda, visitors travel to the top of the column to a viewing platform. From this platform visitors can see across Lake Erie to the site of the naval battle. At the Visitor Center, a film can be viewed, along with the exhibits interpreting the Battle of Lake Erie and the building of the Memorial column and plazas. In summer months, the landscaped grounds of the Park provide an open space that

serves as a calm, contemplative escape from the otherwise busy island and as a recreational space for visitors and local island residents. Visitors can enjoy the open space with shade, benches, and overlooks from the Monument. The existing seawalls have also been used as additional seating (NPS 2012).

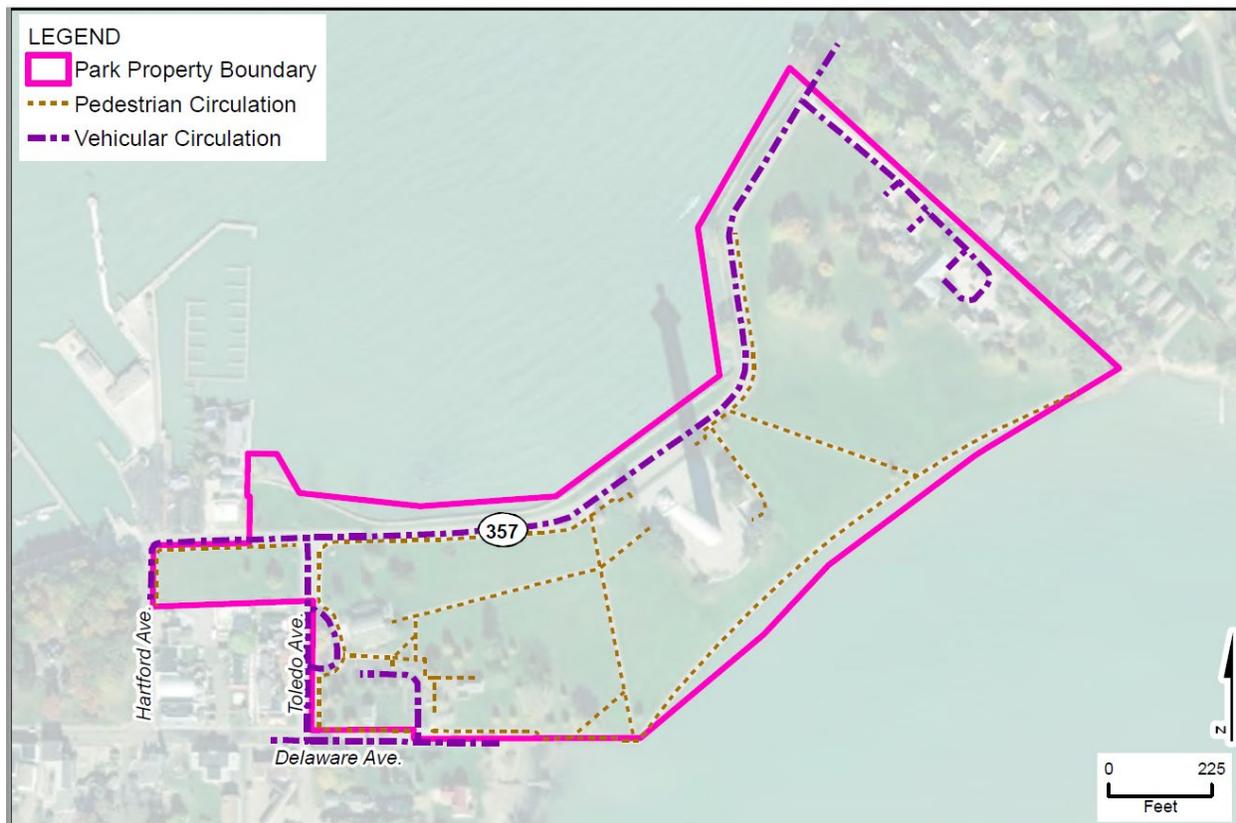


Figure 3-4. Pedestrian and Vehicular Circulation

Severe summer weather at the Park can affect visitor safety, including heat and humidity, storms and flooding, and the presence of biting insects. These conditions at the Park require ongoing maintenance of pedestrian sidewalks and roads, exhibits, site furnishings, buildings, vegetation management, and snow removal to ensure the health and safety of the public. Park staff do not have any methods in place to effectively drain ponded water after a storm. Currently, the Park has to wait for the flood waters to subside naturally which takes places over a long period of time, either through evaporation, infiltration, and when lake levels recede; further impacting visitors use and safety. Vegetation management includes removal of fallen limbs, cleanup of lake debris and lawn care. Park staff monitor use of golf carts on the pedestrian sidewalks, a potential safety hazard for visitors strolling through the project area. Staff are also responsible for the safety of visitors once they are inside the Monument and reach the observation platform. Preventative maintenance ensures that the condition of the Park will not degrade over time and to preserve integrity and/or ensure staff and visitor safety.

SH 357 runs southwest to northeast across the north side of the Park and is the only road connecting the east and west sides of the South Bass Island. SH 357 directly abuts the Monument plaza parking lot and allows visitors to access the Park. SH 357 flooding occurs during large storm events and is attributed to the backward flow of surface water into the stormwater system and waves overtopping the seawalls. Frequent flooding of the road impedes access between the east and west sides of the island and the passage of emergency vehicles. Seawall erosion occurs immediately adjacent to the road and has the potential to undermine SH 357. Several sinkholes form annually along the North Seawall, which create tripping hazards and require ongoing maintenance.

Chapter 4 – Environmental Consequences

This chapter addresses the potential environmental impacts from the Proposed Action described in Chapter 2: restoring 3,322 LF of the North and South Seawalls, extending the western end of the South Seawall by 80 LF, patching repairs to the South Seawall, replacing the stormwater system, and installing lighting and interpretive elements at the Park.

The analysis compares the baseline of the “No Action” alternative against the Proposed Action to determine beneficial and adverse outcomes during and after construction. By examining the environmental consequences of the alternatives on an equivalent basis, decision makers can evaluate which approach would create the most desirable combination of benefits with the fewest adverse effects. Section 4.01 describes the methods and assumptions used to assess impacts. Sections 4.02 through 4.05 provide individual resource-focused analyses of the potential environmental impacts.

4.01 Methods and Assumptions for Analyzing Impacts

NPS based the impact analyses and conclusions on a review of baseline documentation, additional surveys, Park studies, information provided by experts at the Park and other NPS personnel, other agencies, professional judgment, and public input. The Park studies included modeling of wave reflection, wave overtopping, and wave transformation, which assessed potential impacts from the proposed seawall restoration and impacts to neighboring shorelines (Jacobs 2020). Stormwater drainage modeling was conducted to assess surface ponding and changes in conditions associated with the Proposed Action (Jacobs 2020). Cultural resources impact and viewshed analyses determined by the VIA, and archaeological assessments were determined by the additional survey and analysis (CH2M 2020f; SEARCH 2020). Current climate change trends and Lake Erie lake level trends were taken into account as part of the existing conditions.

In accordance with CEQ regulations, the environmental impact analysis describes changes to the human environment resulting from the Proposed Action that are reasonably foreseeable and have a reasonably close causal relationship to the Proposed Action. Impacts are described as beneficial or adverse. A beneficial impact would result in a favorable change in the condition or appearance of the resource and an adverse impact would cause an unfavorable effect to the resource compared with the existing conditions. Impacts are also described as short-term and long-term. Short-term impacts occur during construction and are temporary. Long-term impacts are typically permanent.

In each impact category, impacts were assumed to be worst-case, meaning they would occur throughout the construction area shown on **Figure 4-1**. More likely, the entire area would not be an active construction area. For example, an area of temporary barge passage is described as an impact area, although construction, excavation, or other disturbance may not occur.

The impact analysis also assumes that the monitoring and mitigation measures identified in Chapter 2 Development of Alternatives would be implemented for the Proposed Action.

For each impact topic, a summary assessment of the potential impacts is provided in the "Conclusion" section that follows the discussion of the impacts under each alternative. Reasonably foreseeable projects include a sewer line extension greater than 600 feet from the Park property boundary, and ongoing maintenance of SH 357. These projects were considered but are not addressed in this analysis because the projects are not in the vicinity of the Proposed Action and any impacts would be unrelated to the Proposed Action.

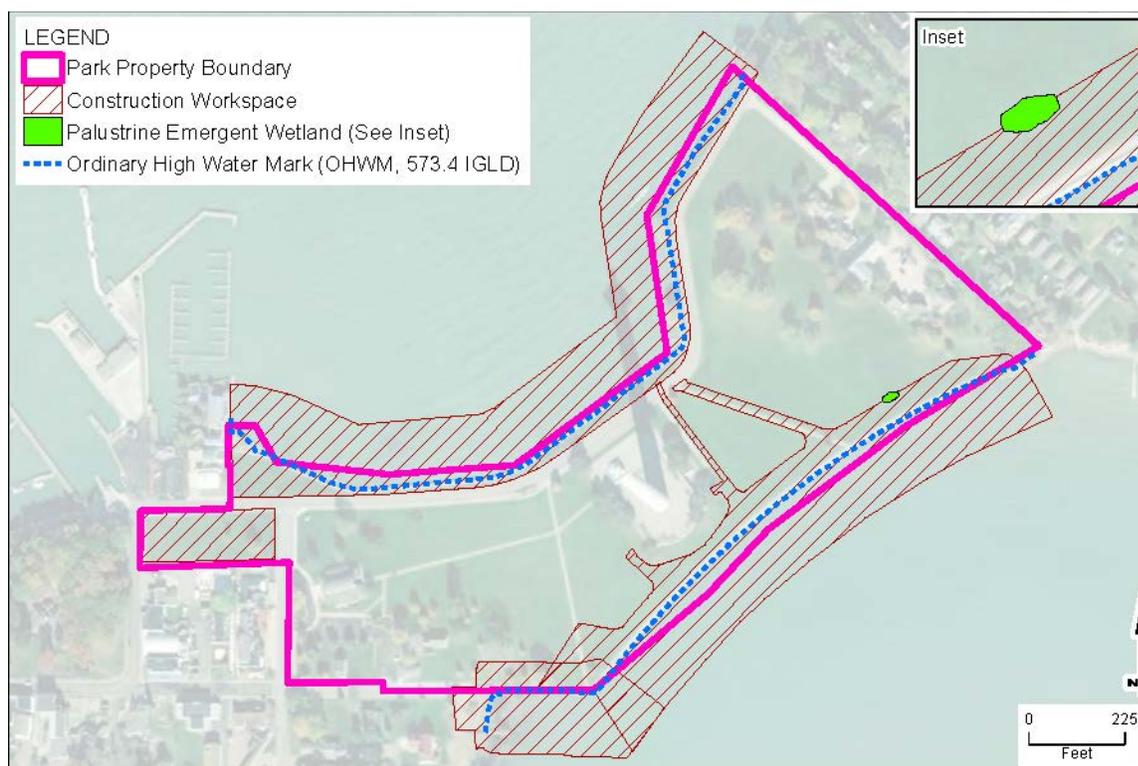


Figure 4-1. Proposed Action Impacts

4.02 Water Resources and Floodplain

No Action Alternative

Impacts

Short-Term

Under the No Action Alternative, existing conditions, operations, and maintenance of the Park would continue. Without modifications to the seawalls, the Park would continue to experience periodic flooding and wave overtopping during storm events. Stormwater would continue to backflow from Lake Erie into the stormwater system and inundate the Park during high water levels and rainfall events, contributing to flooding, affecting soil

stability at the seawalls, and degrading the integrity of significant cultural resources. Post-flood maintenance activities would need to continue, and SH 357 would continue to flood and be impassable during higher water events.

Long-Term

Over the long-term, seawall deterioration would continue with pieces of the seawall expected to crumble and be transported along the shoreline or into Lake Erie. If this occurs, the frequency of flooding and likelihood of flood-related damage would increase. The erosion of the shoreline and existing seawall would continue to undermine SH 357 and sinkholes would continue to form directly adjacent to the seawall. The Park and nationally significant Monument would not be adequately protected.

In addition, the stormwater drainage system would not adequately manage large rainfall events. During a typical 10-year design storm event approximately 2.9 acres of the Park would continue to flood for greater than 24-hours with a maximum surface ponding depth of 13 inches (Jacobs 2020). A 10-year design storm event has a probability of 0.1 or 10% of being equaled or exceeded in any one year. For a 24-hour storm duration, a 1- in 10-year return period storm provides 3.25 inches of rainfall. During large storm events, localized sedimentation, suspended solids, and debris would continue to enter Lake Erie. Over the long-term, there would be a negative impact to water quality as there would be cumulative effect associated with repeated storm water discharges. Changes to the floodplain, which may occur include larger and longer-term surface water ponding across the road and at lower lying elevations in the Park, continued loss of shoreline, and reduced upland area and Park landscape. In addition, groundwater levels, which can be high (within a few feet of the land surface), are likely to remain high for longer periods of time. Therefore, there would be long-term adverse impacts to water resources and floodplains.

Conclusion

Under the No Action Alternative, there would be no change in existing conditions over the short-term. Long-term adverse impacts to water resources and floodplains would continue.

Proposed Action

Impacts

Short-Term

Over the short-term, seawall construction is expected to temporarily affect water quality and water resources by increasing turbidity and sediment loads in and adjacent to the shoreline. In-water activities include construction workspaces in Lake Erie that would temporarily impact 10.4 acres of Lake Erie along the North and South Seawalls (**Figure 4-1**). The most intrusive activities would be associated with the construction of the North Seawall—Center section, which involves underwater construction to replace the foundation, fill activities in the lake, and temporary excavation and backfilling activities. Excavation and backfilling would temporarily change the contours of the lake

bottom. Temporary shoring would be installed, and a trench shield would be used to hold back loose soil, as described in Chapter 2.

Dust and debris deposition would be expected in the localized construction area. Lakebed disturbances from construction activities and vessel mooring would cause temporary suspended sediments. Sediment and debris deposition would be localized and would be limited by shoring and sediment control such as turbidity curtains, silt fences, straw wattles, inlet filter sacks and other sediment and erosion controls. Other best management practices would be implemented as needed.

In areas where just the top section of the seawall is being removed and the elevation raised, impacts from construction activities would be short-term and localized with potential impacts minimized by sediment and erosion controls.

The proposed stormwater system improvements would require excavation and grading. Soil erosion and sediment controls would be implemented, and the duration of exposed soils minimized to the extent possible. Similar measures would be used to construct new and replace existing sidewalk and add interpretive elements and lighting. Therefore, the degree of short-term impacts to water resources and the floodplain would be minimal.

Long-Term

The Proposed Action would fill 0.02 acre of Lake Erie to accommodate the North Seawall realignment and South Seawall—West Extension. It would also permanently drain one 0.01-acre palustrine emergent wetland, located within the maintained lawn area, as a result of the construction of the stormwater system improvements (**Figure 4- 1**). These permanent impacts to waters of the United States would not exceed Section 404 of the Clean Water Act and a Clean Water Act Section 401 requirements. The degree of long-term impact would result in minimal adverse effect to waters of the United States and floodplain.

Over the long-term, the Proposed Action would improve storm resiliency and better protect the Park and improve operational efficiency by reducing the degree, frequency and extent of stormwater, flooding, and wave overtopping that occurs throughout the Park grounds when compared to the No Action Alternative. During a typical 10-year design storm event, a 100 percent reduction in flooding (i.e., no flooding or ponding) would result from the North and South Seawall improvements and replacement of the stormwater system. The Proposed Action would also reduce the frequency of wave overtopping so that it would not occur for storms more frequent than the 25-year storm (probability of 0.04 or 4% of being equaled or exceeded in any one year)(Jacobs 2020).

The Proposed Action would improve water quality in the long-term as it will protect the receiving waters (Lake Erie) physical, chemical, and biological characteristics. Storm water from the approximately 11.2-acre north catchment area would be treated via a vortex separator prior to discharge. This system would remove debris, total suspended solids, hydrocarbons, and oils from stormwater prior to discharge into Lake Erie (CH2M

2020c). Therefore, impacts to water resources and the floodplain are considered to be long-term and positive.

Conclusion

The Proposed Action would result in short-term minor impacts to water resources, water quality, and floodplains during construction, and minor permanent impacts after construction. Long-term impacts include a permanent loss of 0.02-acre Lake Erie, a permanent loss of a 0.01-acre wetland, a small improvement in the quality of the stormwater runoff. The frequency and extent of flooding along the roadway and Monument grounds would be reduced, improving the Park's operational efficiency and sustainability. Therefore, over the long-term, the Proposed Action would have a beneficial impact compared to the No Action Alternative, as benefits to water resources and flood reduction would outweigh the minor adverse long-term impacts to wetlands and waterbodies.

4.03 Shoreline Processes

No Action Alternative

Impacts

Short-Term

Under the No Action Alternative, the existing shoreline processes would continue to affect the Park. The North and South Seawalls would continue to be overtopped during storm events and the concrete would continue to deteriorate. The foundation of the North Seawall—Center has been severely undermined as a result of shoreline processes and would continue to degrade. Debris will continue to be transported and buildup along unprotected shorelines. Sediment transport would remain as is and the wave energy reflected off the North and South Seawalls would be unchanged.

Long-Term

Over the long-term, the effects of erosion and debris buildup would continue, which would further destabilize the seawalls as described in Section 4.02, Water Resources and Floodplains. Portions of the seawall may be undermined to the point that the seawall severely deteriorates, destabilizing the shoreline.

Continued seawall deterioration would lead to pieces of the seawall being deposited along the shoreline. These would be carried with waves and lake currents and contributing to the debris buildup in unarmored locations along the shoreline.

Under the No Action Alternative, conditions would be unchanged and where erosion is occurring or debris is accumulating, these concerns would be expected to continue.

Conclusion

Under the No Action Alternative there would be no change in existing conditions over the short-term. Over the long-term, shoreline erosion at the Park would worsen,

resulting in long-term adverse impact. Conditions at adjacent shorelines would remain unchanged.

Proposed Action

Impacts

Short-Term

Over the short-term, seawall construction is expected to temporarily affect the water patterns and sediment source at the seawalls due to the presence of work barges and in-water demolition. Best practices such as a turbidity curtain surrounding the site would limit the potential for debris to enter the lake and be transported down shore. As described in Section 4.02 dust and debris in the localized area, lakebed disturbances, and vessel mooring are all expected during construction. These would contribute to debris moving down shore but would be minor and temporary. The suspension of sediments within the turbidity curtain during construction would not affect erosion along the shoreline. Shoreline conditions along the extended shoreline would remain unchanged.

Storm contingency plans are expected to be developed by the contractor to minimize possible effects during storm events.

Long-Term

The Proposed Action would restore the structural integrity of the seawall and stabilize the shoreline at the Park so it may remain open and operational into the future. The North Seawall—Center would be replaced with a new foundation that is protected from erosion and undermining. Deteriorated portions of the seawall would be replaced and therefore broken pieces of seawall would not create new debris in the lake.

The new South Seawall—West extension of the Proposed Action would prevent waves from propagating onto the Park and decrease flooding and debris buildup in this corner of the property (CH2M 2020c).

The wave energies rebounding from the Perry's Victory Memorial Seawalls would increase by 8 percent due to the raised seawall increasing wave reflection, (CH2M 2020e). This increase is considered minor. For example, in the worst-case scenario modeled, a 100-year return-period storm, this equates to a 0.48-foot wave increase. The highest wave for the 100-year return period at the South Seawall is 6.02 feet, with wave reflection at 11.38 feet under the No Action Alternative and 11.86 feet under the Proposed Action. This minor wave reflection increase in the Proposed Action scenario is due, in part, to the decrease in wave overtopping from the Proposed Action.

In summary, the increased wall heights would improve protection of the shoreline by rebounding wave energy into the lake. The increase in rebounded wave heights would only increase at the Park by 8 percent.

Conclusion

The Proposed Action would restore the integrity of the seawalls and protect the Park from shoreline erosion and debris. Over the short-term, the construction would not affect shoreline processes. It may increase debris, but this would be localized and temporary. Over the long-term the Proposed Action would resolve erosion issues at PEVI and would not contribute to new erosion or debris at neighboring shorelines.

4.04 Cultural Resources

4.04.1 Archaeological Resources

This topic would not normally be retained for consideration after the survey found no significant archaeological resources in the Park. However, the topic was retained to ensure compliance with Section 106 of the NHPA.

No Action Alternative

Impacts

Short-Term

Under the No Action Alternative, no significant impacts to archaeological resources would occur, because there are no significant archaeological resources identified in the Park.

Long-Term

Under the No Action Alternative, no significant impacts to archaeological resources would occur, because there are no significant archaeological resources identified in the Park.

Conclusion

No significant archaeological resources are present, and the potential for undiscovered significant intact archaeological resources is low due to previous construction and fill in the Park. Therefore, there would be no significant impacts to archaeological resources over the short- or long-term.

Proposed Action

Impacts

Short-Term

No significant archaeological resources are present in the Park. NPS has adequately investigated all terrestrial portions of the Park, and no significant archaeological resources were identified. One positive shovel test (N2830 E9115) was encountered during the Phase I Archaeological Survey, but the bifacial stone tool that was discovered was likely displaced from another location and deposited at the location during grading and fill activities associated with the construction of the Park. Ten submerged IFs were also encountered, but none of the archaeological resources are

significant and they lack the necessary characteristics to qualify for listing in the NRHP (SEARCH 2020).

Impacts during construction to submerged archaeological resources could result from boat mooring and dredge and fill activities that are proposed to occur within 150 feet from the wet side of the seawalls (SEARCH 2020). Potential impacts to the 10 submerged IFs discussed in Chapter 3 could occur if vessel mooring or anchoring activities damage submerged archaeological resources, or the submerged archaeological resources also have the potential to be affected by seawall excavation and fill activities. Only IF 01 to 05 are associated with the historic rail dock used during the construction of the Monument, and only IF 01, 02, 03, and 05 are associated with the historic rail bridge. IF 06 to 10 are not likely associated with the Monument. None of the archaeological resources retain sufficient historic integrity. Nonetheless, a 5-meter (15-foot) avoidance buffer will be implemented during construction around IF 01, 02, 03, and 05 that are associated with the historic rail bridge. The locations of all other submerged IF—04, 06 to 10—will be noted for avoidance as they could be potential hazards to navigation during construction.

The proposed seating area and sidewalk along the South West Seawall section coincides with the recorded single positive shovel test (N2830 E9115) that contained a prehistoric bifacial stone tool. However, this area contains heavily disturbed soils that were likely deposited from heavy fill buildup events, and the resource is not eligible for inclusion in the NRHP. Therefore, no adverse impacts would occur.

No significant archaeological resources were discovered in the Park, and no adverse impacts are anticipated to submerged archaeological resources. A 5-meter (15-foot) avoidance buffer will be applied to the four submerged archaeological resources that are associated with the historic rail dock. The location of the other six submerged archaeological resources will be noted for avoidance due to their potential hazard to navigation. In the event of an unanticipated discovery during construction, archaeological monitoring would be implemented.

Long-Term

No significant archaeological resources are present in the Park, and the 10 submerged archaeological resources are not eligible for listing in the NRHP.

Compared to the No Action Alternative, the proposed seawalls and stormwater drainage system would adequately manage large rainfall events, improve drainage, and would minimize flooding and disturbance of any potentially undiscovered archaeological resources throughout the site. However, the potential to yield significant archaeological resources is low due to grading and fill activities associated with the construction of the Park.

NPS has investigated all terrestrial portions of the Park, but further maritime investigation may be warranted if construction activities extend beyond 150 feet from the wet face of the seawalls. Of note, the North Seawall is proximate to the location of the historic rail dock, which extended approximately 600 feet into Lake Erie, and

maritime archaeological investigations have not extended beyond 150 feet from the wet face of the seawalls. All negative long-term impacts from the Proposed Action to submerged archaeological resources will be avoided, and no significant archaeological resources are recorded in the Park. Therefore, there would be no long-term adverse impacts to archaeological resources.

Conclusion

No significant archaeological resources are in the project area. Soils in the terrestrial portion of the project area have been heavily disturbed, likely the result of fill and construction-related activities during the construction of the Monument and Park. Short-term impacts to submerged archaeological resources—in particular IF 01, 02, 03, and 05—would be avoided by implementing a 5-meter (15-foot) avoidance buffer during construction. In the event of an unanticipated discovery during construction, archaeological monitoring would be implemented. Therefore, no significant short-term or long-term adverse impacts are anticipated.

4.04.2 Cultural Landscapes

No Action Alternative

Impacts

Short-Term

Under the No Action Alternative, the periodic flooding and wave overtopping during storm events would continue with ongoing flooding in the Park and limited access due to flooding. Viewsheds are critical to interpretation of the site, and the lack of access would continue to diminish the ability to experience the historic property.

Long-Term

Over the long-term, seawall deterioration would continue with pieces of the seawall expected to crumble and be transported along the shoreline or into Lake Erie. If this occurs, the frequency of flooding and likelihood of flood-related damage would increase the potential for flood-related damage to the historic property, adversely affecting the integrity of the design, material, and location.

In addition, the stormwater drainage system would not adequately manage large rainfall events and would also contribute to flooding throughout the site, which could cause foundation failures and material fatigue to the buildings and structures. Stormwater infiltration into the interior of buildings could cause moisture damage and lead to mold growth and mechanical failure from oxidation to metal structures.

The seawalls' deterioration would contribute to a compromised subsurface of pedestrian walkways and roadway structures. These could result in the formation of trip hazards due to uneven sidewalks, and the need for ongoing repair. Buried utilities could experience premature failure due to increased saturation and exposure to severe storm events.

Significant landscape features, in particular original trees and vegetation, are more likely to experience biological infestations and death due to prolonged wet conditions. Outdoor furniture, such as benches, could require frequent repair from material failure due to exposure to flooding. The loss of original material and changes in the landscape would negatively affect the historic integrity of feeling and setting, which would diminish the key characteristics that qualify the property for listing in the NRHP.

Therefore, there would be long-term adverse impacts to the cultural landscape and the contributing features that qualify the property for listing in the NRHP.

Conclusion

The historic core is the 14.5 acres designated as a NRHP-listed historic property, which is part of the 25-acre Park. Under the No Action Alternative, the property is anticipated to experience periodic flooding and wave overtopping during storm events with the potential to cause short-term and long-term adverse impacts from seawall deterioration and flooding.

Proposed Action

Impacts

Short-Term

In the short-term, the North and South Seawalls, which are not historically significant themselves, would undergo partial demolition, new construction, and additional fill, but would be restored to a similar appearance with the exception of a 12- to 24-inch increase in height, a 124-linear-foot realignment of the center of the North Seawall, and an 80-linear-foot extension of riprap from the South Seawall. The seawalls would be temporarily inaccessible, as would the adjacent sidewalk and public space. The Memorial structure and Superintendent's Residence (Men's Dormitory) building would not experience any changes in the short-term. Access to the plazas would not be affected during construction. All major construction activities would take place in the vicinity of the seawalls and would not extend to the Monument structure or the Superintendent's Residence (Men's Dormitory) building. Best practices would be implemented to minimize site erosion or soil dispersal. All vibration or auditory impacts would be monitored and kept within an allowable range.

Short-term circulation changes would occur along Bayview and Delaware Avenues, but would not impact the segment of Chapman Avenue in the Park. The two main diagonal sidewalks would be used for construction access but would be restored after completion. The restroom access, sidewalk and stairs, sidewalk to the lower plaza stairs, and both sets of stairs to the lower plaza would remain open during construction.

The setting would experience short-term changes, but these changes would not alter the contributing features. The trees that mark the general area of the east boundary would remain in place.

Small-scale features that contribute to the property, in particular the granite benches and granite urns on the upper plaza, and general location of flagpoles and floodlights, would not be altered.

The topography and grading that contribute to the property, including the level topography of the site and the earthen berm around the Memorial plazas, would not be affected by the Proposed Action. No substantial grade changes would occur on the property; only minimal changes, including raising the lawn by 18 inches to maintain the slope to the sidewalk, would occur near the seawalls. Any change that may occur would not impact the original design, feeling, or setting of the property, and would be restored to preexisting conditions after completion.

Vegetation, including all manicured lawn, patterns of large tree massing on the east and west boundaries of the historic core, and four Norway maple trees and 15 remaining Austrian pines would not be altered by the Proposed Action. Any change that may occur would be minimal and would be restored to the preexisting condition after completion.

A VIA was conducted to assess the potential for visual impacts from the proposed changes to the seawalls and to the sidewalks along the seawalls. Six viewsheds were identified in the CLTP as contributing features of the cultural landscape (NPS 2018) (**Table 3-2**) (**Figures 3-2 and 4-1**). Two additional viewsheds, Views 7 and 8, were assessed to evaluate the potential for impacts from the proposed pump station. The VIA confirmed that the proposed changes were either not visible in Views 1, 4, 5, 7, and 8, or would not affect the cultural landscape. Views 2, 3, and 6 had negligible changes, but these changes would not affect important characteristics that contribute to the cultural landscape. Short-term impacts would be limited to temporary obstructions associated with construction machinery but would not obstruct or alter any contributing viewsheds after construction (CH2M 2020f).

Therefore, there would be no short-term adverse impacts to the cultural landscape or the contributing features that qualify the property for listing in the NRHP.

Long-Term

The general location of the seawalls would remain the same, except for a 128-LF section of the North Seawall, which would be realigned further into Lake Erie with the addition of fill, and the South Seawall, which would be extended by 80 LF. The seawalls are not historic themselves, and therefore cannot be adversely affected. The seawalls would be replaced with a similar cast concrete design. Step lights would be installed into the repaired seawall, and a 6-foot sidewalk would be installed along the North Seawall to improve pedestrian access and safety. The proposed lights and sidewalk would not affect contributing features of the cultural landscape and are compatible with the design recommendations in the CLTP (NPS 2018). The seawalls would be elevated 12 to 24 inches above the current elevation but would not alter or obstruct any contributing viewshed (CH2M 2020f).

The historic site, the Perry's Victory Memorial structure, and Superintendent's Residence (Men's Dormitory) building would not experience any negative changes in

the long-term. Access to the plazas would remain unchanged. No historic material or design elements will be removed from the historic site. No material or design changes would occur to the Monument structure or the Superintendent's Residence (Men's Dormitory) building. The proposed seawall elevation would provide a beneficial effect to the site because damage caused by stormwater and flooding would be lessened.

No long-term circulation changes would occur along Bayview Avenue, Delaware Avenue, or the trace of Chapman Avenue. The restroom access sidewalk and stairs, sidewalk to the lower plaza stairs, and both sets of stairs to the lower plaza would not be changed. The pedestrian sidewalks, which are adjacent to the existing seawalls but are not contributing, would be removed and replaced. Seating areas along the North and South Seawalls would not conflict the original design or feeling of the site and is compatible with the design recommendations in the CLTP (NPS 2018). The Proposed Action would also have a beneficial effect as interruptions of pedestrian circulation during flood events would be reduced.

No long-term changes to the setting would occur. The contributing features, in particular the trees that mark the general area of the east boundary, would remain in place. The aboveground utility infrastructure would be low in height and is not expected to detract from the landscape quality. All changes in the setting would be minimal and have a similar appearance and orientation to existing conditions.

No long-term changes to small-scale features that contribute to the property, in particular the granite benches and granite urns on the upper plaza, and general location of flagpoles and floodlights, would occur. These features would remain in place and changes to them are not part of the Proposed Action.

Minimal changes to the topography and grading would occur near the seawalls as part of flood mitigation, but these changes would not affect the level topography of the site or the earthen berm around the Memorial plaza, which are contributing features. Contributing features would not be adversely impacted by the Proposed Action. No substantial grade changes would occur on the property, and the existing elevation of the flat areas or earthen berm would remain the same. Any change that may occur would not impact the historic integrity of association, design, feeling, location, setting, or workmanship of the property, and would be restored to preexisting conditions upon completion.

There would be no long-term changes to the manicured lawn, patterns of large tree massing on the east and west boundaries of the historic core, four Norway maple trees, and 15 remaining Austrian pines. The contributing features would not be altered by the Proposed Action. Electrical conduit would be installed, and the stormwater system would be improved, but these buried features would not introduce any long-term changes to vegetation. The site would be restored to the preexisting condition upon completion. The proposed seawall elevation would provide long-term benefits to the site and its contributing features as a result of the reduced by stormwater ponding and flooding.

As demonstrated by the VIA, no historic views or viewsheds would be altered (NPS 2020). Long-term impacts would be limited to the 12- to 24-inch increase in the seawalls and would not obstruct any key viewshed (CH2M 2020f).

Because the Park is designed for visitor use and experience, improvements to the sidewalk, improved lighting, improved small-scale features for trash, and additional benches add to visitor accessibility and enjoyment of the site. These long-term beneficial and appropriate improvements are CLTP treatment recommendations for rehabilitating the cultural landscape (NPS 2018).

Therefore, there would be no adverse impacts to the cultural landscape or the contributing features that qualify the historic property for listing in the NRHP. Any long-term impacts would be beneficial and aligned with the CLTP treatment recommendations for rehabilitation of the Park.

Conclusion

There are no adverse impacts to the cultural landscape. Any change that may occur would be beneficial, and any minimal negative changes would be temporary and reversed to the preexisting condition after completion. Any changes, in particular the proposed sidewalk, seawall lights, and Park furniture, are compatible with design recommendations in the CLTP, and will have no adverse effects on the historic property (NPS 2018). Reduced surface water ponding and flooding would result in a long-term benefit to the site and its contributing features.

4.05 Human Health, Safety, and Use

No Action Alternative

Impacts

Short-Term

The No Action Alternative would represent a continuation of the existing conditions, operations, and maintenance at the Park. Current and ongoing management and maintenance of buildings, structures, walkways, exhibits, site furnishings, and vegetation would continue. Park staff would continue to implement plans and policies to promote safety for all visitors. Park personnel would remain vigilant with visitor safety issues. There would be no addition to lighting, interpretive elements, or an interpretive plaza. No construction activities would occur and no short-term interruptions to visitor use or experience would take place.

As described in Section 4.02, Water Resources and Floodplains, without modifications to the seawalls, the Park would continue to experience flooding and wave overtopping during storm events. Stormwater would continue to backflow from the lake during high water levels and rainfall events, contributing to flooding, creation of sinkholes, and degrading the integrity of significant cultural resources. Therefore, visitors and Park staff would continue to be exposed to hazardous conditions. SH 357 would continue to flood and become impassable. Therefore, the No Action Alternative would continue to have short-term adverse impacts on human health and safety as the No Action Alternative

would be a continuation of existing conditions. Flooding would continue to occur, jeopardizing the Monument and visitor and Park staff safety.

Long-Term

As described in Section 4.02, Water Resources and Floodplains, the frequency and extent of flooding is expected to increase with the continued seawall deterioration. The No Action Alternative could result in the seawalls suffering a sudden or catastrophic structural failure during a 100-year return period event. The existing stormwater system would continue to inadequately drain the Park, contribute to the creation of sinkholes and unsafe conditions and potential undermining of the seawall foundation. As a result of these conditions, it is expected that the likelihood of injuries to people, and damage to Park infrastructure and maintenance equipment would increase. Additional maintenance activities would also be required, including cleanup of spalled concrete, repair of sinkholes, and removal of wreckage and debris. Routine Park maintenance would be interrupted while grounds are flooded. Visitor use of the Park is expected to be limited during these time periods and the visitor experience diminished as ponding water limits movement in the Park, Bayview Avenue, and the existing sidewalk. The sidewalk is also often flooded, which causes vehicles and pedestrians to encounter ponding water in an unsafe manner. Therefore, the No Action Alternative would have a long-term adverse impact on the human health, safety, and Park use.

Conclusion

The implementation of the No Action Alternative would have short-term and long-term adverse impacts to human health, safety, and use, visitor experience due to the limitations of existing interpretations, potential for vehicular and pedestrian encounters, and lack of universal accessibility.

Proposed Action

Impacts

Short-Term

The Proposed Action would include active construction which would occur from the land and Lake Erie. Heavy equipment would be required, including barges, cranes, concrete trucks, and wire saw cutter throughout the construction period. Equipment, materials, and construction offices would be staged in the Peace Garden lawn. Access to the Memorial and Visitor Center is not anticipated to be affected by construction. A Site Health and Safety Plan would be implemented for the project and barriers, fencing, and signs placed to limit visitor and staff access to construction areas and hazards.

Temporary changes to the Visitor Center's two viewsheds, referred to as Views 4 and 6, would occur due to the presence of heavy machinery, and limited access to visitors during construction. In addition, planned temporary lane closures of SH 357 and temporary utility outages would occur. A traffic control plan and certain construction means and methods would be implemented to reduce construction impacts to visitors, including limiting single-lane closures to 6 hours, limiting water shutdowns to 4 hours, limiting electric/phone/cable shutdowns to 2 hours, meeting local noise ordinances, and limiting construction during weekday operating hours. It is expected that the Proposed

Action would have a minor, short-term, negative impact on human health, safety, and Park use during construction.

Long-Term

The Proposed Action would reduce the frequency of flooding and occurrences of unsafe conditions in the Park. Ongoing maintenance would be reduced as sinkholes along the North Seawall would no longer form, and spalled concrete would no longer need to be regularly cleaned up. Reducing the frequency of flooding in the Park and on SH 357 would improve access between the east and west sides of South Bass Island, including that of emergency vehicles. Restoration of the North Seawall—Center section would result in SH 357 no longer being at risk of catastrophic failure. Realignment of a 128-LF section of the North Seawall—Center section would further separate pedestrian walkways from SH 357 and thereby improve pedestrian and vehicular safety. The Proposed Action therefore meets the Project Objective of visitor safety and improvements to operational efficiency.

The Proposed Action would also install new sidewalk along the North Seawall, replace existing sidewalk along the South Seawall, and install step-lighting in the North and South Seawalls. These actions would have a long-term positive impact on human health and safety by improving pedestrian safety and providing new access for visitors. Installation of an interpretive plaza would improve the visitor experience by creating a new focal point directly in front of the Monument with visual aids for visitors to engage with the history of the Park. No obstructions would be introduced within the Visitor Center's viewsheds, referred to as Views 4 and 6, that interrupt the viewshed to the Memorial. New step-lighting elements would be installed into the North Seawall but would not protrude from the wall nor cast excessive upward light. The pump stations and Park furniture would be outside of important viewsheds and would not impede the visitor experience. The Proposed Action would meet the Project Objectives of visitor safety and improving the visitor experience. The Proposed Action would have a long-term positive impact on human health, safety, and use of the Park.

Conclusion

The Proposed Action would result in short-term minor adverse impacts and long-term positive impacts on human health and safety. The proposed walkways would be expanded and built in accordance with site grading and landscape. The lighting systems would help guide pedestrian movement across the pedestrian pathways creating a positive impact on accessibility for Park visitors. The interpretive elements would have a long-term positive impact to visitor use and experience at the Memorial. No negative long-term interruptions would occur, and all interpretive activities would remain uninterrupted after the project is completed. During construction, there would be short-term impacts to human health and safety; however, once the elements are in place, the Proposed Action would have a long-term positive impact as it would improve flood resiliency, protect the Park and the Monument, improve operational efficiency and sustainability by reducing maintenance associated with flooding, improve visitor experience, and enhance overall human health and safety. The specified actions comply with the recommendations found in the CLTP, would have no adverse effects on

the interpretative use of the Park, and are expected to support the well-being of Park staff, visitors, and South Bass Island residents for many years.

Chapter 5 – Agency Consultation, Coordination, and Public Outreach

NPS Director's Order 12 requires NPS to involve the interested and affected public in the NEPA process. This chapter documents the scoping process for this EA and interagency consultation and coordination with the USFWS, OHPO, and other natural and cultural resource agencies. Included in this chapter is the list of recipients who received notice of the project undertaking and the planned stakeholder meetings.

5.01 Internal Scoping Process

An internal kickoff planning and scoping meeting was held virtually on May 14, 2020, with participants from the Park, the NPS Midwest Regional Office, NPS Denver Service Center, and the consultant project team (Jacobs Engineering Group Inc. [Jacobs]). The internal kickoff and subsequent planning meetings focused on preliminary issues and concerns, potential impact topics, project goals and objectives, and planned public outreach.

5.02 Agency Consultation and Coordination

NPS initiated consultation with federal and state agencies in July 2020. Consultation letters and invitations to an interagency meeting were sent to the USFWS, ODNR DOW and Office of Coastal Management, and the Ohio State Historic Preservation Office on July 17, 2020. NPS held a virtual interagency meeting from 1 to 2 p.m. Eastern Standard Time (EST) on July 20, 2020. State and federal agencies in attendance included the U.S. Army Corps of Engineers (USACE)—Buffalo District, the ODNR DOW, ODNR OCMP, the OHPO, the ODOT, and the Ohio Environmental Protection Agency.

NPS received letters from the USFWS (2020) on August 21, 2020, and ODNR DOW (2020b) on October 8, 2020, concurring with special-status species avoidance and minimization measures that will be implemented and species effects determinations. NPS received a letter from ODNR OCMP (2020a) on August 31, 2020, concurring with the Federal Coastal Zone Consistency Determination.

NPS is using the NEPA process to comply with Section 106 of the NHPA and the ACHP's implementing regulations (36 CFR 800.8 (c)). Information relevant to Section 106 is contained in Chapters 3 and 4. Consultation and coordination with OHPO is ongoing and will be completed prior to the final EA. Any consulting parties identified as interested in the Proposed Action will be provided with the opportunity to serve as consulting parties. Federally recognized tribes who may have interest in the project area will also be provided with the opportunity to consult.

5.03 Public Outreach

5.03.1 Public Scoping Summary

On July 20, 2020, NPS issued a press release, opening the public comment period for the project. NPS also notified, contacted, or consulted with agencies, individuals, and organizations during the scoping process. Public comments were accepted through August 21, 2020. Public notification efforts included the following:

- On July 17, 2020, scoping notification letters were distributed to federal and state agencies.
- On July 20, 2020, a press release was distributed to local newspapers, and notification letters were sent to municipalities, elected officials, nongovernmental organizations, adjacent property owners, and other local stakeholders.
- The press release was posted to the Park Planning, Environment, and Public Comment (PEPC) website (NPS 2020a) and the Park social media pages, including Facebook (2020b), and Twitter (2020c).
- Newspapers published the public notices, including those listed below.
 - Put-In-Bay Daily on July 22, 2020 (circulated online)
 - Sandusky Register on July 22, 2020 (circulated in Sandusky Ohio and to online subscribers)
 - Put-In-Bay Gazette on August 1, 2020 (circulated hard copy in Bass Islands, Catawba, Port Clinton, and Marblehead, and to online subscribers)
- Display boards were posted at the Park Visitor Center

Members of the public submitted comments on the project using the following methods:

- Electronically through the NPS PEPC website (NPS 2020a)
- By mailing written comments
- By emailing comments
- Posting on the Park Facebook and Twitter social media pages managed by NPS

During the public scoping comment period, one public meeting was held virtually over Microsoft Teams from 10 to 11:15 a.m. EST on July 29, 2020. The purpose of the public scoping meeting was to describe the proposed project to the public and determine relevant issues that would influence the environmental analysis. The public scoping meeting provided an opportunity for the public to comment and have a conversation about potential environmental concerns, both positive and negative.

NPS received a total of 226 pieces of correspondence (115 unique), yielding 529 comments (118 unique) during the public comment period. The project team read, analyzed, and used the public comments to refine the scope of the EA and define issues to be addressed.

The comments received during public scoping fell into five broad categories:

- Support for the Proposed Action
- Modifications to the Proposed Action
- Shoreline Processes: Erosion at the North Shore
- Shoreline Processes: Beach and Erosion at the South Shore
- Shoreline Processes: Debris at the Public Beach

In total, seven unique comments were received expressing support for the Proposed Action. In total, 20 unique comments were received expressing suggested modifications to the Proposed Action. A total of four comments were received related to the North Shore and the property to the west of the Park. A total of 66 unique comments related to erosion at the Village of Put-in-Bay beach were received. A total of 21 unique comments related to debris accumulation at the Village of Put-in-Bay beach were received.

The majority of comments focused on shoreline processes and suggestions for how to resolve historic and ongoing shoreline process issues. Many public comments stated that they believed the design of the 1970s seawall causes debris to accumulate on the Village of Put-in-Bay public beach and contributes to shoreline erosion, and damage to building foundations along the North Shore. Commenters expressed their belief that a variety of factors contribute to shoreline erosion and debris accumulation at the Village of Put-in-Bay Public Beach—the North and South Seawalls, cyclical variations in weather from year-to-year, and overall rising water levels in Lake Erie—and stated that NPS bears responsibility for some of the problems. Many of the comments requested NPS assistance in addressing shoreline issues adjacent to the Park. Public comments also expressed support for the project as a means of protecting cultural resources and the natural heritage of the area and reducing ongoing maintenance needs. Other comments suggested modifications to the design of the Proposed Action.

Chapter 6 – Preparers, Consultants, and References

6.01 Preparers and Consultants

NPS: Perry's Victory and International Peace Memorial

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EnviroScience

Ryan Schwegman, Marine Services Manager

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As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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