National Park Service
Apostle Islands National Lakeshore
Bayfield, Wisconsin

Accessibility Plan For Raspberry, Michigan, Outer, Devils, Long and Sand Islands

Site Visits and VA Session June 8 – 10, 2010

Prepared for:
Apostle Islands National Lakeshore
Route 1, Box 4
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Prepared by:
Nancy Baker, Denver Service Center Project Manager
Joanne Cody, Denver Service Center Accessibility Technical Expert

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SECTION A: INTRODUCTION AND BACKGROUND

Introduction

This report summarizes recommendations for providing physical and programmatic access to the islands with light stations at Apostle Islands National Lakeshore. The national lakeshore will be referred to as the park in this document.

The recommendations in this report were developed during site visits to selected locations in the park and an accessibility assessment session held at park headquarters in Bayfield, Wisconsin. The site visits and the assessment took place June 8-10, 2010.

The Superintendent and staff of Apostle Islands National Lakeshore recognize the need to improve accessibility to sites within the park. It is a high priority to provide physical and programmatic access to the unique programs included on these islands.

This report describes a plan for providing accessibility improvements to the islands with light stations managed by Apostle Islands National Lakeshore: Raspberry, Michigan, Outer, Devils, Long and Sand Islands.

Accessibility laws, regulations and policies are not repeated in this document. See the Appendix for a list of references related to accessibility.

Background

Apostle Islands National Lakeshore is located in Ashland and Bayfield counties in northern Wisconsin. The following introduction is on the main page of the park website:

> *Jewels of Lake Superior*
>
> *Along windswept beaches and cliffs, visitors experience where water meets land and sky, culture meets culture, and past meets present. The 21 islands and 12 miles of mainland host a unique blend of cultural and natural resources. Lighthouses shine over Lake Superior and the new wilderness areas. Visitors can hike, paddle, sail, or cruise to experience these Jewels of Lake Superior.*

The park was established in 1970 *"in order to conserve and develop for the benefit, inspiration, education, recreational use, and enjoyment of the public certain significant islands and shoreline of the United States and their related geographic, scenic, and scientific values…"* (Public Law 91-424, September 26, 1970).

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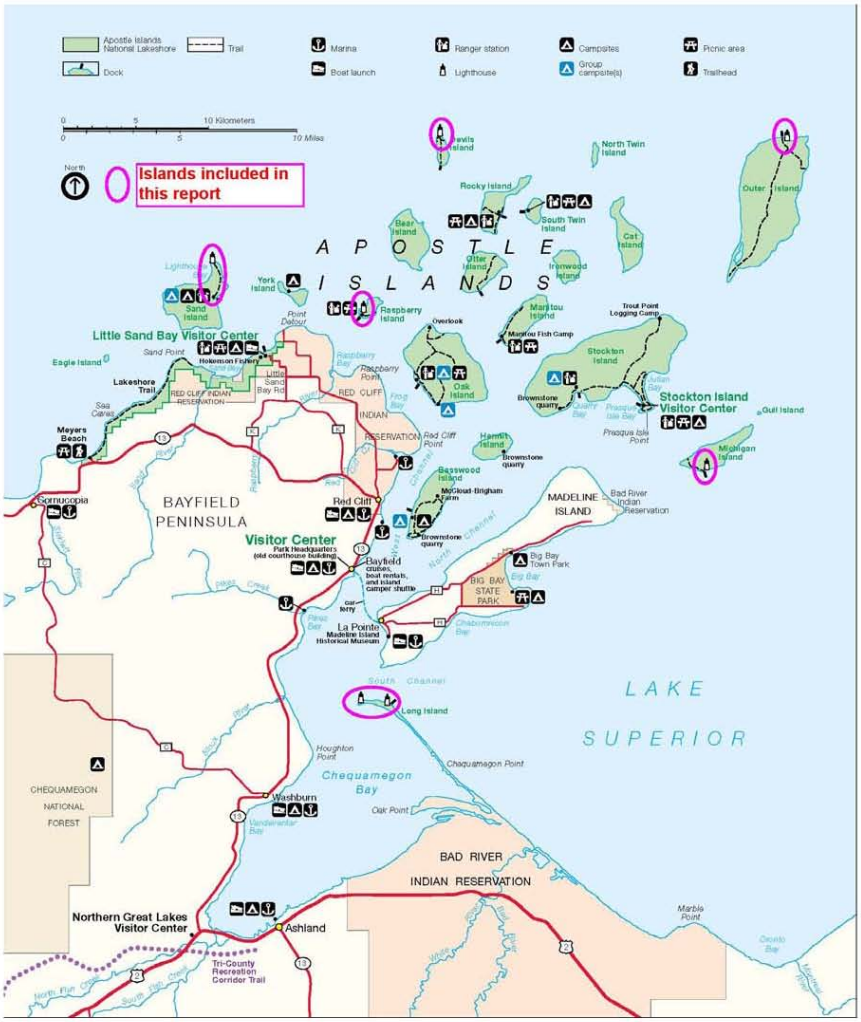

Islands Included in this Report

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Public access to the islands is provided by a cruise service from Bayfield. The cruise boats are accessible and provide accessible restrooms. The cruise boats provide a scenic cruise passing by many islands and lighthouses. The cruise service stops at only one light station (at the south end of Raspberry Island) and National Park Service staff interpreters provide a two-hour tour of the light station.

Access to the various programs available on these islands will align with the Draft General Management Plan (GMP) and Wilderness Management Plan (WMP) for the park.

Raspberry, Michigan, Outer, and Devils Islands are designated wilderness areas except for the cultural landscape areas directly adjacent to the light stations. A majority of the Long Island site is a cultural landscape area.

Sand Island is the only light station island with a broad range of programs offered. With no designated wilderness area and close proximity to the mainland, making the activities provided on Sand Island accessible is a high priority for the park.

Apostle Islands Gaylord Nelson Wilderness Area (Light green areas)

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SECTION B: THE ISLANDS

Raspberry Island Light Station

Raspberry Island – Raspberry Island Light Station has been rehabilitated and is the only light station at which guided tours are provided to the public on a regularly scheduled basis. Tours are available to the public arriving by cruise boat as well as those arriving at the island via private boats. Because this is the only island that is accessible to the public via cruise boat and also has public tours staffed by NPS interpretive employees, it is a high priority to provide physical access to the light station and program access at this site.

Physical Access - Physical access will be provided to the light station site with a mechanical lift from the dock to top of the bluff. Access to the first floor of the lighthouse will be provided via a ramp or other means of access. Accessible routes will be provided from the lift to an accessible vault toilet and to the lighthouse.

Program Access - Exhibits and media presentation on the first floor will provide program access to the second floor and light tower of the lighthouse for visitors with mobility impairments. Exterior programs will be made accessible through

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interpretive waysides. Program access for visitors who are blind or have low vision will be available through tactile exhibits, alternative format media and descriptive tour by the trained interpretive staff at the light station. Assistive listening devices will be available for ranger led programs and tours by the trained interpretive staff.

Michigan Island Tramway

Michigan Island – Michigan Island is currently accessed only by private boat or charter. Program access to this island for visitors with disabilities will be provided through exhibits and literature available at a mainland visitor center.

Physical access - Physical access to the light station, including its buildings and structures, is limited due to the extreme topography of the site and extreme weather conditions that make docking unreliable and maintaining a lift very difficult. There are 123 steps on the tramway connecting the boat dock to the light station. Step on west side of light station will be replaced with a graded walk and accessible threshold. When the existing pit toilet is replaced, an accessible vault toilet will be installed.

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The trails and campsite in the wilderness area will remain primitive; the existing pit toilet at the campsite will be replaced with an accessible vault toilet through the cyclic maintenance program.

Program Access – Exterior waysides/exhibits will include tactile elements and alternative formats for visitors who are blind or have low vision. If/when, this light station is open to the public, exhibits and media will provide program access for visitors with disabilities.

Outer Island Light Station and Tramway

Outer Island – Outer Island is currently accessed only by private boat or charter. Program access to this island for visitors with disabilities will be provided through exhibits and literature available at a mainland visitor center.

Physical access - Physical access to the light station, including its buildings and structures, is limited due to the extreme topography of the site and extreme weather conditions that make maintaining a lift very difficult. There are 108 steps on the tramway connecting the boat dock to the light station. When the existing pit toilet is replaced, an accessible vault toilet will be installed.

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The trails and campsite in the wilderness area will remain primitive; the existing pit toilet at the campsite will be replaced with an accessible vault toilet through the cyclic maintenance program.

Program Access – Exterior waysides/exhibits will include tactile elements and alternative formats for visitors who are blind or have low vision. If/when, this light station is open to the public, exhibits and media will provide program access for visitors with disabilities.

Devils Island Rocky Cliffs and Light Station

Devils Island – Devils Island is currently accessed only by private boat or charter. The buildings on this island are not planned to be open to the public. Program access to this island for visitors with disabilities will be provided through exhibits and literature available at a mainland visitor center.

Physical access - Physical access to the Light Station, including its buildings and structures, is limited due to the topography of the site, rocky cliffs at the boat landings near the Light Station and steps leading into and through the structures. When the existing pit toilet is replaced, an accessible vault toilet will be installed.

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Program Access – Exterior waysides/exhibits will include tactile elements and alternative formats for visitors who are blind or have low vision. If/when, this light station is open to the public, exhibits and media will provide program access for visitors with disabilities.

Sand Island Light Station

Sand Island – Sand Island provides several programs for visitors due to its relative close proximity to the mainland, gentle terrain and beach access. Programs include hiking, camping, visiting historic light station and historic farm, boating and sea kayaking, beach and water play, visiting an area of virgin white pines and viewing the sea caves on the islands' cliffs. Providing access to all of these activities is a high priority for the park.

Physical Access - Physical access to the light station, farm, and overlooks will be provided by making the trail/boardwalk from the East Bay dock to the light station and farm accessible to trail standards. Accessible routes will be provided at the light

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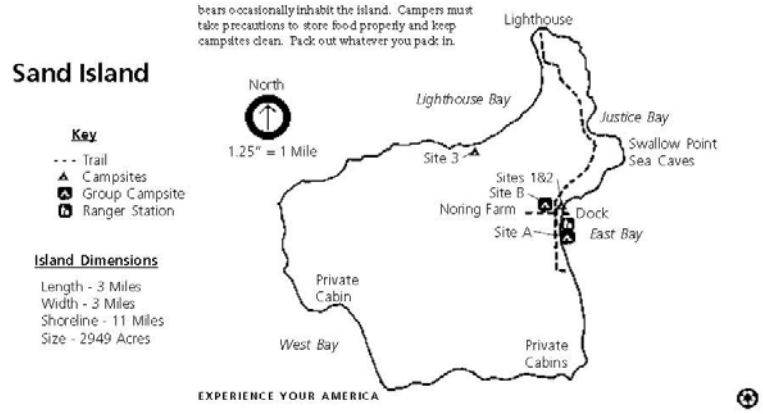
station to an accessible vault toilet and to the lighthouse. Access to the first floor of the lighthouse will be provided via a ramp or other means of access.

The dock at East Bay will be made accessible for cruise boats and private boats for visitors with disabilities. Accessible trails will be provided from the dock area to an accessible vault toilet, accessible campsite and accessible group campsite. A beach access route will be provided from the dock area to beach and water for beach and water access and sea kayaking.

Program Access - Exhibits and media presentation on the first floor will provide program access to the second floor and light tower of the lighthouse for visitors with mobility impairments. Exterior programs will be made accessible through interpretive waysides. Program access for visitors who are blind or have low vision will be available through tactile exhibits, alternative format media and descriptive tour by the trained interpretive staff at the light station. Assistive listening devices should be available for ranger led programs.

Excerpt from the Sand Island brochure:



The Apostle Islands have a complex human history that is an integral part of the natural landscape. Sand Island is an outstanding place to view the return of wild nature to lands that have experienced many complex and changing human uses. Second growth forests, old farm clearings, foundations, and existing structures all tell stories about the people who used, and continue to use Sand Island. Today's visitors experience these stories in several ways.

A two-mile trail connects the campground at East Bay with the Sand Island Lighthouse. A half mile north of East Bay the trail passes through an overgrown field (part of the Hansen farm). Justice Bay and a view of the Swallow Point sea caves are found at the trail's midpoint. A mile and a half north of the campground, the trail passes through an

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area of virgin white pines. These 250-year-old trees were protected within a lighthouse reservation. An overlook with a panoramic view of Lighthouse Bay is a quarter mile south of the lighthouse. A second trail begins at the East Bay campground and leads west for one third of a mile to a farmsite once occupied by the Noring family. The site contains some historic farm equipment and remnants of buildings. Beware of the old well located among the ruins.

Permits are required for all camping in the national lakeshore. A camping fee is charged. The campground near the dock at East Bay has a group campsite and two individual campsites. Another group campsite is located 200 yards south of the dock. A third individual campsite is located at the west end of the Lighthouse Bay beach. For detailed information, request the free "Camping" brochure.

A wooden dock is available for public use adjacent to the campground in East Bay. Docks at the west side and southeastern tip of the island are for private use. Please avoid using these docks. A rock shelf near the lighthouse is fitted with mooring cleats. Submerged rocks make extreme caution necessary when using this landing. Boats often anchor at East Bay, Justice Bay, and Lighthouse Bay, depending on wind conditions. Visitors exploring the sea caves in sea kayaks or small boats should note weather conditions and use caution.

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SECTION C: ASSESSMENT TEAM

The accessibility assessment team consisted of NPS employees from Apostle Islands National Lakeshore and Denver Service Center as well as two accessibility consultants from the Minneapolis-St. Paul area. The list of team participants follows:

Name/Role:	Title	Address	Phone/ Fax
Bob Krumenaker	Superintendent	Apostle Islands National Lakeshore Route 1, Box 4 Bayfield, WI 54814	715.779.3398 ext. 101
Jim Nepstad	Chief of Planning & Resource Management	Apostle Islands National Lakeshore Route 1, Box 4 Bayfield, WI 54814	715.779.3398 ext. 102
Myra Foster	Resource Education Chief	Apostle Islands National Lakeshore Route 1, Box 4 Bayfield, WI 54814	715.779.3398 ext. 301
Randy Ross	Facility Manager	Apostle Islands National Lakeshore Route 1, Box 4 Bayfield, WI 54814	715.779.3398 ext. 401
Dave Brunsvold	Park Accessibility Coordinator	Apostle Islands National Lakeshore Route 1, Box 4 Bayfield, WI 54814	715.779.5994
Nancy Baker	Project Manager	Denver Service Center 12795 West Alameda Pkwy PO Box 25287 Denver, CO 80225-0287	303.969.2275
Joanne Cody	Accessibility & Landscape Arch. Technical Expert	Denver Service Center 12795 West Alameda Pkwy PO Box 25287 Denver, CO 80225-0287	303.969.2278

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Name/Role:	Title	Address	Phone/ Fax
Glenn Lamoree	Design & Construction Branch Chief	Denver Service Center 12795 West Alameda Pkwy PO Box 25287 Denver, CO 80225-0287	303.969.2434
Julee Q. Peterson	Accessibility Consultant	Need contact info	
Mara Peterson	Accessibility	Need contact info	

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APPENDIX
ACCESSIBLITY LAWS, REGULATIONS AND POLICIES

ABAAS – Architectural Barriers Act Accessibility Standard. See http://www.access-board.gov/ada-aba/final.cfm

ADAAG – ADA Accessibility Guidelines

Draft Final Accessibility Guidelines for Outdoor Developed Areas – Guidelines for providing access to:

Camping Facilities, Picnic Facilities, Viewing Areas, Outdoor Recreation Access Routes, Trailheads, Trails, and Beach Access Routes

Harpers Ferry Programmatic Accessibility Guidelines for National Park Service Interpretive Media – See http://www.nps.gov/hfc/accessibility/index.htm#

Section 504 of the Rehabilitation Act of 1973, as amended 29 U.S.C. § 794

Section 504 of the Rehabilitation Act is a civil rights law. It was the first civil rights legislation in the United States designed to protect individuals with disabilities from discrimination based on their disability status. The nondiscrimination requirements of the law apply to employers and organizations that receive federal financial assistance. This statute was intended to prevent intentional or unintentional discrimination based on a person's disability. Included as an amendment to the Rehabilitation Act of 1973, the message of this section is concise; Section 504, 29 U.S.C.§794, states:

> "No otherwise qualified individual with a disability in the United States... shall, solely by reason of her or his disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

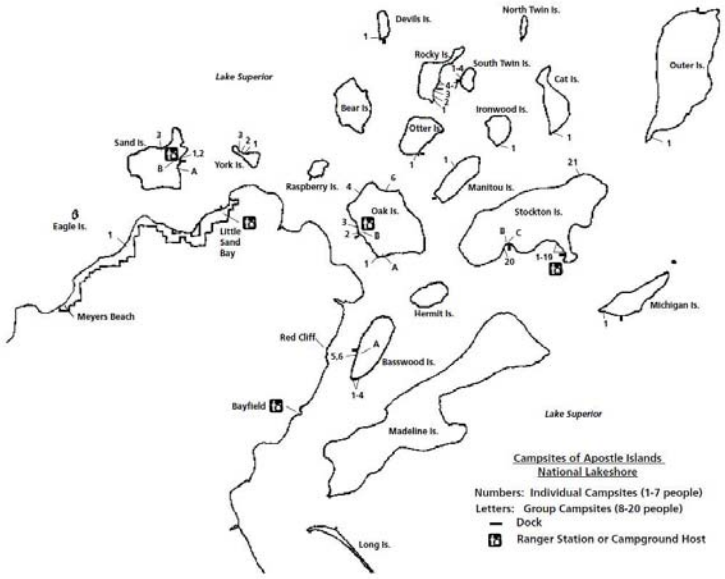
Department of the Interior regulations to implement Section 504 in federally-assisted programs can be found at 43 CFR17, Subpart B. See http://cfr.vlex.com/vid/appendix-subpart-part-17-19815557

Section 508 of the Rehabilitation Act of 1973, as amended 29 U.S.C. § 794

See http://www.section508.gov/index.cfm?FuseAction=Content&ID=11

Camping at Apostle Islands

There are currently 53 tent campsites and five group sites available in the park. Stockton provides two accessible campsites. All vault toilets will be replaced with accessible units through scheduled park maintenance updates. Campsites in designated wilderness will remain primitive sites. Sand Island campsites will provide an accessible camp site and an accessible group site with accessible amenities.



Island/ Location	Campsites	Sites	Well Water	Vault Toilet	Fire Ring	Tent Pad	Food Locker
Basswood	**1917 acres, 7.2 miles of trails**						
	South end of island	Sites 1-4:			X	X	X
	200 yards south of dock	Sites 5, 6:		X	X	X	X
	200 yards south of dock	Group Site A:		X	X		X
Cat	**1348 acres, no trails**						
	Near sandspit at south end of island	Site 1:		X	X		X
Devils	**318 acres, 1 mile of trail**						
	South end of island near dock	Site 1:		X	X		X
Ironwood	**659 acres, no trails**						
	Sandspit at south end of island	Site 1:			X	X	
Mainland Unit	**2568 acres, 4.5 miles of trails-**						

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	On Lakeshore Trail, 4.5 miles NE of trailhead	Site 1:			X	X	X
Manitou	**1363 acres, 2.75 miles of trails**						
	Beach area 2 miles north of fish camp dock	Site 1:					X
Michigan	**1578 acres, 1.5 miles of trails**						
	Beach area 0.9 miles west of light station	Site 1:			X		X
Oak	**5078 acres, 11.85 miles of trails**						
	Sandspit, 1.5 miles SE of dock	Site 1:		X	X		X
	0.1 mile west of dock	Site 2:		X	X		X
	0.25 mile west of dock	Site 3:		at dock	X	X	X
	NW beach, 2.8 miles from dock	Site 4:		X	X	X	X
	North Bay, 3.9 miles from dock	Site 6:		X	X		X
	Clearing near sandspit	Group Site A:		X	X		X
	Clearing near dock	Group Site B:		X	X		X
Otter	**1333 acres, 1.9 miles of trails**						
	Sandspit near dock	Site 1:		X	X		X
Outer	**8000 acres, 8.7 miles of trails**						
	Southern tip of island on sandspit	Site 1:		X	X	X	X
Rocky	**1100 acres, 1.9 miles of trails**						
	On sandspit 0.5 miles south of NPS dock	Site 1:		X	X	X	
	Within 0.25 miles of NPS dock	Sites 2-7:		X	X	X	
Sand	**2949 acres, 2.6 miles of trails**						
	Grassy clearing near East Bay NPS dock	Sites 1, 2:	X	X	X		X
	West end of Lighthouse Bay	Site 3:			X	X	X
	200 yards south of East Bay dock	Group Site A:	X	X	X		X
	Clearing near East Bay dock	Group Site B:	X	X	X		X
South Twin	**360 acres, 0.35 miles of trails**						
	Sandspit near dock	Sites 1-4:		X	X	X	
Stockton	**10054 acres, 14.5 miles of trails**						
	Presque Isle Campground	Sites 1-19:	X	X	X	X	X
	Quarry Bay	Site 20:		X	X	X	X
	Trout Point	Site 21:			X	X	X
	Quarry Bay	Group Sites B, C:		X	X		X
York	**321 acres, no trails**						
	Beach on north side of island	Sites 1-3:		X	X		X
Totals	**Sites**	**53**					
	Group Sites	**7**					

Memorandum: "Disability Access in the National Park Service". See attached memorandum dated October 24, 2006

United States Department of the Interior

NATIONAL PARK SERVICE
1849 C Street, N.W.
Washington, D.C. 20240

IN REPLY REFER TO

D24(2420)

ELECTRONIC TRANSMISSION – NO HARD COPY TO FOLLOW

October 24, 2006

Memorandum

To: Directorate and Field Directorate
Director, Denver Service Center
Director, Harpers Ferry Center
Park Superintendents

From: ***(for)*** Director ***/s/ Steve Martin***

Subject: Disability Access in the National Park Service

The purpose of this memorandum is to provide ongoing guidance regarding the improvement of the level of accessibility within the National Park System. The National Park Service (NPS) is required by law to ensure that its constructed assets, programs and services are accessible to and usable by individuals with disabilities. These legal mandates, which have been in existence for over 30 years, require that the NPS modify and adapt these assets and programs to ensure that these individuals have access to the same opportunities and benefits available to all other visitors. However, over the past several months, the NPS has received a significant increase in the number of official and valid complaints alleging non-compliance with the legal mandates. Also, Congressman Stevan Pearce, Chairman of the House Subcommittee on National Parks, convened an oversight hearing in May 2006, to review the efforts of the NPS to ensure equal opportunity for the Nation's 54 million disabled citizens. Many of the participants attending the hearing were from organizations representing citizens with disabilities who related their experiences and observations regarding NPS efforts. The testimony presented and the official complaints that have been filed both emphasize the fact that in spite of the efforts that have been made and the successes achieved, the NPS is falling significantly short of meeting the minimum level of access that is

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mandated by Federal law. There needs to be more accountability for actually achieving the goal of increased accessibility.

A review of the complaints filed and of the testimony received indicates that there are four critical areas where the NPS must show improved success. These areas are:

- **The NPS must ensure that all newly constructed assets are designed and constructed in compliance with the appropriate standards or guidelines.** There are findings that a number of newly constructed projects are falling short of compliance. In some cases, the design is appropriate, but the finished project is in noncompliance. Official guidelines and standards do exist and they are being amended and added to on an ongoing basis. Compliance with these standards is required and is not a choice. The NPS must ensure that all new designs conform to the appropriate standards. The NPS must also practice due diligence to ensure that the finished project is completed in conformance with the design. It has been proven over the years that incorporating accessibility standards into the design and construction of new facilities is the single most cost effective way to meet this requirement. Having to go back and make corrections after the project is completed is extremely costly.

- **The NPS must ensure that all rehabilitation and renovation projects incorporate accessibility corrections to the highest degree practicable. There are many Project Management Information System (PMIS) projects which indicate that accessibility compliance is being addressed, but the accomplishment reports do not reflect that action. There are also some projects in PMIS that could and should address access, but apparently do not.** As projects are formulated and selected for funding, no project should proceed without first assuring that current accessibility guidelines are being met. With the significant funds available through line-item construction, repair and rehabilitation, recreation fees, Operation of the National Park System, concession franchise fees equipment replacement, Federal Lands Highway and other programs, the NPS should be positioned to be a leader in providing access for all of our visitors.

- **The NPS must ensure that all interpretive programs, services and opportunities are provided in such a way as to ensure that they are accessible to all individuals with disabilities.** The NPS' legal obligations extend to individuals with visual impairments, hearing impairments, and cognitive impairments, as well as those with mobility impairments. This means that all interpretive and educational programs, exhibits, audio-visual programs, publications, and all other interpretive media must comply with Departmental Regulations 43 Part CFR 17, Subpart E. This must include ensuring that all audio-visual programs are captioned and that all assembly areas are equipped with assistive listening devices. In addition, the use of sign-language interpreters must be evaluated for all interpretive programs as a method to provide effective communication. It also means that the NPS must provide

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audio-descriptive services for the audio-visual programs, Braille, and large-print versions of printed materials for those with visual or cognitive disabilities. In order to accomplish this, parks should use their recreation fee or other revenues where possible. Low revenue and non-collecting parks should identify 20 percent Recreation Fee funds.

- **The NPS must ensure that appropriate staff receives the necessary continuing education and technical assistance to enable them to better understand the legal requirements for accessibility, as well as the methods and techniques to more effectively meet the needs of citizens with disabilities.** The NPS has an ongoing partnership with Indiana University's Department of Park and Recreation Administration, which resulted in the establishment of the National Center on Accessibility (NCA). This cooperative agreement has been extended for an additional 5 years, through FY 2010. At the present time, NCA is working to provide a series of training courses focused on the role and function of the regional and individual park accessibility coordinators. The primary objectives of the training are to assist the coordinators in completing comprehensive evaluations of the degree to which the parks are currently accessible, and to develop and oversee a comprehensive action plan on how to correct access limitations that currently exist. It is requested that all units of the NPS provide the necessary financial assistance to ensure that the coordinators are able to attend and benefit from these continuing education opportunities.

As a means of addressing accessibility, each region should make a determination of the visitor use assets that are rated with an Asset Priority Index of 90 or higher, if they are accessible, and if not, what is required to make the asset accessible. Also, each region should address a strategy to begin to remedy the issues. We will be discussing your findings at upcoming National Leadership Council meetings.

In addition, the NPS has taken and will be taking other steps to raise the level of visibility and priority of accessibility and to assist all units in making continued progress. These actions include the following:

- The NPS has taken steps over the past several months to develop a comprehensive accessibility evaluation component to the Facility Management Software System. This component has been tested at five parks during an initial pilot test, and has been utilized in conducting access evaluations at six additional parks during FY 2006.

- The NPS is currently initiating accessibility evaluations utilizing fee revenue funds and outside accessibility contractors at a number of selected parks from each region during FY 2007.

- The NPS is planning a Servicewide TELNET broadcast on this subject during the first quarter of FY 2007. This broadcast will be targeting regional staff,

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superintendents and division chiefs, and will be entitled "**Accessibility for People with Disabilities in the NPS: From Rhetoric to Reality.**"

- A presentation on this topic will be made at the next National Leadership Council meeting.

Your full cooperation in this matter is appreciated. Please contact your Regional Accessibility Coordinator, or David Park, Accessibility Management Program Coordinator, at 202/513-7027, for guidance and assistance in meeting this request. Thank you again for your past and continued support.

cc: Associate Regional Directors, Park Operations
Regional Accessibility Coordinators
Regional Equal Employment Opportunity Managers

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APPENDIX C: FIRE SAFETY EMAIL CORRESPONDENCE

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From: Brian_Olson@nps.gov [mailto:Brian_Olson@nps.gov]
Sent: Monday, June 28, 2010 4:59 PM
To: Martin, Scott
Cc: kip_schwabe@nps.gov; Nancy_Baker@nps.gov; Eades, Peter
Subject: RE: NPS Apostle Islands - Fire Suppression

Scott,
Since there is no infrastructure now (or planned for the near future) on these islands, don't include any costs for fire protection or fire detection.

Brian C. Olson, PE, CSP
Safety and Fire Protection Engineer
National Park Service
Denver Service Center
(303) 969-2196

From: "Martin, Scott" <smartin@rmhgroup.com>
To: "Brian_Olson@nps.gov" <Brian_Olson@nps.gov>
06/28/2010 03:26 PM
cc "Eades, Peter" peades@rmhgroup.com, Nancy_Baker@nps.gov <Nancy_Baker@nps.gov>, "kip_schwabe@nps.gov" <kip_schwabe@nps.gov>
Subject: RE: NPS Apostle Islands - Fire Suppression

Brian and/or Kip,
We happen to have the Raspberry Island report for example purposes and have gone through the fire protection, mechanical and electrical recommendations. It appears the there was existing electric and water infrastructure which was being supplemented and or upgraded to accomplish some level of fire suppression through the use of hydropneumatic tanks.

If we do not have the electrical generators at the Islands, are we to add this infrastructure even though we have been specifically directed to reduce/eliminate the use of fossil fuels?

Scott Martin, PE, LEED AP
Mechanical Engineer
The RMH Group, Inc.
Main: (303) 239-0909
Direct: (303) 312-4643
E-Mail: smartin@rmhgroup.com

-----Original Message-----
From: Brian_Olson@nps.gov [mailto:Brian_Olson@nps.gov]
Sent: Monday, June 28, 2010 2:09 PM
To: Martin, Scott
Cc: Eades, Peter; Nancy_Baker@nps.gov; kip_schwabe@nps.gov
Subject: Re: NPS Apostle Islands - Fire Suppression

Scott,
Typically we want to sprinkler all of these structures. Recently we sprinklered the Raspberry Island Lighthouse. This is a discussion that

we should have with the MWR AHJ (Kip Schwabe). I will be out of the office until Thursday.

In the future, all correspondence and coordination should be through Nancy Baker the DSC Project Manager.

Brian C. Olson, PE, CSP
Safety and Fire Protection Engineer
National Park Service
Denver Service Center
(303) 969-2196

From: "Martin, Scott" <smartin@rmhgroup.com>
To: "Brian_Olson@nps.gov" <Brian_Olson@nps.gov>
06/28/2010 01:48 PM
cc "Eades, Peter" <peades@rmhgroup.com>
Subject: NPS Apostle Islands - Fire Suppression

Brian,
RMH is working on a Historic Structures Report document for the NPS Apostle Islands. The question has been raised to us about the requirements for fire suppression at these facilities (mainly light houses and their support
buildings). The islands where these facilities are located do not have power or water supplies. We would like to discuss with you how we should handle these unique buildings and whether there may be a possibility of omitting fire suppression all together. Would you be available for a phone call tomorrow at approximately 10am? If not any time later in the day would work as well.

Scott Martin, PE, LEED AP
Mechanical Engineer
The RMH Group, Inc.
Main: (303) 239-0909
Direct: (303) 312-4643
E-Mail: smartin@rmhgroup.com
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Lakewood, Colorado 80215
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APPENDIX D: HAZARDOUS MATERIALS SAMPLING METHODOLOGY

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HAZARDOUS MATERIALS INVESTIGATION METHODOLOGY

The preliminary asbestos-containing material (ACM), lead-containing paint (LCP) and other regulated/hazardous material (RBM) assessment (assessment) has been performed by Landmark Environmental, Inc. (Landmark). This section focuses on the technical approach and findings of the observations and sampling associated with the assessment performed at the Apostle Islands National Lakeshore from September 15, 2009 through September 18, 2009.

The objective of this evaluation was to conduct ACM, LCP and RBM assessments in accordance with applicable regulations and project requirements to obtain preliminary data to support technical approach evaluations associated with the Historical Structures Report (HSR) and possible rehabilitation of several of the facilities.

Landmark's scope of services consisted of the following:

- Review of existing reports/data associated with ACM, LCP, etc.
- Preliminary screening of building materials for ACM and LBP as well as lead-contaminated soils (LCS) and perform analysis in support of the HSR,
- Observe structures for visible indications of mold growth; and
- Observe site surface soil for indications of staining or distressed vegetation associated with Petroleum Hydrocarbons.

BACKGROUND

ASBESTOS BACKGROUND

Asbestos is a confirmed human carcinogen and can cause diseases such as asbestosis, lung cancer, and mesothelioma; therefore, asbestos is regulated by the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and the Wisconsin Department of Natural Resources (WDNR). Typically these materials do not present an occupational hazard unless they are disturbed to the extent that an airborne release occurs, or they are in a significantly deteriorated condition in an occupied structure.

LEAD BACKGROUND

Lead-containing paints were used widely in construction until the mid-1980s. The routes of exposure for lead are ingestion and inhalation of dust. The target organs for lead exposure are kidneys, blood, gingival tissues, gastrointestinal system, and the central nervous system. Typically these materials do not present an occupational hazard unless they are disturbed to the extent that an airborne release occurs, or they are in a significantly deteriorated condition in an occupied structure.

MOLD BACKGROUND

Molds/fungi can grow (amplify) in building materials due to moisture infiltration from storm water or plumbing-related leaks. Applicable and relevant regulations identifying unhealthy concentrations of these biological materials have not been developed, however the presence of certain analytes such as Aspergillus have been reported in some specific instances to pose either and allergic or infective respiratory or contact dermatitis health risks to certain susceptible individuals.

Histoplasmosis is a disease caused by the fungus *Histoplasma capsulatum*. Its symptoms vary greatly, but the disease primarily affects the lungs. H. capsulatum grows in soil and material contaminated with bat or bird droppings. Spores become airborne when contaminated media is disturbed.

PETROLEUM HYDROCARBONS BACKGROUND

Petroleum Hydrocarbons sourced from gasoline, diesel, fuel oil, or various oils/lubricants have the potential to impact surface and subsurface soils and also ground water due to historical spills/releases. Petroleum hydrocarbons can include both aliphatic hydrocarbons, such as diesel-range organics (DRO) and gasoline range organics (GRO) and aromatic hydrocarbons such as benzene, xylene, etc. The health and environmental risks associated with petroleum hydrocarbons are widely and variously reported with inhalation and ingestion being the pathways of greatest concern. Combustible gas and vapor concentrations can also exist when vapor concentrations in air exceed the lower explosive limit.

PURPOSE AND OBJECTIVES

The purpose of the September 15-18, 2009 site visit was to conduct preliminary assessments of the Apostle Islands buildings and structures. The Hazardous Materials investigation was a preliminary screen performed to determine the scope of future investigations.

ASBESTOS

The asbestos inspection was limited in nature due to mandatory nondestructive testing and time constraints. Materials not tested are assumed to be asbestos containing. During this preliminary assessment, potential ACMs were inventoried and assumed to be asbestos containing. Materials that showed damage and that the Park Historic Preservation staff approved testing for were sampled for asbestos content.

LEAD CONTAINING PAINTS

Collection of paint chips for analysis to determine lead content was not conducted as part of the preliminary assessment. The park provided results of previous lead paint testing conducted in 1993. This testing was conducted using X-ray fluorescence analyzer (XRF). The results of the XRF testing showed that lead containing paints were present throughout the island structures tested. Results of the XRF testing showed that detectable lead was present in the majority of testing combinations.

LEAD IN SOILS

Soil samples were collected from roof driplines of lighthouses and selected Keepers Quarters. The soil sampling was conducted as a hazard screen to determine which of the structures sampled would require further soil characterization.

MOLD

Visible mold growth was observed in some of the inspected structures. The extent of the mold growth was highly variable among structures. The presence of mold and observed conditions were recognized as potentially contributing to poor indoor air quality.

PETROLEUM HYDROCARBONS

Landmark conducted a visual inspection of the ground surface adjacent to the site structures for the presence or likely presence of any petroleum products for conditions such as obvious soil staining, distressed vegetation or other conditions that indicate an existing release, a past release, or a potential threat of a release of petroleum products into structures on the property or into the ground.

EVALUATION CRITERIA

ASBESTOS EVALUATION CRITERIA

An ACM is defined by Wisconsin Statutes on Environmental Health Chapter 254, Subchapter II, Part 245.11(3) as asbestos or any material or product which contains more than 1% asbestos. ACMs are further classified as Friable and Nonfriable. Friable ACMs can be crumbled or reduced to powder by hand pressure when dry. Nonfriable materials cannot be crumbled, pulverized or reduced to powder by hand pressure.

The EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) further classify nonfriable ACM as Category I and II. Category I nonfriable ACMs include asbestos containing packings, gaskets, resilient floor coverings, and asphalt roofing products. Category II nonfriable ACMs are defined as all other nonfriable ACM, such as cement board, window putty, etc. During abatement and demolition projects, applicable regulations identify removal requirements based on the friability classification of an ACM.

Removal of ACM is not required by regulation unless the potential for an airborne release of asbestos fibers in excess of allowable levels exists. Typically, the potential for an airborne release of asbestos fibers exists in three circumstances:

1. The ACM will be impacted during maintenance, renovation, or demolition.
2. The material is significantly deteriorated to the extent that asbestos debris is present.
3. The ACM will be subject to future deterioration by vibration, airflow, or weathering.

The OSHA regulations in 29 Code of Federal Regulation (CFR) 1926.1101 require that building owners inform prospective contractors, employees, and tenants of the presence, location, and quantity of ACM or presumed ACM, in their buildings and facilities.

LEAD EVALUATION CRITERIA – PAINT

The EPA and U.S. Department of Housing and Urban Development (HUD) regulate Lead-Based Paint (LBP) abatement activities in target housing and child occupied facilities. OSHA regulates worker exposure to lead for coatings with any detectable lead. The EPA and HUD regulations related to LBP abatement do not apply to the project site unless abatement activities occur (specifically designed to permanently remove Lead-Based Paint). Wisconsin Administrative Rule DHS 163 defines lead-based paint as dried paint film containing greater than 0.7 milligrams of lead per square centimeter.

The OSHA lead in construction standard 29 CFR 1926.62 addresses requirements for sites where the employer has reason to believe that any employee may be exposed to lead in excess of OSHA's action level (AL) of 30 micrograms per cubic meter (30 µg/m3) over an eight-hour time weighted average. The OSHA standard applies to all construction activities that may impact lead containing paint (any detectable lead).

LEAD EVALUATION CRITERIA - SOIL

The WDNR regulates lead concentrations in soil that exceed 50 milligrams per kilogram (mg/kg), as provided in the Soil Cleanup Standards (January 2001), for residential/unrestricted land use if other contaminants (metals) are present, and 250 mg/kg if lead is the *only* contaminant present.

Elevated concentrations of lead in soils near some of the structures were expected due to historic paint management and rainfall runoff.

Because the September 2009 screening assessment confirms that lead in soils concentrations for certain structures exceed the default nonindustrial standard of 50 mg/kg [Wisconsin Administrative Code (WAC) Chapter NR 720.11], *site-specific evaluation criteria* can be and calculated by obtaining additional soil characterization samples and by using the EPA's Integrated Exposure Uptake Biokinetic (IEUBK) human health risk model, then submitted for WDNR approval.

Site-specific evaluation criteria that are protective of human health and the environment from direct contact with lead-affected soils can be higher than the default values, if the site-specific values chosen for the model for air, ingestion, and drinking water (with both soil and indoor dust values) are calculated from the required set of site-specific data. In certain circumstances the default levels provide a conservative estimation of the amount of biological lead uptake that a receptor (person) would receive at the site, and therefore the corresponding required default clean-up levels can be lower than those calculated on a site-specific basis.

By developing site-specific evaluation criteria it may be possible to identify more localized areas of elevated concentrations of lead in soils that exceed the site-specific criteria, and therefore minimize the extent of required soil excavation.

MOLD EVALUATION CRITERIA

Fungi such as Penicillium, Aspergillis, and Cladosporium are almost always found in the outdoor air and, due to moisture infiltration into structures, these and other molds can grow (amplify) in organic-based building materials such as wood and wallboard. Although an increase in mold concentrations from outdoor to indoor air is recognized in certain literature as typical, a consistent standard or Wisconsin-applicable regulation identifying unhealthy concentrations of biological materials has not been developed. Based on recommended guidance (not applicable standards) the comparative evaluation criterion utilized during initial mold assessments for this project is observable/visible growth in or on building substrates.

During the September 15-18, 2009 site assessment a visual inspection for the presence of mold and conditions that may contribute to mold was conducted. Moisture testing, air testing, and bulk sampling for mold were not conducted therefore these and associated air-quality related evaluation criteria are applicable only once corrective/construction (abatement) efforts are complete.

Evaluation criteria associated with possible future abatement strategies may include confirmation of correction of construction-related causes of the moisture intrusion with testing for acceptable indoor air quality (IAQ) prior to re-occupancy. The primary evaluation goal of the design for mold abatement would be to accomplish construction improvements in a safe manner that protects workers, occupants and visitors from adverse impacts to air quality and facilitates final assessment for re-occupancy by the Industrial Hygienist.

Abatement activities such as drying, surface treatment (potentially including sanding, biocide application, and encapsulation) would conceptually be performed in conjunction with interior/structural rehabilitation tasks, which may include removal of certain structural elements/building materials that are affected by moisture or mold. These removal or in-place treatment activities may require abatement controls such as enclosures, air filtration and personal protective equipment to be established and removed in sequence with construction requirements with key criteria/goals of: minimizing access and logistic constraints, ensuring that work occurs in a controlled fashion and attainment of post-project air quality to within recommended levels.

SAMPLING AND ANALYTICAL PROCEDURE

ASBESTOS

Asbestos analysis of bulk building material samples was limited during this evaluation. Only previously damaged materials were approved for sampling by the park historic preservation staff.

The bulk suspect asbestos samples were submitted to Reservoirs Environmental Services, Inc. (Reservoirs), located in Denver, Colorado. Reservoirs is a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory and is accredited by the American Industrial Hygiene Association (AIHA). The samples were analyzed by Polarized Light Microscopy (PLM) to determine asbestos type and percent.

The total asbestos reported is the average of all components in the material, with the asbestos content of separate layers also identified. Unused portions of samples are archived for 60 days unless the client requests special handling.

LEAD

Soil samples were collected from the roof dripline of selected lighthouses and Keepers Quarters. Samples were collected using a garden trowel from the top one inch of soil. One aliquot of soil per structure side was collected and composited for analysis. Samples were submitted to Reservoirs for Atomic Absorption Spectroscopy (AAS) / Atomic Emission Spectroscopy – Inductively Coupled Plasma (AES-ICP) to determine the amount of lead in each composite soil sample. Reservoirs is an AIHA accredited laboratory and is proficient in the Environmental Lead Proficiency Analytical Testing (ELPAT) program.

Wipe samples were collected in Keepers Quarters which were known to be seasonally inhabited by volunteers. The samples were three wipe composites collected from floor areas within the structure. The wipe samples were analyzed for lead dust by Reservoirs using AAS / AES-ICP to determine the amount of lead dust per square foot of floor space.

QUALITY ASSURANCE AND QUALITY CONTROL

Landmark performed an internal review of field data and laboratory analysis reports to ensure that data generated in these reports are accurate and complete. Quality control procedures were performed by EPA and WDNR certified inspection personnel that included cross referencing inspector field notes and sample logs with the laboratory analysis data to confirm sample numbers and material descriptions for each sample.

TEST RESULTS

Refer to each island's text and appendixes for results of the hazardous material sampling. Data sheets from the samples will be included in the appendix of each islands' volume in the final document unless requested as otherwise. Laboratory data sheets are included in each islands' appendix.

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

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