

National Park Service
U.S. Department of the Interior

Apostle Islands National Lakeshore Wenabozho Ominisan
Bayfield, Wisconsin



Create Accessible Ramp at Meyers Beach and New Trail Network at Little Sand Bay

**Apostle Islands National Lakeshore
Wisconsin**



April 2023

Executive Summary

Apostle Islands National Lakeshore -- Wenabozho Ominisan (Park) has prepared an Environmental Assessment (EA) to evaluate the creation of an accessible ramp at Meyers Beach and the construction of a new trail network at Little Sand Bay. This EA has been

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) to provide a decision-making framework as follows: 1) Assess a reasonable range of alternatives to meet the purpose of the proposed action; 2) Evaluate potential issues and impacts to the natural and cultural resources of the Apostle Islands National Lakeshore; and 3) Identify required mitigation measures designed to lessen the degree or extent of any potential adverse environmental impacts.

Two alternatives have been evaluated: Alternative A: No Action; and Alternative B: Create Accessible Ramp at Meyers Beach and New Trail Network at Little Sand Bay (Preferred Action). Under Alternative A, no significant improvements to the visitor experience on the mainland of Apostle Islands National Lakeshore or changes to current management for Meyers Beach and Little Sand Bay would occur. Under Alternative B, the Park would create a new accessible ramp at Meyers Beach and construct a new trail network at Little Sand Bay; ultimately improving the Parks accessibility.

This EA identifies the categories of resources, or Impact Topics, found within the project area that are most likely to be affected by the actions described within the alternatives. These topics have undergone a detailed analysis by agency staff to determine the most likely effects on the resources and the required mitigations to avoid resource damage. The Impact Topics are identified in Section 1.5 of this document, and in Table 1. The preferred action would not result in significant impacts to any resources within Apostle Islands National Lakeshore.

Public Comment

This EA will be available for public comment for 30 days, from (April 12, 2023) to (May 12, 2023), through the NPS Planning, Environment and Public Comment (PEPC) website which provides access to current plans and related documents and is located here: National Park Service - PEPC – Apostle Islands National Lakeshore ([nps.gov](https://www.nps.gov)).

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment including your personal identifying information may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

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Chapter 1

Purpose and Need for Action

1.0 Introduction

Apostle Islands National Lakeshore (APIS or park) is a unit of the National Park Service (NPS) located in Bayfield and Ashland Counties, along the northern shoreline of Wisconsin and within the homelands of the Ojibwe (Anishinaabe) people (Figure 1). The park was established by an act of Congress on September 26, 1970.¹ The park's purpose and significance statements establish assessment criteria for management plans, operational decisions, and project actions. In summary, the park's purpose is to conserve and develop the islands and their related geographic, scenic, and scientific values for the benefit, inspiration, education, recreational use, and enjoyment of the public. The Apostle Islands National Lakeshore is the traditional home of the Ojibwe people and is home to significant geologic features, costal landforms, and remnants of ancient boreal forests.

Apostle Islands National Lakeshore totals 69,372 acres of land and water resources. However the operational area is much greater: the islands are spread out over nearly 290,000 acres of Lake Superior. The park includes a 12-mile-long narrow strip of shoreline on the northwest portion of the Bayfield Peninsula and 21 adjacent islands in Lake Superior. The park boundary, which extends a quarter mile from the mainland and from each island out into the waters of Lake Superior, accounts for 27,323 acres. The Gaylord Nelson Wilderness, which was designated in December 2004, is limited to 18 of the park's islands and accounts for 80 percent of the park's land area. Islands range in size from the 3-acre Gull Island to the 10,054-acre Stockton Island.² The park has a wide range of maritime and land-based natural and cultural resources; these provide numerous opportunities for visitors to experience lighthouses, sandy beaches, rocky sea caves, maritime forests and the vast viewshed of Lake Superior. The mainland unit along the Lake Superior shoreline includes two visitor use areas: Meyers Beach and Little Sand Bay.

Meyers Beach is located on the western end of the Mainland Unit and within Ceded Territory of the Lake Superior Ojibwe. It is the primary kayak launching location to access the Mainland sea caves, the park's most popular kayaking destination. During the visitor season, park rangers provide safety information to park visitors, with a focus on kayakers. Lake Superior has year-round cold water temperatures, frequent high winds, and rapidly changing conditions that require special equipment and caution. Visitor amenities are limited, but include a stairway from the parking lot to the beach; a trailhead to the park's popular Lakeshore Trail, which provides views of the Mainland sea caves; a double vault toilet; and a three-sided shelter that provides real-time information on wave conditions at the sea caves.

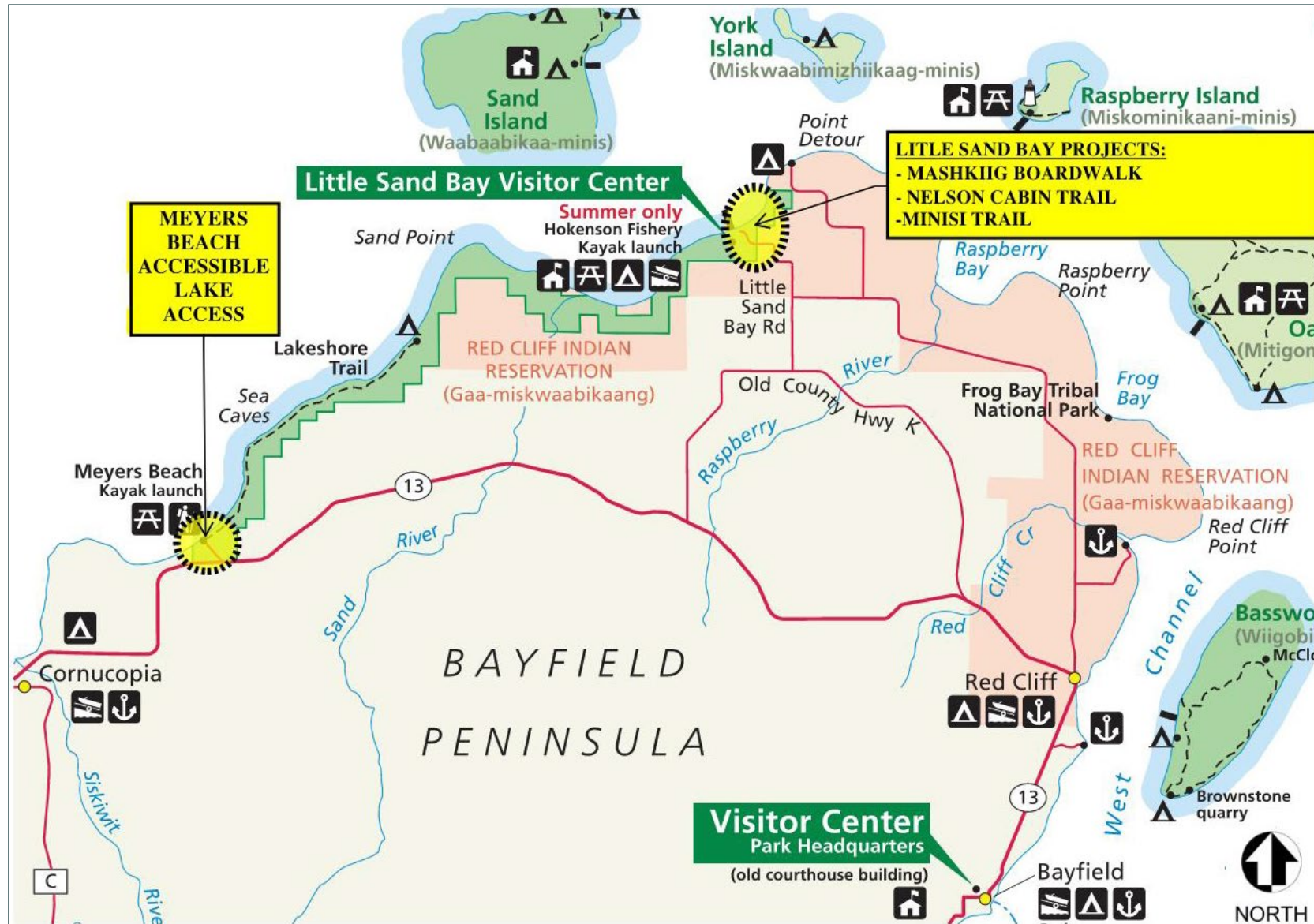
The Little Sand Bay visitor center includes outdoor exhibits, a historic fishery, marina, kayak launch, and park operations. The portion of the park's mainland unit that includes Little Sand Bay is an inholding within the Red Cliff Reservation. The Town of Russell also has an inholding at Little Sand Bay that includes the Little Sand Bay (LSB) Recreation Area. The LSB recreation area features a campground, boat ramp, harbor docking area, picnic area, popular sandy beach, sports field and playground. The park and Town work together towards providing a seamless visitor experience at Little Sand Bay under a Cooperative Management Agreement. Discussions are also underway with Red Cliff to determine if they want to develop a co-stewardship agreement with the NPS for this inholding.

Kayak outfitters with Commercial Use Authorization Permits operate out of both Little Sand Bay and Meyers Beach.

¹ Public Law 91-424

² National Park Service, Resource Stewardship Strategy Summary, 2022

Figure 1: Little Sand Bay



Source: NPS, 202

1.1 Purpose and Need

The purpose of the action is to provide recreational, interpretive, and educational opportunities for visitors of all abilities on the mainland while increasing tribal connections, safety, and resource protection.

The following goals and objectives would be met with the proposed action:

- Create and increase recreational mainland opportunities for visitors of all abilities;
- Increase tribal connections through collaborative trail exhibits, trail connections, joint resource monitoring and educational opportunities.
- Mitigate future human impacts to the wetland and shoreline areas by focusing use onto designated trails
- Increase educational opportunities for youth.
- Increase safety by routing visitor traffic from busy roads to trails.
- Enhance health/fitness opportunities for visitors and local residents of all abilities.

1.2 Project Background

The 2011 Apostle Islands National Lakeshore General Management Plan/Wilderness Management Plan/Environmental Impact Statement (GMP/EIS) identified a need for increased recreational, educational and interpretive opportunities on the mainland. The Mainland is the only park experience for many visitors. There are currently no trail opportunities at Little Sand Bay and access to the beach from the parking lot at Meyers Beach is not accessible. The GMP preferred alternative included recommendations for Architectural Barriers Act (ABA)-compliant access to the shoreline of Meyers Beach and trails and increased educational opportunities at Little Sand Bay. The need for the Proposed Action is also expressed in the park's Accessibility Self Evaluation and Transition Plan, which delineated priority areas for accessibility improvements including Meyers Beach and Little Sand Bay.

The NPS has seen a nation-wide increase in visitation over the last decade. Visitation at APIS has shared that trend, increasing the need for more recreational opportunities. Significant jumps in visitation occurred following the years the ice cave were accessible (2014 and 2015) and post-COVID-19 pandemic. Visitation during the ice caves of 2014 nearly doubled annual visitation to a record high of 290,000; average visitation from 2009-2013 was 163,000. Visitation in 2021 bounced up 25% from the previous 5-year average of 220,000 (2016-2020), bringing annual visitation to nearly 291,000 (without a large ice caves visitation influx). Some of this increase can partially be attributed to the significant rise in the general public's interest in outdoor recreational activities during the COVID pandemic, but the interest in outdoor recreation in general is anticipated to continue for the foreseeable future.

The NPS proposes to expand mainland visitor experiences under one proposed action. The proposed action would include four separate projects at two mainland units along the Lake Superior shoreline in the northwest portion of Bayfield County, Little Sand Bay (LSB) and Meyers Beach.

Little Sand Bay is a heavily trafficked visitor use area currently lacks any trail opportunities and has limited options for visitors of all abilities. Under this alternative, the following would be developed: 1) a fully accessible boardwalk with bilingual Ojibwe exhibits, 2) a coastline trail with island views, and 3) a trail that provides access to a historic site and increases safety by providing an alternative to walking down the road. There would also be increased interpretive and educational opportunities for youth and other visitors and increased tribal connections.

Meyers Beach is located on the west side of the park's Mainland Unit, Meyers Beach is the primary starting point to access the park's Mainland sea caves by water or trail. Access to the beach from the parking lot is limited to a fairly steep stairway. This limits access to many, even though kayaking is a sport that can provide freedom to those with mobility challenges. Under this alternative, an ABA compliant ramp from the parking lot to the beach would be developed to provide access for those of all abilities. This alternative also includes improved stairs and an overlook.

1.3 Project Area

The two project areas, Little Sand Bay and Meyers Beach, are located on the Mainland Unit of APIS. The Mainland Unit, a 12-mile coastal strip, is located in northwestern Wisconsin along the south shore of Lake Superior in Bayfield County. The eastern two-thirds of the park's Mainland Unit is within the Red Cliff reservation and the remaining westernmost third is within Ceded Territory of the Lake Superior Ojibwe. At Little Sand Bay, the Town of Russell owns a parcel that includes the Little Sand Bay Recreation area.

The project area includes two visitor use areas, Little Sand Bay (LSB) and Meyers Beach. This project consists of four (4) components: three (3) in the LSB area, the other at Meyers Beach.

Project 1: Meyers Beach Accessible Lake Access – This project would result in construction of an ABA accessible beach lake access ramp at Meyers Beach day use area. The project would include the removal of the primary stairway along with the construction of two 12-foot-wide stairways to improve access. The new routes to the beach would reduce existing stairway congestion and increase safety for all users. The alternate for design option 3 includes a 20' x 20' overlook that would have a deck height of approximately 10' over the hillside at its highest. This overlook would provide a visual cue for the location of Meyers Beach from the water as well as provide an overlook of Lake Superior. The project area is at the north end of the Meyers Beach parking lot and the limits of disturbance would be 0.732 acres.

Project 2: Mashkiig (wetland) Boardwalk (Mashkiig Boardwalk) – This project would result in construction of a fully accessible, raised wetland boardwalk adjacent to the coastal wetland lagoon at Little Sand Bay. The overall disturbance limits for the boardwalk trail would be approximately 0.448 acres.

Project 3: Nelson Cabin Trail – This project would result in construction of a short earthen trail to a historic Nelson Cabin structure at Little Sand Bay. The trail would extend from part of the Town of Russell campground, through the forested area to Nelson Cabin and continue to the park boundary. The limits of disturbance for the earthen trail would be 0.20 acres.

Project 4: Minisi (island) Overlook Trail (Minisi Overlook Trail) – This project would result in identification of a walking path along the sand beach, until it reaches Allen Road, where an earthen trail would be constructed along the shoreline. The trail would extend to the park's boundary. The park and Red Cliff Band of the Lake Superior Chippewa have discussed the possibility of a connector trail that could extend north of the park boundary to connect Little Sand Bay with Red Cliff's Point Detour campground, if the Red Cliff community decides they are interested in creating that trail connection in the future. The length of the new earthen trail would be approximately 1,600 linear feet.

1.4 Issues and Impact Topics

Impact topics are the resources or issues of concern that could be impacted by the range of alternatives. NPS specialists used federal laws, regulations, and management policies to identify the impact topics retained for further analysis. Identification of impact topics facilitates the analysis of environmental consequences and allow for a standard comparison between alternatives based on the most relevant information. **Table 1** in Appendix A summarizes the topics retained or dismissed and includes the rationale for dismissal.

The seven (7) topics below will be further analyzed in **Chapter 3, Affected Environment and Environmental Consequences**, of this EA:

- Cultural & Historic Resources
- Ethnographic Resources
- Soils and Topography
- Vegetation: Native Plant Communities & Invasive Species
- Viewsheds and Visual Resources
- Visitor Use, Experience, and Safety
- Water Resources: Floodplains and Wetlands
-

Issues related to air quality, fuels management, geology, paleontological resources, soundscape, special status species, wildlife etc. have been dismissed from detailed analysis because they are not central to the proposal or do not assist with making a reasoned choice between alternatives. **Table 1** in Appendix A summarizes the topics retained or dismissed and includes the rationale for dismissal.

Chapter 2 Alternatives

2.0 Introduction

This section describes the alternatives developed. Two alternatives are discussed: the no-action alternative (Alternative A) and the action alternative (Alternative B, the preferred). A no-action alternative is required by the National Environmental Policy Act (NEPA) as a baseline to compare other action alternatives. The action alternative presents a reasonable and feasible approach that meets the purpose of and need for action. Actions considered but dismissed from further consideration are mentioned in Table 2 in Appendix A. This section also identifies the NPS proposed action and lists mitigation measures for the alternatives.

2.1 Alternative A: No Action Alternative

The No Action Alternative would result in no significant improvements to the visitor experience on the mainland of Apostle Islands National Lakeshore (APIS) or changes to current management for Meyers Beach and Little Sand Bay. This alternative would result in the continued use of a non-ABA compliant stairway, with a built footprint of 730 square feet, leading from the Meyers Beach parking lot, down the bluff to the beach. This alternative would continue to limit access for visitors of all abilities to the park's Mainland Unit attractions: exploration of a coastal wetland and forest, kayak launching from Meyers Beach to explore the spectacular sea caves, and the interpretation and education opportunities for visitors at Little Sand Bay. Exposure to historic resources would be limited without improved access to the historic Nelson Cabin. Ultimately, the No Action Alternative does not meet the Purpose and Need for the mainland improvements.

2.2 Alternative B: Action Alternative (preferred)

The Proposed Action Alternative is to enhance, increase, and create recreational opportunities for visitors of all abilities to experience natural, cultural, and historic resources on the mainland of the park. This action comprises of four (4) projects; Meyers Beach Accessible Lake Access, Mashkiig Boardwalk, Nelson Cabin Trail, and Minisi Overlook Trail.

Project 1: Meyers Beach Accessible Lake Access

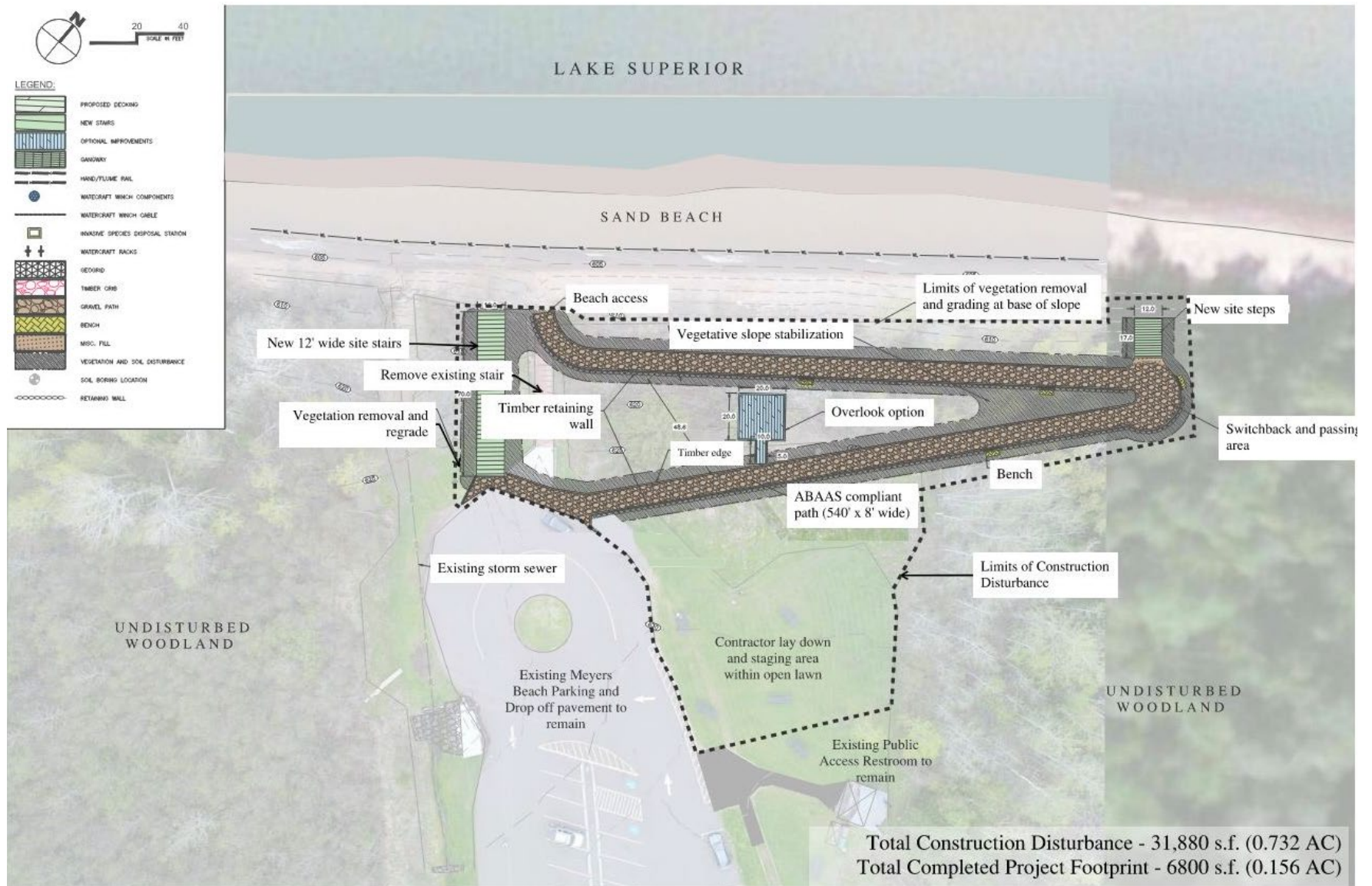
An ABA-compliant ramp, a small overlook, and two new stairways would be constructed to connect the day use area parking lot to the sand beach along the Lake Superior shoreline (see Figure 2). Meyers Beach is the primary launching area for kayaking to the Apostle Islands Mainland sea caves, the most popular kayak destination in the park. This ramp would provide access for visitors of all abilities.

The proposed ABA-compliant ramp would be approximately 520 feet long, with a five percent maximum gradient to descend the 20-foot-high bluff. The completed project's developed footprint, once vegetation is restored, will be approximately 7785 square feet, or 7055 square feet greater than the existing stair footprint. The ramp would be compressed gravel that would allow wheelchair access. An overlook would be constructed near the top of the ramp to provide visitors the opportunity to take in the Lake Superior viewshed without descending to the beach. Each of the two new stairways would be 12 feet wide and extend to the beach from different locations. The limits of disturbance from the parking lot to the beach would be approximately 0.732 acres of the sloping topography, where 0.554 acres of that to be vegetatively restored.

This project will require removal of coniferous trees, deciduous understory, and groundcover growing along the sand bluff along the reach of the ramp beach access. An attempt will be made in design, topographic grading, and construction phases to retain and protect existing vegetation to the greatest extent possible on the bluff. Construction phase site restoration will require revegetation of the slope to mitigate erosion and the view of the pedestrian ramp from the shore and lake. Revegetation will use Great Lakes sourced materials and consist of planting native coniferous tree, deciduous understory, and groundcover species, so, with maturity, the diversity and density will return to the pre-construction condition.

To supplement the vegetation period of germination and establishment, ecologically sensitive temporary erosion control measures(i.e, straw wattles and biodegradable jute netting) will be employed on the embankment. The project would also require removal of the existing stairway. A construction staging area, established in the open turfgrass lawn at the end of the parking lot, could be restored to pre-project conditions upon completion. Any disturbed turf areas will receive decompaction efforts to the soil and will be reseeded with turf cultivars to match the existing landscape. The parking lot would partially be closed during the time of construction. Another option for the construction staging area would be the level picnic area adjacent to the restrooms.

Figure 2 Meyers Beach Accessible Lake Access



Source: NPS, 2023

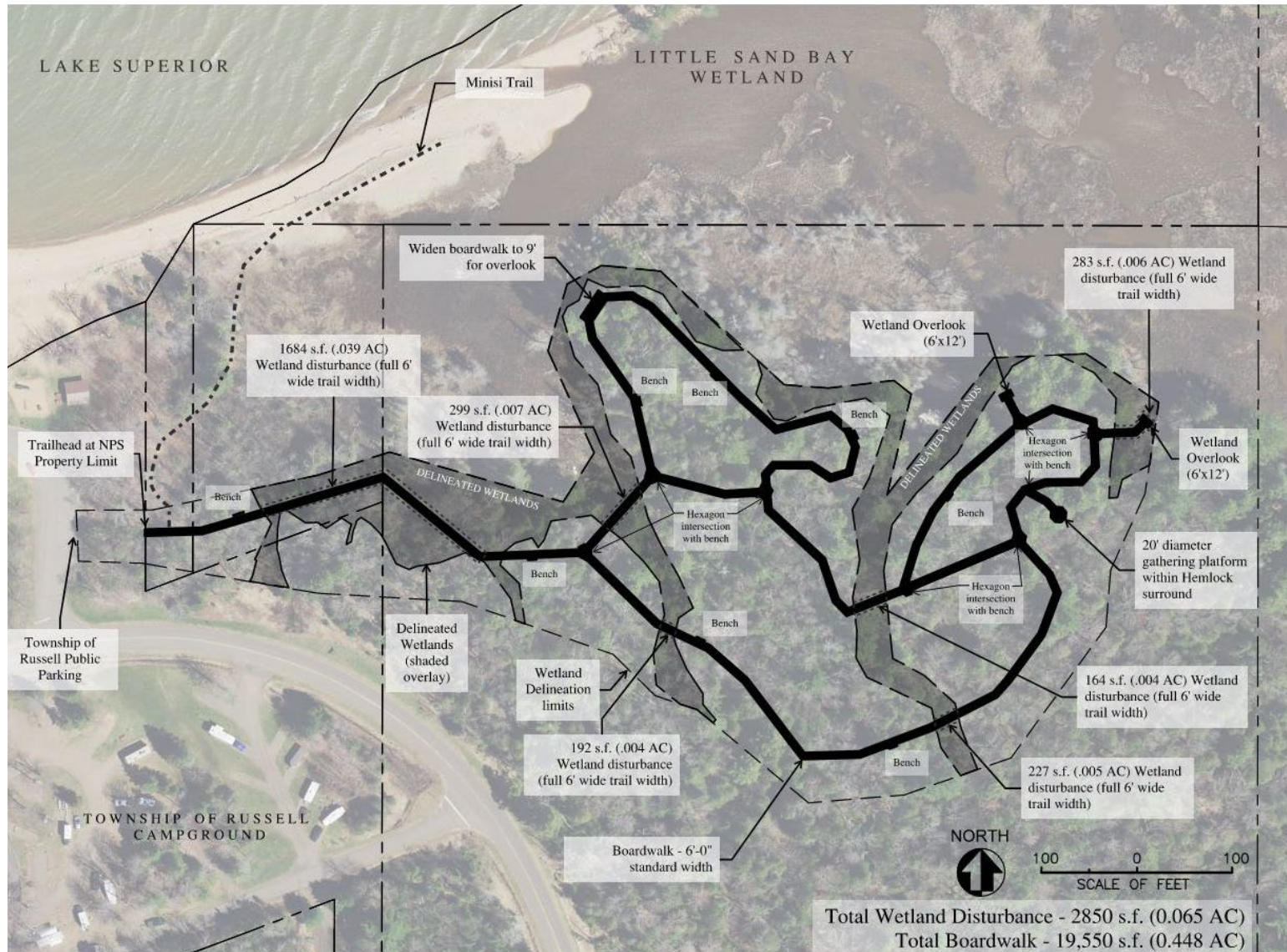
Project 2: Mashkiig Boardwalk

An accessible and sustainable boardwalk would provide visitors of all abilities with the ability to experience views of a beautiful coastal wetland and lagoon complex, mature coastal forest, and scenic wetland vegetation (see Error! Reference source not found.). The boardwalk structure has a 100 year life-span and minimizes ground disturbance. The boardwalk supports sit on-top of 18" x 18" plates, eliminating the need for pilings. The trail, approximately 3200 linear feet, would be constructed in a coastal forest, adjacent to a coastal lagoon and wetland, east of the Little Sand Bay Visitor Center. The trail would be an ABA compliant boardwalk, which would provide an intimate view of the wetlands, unique vegetation and forested area. The raised boardwalk would have a width of six feet, with toe-rails for safety. The segments of the trail that extend into the wetland would be minimized, and the trail would be aligned to minimize the need for tree removal. The limits of disturbance through the forested area would be approximately 0.448 acres which includes approximately 0.065 acres of wetland disturbance specifically. The trail would include interpretative signage in English and Ojibwe language, occasional benches, and a gathering area large enough to accommodate small groups. The project site and project staging area would have signage identifying the area as closed during construction.

For construction of the boardwalk, materials would be staged within the existing NPS asphalt parking lot south of the Little Sand Bay Visitor Center (approximately 700 linear feet from trailhead) and intermittently transferred over to the project area as needed throughout installation progress. The boardwalk itself would serve as means of transporting later segments of structure by manually wheeled cart. A linear installation sequence commencing at trailhead and progressing along its designated alignment in order to retain minimal installation phase disturbance to woodland and wetland.

Temporary signage and caution taping would serve as means of identifying the boardwalk as an active construction project and not accessible for public use. Tools and materials would be secured or moved out of the project area at the end of each work day so as to minimize any risk to the public voluntarily wandering into the woodland project area.

Figure 3 Mashkiig Boardwalk

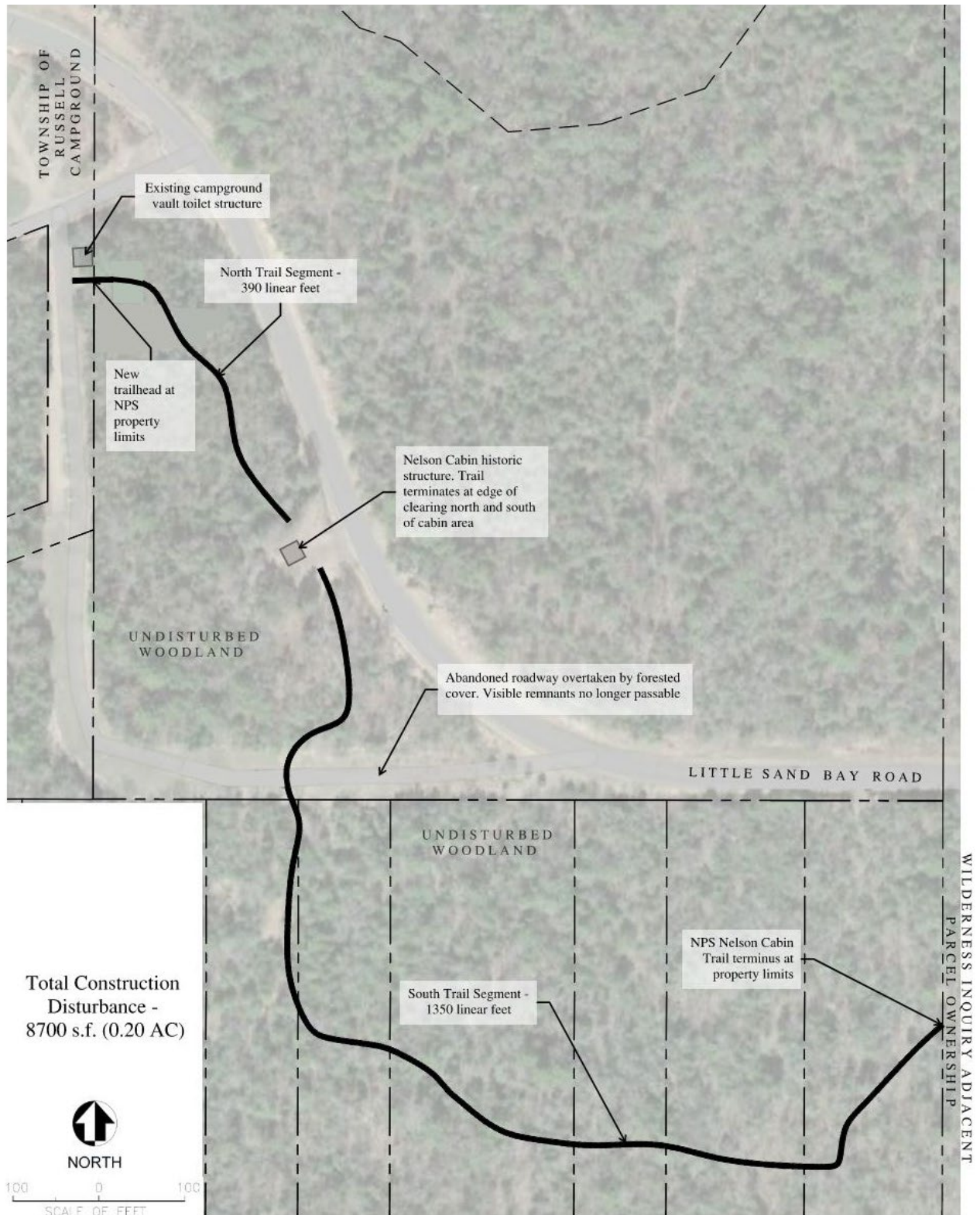


Source: NPS, 2023

Project 3: Nelson Cabin Trail

An earthen trail would be constructed through the forested area southeast of the Apostle Islands National Lakeshore Visitor Center (see Error! Reference source not found.). The trail would extend approximately 1,740 linear feet to the park's boundary. The historic Nelson Cabin would be a focal point along this trail. The trail would consist of an earthen trail tread with a consistent width of 30-inches that would require the removal of some small diameter trees and understory growth. Tree removal would be limited as the trail would be aligned to minimize the number of trees removed. Tree removal, where necessary, would consist of providing a flush cut of the trunk at grade and allow the root system to naturally biodegrade and return organic matter to the soil. The limits of disturbance through the forested area would be approximately 0.20 acres. This trail could potentially be extended south to the Wilderness Inquiry Kayak Base Camp, a local outdoor recreation/education organization's facility—this effort would require coordination with property owners. Like Project 2, this alternative would require minimal site staging with tools and equipment removed from the site at the end of the workday or secured on site so as not to pose a risk to public safety. Trailheads at north and south terminus as well as where entering the Nelson Cabin site greenspace would have signage identifying the area as closed during construction.

Figure 4 Nelson Cabin Trail

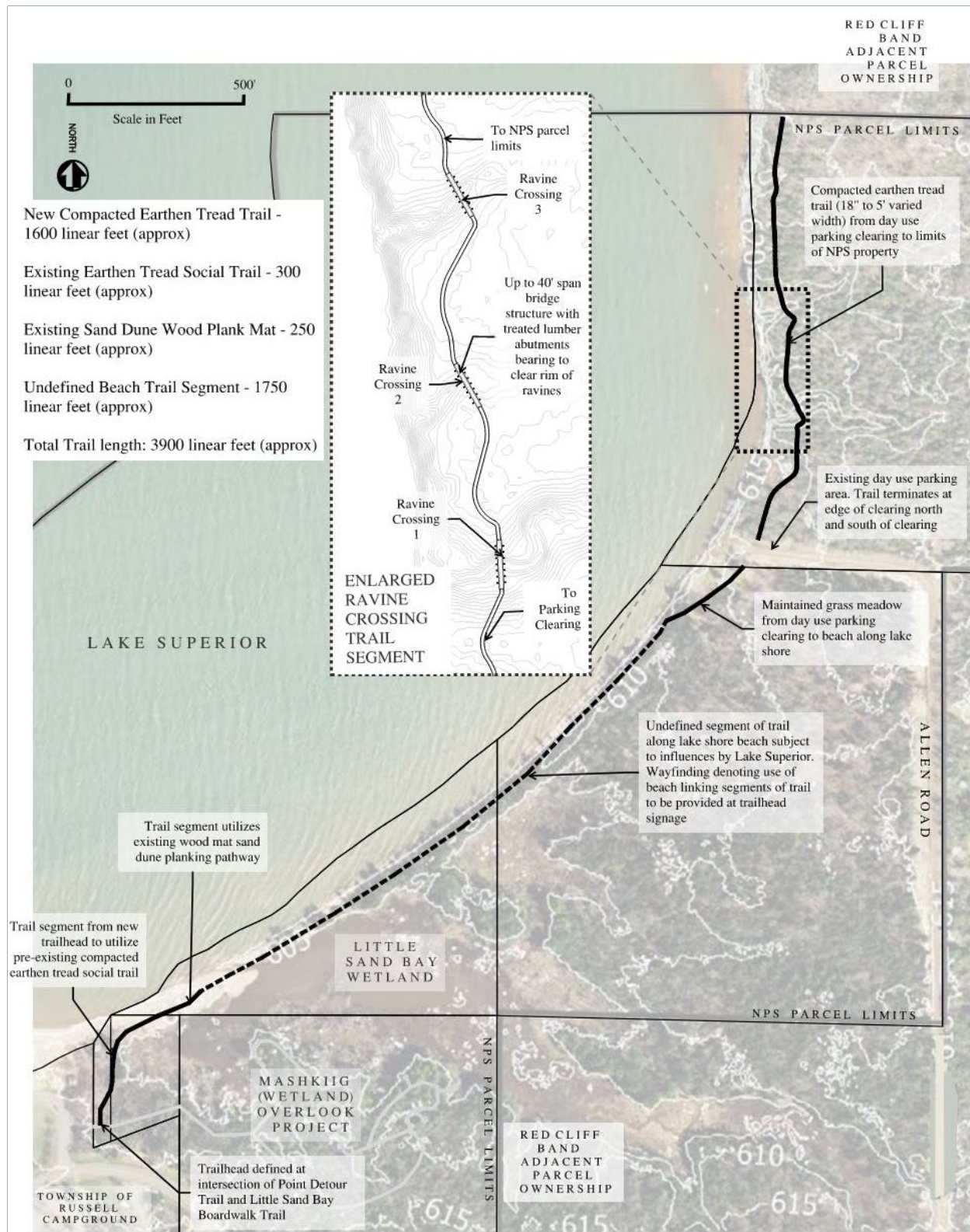


Source: NPS, 2023

Project 4: Minisi Overlook Trail

An earthen trail would begin at the Wetland Boardwalk trailhead, with a spur behind the Town of Russell pavilion, directing hikers to the beach and wooden sand dune pathway (see **Figure 5**). From the pathway, the trail would follow the beach (no formal trail) to Allen Road. An earthen trail would be constructed through the forested area along the coast starting at Allen Road and extending to the park's boundary to the north. The entire trail would be approximately 3,900 linear feet in length and extend approximately 1,750 linear feet along the beach. The trail would exit the beach where Allen Road ends. Allen Road is an unpaved road, with very low volumes of traffic, that ends at the shoreline. From that point, the trail would generally follow an informal trail along the coast to the park's property boundary, a length of approximately 1,247 linear feet. Construction of this trail would also use a similar strategy as the Mashkiig boardwalk and Nelson Cabin trails and would minimize the number of trees removed. The limits of disturbance through the forested area would be approximately 1,600 linear feet based on an earthen trail tread width of 24-inches. In addition to trail construction, there would be crossings of three ravines and associated floodplain that would require short pedestrian bridges. The proposed pedestrian bridges will be of similar detail to existing bridges on the Mainland Trail within the park consisting of structural, decking, and railing components that can be hand carried into the site and assembled by hand held tools without mechanical equipment. Abutments for the pedestrian bridges are intended to be wood timber spread footings placed on grade and keyed into the topography with excavation limited to the extent necessary to provide at grade bearing and restricting the toe of the abutment from shifting. This trail would provide increased recreational, health and exercise opportunities for campers and hikers. As noted in Projects 2 and 3, the project staging area and security measures could be the same to minimize the area affected. Pedestrian bridge construction specifically would require temporary staging of materials adjacent to the trail, carried in and erected in place by hand.

Figure 5 Minisi Overlook Trail



Source: NPS, 2023

2.3 Alternatives Considered but Dismissed

Several alternatives were considered by the NPS but eliminated from further detailed evaluation because they either did not meet the purpose or need, could not be implemented for technical or logistical reasons, or were not consistent with the mission or significance of the park. The alternatives and actions and associated reasons for dismissal are described below.

The Meyers Beach Access Feasibility Study was completed in 2019 and analyzed accessibility options from the Meyers Beach parking lot down a 20-foot bluff to the beach.³ The feasibility study includes three design options. The NPS preferred accessibility option identified in the Feasibility Study is described in the Proposed Action Alternative of this EA. Two design options were also considered but were dismissed because they did not meet the full accessibility requirements.

- Design Option 1 – This design option featured construction of two new stairways leading from the parking lot to the beach. Neither stairway would meet accessibility requirements; however, an overlook was proposed to provide visual accessibility to the beach and Lake Superior viewshed.
- Design Option 2 – This design option did feature construction of a 320-foot ABA-compliant ramp that would provide access to the beach; however, the proposed ramp would be constructed at the maximum slope for accessibility to mitigate impacts to soils and topography of the bluff. Although the ramp would technically meet ABA standards, the slope might create some safety concerns during periods of bad weather, particularly during winter months. An additional concern was the narrower width of the ramps, which could create congestion when numerous visitors are walking up and down the ramp. The safety concerns were the primary reason this design option was dismissed

³ AMI Consulting Engineers, 2019

Chapter 3

Affected Environment and Environmental Consequences

3.0 Introduction

This chapter describes the affected environment, documents existing conditions and analyzes environmental consequences or “impacts” of the no-action alternative and action alternatives for each resource. The resource topics presented in this section correspond to the environmental issues and concerns identified during internal scoping.

In accordance with the Council on Environmental Quality (CEQ) regulations, the environmental consequences analysis includes the direct, indirect, and cumulative impacts (40 CFR 1502.16) of each alternative. The intensity of the impacts is assessed in the context of the Monument’s purpose and significance and any resource-specific context that may be applicable (40 CFR 1508.27). The methods used to assess impacts vary depending on the resource considered, but generally are based on a review of pertinent literature and studies, information provided by on-site experts and other agencies, dialogue with tribal partners, professional judgment, and NPS staff knowledge and insight.

3.1 Affected Environment

The affected environment describes existing conditions for those elements of the natural and cultural environment (including human health and safety and the visitor experience) which could be affected by the actions proposed in the alternatives. These descriptions serve as a baseline for understanding the resources that could be impacted by implementation of the proposed action.

3.2 Impacts

According to the 2022 Council on Environmental Quality (CEQ) revised regulations, “effects or impacts” are changes to the human environment that include reasonably foreseeable (1) direct effects, (2) indirect effects, and (3) cumulative effects [40 CFR §1508.1(g)].

Agencies consider the potentially affected environment and degree of effects to determine the significance of an action’s impacts. The degree of effects is assessed in the context of the Monument’s purpose and significance and any resource-specific context that may be applicable. When assessing the degree of effects, agencies consider:

- Both short (during construction and rehabilitation)- and long-term (post construction & rehabilitation) effects.
- Both beneficial and adverse effects.
- Effects on public health and safety.
- Effects that would violate Federal, State, Tribal, or local law protecting the environment. [40 CFR § 1501.3(b)]
-

None of the alternatives analyzed in this EA would violate any federal, state, tribal, or local laws that protect the environment.

3.3 Cumulative Impacts Methodology

In accordance with the CEQ revised regulations, this EA also considers cumulative impacts, “which are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other actions” [(§1508.1(g)(3)]. Cumulative impacts have been addressed in this EA by resource and are considered for each alternative.

3.4 Trends and Reasonably Foreseeable Planned Actions

Climate Related Trends

The park lies within and along the shores of Lake Superior and this complicates how effects of climate change manifest (see the park climate change vulnerability assessment, Handler, et al., 2020 for more detail). The various impacts most relevant to the mainland derive primarily from increasing temperatures and storms. Lake Superior is one of the fastest warming lakes globally, with the water warming faster than the air above⁴. A change in the temperature gradient between the two zones has caused increased windspeeds over the lake at a rate of 5% per decade since the mid-1980s. This results in increasing wave heights. Warmer water temperature during the winter causes decreased ice cover.

Research suggests that thunderstorms may also increase because of greater amounts of water vapor in lower levels of the atmosphere. This is particularly true in the Midwest. The park (including the Mainland Unit) has experienced several impacts from significant waves, flooding, and winds. These include erosion to shorelines and sandspits, impacts to ground and forest vegetation, and damage to infrastructure (docks, boardwalks, trails, buildings, etc.). Periods of high-water levels have magnified shoreline impacts. Both temperature increases and storminess are predicted to continue to worsen over time.

Visitor Use Related Trends

In general, there has been a relatively consistent increase in annual visitation at the park over the past 40 years; however, significant jumps in visitation occurred following years the ice caves were accessible (2014 and 2015) and post-pandemic. Visitation during the ice caves of 2014 nearly doubled annual visitation to a record high of 290,000; average visitation from 2009-2013 was 163,000. Visitation in 2021 bounced up 25% from the previous 5-year average of 220,000 (2016-2020), bringing annual visitation to nearly 291,000 (without a large ice caves visitation influx). It is anticipated that these increases will continue and expand due to the significant rise in the general public's interest in outdoor recreational activities during the COVID pandemic. Climate researchers have found a historical relationship between mean monthly air temperatures and visitation at national parks (higher temperatures relate to more visitation). Projections for the middle of this century are that Apostle Islands National Lakeshore may have 22%–65% more visitors annually. In addition, the length of the peak visitation season may increase by 18–46 days.

The Apostle Islands National Lakeshore GMP/EIS recommended additional educational/interpretive resources should be available for visitors and additional experiences should be provided on the mainland for visitors that may not desire or do not have the ability to kayak, canoe, or take tourist boats out to the islands. The Proposed Action would provide these additional visitor resources and expand access for those of all abilities. The impacts of proposed and reasonably foreseeable planned actions would result in beneficial effects to visitors parkwide.

⁴ Austin and Coleman, Lake Superior summer water temperatures are increasing more rapidly than regional air temperatures: A positive ice-albedo feedback. 2007

Past Projects

Little Sand Bay Visitor Center – The Little Sand Bay Visitor Center replacement project was completed in 2020. The building housing the new visitor center is smaller and more energy efficient (meeting the LEED silver standard) and includes outdoor exhibits that are available for visitors year-round, 24/7. The new center was constructed in approximately the same footprint within a previously disturbed area. There were no unmitigated impacts.

Lakeshore Trail Improvements (at Meyers Beach) – This project improved safety, addressed erosion issues, and improved the overall existing trail for visitors. No new construction or alignment was included, rather general maintenance of the existing trail was performed. There were no unmitigated impacts associated with the project.

Present Projects

Hokenson Dock Replacement – The historic Hokenson Dock was partially destroyed during a large storm in 2017. The project included replacing the dock and moving the historic herring shed back on the new dock as it had been temporarily re-located onto the shore following the storm damage. This effort will retain the historic aesthetic of the cultural landscape and improve visitor use/enjoyment. The project is nearly complete as of December 2022. Unmitigated impacts are not expected.

Reasonably Foreseeable Future Projects

Rehabilitation of the Little Sand Bay Marina – This project is proposed to stay within the current footprint/disturbed area of the current Little Sand Bay Marina and improve the conditions of the existing marina.

Red Cliff Band Point Detour Trail Extension – The Minisi Overlook Trail will extend north from the trailhead at Little Sand Bay and follow the sandy shore until it reaches Allen Road. At that point the trail will extend into the forest and parallel the Lake Superior shoreline to the park boundary to the north, following an old road-bed. The park and Red Cliff Band of the Lake Superior Chippewa have discussed the possibility of a connector trail that could extend north of the park boundary to connect Little Sand Bay with Red Cliff's Point Detour campground, if the Red Cliff community decides they are interested in creating that trail connection in the future.

Historic Nelson Cabin Trail and Wilderness Inquiry Kayak Base Camp Extension – The Nelson Cabin Trail would begin at a trailhead behind a tent camping-only section of the Town of Russell campground. NPS land is immediately east of the campsites. The trail would travel through a forested area to the Historic Nelson Cabin and continue beyond the cabin to terminate at the park parcel limits. The adjacent landowner, Wilderness Inquiry intends to continue with a private trail section that would connect to Wilderness Inquiry's base camp to create a safer, off-road alternative for pedestrians walking to Little Sand Bay.

3.5 Cultural and Historic Resources

Affected Environment

This section covers the impacts to Historic Structures, Cultural Landscapes and Archeological Resources within each of the four project sites.

Project 1. Meyers Beach Accessible Lake Access

Historic Structures and Cultural Landscape

There are no historic structures or cultural landscapes at Meyers Beach. A historic logging camp site slightly overlaps with the project area of Meyers Beach; however, no structures exist from that logging camp and no cultural resources have been recovered from previous investigations of that site. The NPS Midwest Archaeological Center (MWAC) archeologists conducting the June 2022 survey at Meyers Beach did not discover any debris or historic artifacts associated with the former logging camp site.⁵

Archeological Resources

No archeological resources were discovered at the Meyers Beach project area during the June 2022 archeological survey conducted by the NPS MWAC. Six shovel tests were completed in the area at the top of the bluff and one was on the steep embankment. A pedestrian survey of the steep embankment and the beach at the bottom of the bluff was also conducted. Report results concluded that additional archeological work was not needed unless further testing is recommended during the Section 106 compliance process.⁶

Project 2: Mashkiig Boardwalk

Historic Structures and Cultural Landscape

There are no historic structures or cultural landscapes within the limits of disturbance of the Mashkiig Boardwalk.

Archeological Resources

Two NPS MWAC archeological surveys were conducted, one in June the other in October/November 2022. The June 2022 archeological survey revealed no subsurface resources, however the second survey revealed three positive results, all close proximity to each other. The proximity of three positive shovel tests resulted in determination of a small pre-contact site at that location. Three additional shovel tests along the proposed trail resulted in two negative tests, with one undetermined due to water infiltration. The small pre-contact archeological site will be avoided by a slight (approximately 7 meter) adjustment to the trail alignment.

⁵ NPS, Trip Report, Section 106 Inventories at Little Sand Bay and Meyer's Beach. Apostle Islands National Lakeshore. June 2022

⁶ NPS, Trip Report, Section 106 Inventories at Little Sand Bay and Meyer's Beach. Apostle Islands National Lakeshore. June 2022

Project 3: Nelson Cabin Trail

Historic Structures and Cultural Landscape

Nelson Cabin is the only historic structure in this project area, and would be accessed by the proposed Nelson Cabin Trail. The small cabin was constructed by John Nelson during the late 1930s and was utilized as his personal residence while he worked at the Hokenson family fishery. Although the cabin was constructed in the late 1930s, Mr. Nelson did not use power tools in his work. He cut and shaped each log with simple tools including an axe and plane, but he was still able to incorporate unique details such as dovetail joints at the corners of each wall. The interior of the historic cabin is not open to the public and there are no actions proposed that would allow visitor access to the interior of the cabin. A wayside exhibit in the vehicle pull-off area interprets the cabin for visitors. It is anticipated that the proposed hiking trail could result in an increase of up to 500 visitors per year to the cabin.

Archeological Resources

The June 2022 NPS MWAC archeological survey conducted for the proposed Nelson Cabin Trail resulted in one positive result. The survey included forty-three shovel test pits. Forty-two of the test pits revealed negative results, the one positive result was described as mid-20th century material (window glass); this material was left in place. It was determined by NPS MWAC archeologists that no significant materials or features were identified along the proposed Nelson Cabin trail alignment and no additional testing would be required unless there was a realignment of the proposed trail.⁷

Project 4: Minisi Overlook Trail

Historic Structures and Cultural Landscape

There are no historic structures or cultural landscapes within the limits of disturbance along the proposed Minisi Overlook Trail.

Archeological Resources

The June 2022 survey of the Minisi Overlook Trail by NPS MWAC archeologists was conducted and resulted in two positive tests. The shovel test survey took place through the forested area from Allen Road, north to the park boundary, and a pedestrian inventory of the path occurred along the sandy beach between Little Sand Bay and Allen Road. The pedestrian inventory along the sandy shoreline did not reveal significant materials or features.⁸ Thirty shovel tests were conducted between Allen Road and the park boundary. Most of the shovel tests were dug at 15-meter intervals; however, the proposed trail alignment would cross three small ravines. The testing intervals were reduced to 10 meters in proximity to the ravines to account for potential construction requirements of ravine crossings. Of the 30 test pits, only two shovel tests were positive. The NPS MWAC archeologists determined that although there was a positive test at one site (a 20th century fence staple), no significant materials or features were identified, but that additional testing would be warranted for the second pit that had a positive test (pre-contact lithic debitage). A second survey, conducted by NPS MWAC at the one test pit identified in the June 2022 survey, detected additional debitage and resulted in categorizing the site as unidentified pre-contact. The recommendation from the survey report was no further investigation and leave the site undisturbed. The site will be avoided by a seven-meter adjustment to the proposed trail alignment.⁹

⁷ NPS, Trip Report, Section 106 Inventories at Little Sand Bay and Meyer's Beach. Apostle Islands National Lakeshore. June 2022

⁸ NPS, Trip Report, Section 106 Inventories at Little Sand Bay and Meyer's Beach. Apostle Islands National Lakeshore. June 2022

⁹ NPS, Trip to Conduct Archeological Inventory at Apostle Islands National Lakeshore, Wisconsin from October 30th to November 3rd, 2022. December 2022.

Environmental Consequences

Alternative A: No Action Alternative

The no action alternative would result in no change to the current conditions as outlined in Section 3.6.1 Affected Environment. No trails, ABA-compliant ramp, stairs or overlook would be constructed thus no change to the cultural and historic resources existing conditions. Further, the Wisconsin State Historic Preservation Office (SHPO) was contacted via email requesting comments on the actions and a concurrence on a final of No Effect on historic properties. The SHPO responded via an email dated March 8, 2023 concurring with the determination of No Effect on historic properties.

Cumulative Impacts

Impacts under the No Action Alternative, when combined with past, present and reasonably future actions and trends would continue to be adverse, but would likely not increase by a measurable degree as no ground disturbance or construction would occur.

Alternative B: Action Alternative

Project 1. Meyers Beach Accessible Lake Access

Alternative B, Project 1 proposes the construction of the ABA-compliant ramp, stairways and overlook between the day use area parking lot and the beach as described in Section 2.3. A historic logging camp site slightly overlaps with the project area; however, no structures exist from that logging camp and no cultural resources have been recovered from previous investigations of that site. The NPS Midwest Archaeological Center (MWAC) archeologists conducting the June 2022 survey at Meyers Beach did not discover any debris or historic artifacts associated with the former logging camp site.¹⁰ Therefore, this portion of the action alternative would result in no impacts and no effect to cultural and historic resources.

Project 2: Mashkiig Boardwalk

Alternative B, Project 2 proposes to construction an ADA/ABA accessible boardwalk and overlook, as described in Section 2.3. No historic structures or cultural landscapes were identified within the limits of disturbance however, the June 2022 archeological survey did identify a small archeological site within the proposed area of effect. Impacts to the identified site will be avoided by a minor adjustment to the trail alignment. Therefore, construction of the boardwalk would result in no impacts and no adverse effect to cultural or historic resources.

Project 3: Nelson Cabin Trail

Alternative B, Project 3 proposes to construct an earthen trail through the forested area southeast of the Parks Little Sand Bay Visitor Center as describes in Section 2.3. Nelson Cabin is the only historic structure within the Are of Potential Effect (APE) of this proposed project. The construction of the trail would likely increase visitation to the historic structure however the use of the structure would not change from the current condition described above in the affected environment. The impacts to the historic resource would likely be minor, with no adverse effect.

The proposed trail would result in minor ground disturbance associated with construction. The archeological survey identified no significant materials or features along the proposed Nelson Cabin trail alignment. Therefore, the proposed trail would have no impacts to archeological sites, resulting in no adverse effect.

¹⁰ NPS, Trip Report, Section 106 Inventories at Little Sand Bay and Meyer's Beach. Apostle Islands National Lakeshore. June 2022

Project 4: Minisi Overlook Trail

Alternative B, Project 4 proposes to construct an earthen trail through the forested area along the coast of Lake Superior starting at Allen Road and extending to the park's boundary to the north. Minor ground disturbance associated with trail construction through the forested area north of Allen Road and bridging three ravine crossings would involve low impact construction to mitigate ground disturbance. No cultural landscapes or historic structures are located within the project area, therefore there is no impact to those resources. The single archeological site identified by the NPS MWAC archeologists would be avoided through the realignment of the trail. Therefore, there would be no impacts to archeological sites, resulting in no adverse effect.

Cumulative Impacts

When combined with past, present, and reasonably foreseeable future actions and trends, Alternative B Project 3, Nelson Cabin Trail could result in additional minor long-term impacts to the historic structure due to the projected increase in visitation which could bring more awareness to the structure. No additional impacts to cultural and or historic resources are anticipated with Alternative B because the resources either do not exist in those locations, were determined to have no significance, or are being mitigated through avoidance. The construction of the trails provides for improved access through the park while guiding visitors away from sensitive cultural and historic resources.

3.6 Ethnographic Resources

Affected Environment

National Park Service *Management Policies*, 2006, defines ethnographic resources as "...cultural and natural features of a park that are of time-honored significance to traditionally associated peoples. These peoples are the contemporary park neighbors and ethnic or occupational communities that have been associated with a park for two or more generations (40 years), and whose interests in the park's resources began prior to the park's establishment. Living peoples of many cultural backgrounds—American Indians, African Americans, Hispanics, Chinese Americans, Euro-Americans, and farmers, ranchers, and fishermen—may have a traditional association with a particular park."¹¹

What is now called Bayfield Peninsula and the nearby islands to the north have been inhabited for thousands of years and, according to Ojibwe oral and written history, the Ojibwe people were the original inhabitants of the region. Only in the past 100+ years have Europeans and others began to populate the region to extract resources including logging, hunting and fishing. The Ojibwe people remain in the region and "park neighbors" include both the Red Cliff and Bad River Bands of Lake Superior Chippewa (Ojibwe). A portion of the park's mainland unit is within the Red Cliff Reservation. The balance of the park is included within lands ceded to the United States government in the Treaty of 1842 with the Lake Superior Ojibwe. In these ceded lands, Ojibwe tribes kept their reserved treaty rights to gather, hunt, harvest, fish, and trap.

Environmental Consequences

Alternative A: No Action Alternative

The no action alternative would result in no change to the current conditions as outlined in Section 3.7.1 Affected Environment. No trail construction in the Little Sand Bay area or construction of the ABA-compliant ramp, stairs or overlook at Meyers Beach. Because there would be no construction activities, there would be no ground disturbance, which would result in a long-term beneficial impact to ethnographic resources and no adverse effect.

Cumulative Impacts

Impacts to ethnographic resources under the No Action Alternative, when combined with past, present and reasonably future actions and trends would likely not increase by a measurable degree as no ground disturbance or construction would occur.

Alternative B: Action Alternative

Alternative B would construct Projects 1-4 as described in Section 2.2. The NPS has collaborated with the Red Cliff and Bad River Bands of the Lake Superior Chippewa and other key stakeholders to develop a strategy for managing resources of the park. The 2022 APIS Resource Stewardship Strategy set priorities for cultural and natural resources management, which can be revised through consultation, as priority activities are accomplished, or conditions change.¹² The Little Sand Bay is an inholding within the Red Cliff Reservation.

Preliminary consultation regarding the proposed action addressed in this EA has begun with the Red Cliff Band of the Lake Superior Chippewa. This consultation has identified the potential for ethnographic resources with significance to the tribes within the project areas of the proposed action. Further consultation with the tribes and any concerns expressed by the THPO would be

¹¹ National Park Service Management Policies 2006.

¹² NPS, Resource Stewardship Strategy Summary. Apostle Islands National Lakeshore, Wisconsin. September 2022.

addressed prior to final project design and construction. NPS is in the process of completing Section 106 consultation, which includes the THPO of the Red Cliff Band of the Lake Superior Chippewa and the Wisconsin SHPO. Tribal representatives would be invited to all public meetings and in-person meetings will also be scheduled on an as needed basis. This coordination and consultation will be conducted and neither alternative would preclude this ongoing relationship. Through coordination with the tribes, signs and exhibits used on the trails will be bilingual (Ojibwemowin and English).

No ethnographic resources were identified at Meyers Beach and resources found in the area of the three trail projects are being avoided. The construction of the trails provides for improved access through the park while guiding visitors away from sensitive cultural and historic resources.

Alternative B could result in a long-term beneficial impact to ethnographic resources by providing visitors knowledge on the local Tribal culture and history through collaboration with local Tribal communities.

Cumulative Impacts

Impacts to ethnographic resources under Alternative B, when combined with past, present and reasonably future actions and trends would likely remain the same.

3.7 Soils and Topography

Affected Environment

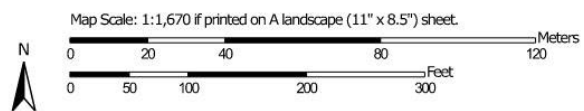
Project 1. Meyers Beach Accessible Lake Access

The Meyers Beach area is composed of two primary soil types, as designated by the Natural Resource Conservation Service (NRCS) and shown in **Figure 6**. The areas located near the beach and within the ravines are considered “Udorthents, ravines and escarpments, 25 to 60 percent slopes.” This is largely loamy soils within ravines and steep slope/cliffs. The area further inland is considered “Portwing-Herbster complex, 0 to 6 percent slopes,” which are soils comprised of clayey till over stratified loamy and sandy lacustrine deposits.

Project 2, 3 & 4: Little Sand Bay Area

The Little Sand Bay Area—includes Projects 2, 3, and 4—is comprised largely of “Kellogg-Allendale-Ashwabab complex, 2 to 6 percent slopes” and “Portwing-Herbster complex, 0 to 6 percent slopes.” Kellogg-Allendale-Ashwabab is made of sandy outwash or lacustrine with underlying clayey lacustrine deposits. As discussed previously, Portwing-Herbster complex, are soils comprised of clayey till over stratified loamy and sandy lacustrine deposits. Additional soil types of lesser significance are also found within the area, as shown in **Figure 7**.

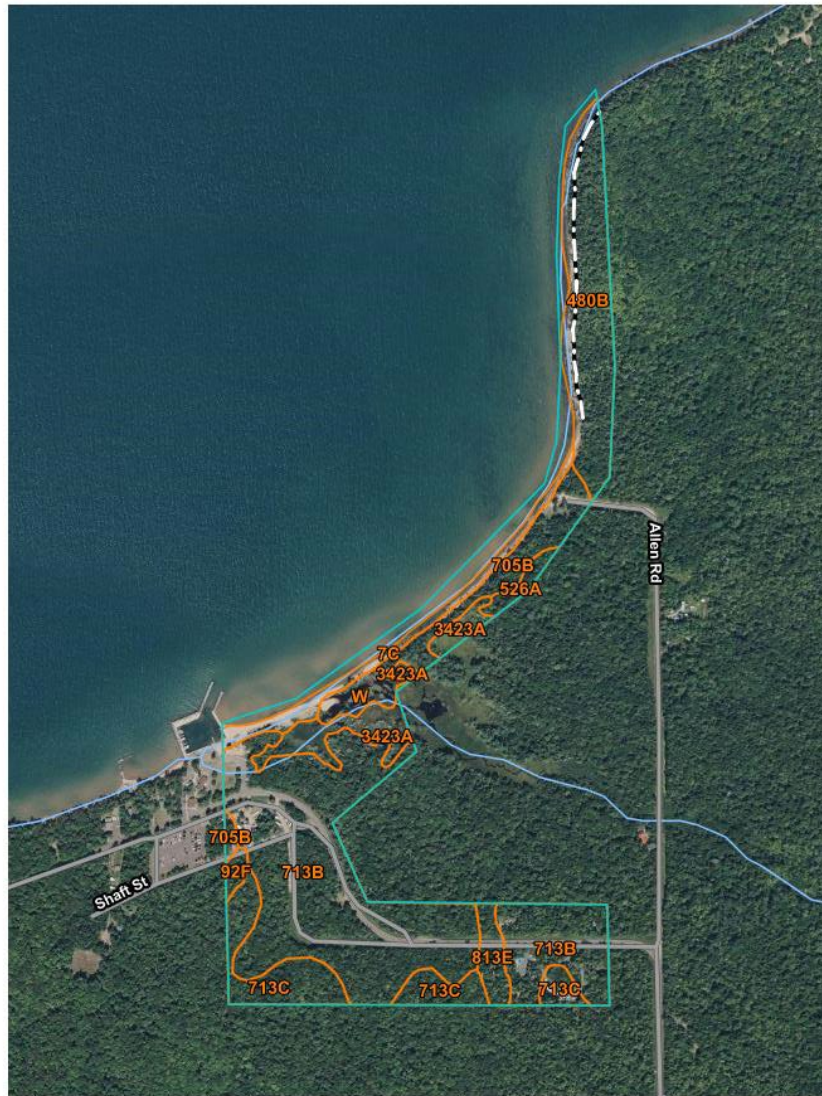
Figure 6 Meyers Beach Soil Map



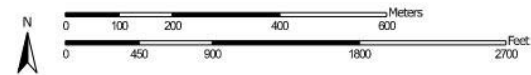
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
92F	Udorthents, ravines and escarpments, 25 to 60 percent slopes	2.3	50.6%
480B	Portwing-Herbster complex, 0 to 6 percent slopes	2.3	49.3%
Totals for Area of Interest		4.6	100.0%

Source: NRCS, 2023

Figure 7 Little Sand Bay Soil Map



Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7C	Beaches, 2 to 12 percent slopes	3.9	4.3%
92F	Udorthents, ravines and escarpments, 25 to 60 percent slopes	0.7	0.7%
480B	Portwing-Herbster complex, 0 to 6 percent slopes	13.7	15.0%
526A	Flink sand, 0 to 3 percent slopes	1.1	1.2%
705B	Cublake-Croswell-Ashwabay complex, 0 to 6 percent slopes	5.9	6.5%
713B	Kellogg-Allendale-Ashwabay complex, 2 to 6 percent slopes	40.6	44.6%
713C	Kellogg-Allendale-Ashwabay complex, 6 to 15 percent slopes	8.7	9.6%
813E	Manistee-Kellogg-Ashwabay complex, 15 to 45 percent slopes	2.1	2.3%
3423A	Rifle peat, 0 to 1 percent slopes	5.6	6.1%
W	Water	2.1	2.3%
Totals for Area of Interest		91.1	100.0%



Source: NRCS,

Environmental Consequences

Alternative A: No Action Alternative

The No Action Alternative would not result in soil disturbance. The quality and condition of soils within the Meyers Beach Accessible Lake Access, the Mashkiig Boardwalk, Nelson Cabin Trail, and Minisi Overlook Trail project areas would not be impacted by trail construction; however, they may be impacted by increased informal trailing due to higher levels of visitation.

Cumulative Impacts

When combined with past, present, and reasonably foreseeable future actions and trends, the no action alternative would have negligible to no short or long-term impact on the soils resources beyond what is currently existing, as no ground disturbance or construction would occur.

Alternative B: Action Alternative

Project 1: Meyers Beach Accessible Lake Access

Under this proposed project, the construction of the accessible lake access boardwalk and staircases would result in disturbance to soils within the project area. Temporary impacts to soils would result from construction of a 12-foot-wide gravel walking surface with timber borders and retaining walls. To minimize erosion and impacts to the slope, vegetation removal would be minimized, and slope stabilization techniques would be used during and following construction. Following construction, the slope would be revegetated with native plants to increase slope stabilization.

Project 2: Mashkiig Boardwalk (Accessible)

Construction of the new boardwalk would primarily occur on well-drained soils with minimal vegetation clearing and ground disturbance. A wetland delineation and soil investigation was conducted to confirm soil-bearing capacity and drainage characteristics; the design of the boardwalk took these results into consideration when determining the final boardwalk location. Boardwalk construction techniques minimize ground disturbance. The boardwalk would not require pilings, and would sit on 18" x 18" footings, minimizing impact to soils. The topography of the area will not change as the boardwalk will be built to match the existing topography. The boardwalk would be constructed by NPS staff by hand without use of heavy equipment, further reducing impacts to vegetation.

Project 3: Nelson Cabin Trail

Under this proposed project, soil disturbance would be negligible from the creation of the earthen trail. The design of the trail would not result in structural changes to the topography of the area or natural movement of soil. Once constructed and utilized, compaction of the trail would occur; however, it would be minimal when considering the overall width of the trail (2 feet with 6 feet of vegetation clearing).

Project 4: Minisi Overlook Trail

The construction of the Minisi Overlook Trail would cause minor soil disturbance within the limits of construction. Trail tread would be 2 feet with 6 feet of vegetation clearing. There would be short-term construction related impacts to soils in the areas surrounding trail and within the forested area from the creation of the trail, water bars and installation of three small bridges at ravine crossings. The design of the trail would not result in structural changes to the topography of the area or natural movement of soil as any built components would simply be placed on top of the ground with limited disturbance. Once constructed and utilized, minimal compaction of the trail would occur.

Cumulative Impacts

When combined with past, present, and reasonably foreseeable future actions and trends, Alternative B would result in minimal long-term impacts to the natural soils and topography of the project areas. In general, construction activities and compaction would occur in all areas where the earthen trails will be constructed; however, the impacts would be minimal to soils and topography. To the extent possible, ground disturbance will be limited.

3.8 Vegetation: Native Plant Communities and Invasive Species

Affected Environment

Native Plant Communities

APIS is at the continental limits of the hemlock white pine-northern hardwood forest and the southern edge of the boreal forest. The area is on or near the ecotones of several continental biomes. In combination, these features result in a unique ecosystems that include diverse and rare plant communities. Because the park is in the extreme northern part of Wisconsin, its habitats are not found elsewhere in the state. Many of the rare plants in the park are arctic relics such as butterwort and arctic primrose.¹³ A vegetation survey of the proposed trail routes was conducted. No Federal or Wisconsin state-listed Endangered or Threatened species were located along any of the proposed trail routes.¹⁴

Project 1: Meyers Beach Accessible Lake Access

The land surrounding Meyers Beach day use area is a mix of deciduous and coniferous trees that are typical of the region. The project/visitor use area includes a maintained lawn with a bluff that joins the parking area with the beach. The bluff is vegetated with trees and shrubs. The area surrounding the visitor use area is forested with a mix of boreal conifer (white spruce [*Picea glauca*], black spruce [*P. mariana*], and balsam fir [*Abies balsamea*]) and hardwood species (maple-birch). On the southwest side of the lawn is a low area filled with speckled alder that extends to Saxine Creek. The slope is comprised of the Udorthent soil type, which can be shallow, erodible, and nutrient poor. Adaptable vegetation species are most successful in these types of sites that also include strong winds. Both trees (paper birch and balsam fir), and shrubs (speckled alder, and dogwood which species???) are present. Exotic shrubs like honeysuckle (*Lonicera* spp.) have invaded and been removed in past years. A sand beach is at the bottom of the stairs and its width changes with the lake level.

Project 2: Mashkiig Boardwalk (Accessible)

The Little Sand Bay area includes a coastal lagoon wetland that empties into Lake Superior. According to a vegetation survey conducted in 2022¹⁵, the proposed trail provides views of diverse mixed coniferous-deciduous forest and coastal wetlands. The cool, moist coniferous forest with the small drainages to the adjacent coastal lagoon provide diverse habitat for several specialist species. Neither state –not Federally Threatened or Endangered plant species were observed during the survey; however, the Wisconsin Special Concern orchid the western rattlesnake plantain (*Goodyera oblongifolia*), was found in the southern portion of the proposed trail route.¹⁶

¹³ Resource Stewardship Strategy Summary, 2022

¹⁴ Johnson and James, Vegetation Survey of Proposed Trails in the Mainland Unit of the Apostle Islands National Lakeshore, 2022

¹⁵ Johnson and James, Vegetation Survey of Proposed Trails in the Mainland Unit of the Apostle Islands National Lakeshore, 2022

¹⁶ Johnson and James, Vegetation Survey of Proposed Trails in the Mainland Unit of the Apostle Islands National Lakeshore, 2022

Project 3: Nelson Cabin Trail

The proposed Nelson Cabin Trail would be constructed in a wooded area southeast of the Little Sand Bay Visitor Center and adjacent to the southernmost section of the Township of Russell campground. This section is separate from the main campground and is limited to six tent-only campsites. The proposed Nelson Cabin Trail would extend through a mixed stand of white spruce, balsam fir, trembling aspen (*Populus tremuloides*), red oak (*Quercus rubra*), red maple (*Acer rubrum*), yellow birch (*Betula alleghaniensis*), and white cedar (*Thuja occidentalis*) and would cross two stream drainages lined with wetland species. Beneath mostly conifers, the acidic and shaded understory is sparsely vegetated. The trail would extend through mostly young balsam fir with an impoverished understory to the west of the historic Nelson cabin. West of the cabin is mostly young paper birch (*Betula papyrifera*), red maple (*Acer rubrum*), and balsam fir with a ground layer of clubmosses, frequent blue-bead lily (*Clintonia borealis*), big-leaf aster (*Eurybia macrophylla*), starflower (*Trientalis borealis*), Canada mayflower (*Maianthemum canadense*), shinleaf (*Pyrola elliptica*), interrupted fern (*Osmunda claytoniana*), and scattered lion's foot (*Prenanthes alba*).

Project 4: Minisi Overlook Trail

The vegetation along the proposed Minisi Overlook Trail includes native and non-native species, wetlands, forested areas, and mowed areas that provide important ecological functions, increase diversity, and provide habitat for a variety of plant and wildlife species. The forested area surrounding the proposed Minisi Overlook Trail includes jack pine (*Pinus banksiana*), open-grown red maple, paper birch, and white pine (*Pinus strobus*), with earlier successional trees (balsam fir, paper birch, and trembling aspen) surrounding the parking area. The vegetation in the area is indicative of past logging disturbance.¹⁷

Invasive Species

Invasive plants are non-native species that have significant potential to cause environmental harm to biodiversity and wildlife habitat quality. National Park Service Management Policies (2006) direct invasive plant management in parks to conserve ecosystems and wildlife habitat and maintain cultural landscapes. Policies also direct use of integrated pest management (IPM) methods which focus on prevention, early detection and rapid response, and monitoring.

Park staff annually survey and treat non-native invasive plants. Several species have been found and treated at both Meyers Beach and Little Sand Bay over the past several years. Some of these include birds-foot trefoil (*Lotus corniculatus*), clovers (*Trifolium*), hawkweed (*Hieracium*), purple loosestrife (*Lythrum salicaria*), sorrel (*Rumex acetosa*), spotted knapweed (*Centaurea stoebe*), tansy (*Tanacetum vulgare*), and thistle species. The slope within the project area at Meyers Beach has been treated for invasive Bells honeysuckle (*Lonicera x bella*).

Environmental Consequences

Alternative A: No Action Alternative

Under the No Action alternative, no vegetation disturbance or removal caused by construction activities nor would additional invasive species be introduced. However, the no Action Alternative could result in adverse long-term impacts to vegetation resulting from increased visitation and associated social trailing.

Cumulative Impacts

When combined with past, present, and reasonably foreseeable future actions and trends the no action alternative could have minor long-term adverse impact to vegetation due to projected increase in visitation over time and associated social trails resulting from lack of mainland recreational opportunity.

¹⁷ Johnson and James, Vegetation Survey of Proposed Trails in the Mainland Unit of the Apostle Islands National Lakeshore, 2022

Alternative B: Action Alternative

Project 1: Meyers Beach Accessible Lake Access

Native Plant Communities:

Construction of the Meyers Beach Accessible Lake Access would result in about 0.6 acres of temporary vegetation impacts. This area is made up mostly of the day use area lawn, parking, and existing lake access staircase. The lawn and parking area would be restored to existing or better condition during the restoration phase of the project. About 0.1 acres would result in a permanent impact in vegetation cover and makeup, due to the extension of the accessible ramp (see Error! Reference source not found.). To mitigate for the permanent impact from the ramp, existing native vegetation will be spared to the extent possible. Also, a revegetation plan will be produced and implemented. Chapter 4 outlines vegetation and other project mitigations.

Invasive Species:

It is likely this project will require heavy equipment to either remove stairs or install ramp infrastructure, and/or to move soil on the slope. It is well known that heavy equipment tires and tracks can carry invasive seeds, and that seeds are difficult to find. In addition, equipment from outside of a region can hold more novel seeds. Similarly, gravel and soil used for fill can readily contain invasive plant seeds. These issues can be mitigated to a degree by ensuring pressure washing of vehicle tires and tracks immediately before they enter the park followed by an inspection of equipment to ensure it is free of outside seeds and debris. It is also helpful if local heavy equipment is used to reduce likelihood of novel species introductions. Contractually requiring weed-free gravel and soil can mitigate this introduction route to a degree as well. Even with these mitigations in place it is possible that introductions may occur. Subsequently, this project should require surveys ahead of time and follow-up monitoring of the project and staging areas to limit impacts of any unintended introductions.

Lastly, it should be noted that the soil disturbance outside of the planned trail width will likely remove or impact the organic layer (i.e., “forest floor”). Once removed, native plants cannot germinate and become established, however, many invasives can. The biggest threat is wind-dispersed invasives and the area becoming a refuge for invasives if there is little or no organic layer. In an effort to mitigate the loss of organic matter, native soil will be stockpiled and reused, cover crops will be employed until native vegetation is established, and ongoing monitoring of the area will provide early identification of the presence of invasive species.

Project 2: Mashkiig Boardwalk

Native Plant Communities:

The preferred route through this area calls for approximately a one-half-mile-long and six-foot-wide boardwalk trail. The boardwalk would be constructed using low disturbance methods and vegetation impacts would be limited. The boardwalk would sit on 18” x 18” wooden feet that lie on the surface of the ground minimizing disturbance to minor levelling and eliminating the need for fill; the boardwalk would be aligned to avoid rare and sensitive species (e.g., *Goodyera oblongifolia*), and to minimize tree removal. To account for any impacts to vegetation, the NPS would prepare a vegetation plan in response to the proposed project. A determination would be made by NPS regarding tree stump removal. Trees removed from the project area to allow construction of new trails and pedestrian access would be minimized and focus on removal of smaller trees. The boardwalk would be constructed by NPS staff by hand without use of heavy equipment further reducing impacts to vegetation.

Invasive Species:

The most likely modes of invasive plant introduction on this project are from heavy equipment delivering materials, boardwalk materials themselves, hand tools, and personal gear and boots. This can be mitigated by ensuring all are cleaned prior to entry on the site. Monitoring before and after project work should be completed at the site and staging areas.

Project 3: Nelson Cabin Trail

Native Plant Communities:

The proposed earthen Nelson Cabin Trail would result in disturbance of vegetation along the proposed one-quarter mile route. The proposed trail would be routed to minimize removal of trees and shrubs; however, there would still be an adverse impact to vegetation in this area of Little Sand Bay.

Invasive Species:

The most likely modes of invasive plant introduction on this project are from hand tools, gear, and boots. This can be mitigated by ensuring all equipment is cleaned immediately before entering the park and equipment is inspected for seeds and other debris. Monitoring before and after project work will be completed, treatment will be completed when necessary.

Project 4: Minisi Overlook Trail

Native Plant Communities:

The construction of the Minisi Trail would require minimal removal of existing vegetation in the southern portion of the trail, primarily along the spur to the beach. The section from Allen Road to the park boundary would require vegetation clearing to construct an earthen trail. Tree removal would be kept to a minimum, with a focus on smaller trees. The trail would be routed around large trees, rare and sensitive vegetation, and archeological sites.

There are three ravine crossings that will require small pedestrian bridges. Temporary impacts may include minor placement of fill or grading and vegetation impacts in the immediate area. Native plant restoration would be performed, as needed. Construction materials would primarily be transported via foot, and large equipment would not be used. Vegetation located along the riverine crossings would experience minor, adverse impacts as the trail and small pedestrian bridges may require some placement of fill or grading operations. As discussed with the other proposed trail projects, any construction material required would be brought in via foot, minimizing impacts from construction equipment.

Invasive Species:

The most likely modes of invasive plant introduction on this project are from any fill required near ravine crossings, and from hand tools, personal gear and boots. Requiring weed-free soil for fill can reduce potential infestation from that source as can ensuring all other project and personal materials are cleaned prior to entry on the site. Monitoring before and after project work should be completed.

Cumulative Impacts

When combined with past, present, and reasonably foreseeable future actions and trends Alternative B could result in minor adverse short-term impacts during construction and long-term, likely not adverse impacts, to the vegetation within the project footprint. Alternative B would not result in adverse impacts through the introduction of invasive species as long as mitigation measures (Chapter 4) are closely followed. In the Meyers Beach project site, Alternative B could potentially have a beneficial long-term impact on invasive species control.

3.9 Viewsheds and Visual Resources

Affected Environment

To determine impacts to viewsheds or visual resources, NPS guidelines state that the ability for the proposed action to be seen from visitor use areas of the park, such as developed overlooks, roads or trails should be considered. If the proposed action is visible from visitor use areas, the discussion should consider whether the proposed action may change the nature or quality of the visitor experience.

The park is known for its scenic views. Located near the tip of the Bayfield Peninsula, the park provides panoramic views of Lake Superior from the mainland to prominent vantage points found among the 21 islands, including lighthouses. The scenic views over the lake are one of the park's fundamental resources. Scenic views are available from all types of recreation in the park and from the mainland out over the vast lake, to islands, and from the lake to the mainland shore. The locations of the mainland and the islands made the area an important site for lighthouse placement to aid in navigation through this portion of Lake Superior and for its observation and vantage points. Scenic views continue to be a primary objective of park visitors, regardless of the season.¹⁸

Environmental Consequences

Alternative A: No Action Alternative

Under Alternative A, ABA-compliant access to Meyers Beach and Little Sand Bay area trails would not be built. The visitation numbers are anticipated to increase in the coming years, thus the increasing demand for improved access to viewshed and visual resources will not be met. Implementation of the No Action alternative would result in both minor beneficial and adverse impacts to visitors' ability to enjoy a wide variety of landscapes and the vast viewsheds and visual resources within the park. Not disturbing the slope leading from the Meyers Beach parking area to the beach would create a beneficial impact for those viewing the shoreline from the lake. However, there would be long-term adverse impacts resulting from the lack of accessible viewsheds for visitors and potential increases to the number of social trails which could have a negative impact on visual resources.

Cumulative Impacts

When combined with past, present, and reasonably foreseeable future actions and trends the No Action alternative would have no measurable short or long-term impact to viewsheds and visual resources. Alternative A would result in a beneficial impact to the viewshed and visual resources by preserving a non-disturbed landscape. The No Action Alternative would result in less of a visual imposition than human-made structures looking into the mainland from the lake/islands and visa-versa.

Alternative B: Action Alternative

Project 1: Meyers Beach Accessible Lake Access

The ABA-compliant access ramp, stairs, and overlook would largely be constructed within a vegetated area visible from the existing parking lot and from the lake and beach when looking inland. Preliminary designs intend to incorporate existing vegetation, leaving trees and shrubs between the ramp and the beach to the extent feasible, which would result in a short-term adverse impact to the viewshed. This would reduce the impacts to the viewsheds and visual resources looking inland; however, it is likely that visitors on the ramp would still be visible by those on the beach and water. Over the long-term, the adverse visual impact resulting from the ramp construction would be mitigated by restoration using native trees/shrubs/vegetation to screen or

¹⁸ National Park Service, Resource Stewardship Strategy Summary, 2022

soften views of the access facilities. The perception of the adverse impact on the viewshed from the beach or lake may also be tempered by the knowledge that Meyers Beach is a existing popular day-use area used for swimming and beach activities and some constructed facilities and crowding would be anticipated.

Project 2: Mashkiig Boardwalk

The Mashkiig Boardwalk would travel through coastal forest, providing overlooks with views of the lagoon/wetland complex. The trail goes through mature, dense forest and is designed to provide high-quality views of the wetland from the trail while minimizing viewshed impacts to visitors on the beach looking toward the forest.

Project 3: Nelson Cabin Trail

The Nelson Cabin Trail would be constructed in an area in between Little Sand Bay Road and an abandoned portion of Little Sand Bay Road. The Wilderness Inquiry Connector would continue south of the Nelson Cabin Trail. Both trail segments travel through northern hardwood forest with very limited visibility, especially during the visitor season. It is not anticipated that the trail would result in adverse impacts to the viewshed or visual resources of the area.

Project 4: Minisi Overlook Trail

This trail would include a spur from the Mashkiig trailhead to the beach, follow a wooden dune path to the lagoon outlet, and continue along the beach to Allen Road. From Allen Road to the park boundary, an earthen trail would be constructed along the shoreline. Both trail sections would provide excellent views of Lake Superior and nearby islands, resulting in beneficial impacts to visitor experience. Impacts to the viewshed of non-hikers is expected to be very minimal. Hikers along the beach would blend in with others exploring the beach area. The forested portion of the trail would be screened by trees and is along the top of a bluff. Hikers along this section would not be easily visible from boaters on the lake.

Cumulative Impacts

When combined with past, present, and reasonably foreseeable future actions and trends, Alternative B would have a minor long-term adverse impact on viewsheds and visual resources to the area due to the additions to the built environment and increased visitor traffic through the previously inaccessible location in the park which may take away from the natural viewsheds.

3.10 Visitor Use, Experience and Safety

Affected Environment

As discussed in [Section 1.3](#), the number of visitors to the park has increased significantly in the recent past and it's anticipated that the increase will continue. As a result, the demand on existing resources is also anticipated to increase. Each proposed project would improve access to the natural resources of the park and, therefore, improve experience for the visitors.

Project 1: Meyers Beach Accessible Lake Access

Meyers Beach, located on the western end of the Mainland Unit and within Ceded Territory of the Lake Superior Ojibwe, is the primary kayak launching location to access the mainland sea caves, the park's most popular kayaking destination. During the visitor season, park rangers provide safety information to park visitors, especially kayakers. Lake Superior has cold water conditions year-round, frequent high winds, and rapidly changing conditions that require special equipment and caution. Visitor amenities are limited, but include a stairway from the parking lot to the beach; a trailhead to the park's popular Lakeshore Trail, which provides views of the Mainland sea caves; a double vault toilet; and a three-sided shelter that provides real-time information on wave conditions at the sea caves.

Meyers Beach is a very popular visitor use area, providing access to a beautiful Lake Superior beach and a primary swimming and kayak launching area for the mainland sea caves, the park's most popular kayak destination. Meyers Beach also includes the trailhead for the Lakeshore Trail, a popular trail that provides views of the sea caves. A stairway from the edge of a paved parking area provides access down to the beach. The beach provides access to the lake and caves along the shoreline, which are accessible by personal watercraft or kayak outfitters (Commercial Use Authorization [CUA] holders) that provide guided trips. The sea caves along the rocky shore north of Meyers Beach are accessible during the summer by kayakers and visitors on tour boats.

During the winter, when conditions allow, visitors can travel over the frozen surface of Lake Superior to view the ice caves. This attracts tens of thousands of visitors. In 2014, there were 138,000 visitors over a two-month period and 38,000 over nine days in 2015. Due to warming lake and air temperatures and increased wind, the last time the Apostle Islands ice caves were accessible without watercraft was 2015.

The Lakeshore Trail begins at Meyers Beach and continues along the coastline for six miles to a lakeshore campsite. The most popular section of the trail provides overlooks of the spectacular sea caves. Significant trail improvements including bridging of ravines were made in 2021 and 2022.

Approximately 30 parking spots for cars and tractor trailers/RVs are offered at Meyers Beach, in addition to a small collection of picnic tables and restrooms. NPS traffic counts recorded an annual average of 25,240 vehicles over the last five years. Vehicles and visitors are increasing on an annual basis. Meyers Beach is exceptionally busy during the visitor season, leading to congestion and back-ups on the stairway to the beach. Meyers Beach is also one of the park's First Amendment demonstration areas.

Project 2: Mashkiig Boardwalk (Accessible)

The Little Sand Bay is a very popular visitor use area. Visitor amenities include a seasonal Visitor Center (open mid-June to early September; constructed in 2020), year-round outdoor exhibits, a marina, kayak launch, historic fishery, comfort station, and parking. Kayak launching at Little Sand Bay gives kayakers access to numerous islands, including nearby Sand and York Islands, for day trips or overnight camping. Visitors travel via personal watercraft or kayak outfitters (CUA holders that provide guided trips). The historic Hokenson Fishery, a rare surviving example of a family-run fishery that still includes many artifacts, furnishings, and most of the features of the original cultural landscape, provides visitors with an opportunity to gain an appreciation of commercial fishing. The portion of the park's mainland unit that includes Little Sand Bay is an inholding within the Red Cliff Reservation. The Town of Russell also has an inholding at Little Sand Bay that includes the Little Sand Bay (LSB) Recreation Area. The LSB recreation area includes a campground, boat ramp, harbor docking area, picnic area, popular sandy beach, sports field and playground. The park and Town work together towards providing a seamless visitor experience at Little Sand Bay under a Cooperative Management Agreement.

Project 3: Nelson Cabin Trail

The area proposed for the Nelson Cabin Trail is currently forested land that would connect the Town of Russell campground with the Nelson Cabin and may continue to the NPS boundary, providing a connection to a trail on private land that leads to the Wilderness Inquiry Kayak Base Camp, a local outdoor recreation/education organization's facility. This land is bordered by Shaft Street and Little Sand Bay Road. Nelson Cabin, built in 1930, is located off Little Sand Bay Road, near a small pull-off for vehicles. Currently, visitors interested in walking from the campground to the historic cabin must walk directly adjacent to Little Sand Bay Road; this proximity to vehicles leaving the area can be a hazard for pedestrians and drivers. Little Sand Bay, like Meyers Beach, is also a designated First Amendment demonstration area.

Project 4: Minisi Overlook Trail

The Minisi Overlook Trail is proposed in a forested area composed largely of native vegetation. The Trail would begin near Meyers Beach and provide visitors with a defined pathway connecting the beach to Allen Road. The Trail will provide visitors with additional hiking opportunities with views of Lake Superior and the islands.

Environmental Consequences

Alternative A: No Action Alternative

Under Alternative A, ABA-compliant access to Meyers Beach and Little Sand Bay area trails would not be built. The visitation numbers are anticipated to increase in the coming years, thus the increasing demand for mainland accessible recreational opportunities will not be met. Implementation of the No Action alternative may result in long-term adverse impacts to visitor's enjoyment of the differing landscapes and viewsheds in the mainland of the park, which could be long-term adverse impacts to visitor experiences of the park's natural and cultural resources on the mainland. This alternative could lead visitors to use social trails through the forested areas at Little Sand Bay or walk along Little Sand Bay Road, which would continue to jeopardize visitors' safety. Visitors would continue to lack trail opportunities, which would limit recreational and educational opportunities. Visitors to Meyers Beach would not have ABA-compliant access to the sandy shoreline at Meyers Beach and kayak access to the sea caves. The current stairway does not provide safe access for visitors of all abilities, and the No Action alternative would adversely affect safety and result in continued congestion during periods of high visitation. The lack of ramp access would also continue to result in adverse impacts to safety as visitors are required to carry their watercraft up and down a narrow stairway.

Cumulative Impacts

Impacts to visitor use, experience, and safety under the No Action alternative, when combined with past, present, and reasonably foreseeable future actions and trends, would have continued long-term adverse impacts due to the lack of mainland recreational and accessible recreation options.

Alternative B: Action Alternative

Project 1: Meyers Beach Accessible Lake Access

The Meyers Beach ABA-compliant accessible ramp would provide access to additional visitors with mobility limitations from the Meyers Beach parking lot to the beach and kayak launching area. Without this, access to the beach would continue to be limited to a set of stairs starting from the northern edge of the parking lot. The existing stairway is difficult for all visitors to carry kayaks to the lake and not accessible for visitors with mobility or other challenges. Providing an ABA-compliant ramp would provide long-term, beneficial impacts to visitor experience via access to the beach and primary kayak launching location to the mainland sea caves, increase safety and improve capacity for visitors of all abilities.

The new stairway would have beneficial impacts on visitor safety, especially for those taking kayaks down to the shore or up to the parking lot. The ABA-compliant ramp would also provide beneficial impacts to emergency responders that may be required to assist visitors that require medical assistance. The proposed overlook on the upper portion of the ramp would provide long-term beneficial impacts for visitors that do not wish to go down to the beach as an opportunity to view the lake.

Project 2: Mashkiig Boardwalk

The Mashkiig Boardwalk would wind through mature coastal forest adjacent to the Little Sand Bay wetland and lagoon, providing views of the wetland, lagoon, and cross riverine areas. This boardwalk would be fully accessible; include bilingual (English and Ojibwe) interpretive exhibits; and create opportunities for interpretation, education, school group use, and social gathering. It would be fully accessible to enhance the experience of visitors of all abilities. The boardwalk would direct visitor traffic to better protecting the ecosystem and include safety features that ensure visitors remain on the boardwalk.

Project 3: Nelson Cabin Trail

The Nelson Cabin Trail would result in a long-term beneficial impact to visitors by creating an additional trail opportunity and safe footpath from the developed portion of the Little Sand Bay area to the historic Nelson Cabin. This route would provide long-term beneficial impacts to visitor safety by eliminating the potential pedestrian/vehicle conflicts for visitors walking along the Little Sand Bay Road to reach the historic Nelson Cabin, or the Wilderness Inquiry Kayak Base Camp, which is farther south.

Project 4: Minisi Overlook Trail

The Minisi Overlook Trail would provide a footpath from the Little Sand Bay campground parking area to the park's boundary to the north. This trail would provide a beneficial impact to visitor experience by providing an opportunity to exercise and experience a variety of landscapes along the Lake Superior shoreline, including coastal forest and Lake Superior and island views.

Cumulative Impacts

Impacts to visitor use, experience, and safety under alternative B, when combined with past, present, and reasonably foreseeable future actions and trends would be beneficial and long-term.

3.11 Water Resources: Floodplains and Wetlands

Affected Environment

The Apostle Islands hold an impressive variety of aquatic habitats. Wetlands within the lakeshore are among the highest quality in the Great Lakes and include coastal wetland/lagoon complexes, bogs, perched bogs, lagoons, alder thickets, riverine, and beaver flowages. Small wetlands are present on most of the islands and the Mainland Unit. The Mainland Unit, Stockton, Outer, and Michigan Islands contain unique lagoons formed by coastal processes. Inflow sources of lagoon water are precipitation, wave wash-over, and seepage from adjacent bogs or wetlands. Evaporation and surface discharge to bog and groundwater are the main outflow methods. Rock pools are another, lesser understood, ecosystem. Small, sometimes ephemeral, water pools have diverse chemical, biological, and ecological features.¹⁹ Lastly, floodplains are located along the coastline and in wetland areas. The floodplains provide crucial water quality maintenance for the area.

Project sites 1, 2, and 4 are adjacent to or within a water resource area. Meyers Beach Assessable Lake Access (project 1), and Mashkiig Boardwalk (project 2) are both within the Federal Emergency Management Agency (FEMA) flood hazard zones; whereas, Mashkiig Boardwalk (project 2) and Minisi Overlook Trail (project 4) cross over or through designated wetlands. The Nelson Cabin Trail (project 3) does not fall within or adjacent to a FEMA flood hazard zone or a designated wetland.

Project 1: Meyers Beach Accessible Lake Access

The Meyers Beach Accessible Lake Access proposed project lays on the bank of Lake Superior and slopes downward to the current beach access. Under the Federally managed floodplain mapping system, the project area falls within Zone AE and at an elevation of 605 feet (see **Figure 8**). Zone AE areas are special flood hazard areas (SFHAs) subject to inundation by the 1% annual chance flood (100-year flood). The 100-year flood zone, also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. There are no wetland areas within the Meyers Beach project site (see **Figure 9**).

Project 2: Mashkiig Boardwalk

The Mashkiig Boardwalk project site is located in a Federally managed floodplain, specifically, a Special Flood Hazard Area, Zone AE, at an elevation of 605 feet (see **Figure 10**). The project site also is within emergent, ponds and riverine designated wetland area as shown in **Figure 11**.

Project 3: Nelson Cabin Trail

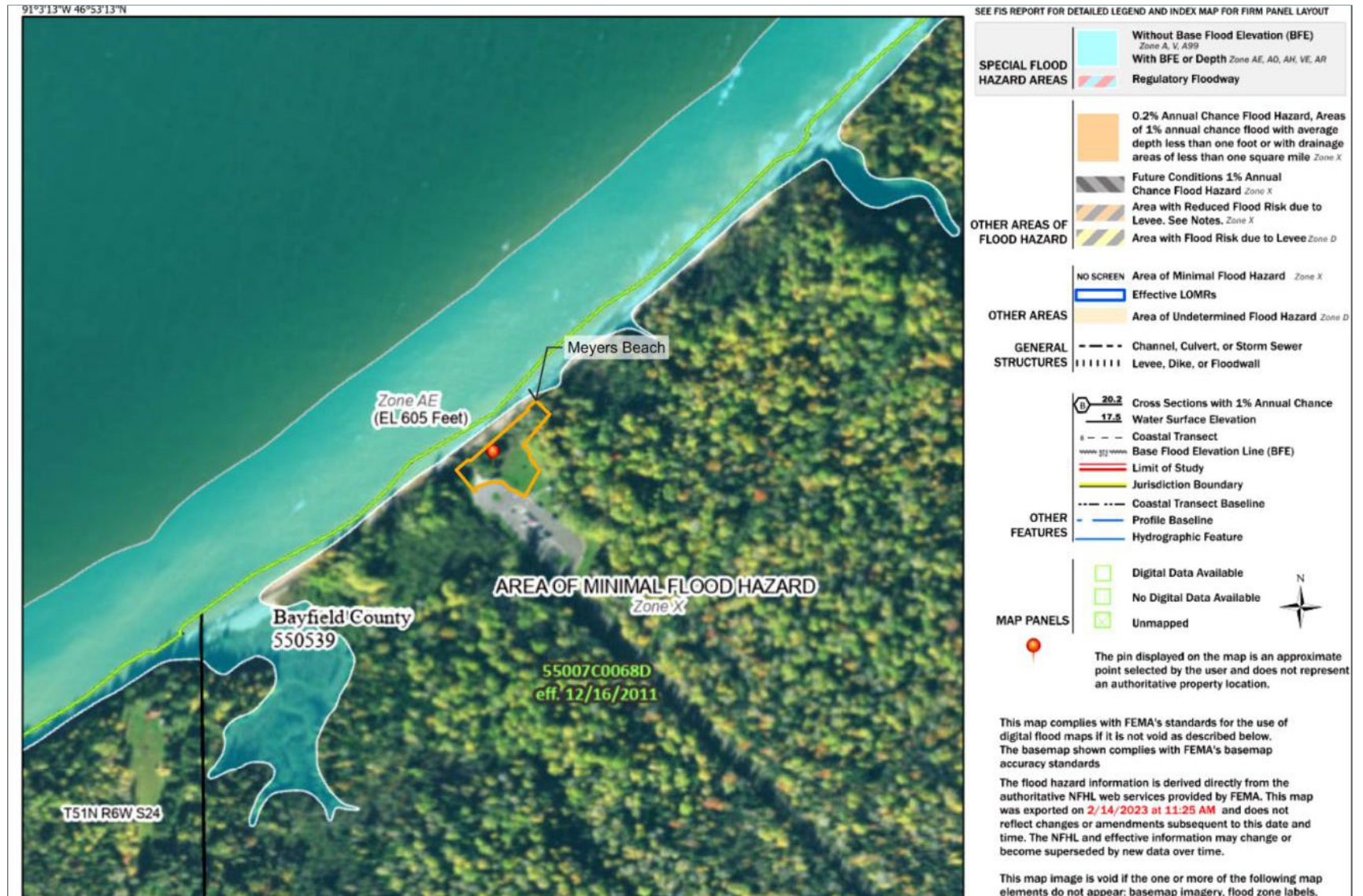
The Nelson Cabin Trail proposed project is not within a currently designated floodway or floodplain under the FEMA mapping system, nor are wetlands depicted on the national wetlands inventory map (see **Figure 10** and **Figure 11**).

Project 4: Minisi Overlook Trail

The Minisi Overlook Trail runs along the bank of Lake Superior and adjacent to the Special Flood Hazard Area, Zone as shown in **Figure 10**. The trail would also cross several ravines and associated wetlands as depicted in **Figure 11**.

¹⁹ Resource Stewardship Strategy Summary, 2022

Figure 8: Meyers beach Flood Zones



Source: Federal Emergency Management Agency, Accessed 11/30/2022

Figure 9: Meyers beach National Wetlands inventory



February 14, 2023

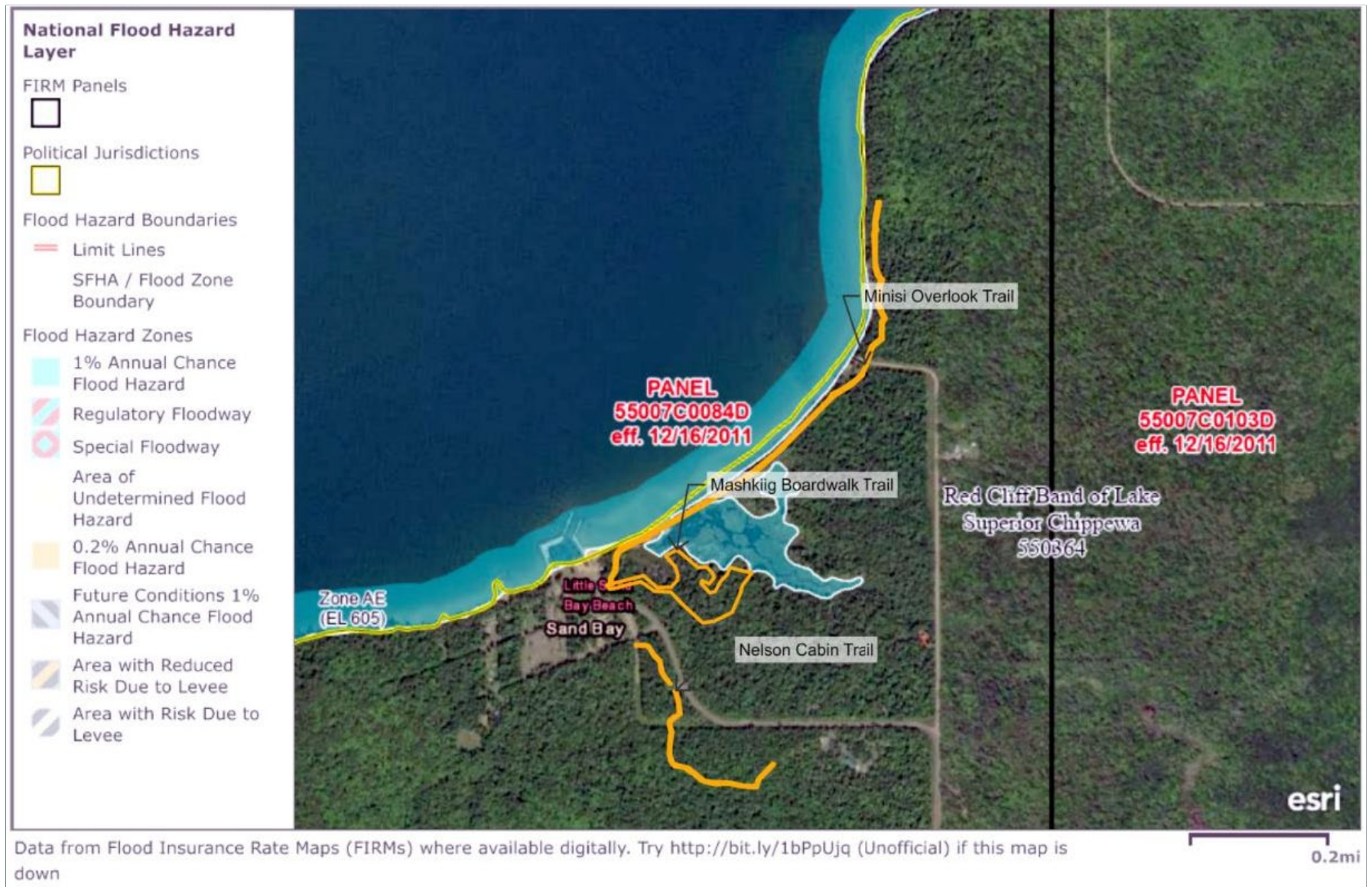
Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

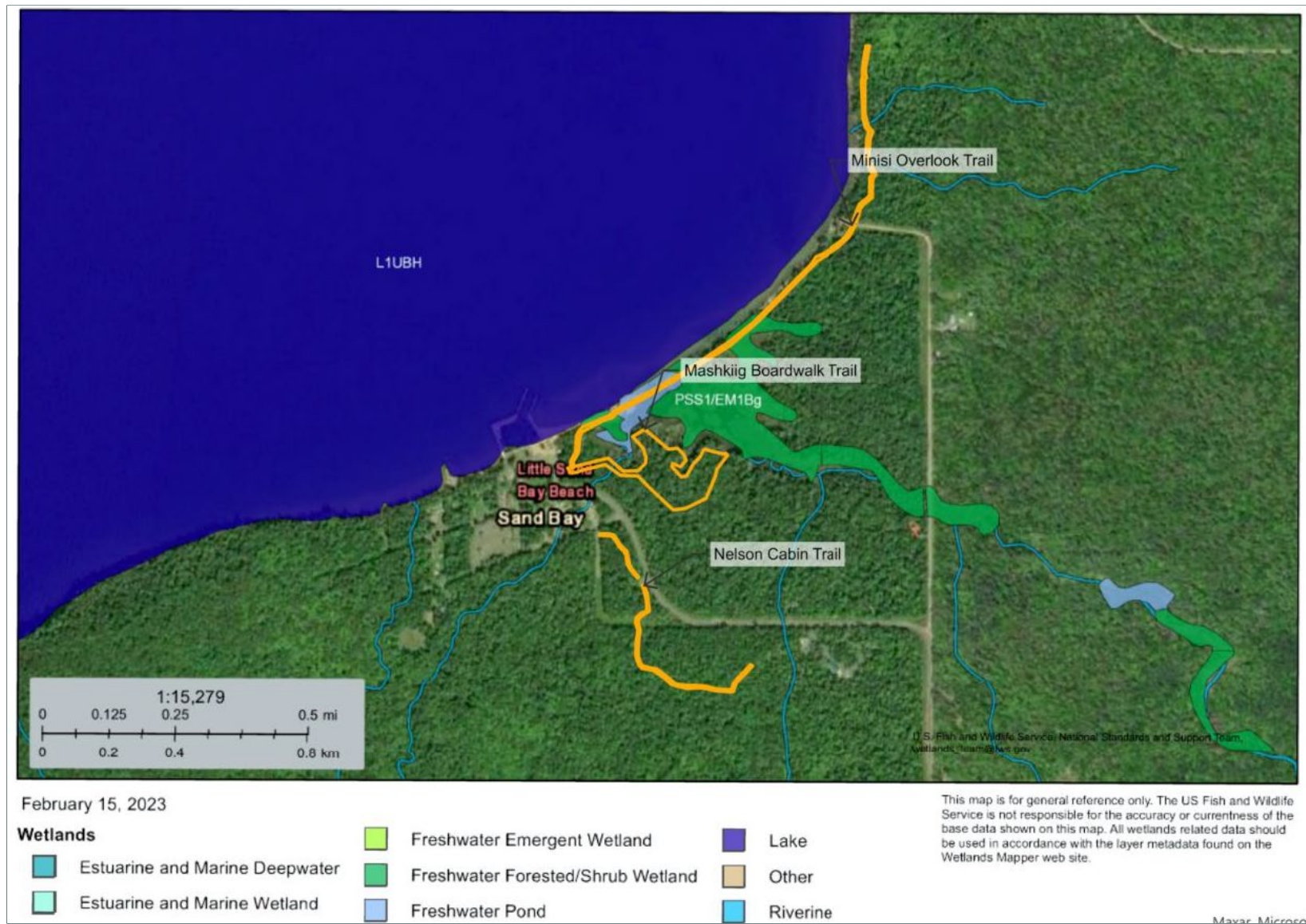
Source: National Wetlands Inventory, Accessed 02/14/2023

Figure 10: Flood Zones



Source: Federal Emergency Management Agency, Accessed 11/30/2022

Figure 11: National Wetlands Inventory



Source: National Wetlands Inventory, Accessed 02/15/202

Environmental Consequences

Alternative A: No Action Alternative

Under the No Action alternative, threats to wetlands and flood zones in the Little Sand Bay area would remain essentially as described in Section 3.12.1 affected environment.

Cumulative Impacts

When combined with past, present, and reasonably foreseeable future actions and trends the no action alternative would add no measurable impacts to water resources.

Alternative B: Action Alternative

Project 1: Meyers Beach Accessible Lake Access

Under Alternative B, the Meyers Beach Accessible Lake Access would be constructed largely adjacent to a designated flood zone, Zone AE. The base of the stairways would be in proximity to the flood zone; however, it is not anticipated that the project would extend into the flood zone. The function of the flood zone would not be changed by the proposed project. Wetlands are not present in the project area.

Project 2: Mashkiig Boardwalk

Construction of the boardwalk would not occur within a flood zone. However, the project would occur in an area that contains jurisdictional wetlands as shown in **Figure 12**. To confirm the location and impacts to wetlands, a wetland delineation and soil investigation was conducted by Terracon in 2022. During design, all attempts were made to minimize impacts to wetlands while maintaining the intent of the boardwalk. The construction of the boardwalk would utilize unique construction techniques that include minimal ground disturbance. According to the wetland delineation survey, less than 0.1 acres of wetlands would be impacted, including both ground disturbance and shadowing impacts. The boardwalk would be constructed by NPS staff by hand without use of heavy equipment to further reduce impacts to vegetation.

Project 3: Nelson Cabin Trail

The construction of the Nelson Cabin Trail would result in minimal ground disturbance. As no water resources are present within the project area, the Trail would not result in any impacts to water resources.

Project 4: Minisi Overlook Trail

The Minisi Overlook Trail would not significantly affect or alter the current water resources at Little Sand Bay or the Red Cliff Bay area (i.e., wetlands, tributaries, or flood zones), as it would primarily use existing dirt paths and no fill would be placed. South of Allen Road, the trail would remain on the beach and extend into the forested area north of Allen Road. The wetland and flood zones are located south of Allen Road and in the area where the trail would remain on the beach (no construction). Once in the forested area, the project has the potential to temporarily adversely impact vegetation along the two drainage areas through the construction of the pedestrian foot bridges. The construction of the foot bridges would result in minor ground disturbance and would use design and construction techniques that limit disturbance. Material would be hauled in by foot, further reducing potential impacts.

Cumulative Impacts

When combined with past, present, and reasonably foreseeable future actions and trends the action alternative would have minimal long-term adverse impacts to water resources. Project 2

would result in 0.065 acres impacts to wetlands; however, the impacts are minimized to the extent possible and less than 0.1 acres. Project 4 would span three riverine wetlands, but would not impact their flow, function or value. These are excepted action under Directors Order (DO) 77.1-4.2.2.1. The other three projects would not result in impacts to water resources.

This map illustrates the Little Sand Bay Wetland area, showing the proposed boardwalk, benches, and wetland disturbance areas. The map includes the following features and labels:

- LAKE SUPERIOR** (top left)
- LITTLE SAND BAY WETLAND** (top center)
- Minisi Trail** (top center)
- Widen boardwalk to 9' for overlook** (top center)
- 1684 s.f. (.039 AC) Wetland disturbance (full 6' wide trail width)** (top left)
- 299 s.f. (.007 AC) Wetland disturbance (full 6' wide trail width)** (top center)
- Wetland Overlook (6'x12')** (top right)
- 283 s.f. (.006 AC) Wetland disturbance (full 6' wide trail width)** (top right)
- Trailhead at NPS Property Limit** (middle left)
- Bench** (multiple locations along the boardwalk)
- DELINEATED WETLANDS** (multiple locations)
- Hexagon intersection with bench** (multiple locations)
- Wetland Overlook (6'x12')** (middle right)
- 20' diameter gathering platform within Hemlock surround** (middle right)
- 164 s.f. (.004 AC) Wetland disturbance (full 6' wide trail width)** (bottom right)
- 227 s.f. (.005 AC) Wetland disturbance (full 6' wide trail width)** (bottom right)
- 192 s.f. (.004 AC) Wetland disturbance (full 6' wide trail width)** (bottom center)
- Boardwalk - 6'-0" standard width** (bottom center)
- Township of Russell Public Parking** (bottom left)
- TOWNSHIP OF RUSSELL CAMPGROUND** (bottom left)
- DELINEATED WETLANDS (shaded overlay)** (bottom center)
- Wetland Delineation limits** (bottom center)
- NORTH** (bottom right)
- SCALE OF FEET** (bottom right)

Total Wetland Disturbance - 2850 s.f. (0.065 AC)
Total Boardwalk - 19,550 s.f. (0.448 AC)

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Table 1: Summary of Impact Topics

Impacts	Alternative A: No Action	Alternative B: Proposed Action
Cultural/ Historic Resources	As ground disturbance would not occur, impacts to cultural and historic resources are not anticipated. When considered with other past, present, and reasonably foreseeable actions it was determined that there are no significant cumulative impacts to cultural and historic resources.	Cultural and historic resources were not identified within the project limits of projects 1, 3, and 4; no impacts will occur. Cultural resources were identified within the project limits of project 2; however, the boardwalk alignment was modified to avoid the resources. No impacts are anticipated. A review of the proposed action's effects on cultural and historic resources when combined with other past, present, and reasonably foreseeable actions has determined that there are no significant cumulative impacts.
Ethnographic Resources	Ground disturbance and changes to the setting would not occur; impacts are not anticipated. When considered with other past, present, and reasonably foreseeable actions it was determined that there are no significant cumulative impacts to cultural and ethnographic resources.	Ethnographic resources are not present in projects 1, 3, and 4 and will be avoided in project area 2. Appropriate consultation will be completed prior to the start of construction to ensure no impacts occur. A review of the proposed action's effects on ethnographic resources when combined with other past, present, and reasonably foreseeable actions has determined that there are no significant cumulative impacts.
Soils/ Topography	The quality and condition of soils within the project areas would not be impacted as no construction would occur, however, they may be impacted by increased informal trailing due to higher levels of visitation. When considered with other past, present, and reasonably foreseeable actions it was determined that there are no significant cumulative impacts to the soil and topography.	Projects 1, 2, 3, and 4 would result in moderate impacts to the existing soil structure and topography within the construction area. The construction of project 1 would require changes to the existing soil; however, the impacts will be short-term and contained to the construction area. Erosion control measures would be employed to minimize impacts to stabilize the slope. Projects 2, 3, and 4 would result in minimal impacts to the soil and topography of the areas. When considered with other past, present, and reasonably foreseeable actions it was determined that there are no significant cumulative impacts to soil and topography.
Vegetation	Ground disturbance and resulting impacts to vegetation would not occur; impacts are not anticipated. Vegetation may be impacted by informal trailing. When considered with other past, present, and reasonably foreseeable actions it was determined that there are no significant cumulative impacts to the vegetation.	Projects 1, 2, 3, and 4 would result in minimal impacts to the existing vegetation resources, any impacts that may occur would be minimized to the extent possible. Larger trees and sensitive plant species would be protected. In areas where vegetation will be removed, erosion control measures would be employed during and following construction and native plant restoration would be done. A review of the proposed action's effects on vegetation when combined with other past, present, and reasonably foreseeable actions has determined that there are no significant cumulative impacts.

Impacts	Alternative A: No Action	Alternative B: Proposed Action
Viewsheds/ Visual Resources	No changes to the existing viewsheds or visual resources would occur; therefore, no impacts are anticipated. When combined with other past, present, and reasonably foreseeable actions has determined that there are no significant cumulative impacts to viewsheds or visual resources.	The proposed projects would result in minimal impacts to the existing viewsheds and visual resources. Within project 1, visitors on the beach and water may be able to see those using the trails and boardwalks, impacts will be minimized through shielding with natural vegetation and avoiding that already in place. Projects 2, 3, and 4 would result in minor visual impacts with increased visitor traffic in each area. A review of the proposed action's effects on visual resources when combined with other past, present, and reasonably foreseeable actions has determined that there are no significant cumulative impacts
Visitor Use, Experience, and Safety	The No Action alternative may result in long-term adverse impacts to visitor's enjoyment of the park and safety while accessing the park, which could be long-term adverse impacts to visitor experiences. Impacts to visitor use, experience, and safety under the no action alternative, when combined with past, present, and reasonably foreseeable future actions and trends, would remain adverse.	It was determined that Alternative B would result in long-term beneficial impacts to visitor experience and safety. Construction of an ABA-compliant ramp from the parking lot to the sand beach at Meyers Beach and an accessible boardwalk at Little Sand Bay would provide beneficial impacts to visitors of all abilities. New trails along the coastline and to a historic site would provide additional long-term benefits to mainland visitors. A review of the proposed action's effects on the visitor use, experience, and safety when combined with other past, present, and reasonably foreseeable actions has determined that there are no significant cumulative impacts.
Water Resources	As no construction would occur, threats to water resources would remain unchanged. When combined with past, present, and reasonably foreseeable future actions and trends no measurable impacts to water resources would occur.	The proposed projects would result in minimal impacts to water resources. The Mashkiig Boardwalk would impact less than 0.1 acres of wetlands. The Minisi Overlook Trail would require bridging to cross three ravines. The other three remaining projects would avoid wetland areas. Flood zones are located within project 1, 2, and 4; the project would not result in a change in topography, add fill, or result in any changes that may change the characteristics or operation of the flood zones. These are all accepted actions under DO 77.1 -4.2.2.1, thus no additional compliance is needed under the 404 Clean Water Act. Therefore, when combined with other past, present, and reasonably foreseeable actions has determined that there are no significant cumulative impacts.

Chapter 4

Mitigations and Minimization Measures

4.0 Introduction

The NPS strives to avoid, minimize, and mitigate adverse environmental impacts resulting from their proposed actions. To ensure the protection of natural resources and the quality of visitor experience, the NPS is committed to implementing the measures detailed in the following subsections.

4.1 General

- Clearly state all resource protection measures in the construction specifications and instruct workers to avoid conducting activities outside the project area. Limit disturbances to roadsides, culvert areas, and other areas inside the project area. Clearly indicate areas of concern on construction drawings.
- Hold a preconstruction meeting to inform contractors about sensitive areas, including natural and cultural resources, and provide procedures for identifying and addressing any unanticipated discoveries.
- Delineate construction zones outside existing disturbed areas with flagging and confine all surface disturbance to the construction zone.
- Establish site staging and storage areas for construction vehicles, equipment, materials, and soils in previously disturbed or paved areas approved by NPS. These areas shall be clearly identified in advance of construction.
- Require contractors to properly maintain construction equipment to minimize noise and emissions. Do not allow construction engines (including vehicles and equipment) to idle for extended periods, unless necessary.
- Remove all tools, equipment, barricades, signs, and surplus materials from the project area upon completion of the project.
- Develop a Spill Pollution Prevention Plan for the project to include spill prevention, fueling, hazardous material containment, hazardous material usage.

4.2 Cultural Resources

- Proposed projects must comply with requirements of The Secretary of Interior's Standards for the Treatment of Historic Properties.
- Implement all mitigation measures resulting from the Section 106 consultation. If previously unknown archeological resources are discovered during construction, that work would be stopped in the area of discovery and the NPS would consult with all appropriate parties. If the resource is determined to be significant, mitigation measures would be created through consultation with the appropriate parties. If appropriate, provisions of the Native American Grave Protection and Repatriation Act (NAGPRA) of 1990 would be implemented.
- Instruct any contractors and subcontractors utilized for maintenance or construction activities on procedures to follow in case previously unknown archeological resources are uncovered during those activities.
- Ensure any contractors and subcontractors utilized for construction or maintenance activities are informed of the penalties for illegally collecting artifacts or intentionally damaging cultural resources.

- Maintain trails, waysides and ravine crossings to avoid impacts to sensitive natural and cultural resources; emphasize environmental sensitivity in construction and use of non-toxic materials.

4.3 Soils and Topography

- Avoid or minimize disturbance to soils as much as possible.
- Evaluate existing topsoil for nonnative invasive plant infestations. Imported materials shall come from locally sourced areas to the extent possible and meet the NPS requirements for soil types in the project area. For Project 1 (Meyers Beach), imported sand and gravel fill will be washed prior to use to minimize introduction of invasive species.
- Implement erosion control measures that provide for soil stability and prevent movement of soils during rain events (i.e., silt fences and tarps).
- Aerate any ground surface temporarily disturbed during construction and reseed or replant with native vegetation to reduce compaction and prevent erosion.
- Develop and adhere to a stormwater pollution prevention plan and project specifications including for staging areas and engage a qualified stormwater practitioner to ensure compliance.
- Ensure control materials are weed/weed seed and debris free to mitigate the spread of non-native, noxious invasive species.
- Ensure erosion control materials made of natural materials, such as erosion blanket made of coconut fiber or jute instead of plastic.
- Ensure imported fill material is devoid of palaeontologic materials before transporting into the park.

4.4 Vegetation: Native Plant Communities and Invasive Species

- Avoid disturbance to native vegetation and forest when at all possible.
- Require contractors to remain within staked project areas.
- NPS personnel will visually inspect all large construction equipment and material prior to arrival on site. Transport all construction material into the park via paved roadways and to each specific project site via foot.
- Provide NPS best management practices for revegetation of the site. This may include seed type and weed/weed seed free materials.
- Provide NPS best management practices to mitigate the introduction or spread of non-native, invasive species due to construction activities.
- Require seed mix for permanent grass, sedge, or herbaceous plant material be locally sourced relative to the project location to greatest extent reasonably available commercially. Seed mix shall consist of species' cultivars native to the region of the project location.
- Require sowing annual turf or sterile cover crop of temporary seed across disturbed pervious surfaces that rapidly germinate. Germinated cover crop to provide erosion protection and attempt to reduce weed competition by reducing the extent of post-construction bare soil.
- Ensure no herbicide use shall take place during construction.
- Use best management practices to prevent worsening exotic plant or forest pest conditions during construction. Key issues are bringing in infested fill/gravel and the accidental

introduction of seeds through gear, equipment, or tires. All equipment accessing the project will be cleaned and inspected immediately prior to accessing the Park. Oak trees cut or damaged by forest pests are predisposed to oak wilt, a condition that can potentially devastate entire stands, to prevent arriving insects from cut tree the stump will be treated/painted to stop the insect from entering the root system.

- The loss of organic matter and potential for windborne seed introduction is a consideration for the project. The use of cover crops to cover bare ground until native vegetation is established will be employed. Ongoing monitoring of the project areas will be completed to ensure invasive species are identified early.
- Project specific mitigation measures include:
- Project 1: Meyers Beach Accessible Lake Access – It is likely this project will require heavy equipment to either remove stairs or install ramp infrastructure, and/or to move soil on the slope. It is well known that heavy equipment tires and tracks can carry invasive, difficult to find seeds. In addition, equipment from outside of a region can hold more novel seeds. Similarly, gravel and soil used for fill can readily contain invasive plant seeds. These issues can be mitigated to a degree by ensuring pressure washing of vehicle tires and tracks immediately before they enter the park and inspection for seeds or other debris. It is also helpful if local heavy equipment is used to reduce likelihood of novel species introductions. Contractually requiring weed-free gravel and soil can mitigate this introduction route to a degree as well. Even with these mitigations in place, it is possible that introductions may occur. Subsequently, this project should require surveys ahead of time and follow-up monitoring of the project and staging areas to limit impacts of any unintended introductions.
- Project 2: Mashkiig Boardwalk – The most likely modes of invasive plant introduction on this project are from heavy equipment delivering materials, boardwalk materials themselves, hand tools, and personal gear and boots. Introduction can be mitigated by ensuring all materials and equipment are cleaned prior to site entry. The site and staging areas should be monitored before and after project work.
- Project 3: Nelson Cabin Trail – The most likely modes of invasive plant introduction on this project are from hand tools, gear, and boots. Introduction can be mitigated by ensuring all materials and equipment are cleaned prior to site entry. The site and staging areas should be monitored before and after project work.
- Project 4: Minisi Overlook Trail – The most likely modes of invasive plant introduction on this project are from any fill required near ravine crossings, and from hand tools, personal gear and boots. Chances of infestation can be reduced by requiring weed-free soil for fill and ensuring all other project and personal materials are cleaned prior to site entry. The site and staging areas should be monitored before and after project work.

4.5 Viewsheds and Visual Resources

- Leave native vegetation in place, to the extent possible, to act as a natural barrier to proposed actions.
- Develop a cohesive aesthetic treatment plan throughout the project areas where project components are visible.
- Limit construction activities to the daytime to limit construction-related light emissions.
- Design all built project components with colors, tones, and textures that complement the natural environment.

4.6 Visitor Use, Experience, and Safety

- Inform visitors in advance of construction activities via multiple methods, including the park's website, various signs, and the visitor center. Provide regular updates to the public about project progress and any associated delays.
- Develop provisions for emergency vehicle access through construction zones.
- Develop a traffic plan to manage the project site during construction.

4.7 Water Resources

- Implement best management practices for drainage and sediment control to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas. These practices may include, but are not limited to, silt fencing, filter fabric, temporary sediment ponds, check dams of pea gravel-filled burlap bags or other material, and/or immediate mulching of exposed areas to minimize sedimentation and turbidity impacts as a result of construction activities. As much as practicable, do not use plastic materials. Leave erosion control measures in place at the completion of construction to avoid adverse impacts on water resources, after which time NPS staff would be responsible for maintenance and removal.

Chapter 5

Consultation and Coordination

5.0 Lead and Cooperating Agencies

An internal review of the Enhance Mainland Visitor Experience and Accessibility Environmental Assessment will be conducted by the NPS staff at the Apostle Island National Lakeshore and by staff at the Midwest Regional Office. Correspondence with consulting parties can be found in Appendix E.

5.1 Internal Scoping

Internal scoping was conducted during several virtual meetings with APIS staff, the NPS Midwest Regional Office, and the consultant team. These bi-weekly virtual meetings were conducted in September and October 2022. Meeting topics included purpose and need for the proposed action; preparation of the Environmental Screening Form (which identified the issues and resource topics that should be addressed in the EA), and resource topics that could be dismissed from detailed analysis. The existing conditions at Meyers Beach, Little Sand Bay, and the shoreline to the north of Little Sand Bay were also discussed; after several meetings, the team was able to discuss ideas for alternatives for the proposed action. The team determined that there would be only two feasible alternatives to consider: the No Action alternative and the Preferred alternative. Alternatives determined to not be feasible are briefly described in the EA but did not warrant further analysis. After determination of the two feasible alternatives, potential mitigation measures and management actions were discussed.

5.2 Federal Agencies

A consultation letter was sent to the U.S. Fish and Wildlife Service (USFWS) via email requesting comments and concerns on the project. The USFWS provided an automatic response on April 3, 2023 providing a list of potential threatened and endangered species in the project areas. Coordination with the USFWS is ongoing.

5.3 Tribal Partners

Red Cliff Band of the Lake Superior Chippewa - Formal consultation between the park's Superintendent and Management Team with the Red Cliff Chair and Council occurred on April 20, 2022. As a result of this consultation, park staff worked with Red Cliff's Treaty Natural Resource (TNR) Director on tribal community outreach. A flyer was developed for distribution to the tribal community, including in the Miisaninawiind Newsletter, to encourage input and invite tribal members to a site visit which was held on June 9, 2022. In addition, informal consultation continues to occur between the Park Superintendent and Red Cliff Chair as well as park and tribal staff. The draft EA will be sent to the tribe during the pre-public review period for their input.

Bad River - Discussion of the trail proposal was included during consultation between the park's Superintendent, Bad River chair, and staff that occurred February 17, 2023. The draft EA will be sent to the tribe during the pre-public review period for their input.

5.4 State Agencies

Wisconsin Department of Natural Resources - the draft EA will be sent for input during the pre-public review period.

Wisconsin State Historic Preservation Office - the Wisconsin SHPO was contacted via email requesting comments on the actions and a concurrence on a final of No Effect on historic properties. The SHPO responded via an email dated March 8, 2023 concurring with the determination of No Effect on historic properties.

5.5 Local Agencies

Town of Russell – Park staff began coordinating with the Town of Russell board related to proposed trails in May of 2022 and attended a Town Board Meeting June 14, 2022 to discuss the proposal and the Town/NPS agreement. Part staff met with Town of Russell representatives on August 17, 2022 for a site visit in which park staff provided an update and sought input. The park has regular communications with the Town of Russell, the draft EA will be sent for input during the pre-public review period.

Bayfield County - the draft EA will be sent to the tribe during the pre-public review period for their input.

5.6 Public Scoping

This EA will be available for public comment for 30 days, from (April 12, 2023) to (May 12, 2023), through the NPS Planning, Environment and Public Comment (PEPC) website which provides access to current plans and related documents and is located here: National Park Service - PEPC – Apostle Islands National Lakeshore ([nps.gov](https://www.nps.gov)). The NPS will also host a virtual public meeting April 26, 2023 from 7-8pm.

5.7 Other Environmental and Regulatory Requirements

A Notice of Availability of the Accessibility Improvements Environmental Assessment will be available on the NPS public Planning, Environment & Public Comment (PEPC) website at www.parkplanning.nps.gov. Local media outlets will also be notified, allowing 30 days for public comment.

Chapter 6

Acronyms and Abbreviations

ABA	Architectural Barriers Act
APIS	Apostle Islands National Lakeshore
CEQ	Council on Environmental Quality
CWA	Clean Water Act
DNR	Department of Natural Resources
DO	Director's Order
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
GMP	General Management Plan
IPaC	Information for Planning and Consultation
MWAC	Midwest Archaeological Center
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Grave Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
SHPO	State Historic Preservation Office
THPO	Tribal Historic Preservation Office
USFWCA	U.S. Fish and Wildlife Coordination Act
USFWS	United States Fish and Wildlife Service

Chapter 7

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