



Figure 3-65. Birch are a common tree species in the study area, and have regrown in areas that had been cleared by the USCG. (source: Mundus Bishop 2016)





Figure 3-66. White pine trees from the period of significance are in good condition and contribute to the historic character of the station. (source: Mundus Bishop 2016)

## Affected Environment

1 This section describes the resources  
2 potentially impacted by the treatment  
3 alternatives. It is organized by impact topics  
4 that were derived from scoping sessions  
5 - historic structures; cultural landscapes;  
6 native vegetation; and non-native ornamental  
7 and invasive, exotic plant species. More  
8 detailed information on biological resources  
9 in PIRO may be found in the GMP and in  
10 documents referred to in the text and cited in  
11 the bibliography.<sup>3.23</sup> Where applicable, links  
12 to documents available on the Internet are  
13 provided in the bibliography.

### 14 **Historic Structures and Cultural Landscapes**

16  
17 The following is a summary of the historic  
18 structures and cultural landscape features  
19 associated with the station. The structures  
20 and landscape features are fully described in  
21 chapter 2.

22  
23 The Michigan State Historic Preservation  
24 Office determined in 1999 that the Munising  
25 (Sand Point) Station is eligible for the  
26 National Register of Historic Places. The  
27 station is significant due to its association  
28 with the maritime heritage of the Upper Great  
29 Lakes, and because it represents the final era  
30 of life saving station design. It also relates to  
31 several broad patterns of upper Midwest and  
32 Great Lakes history, including the growth of  
33 commercial shipping, commercial fishing, and  
34 the development of recreational boating.

35  
36 The station represents the evolution from  
37 utilitarian structures to cohesive complexes  
38 designed by professional architects. The  
39 station also represents the development of  
40 standardized facilities created in response  
41 to the need for an organized federal service  
42 to provide maritime aid. It retains nearly all

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44 <sup>3.23</sup> PIRO GMP.

1 the primary and contributing structures and  
2 landscape features needed for a self-sufficient  
3 life saving station.

4  
5 Although vegetation now screens views  
6 between structures and the lakeshore and  
7 obscures landscape features, the complex  
8 (structures and landscape together) retains  
9 a high degree of integrity in terms of  
10 location, design, setting, feeling, association,  
11 workmanship, and materials.

### 12 13 Historic Structures

14 The complex contains contributing buildings  
15 that were constructed in 1933 following  
16 standardized plans drawn by United States  
17 Life Saving Service architects. The period of  
18 significance, 1933-1946, reflects its active use  
19 as a fully-staffed life saving station. In 1946 it  
20 was demobilized and staffed with a skeleton  
21 crew until it was officially decommissioned in  
22 1961. The existing station structures include  
23 Munising Life Saving Station (HS-01), Oil  
24 House (HS-02), Boathouse and Launchway  
25 (HS-08). Generally, the structures are in good  
26 repair and modifications have been sensitive  
27 to their historic character. Currently, the  
28 Boathouse and Life Saving Station do not  
29 meet accessibility standards and do not have  
30 functional fire suppression systems.

### 31 32 Cultural Landscape

33 Landscape features associated with the  
34 station include a system of concrete walks  
35 that have settled into the sand, former  
36 building foundations, historic vegetation  
37 and woodlands, lawn, and concrete lawn  
38 edging. The station landscape includes a  
39 sandy shoreline with a rock revetment.  
40 Since the period of significance, the station  
41 has revegetated and now has a character of  
42 turf and large trees with woody shrub and  
43 herbaceous understory. Currently, boardwalks  
44 provide access to the boathouse. Remnants



1 of the life saving operation are still present in  
2 the wooded areas, including the foundations  
3 of keepers' quarters that lined the access  
4 road. The concrete footings for the lookout  
5 tower are visible just off the shoreline.  
6 Archeological remains associated with the  
7 station may be present as well.

8  
9 Fire prevention and lack of vegetation  
10 management to maintain views to and from  
11 the station have resulted in dense vegetation  
12 in areas that had little to no vegetation  
13 during the period of significance. The change  
14 in vegetation and resulting changes in  
15 views affect the integrity of the connections  
16 between the station and Lake Superior during  
17 the period of significance.

#### 18 19 **Native Vegetation**

20  
21 The park is at the northwestern limits of the  
22 hemlock-white pine-northern hardwood  
23 forest and contains elements of boreal  
24 forest. Most of the uplands in the park are  
25 covered by a forest dominated by sugar maple  
26 (*Acer saccharum*) and yellow birch (*Betula*  
27 *alleghaniensis*), with American beech (*Fagus*  
28 *grandifolia*) present in various amounts.  
29 Eastern hemlock (*Tsuga Canadensis*) and  
30 white pine (*Pinus strobus*) are present in the  
31 hardwood forests, occasionally becoming  
32 dominant. Jack pine (*Pinus banksiana*) and  
33 red pine (*Pinus resinosa*) are prevalent on  
34 well-drained sand flats, such as Sand Point.  
35 Beaches along Lake Superior include dunal  
36 vegetation such as American beachgrass  
37 (*Ammophila breviligulata*), sand cherry  
38 (*Prunus pumila*), and jack pine. Additional  
39 plant communities occur less frequently in  
40 the park, including wet mesic forests, wet  
41 forests, fens, and swamp shrublands.

42  
43 An in-depth inventory and mapping of  
44 vegetation communities present in the park

45  
46

1 was reported upon in May 2010.<sup>3.24</sup> Vegetation  
2 communities present in the station include  
3 White Pine/Blueberry Dry-Mesic Forest,  
4 Great Lakes Beachgrass Dune, and White  
5 Pine/Red Maple Swamp (Figure 3-58). Areas  
6 of sand and cobble beach and developed area  
7 are also present.

#### 8 9 White Pine/Blueberry Dry-Mesic Forest

10 This is the most prevalent community on  
11 the station, covering 3.49 acres (49 percent)  
12 of the station. In general, the community is  
13 found in sites ranging from flat to moderately  
14 sloping northwest- and west-facing outwash  
15 plains and interdune flats. Soils are well-  
16 drained sand. The unvegetated surface is  
17 made up almost entirely of leaf litter (97-100  
18 percent cover) with some wood. In the park,  
19 the dry white pine forest occurs only in very  
20 small pockets near Lake Superior, including  
21 Sand Point. Tree canopy is dominated by  
22 eastern white pine (*Pinus strobus*) with lesser  
23 amounts of paper birch (*Betula papyrifera*),  
24 black spruce (*Picea mariana*) and red pine  
25 (*Pinus resinosa*). The shrub layer is dominated  
26 by eastern teaberry (*Gaultheria procumbens*),  
27 lowbush blueberry (*Vaccinium angustifolium*),  
28 velvetleaf huckleberry (*Vaccinium*  
29 *myrtilloides*), northern mountain-ash (*Sorbus*  
30 *decora*), and twinflower (*Linnaea borealis*).  
31 Western bracken fern (*Pteridium aquilinum*)  
32 dominates the herbaceous layer; other  
33 species include bluebead (*Clintonia borealis*),  
34 bunchberry dogwood (*Cornus canadensis*),  
35 moccasin flower (*Cypripedium acaule*), and  
36 wavy hairgrass (*Deschampsia flexuosa*).

#### 37 38 Great Lakes Beachgrass Dune

39 This community is present on .53 acres (7  
40 percent) of the station along the shoreline  
41 on stabilized foredunes subject to wave

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43 <sup>3.24</sup> Kevin Hop, Sara Lubinski, and Jennifer Dieck. *National*  
44 *Park Service Vegetation Inventory Program: Pictured*  
45 *Rocks National Lakeshore, Michigan. Natural Resource*  
46 *Report NPS/GLKN/NRR-2010/201*. (Fort Collins, CO: U.S.  
Department of the Interior, National Park Service 2010).

1 action, shore ice buildup, and blowouts.  
 2 The community is part of the cycle of sand  
 3 erosion, deposition, and stabilization.  
 4 The community is sensitive to human  
 5 disturbances, including informal trails and  
 6 dragging kayaks and small boats to and  
 7 from the shore. Species present include  
 8 short shrubs such as sandcherry (*Prunus*  
 9 *pumila*), willows (*Salix spp.*), woolly beach-  
 10 heather (*Hudsonia tomentosa*), common  
 11 juniper (*Juniperus communis*), lowbush  
 12 blueberry (*Vaccinium angustifolium*), and  
 13 velvetleaf huckleberry (*Vaccinium myrtilloides*  
 14 Michx.). Herbaceous species include the  
 15 dominant American beachgrass (*Ammophila*  
 16 *breviligulata*), little bluestem (*Schizachyrium*  
 17 *scoparium*), field sagewort (*Artemisia*  
 18 *campestris*), Virginia strawberry (*Fragaria*  
 19 *virginiana*), and beach pea (*Lathyrus*  
 20 *japonicus*).

21

#### 22 White Pine/Red Maple Swamp

23 This community is present on .2 acres (2.8  
 24 percent) of the station and is found in dune-  
 25 and-swale complexes that are either flat or  
 26 gently sloping. Soils are either seasonally  
 27 flooded, somewhat poorly drained sandy  
 28 loam over pure medium-fine-textured sand or  
 29 well-drained sand. Tree canopy is dominated  
 30 by red pine and eastern white pine, and may  
 31 also include red maple (*Acer rubrum*) and  
 32 black spruce. The shrub layer is dominated  
 33 by dominated by leatherleaf (*Chamaedaphne*  
 34 *calyculata*), lowbush blueberry (*Vaccinium*  
 35 *angustifolium*), and velvetleaf huckleberry  
 36 (*Vaccinium myrtilloides* Michx.). The sparse  
 37 herbaceous understory includes wavy  
 38 hairgrass (*Deschampsia flexuosa*), Canada  
 39 mayflower (*Maianthemum canadense*), and  
 40 narrowleaf cowwheat (*Melampyrum lineare*).

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#### 1 **Non-native Ornamental and Invasive, Exotic** 2 **Plant Species**

3

4 Non-native ornamental plant species are  
 5 those that originate in other regions of the  
 6 world and have been brought to the United  
 7 States through human activities, usually for  
 8 use in ornamental landscapes. Invasive, exotic  
 9 plant species are also non-native species,  
 10 brought intentionally or unintentionally,  
 11 through human activities. They harm the  
 12 environment and can cause extinctions of  
 13 native plants and animals, reduce biodiversity,  
 14 compete with native organisms for limited  
 15 resources, and alter habitats in the park.  
 16 Although not addressed in this EA, exotic  
 17 species of fauna, insects, and pathogens also  
 18 pose similar threats.

19

20 Several non-native ornamental plant  
 21 species are present in the station (Matrix  
 22 3-6). Although they are non-native, some  
 23 ornamental species such as common lilac  
 24 (*Syringa vulgaris*), asparagus (*Asparagus*  
 25 *spp.*), and bearded iris (*Iris spp.*) are cultivars  
 26 that do not tend to spread invasively. In  
 27 contrast, periwinkle (*Vinca minor*) and  
 28 forget-me-not (*Myosotis scorpioides*) are  
 29 invasive, ornamental species that can spread  
 30 aggressively. In addition to periwinkle  
 31 and forget-me-not, invasive, exotic species  
 32 including spotted knapweed (*Centaurea*  
 33 *stoebe*), Eurasian water-milfoil (*Myriophyllum*  
 34 *spicatum*), white sweet clover (*Melilotus*  
 35 *albus*), and Japanese knotweed (*Fallopia*  
 36 *japonica*). These species, along with others,  
 37 are targeted for control or eradication in the  
 38 park.

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## Chapter 4. Treatment Alternatives

### Introduction

1 This chapter presents treatment alternatives  
2 for the repair, protection and stewardship  
3 of the cultural landscape. These treatment  
4 alternatives were initially developed during  
5 the work session in June 2016 and refined in  
6 a work session October 2016. This chapter  
7 describes the no action and two action  
8 alternatives. The description of the no action  
9 alternative is presented first, followed by  
10 a description of each action alternative.  
11 A summary of the alternatives, organized  
12 by area, is presented as a matrix (Matrix  
13 4-1). Cost estimates are provided for each  
14 alternative, as an appendix.

15  
16 The *No Action Alternative* provides a basis  
17 for comparison with the action alternatives.  
18 Under the no action alternative, contributing  
19 and non-contributing features would be  
20 preserved and maintained. The no action  
21 alternative includes current park projects,  
22 those planned for the foreseeable future, and  
23 recommendations included in the GMP.

24  
25 The two *Action Alternatives* would focus  
26 on preserving contributing features,  
27 repairing the historic setting, and providing  
28 accessibility upgrades.

29  
30 *Action Alternative A* would follow a  
31 preservation approach. It would repair  
32 contributing features, remove select non-  
33 contributing features that distract from  
34 the historic setting, and would provide  
35 accessibility upgrades. Alternative A explores  
36 the minimum actions recommended in  
37 order to maintain the cultural landscape  
38 and to ensure its continued integrity. The  
39 vision for Alternative A is to preserve the  
40 site and its features as they are currently,  
41 without introducing extensive new features.  
42 Actions would repair spatial connections  
43 between key areas, and vegetation would  
44 be thinned to reveal historic views. This

1 alternative would repair historic walks and  
2 small scale features so the landscape reads  
3 as a cohesive experience. In this alternative,  
4 the Munising Life Saving Station (HS-01)  
5 would be preserved with NPS administrative  
6 offices and limited visitor use. The visitor  
7 parking area would be supplemented with  
8 a vault toilet and additional parking. Non-  
9 contributing boardwalks would be repaired to  
10 provide access to the shoreline.

11  
12 *Action Alternative B* would take a  
13 rehabilitation approach, which would allow  
14 expanded uses and repairs to features.  
15 Alternative B explores actions that enrich the  
16 cultural landscape from a visitor perspective.  
17 The setting of the Munising Life Saving  
18 Station (HS-01) would be restored to its  
19 formal USCG appearance as a prominent  
20 structure set within a well-maintained and  
21 neat landscape. This alternative restores  
22 historic views and connections between  
23 historic spaces. Visitors would be encouraged  
24 to explore the historic site and buildings to  
25 understand the USCG activities that took  
26 place at Sand Point. In this alternative, the  
27 Munising Life Saving Station (HS-01) would  
28 have expanded visitor uses and the NPS  
29 administrative offices would be relocated.  
30 Visitor experience would be accommodated  
31 in the interior of the Boathouse, which  
32 would be modified to house a new public  
33 restroom. The sand would be removed from  
34 the Launchway to reveal the historic structure  
35 and the rails would be restored. Vegetation  
36 would be removed to repair historic spatial  
37 patterns and views, and the front lawn and  
38 concrete curb would be restored to their full  
39 historic extents.

40  
41  
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## Treatment Approaches

1 Four distinct approaches to the treatment	1 by removing features from other periods in
2 of the cultural landscape were considered. <sup>3.1</sup>	2 history and reconstructing missing features
3 Brief descriptions of each treatment approach	3 from the restoration period.
4 follows.	4
5	5
6 <i>Preservation</i> is an appropriate treatment	6
7 approach for a cultural landscape with a	7
8 continuity of use and few modifications.	8
9 This approach is suited for a property	9
10 where its distinctive materials, features, and	10
11 spaces are intact, and for which extensive	11
12 modifications or additions are not required.	12
13 The preservation treatment approach allows	13
14 contributing features to be preserved,	14
15 restored, or repaired.	15
16	16
17 <i>Rehabilitation</i> is an appropriate treatment	17
18 approach for a cultural landscape with a	18
19 long period of significance, has undergone	19
20 few modifications, and has integrity in one	20
21 or more characteristics: location, setting,	21
22 materials, workmanship, feeling, and	22
23 association. Rehabilitation is appropriate	23
24 for a property where new additions are	24
25 contemplated. The rehabilitation treatment	25
26 approach allows features to be preserved,	26
27 rehabilitated, reconstructed, or restored.	27
28	28
29 <i>Reconstruction</i> is an appropriate treatment	29
30 approach for a cultural landscape with a vast	30
31 amount of documentation that would allow,	31
32 by means of new construction, the form,	32
33 features, and detailing of a non-surviving	33
34 features to be replicated to its appearance	34
35 at a specific period of time and in its historic	35
36 location.	36
37	37
38 <i>Restoration</i> is an appropriate treatment for	38
39 a cultural landscape with documentation	39
40 to accurately depict the form, features, and	40
41 character of earthwork complexes as it	41
42 appeared during a particular period of time	42
43	43
44 3.1 Page et al., <i>A Guide to Cultural Landscape Reports</i> .	44



Matrix 4-1. Treatment Alternatives Matrix

	No Action	Action Alternative A	Action Alternative B
<b>Treatment Approach</b>		preservation	rehabilitation
<b>Circulation</b>			
Staff Parking Area		reduce size and number of spaces	modify parking area to match historic size and arrangement. Expand NPS parking into formerly disturbed area east of Sand Point Road.
Visitor Parking Area		formalize layout, provide walkway from parking to vault toilet	expand in existing location with angled parking and room for pull-through trailer parking; provide parallel parking at east edge of Sand Point Road. Expand turning radius at end of road to accommodate large vehicles.
Station Walks		repair	repair contributing to full extent, reset and add material
Concrete Curb		repair where extant above grade	repair and reveal to full extent of curb
Boardwalk		repair boardwalk and dock	realign boardwalk to follow Launchway, extend boardwalk to dock
Accessibility		72' ramp west side of the Life Saving Station Ramp into Boathouse	heated Lift at Life Saving Station Ramp into Boathouse
<b>Buildings and Structures</b>			
Life Saving Station		maintain Admin use; limited visitor use; provide accessible ramp on building's west edge	remove Admin use; Expand Visitor Use; provide accessible lift at front entrance; repair setting
Boathouse		provide accessible ramp	Expand Visitor Use; open full interior; provide accessible ramp
Launchway		allow sand to remain	remove sand from interior and sides of the structure; restore rails
Restrooms	port-o-let	vault toilet at parking area	vault toilet at parking area as interim solution; long-term provide restroom at interior of Boathouse
Lookout and Communication Towers		preserve foundations	mark visually; new vertical element/ reconstruct Lookout Tower
<b>Vegetation</b>			
Lawn		maintain existing	restore to historic extent; establish lawn to within concrete curb and taller vegetation outside of curb
Woodland		select thinning to open views to the water; preserve extant trees from POS	in key locations, remove vegetation that obscures views to the water; preserve extant trees from POS; provide additional native low-growing shrubs and groundcovers in naturalistic plantings
<b>Revetment</b>	EA preferred alt	EA preferred alt	EA preferred alt

## **Treatment Goals**

- 1 The following goals assist in determining the  
2 desired landscape condition and appropriate  
3 stewardship guidance for protecting the  
4 character and ambiance of the cultural  
5 landscape.  
6
- 7 1. Preservation and rehabilitation actions  
8 will protect the cultural landscape,  
9 including its historic character and  
10 individual features as these contribute to  
11 its significance.  
12
- 13 2. Cultural resources will be protected  
14 through accepted practices including  
15 preservation, stabilization, rehabilitation,  
16 restoration and repair. The cultural  
17 landscape will be protected by repairing  
18 features and patterns, restoring missing  
19 historic features, and by allowing removal  
20 of noncontributing features.  
21
- 22 3. Universal access will be improved to the  
23 Boathouse, Life Saving Station and site.  
24 Appropriate locations for new visitor  
25 facilities including new restrooms,  
26 parking and wayfinding will be addressed.  
27
- 28 4. A strategy for maintenance and repair of  
29 features will be identified, including level  
30 of vegetation clearing to restore views,  
31 repairs needed for walks, concrete curbs,  
32 and other landscape features.  
33
- 34 5. Opportunities for further research and  
35 investigation, including archeological  
36 investigations and other documentation  
37 needs, will be identified.  
38
- 39 6. Strategies for protection of threatened  
40 and endangered species in coordination  
41 with cultural resources will be identified.  
42
- 43 7. The natural shoreline and vegetation that  
44 contribute to the cultural landscape will  
45 be retained and enhanced.

## **No Action Alternative**

- 1 The no action alternative would include  
2 actions undertaken as part of regular  
3 operations. This provides a basis for  
4 comparison with the action alternatives.  
5 Under the no action alternative, the present  
6 level of use, management, interpretation,  
7 maintenance and operations would continue.  
8 The no action alternative includes actions  
9 identified in the GMP, LRIP, and actions  
10 already identified and/or in-progress. As  
11 identified in the GMP, LRIP, and Revetment  
12 EA, the no action alternative would include  
13 the following actions.  
14
- 15 • The Munising Life Saving Station (HS-01),  
16 Boathouse and Launchway (HS-08) would  
17 be preserved to protect the architectural  
18 values associated with their period of  
19 significance (1933 to 1946, with an  
20 emphasis on the 1940s).  
21
- 22 • NPS operations would be removed from  
23 Sand Point and relocated adjacent to the  
24 Munising maintenance facility. When  
25 this occurs, the LRIP recommends the  
26 former Munising Life Saving Station be  
27 refurbished to its 1940s appearance  
28 on the first floor, with the second  
29 floor as seasonal staff housing. The  
30 grounds would be restored to the 1940s  
31 appearance.<sup>3.2</sup>  
32
- 33 • Sand Point would be managed to provide  
34 visitors with opportunities to learn about  
35 Coast Guard history. The improved visitor  
36 experience would expand the museum  
37 exhibits in the Boathouse, and new  
38 waysides would tell the stories of the U.S.  
39 Life Saving Service and U.S. Coast Guard.  
40
- 41 • The rock revetment along the shoreline  
42 would be removed, and the area restored  
43 with soft-engineering methods to  
44 rehabilitate the shore and appearance of  
45 Sand Point.

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3.2 PIRO GMP, 61.

## Action Alternative A

1 Action Alternative A would include repair and  
2 improvement projects under consideration  
3 as part of the No Action Alternative, and  
4 would add actions to preserve and repair key  
5 features of the cultural landscape.

6  
7 Action Alternative A would utilize a  
8 preservation approach and would maintain  
9 and repair features as needed. This approach  
10 does not utilize extensive modifications, but  
11 focuses on repair of existing features and  
12 spaces. Views that are currently missing  
13 would be reestablished through tree  
14 thinning and spatial connections between  
15 key spaces would be restored (Illustration  
16 4-1). Upgrades to accessibility and access  
17 are included in this alternative. Preservation  
18 projects include the following actions.

### 19 Spatial Organization / Views

- 20 • Preserve contributing spatial  
21 organization, views and formal  
22 arrangement of USCG spaces.
- 23  
24 • Repair historic views and spatial  
25 relationships by repairing walks and  
26 partially reestablishing vegetation  
27 patterns.
- 28  
29 • Repair contributing views by thinning  
30 vegetation in key locations.

### 31 Archeological Sites

- 32 • Protect known archeological sites.

### 33 Circulation

- 34 • Retain Sand Point Road, access drives, and  
35 pedestrian routes.
- 36  
37 • Repair network of pedestrian concrete  
38 paths through cyclic maintenance.
- 39  
40 • Repair non-contributing boardwalk.  
41 Repair the reconstructed dock as needed  
42 to match the historic USCG dock.

- 1 • Lessen the impact of the staff parking area  
2 on by modifying the size and reducing the  
3 number of spaces.

- 4 • Remove the non-contributing gravel area  
5 to the south of the Boathouse.

- 6 • Modify the visitor parking area to  
7 formalize the layout and improve ingress  
8 and egress.

### 9 Buildings and Structures

- 10 • Preserve the Munising Life Saving  
11 Station (HS-01) and its formal setting  
12 with short mown lawn and orthogonal  
13 walks. Provide universal access into the  
14 structure with a ramp on the building's  
15 west edge that connects to the front  
16 porch.

- 17 • Preserve the Oil House through routine  
18 and cyclic maintenance.

- 19 • Preserve the Boathouse and Launchway.  
20 Allow sand to remain in Launchway, in  
21 order to protect the structure. Provide an  
22 accessible ramp into the Boathouse.

- 23 • Preserve the Communications Tower  
24 foundation and the Lookout Tower  
25 foundation.

- 26 • Remove non-contributing garage  
27 foundation.

- 28 • Provide an accessible vault toilet at the  
29 visitor parking area, sited out of the  
30 viewshed of the historic structures.

### 31 Small Scale Features

- 32 • Repair the concrete curb around the  
33 Munising Life Saving Station (HS-01)  
34 where it is extant above grade.

- 35 • Remove fence and boat hull.



1 Vegetation

- 2 • Thin woodland vegetation where it has  
3 encroached upon historic views to the  
4 water.  
5  
6 • Maintain existing lawn surrounding the  
7 Munising Life Saving Station (HS-01) .  
8  
9 • Preserve extant trees that date from the  
10 period of significance.  
11  
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## Action Alternative B

1 Action Alternative B would add actions  
 2 to fully repair the historic setting. This  
 3 alternative would utilize a rehabilitation  
 4 approach in order to maintain the historic  
 5 integrity of the cultural landscape.  
 6 Rehabilitation is well-suited for the cultural  
 7 landscape as it requires repair of features  
 8 and adaptive reuse for contemporary and  
 9 compatible uses.  
 10  
 11 This alternative would allow the most  
 12 extensive change to existing conditions in  
 13 order to rehabilitate the cultural landscape to  
 14 the greatest extent possible. Historic spatial  
 15 patterns and views would be restored, and  
 16 greater visitor access throughout the site  
 17 would be accommodated. This alternative  
 18 identifies expanded opportunities for  
 19 visitor contact, improved wayfinding, and  
 20 greater legibility of the cultural landscape  
 21 (Illustration 4-2). Rehabilitation projects  
 22 include the following actions.

### 24 Spatial Organization / Views

- 25 • Preserve contributing spatial  
 26 organization, views and formal  
 27 arrangement of USCG spaces.  
 28
- 29 • Repair to the full extent historic views and  
 30 spatial relationships by restoring walks  
 31 and vegetation patterns.  
 32
- 33 • Repair contributing views by removing  
 34 vegetation where it obscures historic  
 35 views.

### 37 Archeological Sites

- 38 • Protect known archeological sites.  
 39
- 40 • Consult with affiliated tribes to identify  
 41 themes and approaches to marking and/  
 42 or interpreting their history at Sand Point.  
 43  
 44

### 1 Circulation

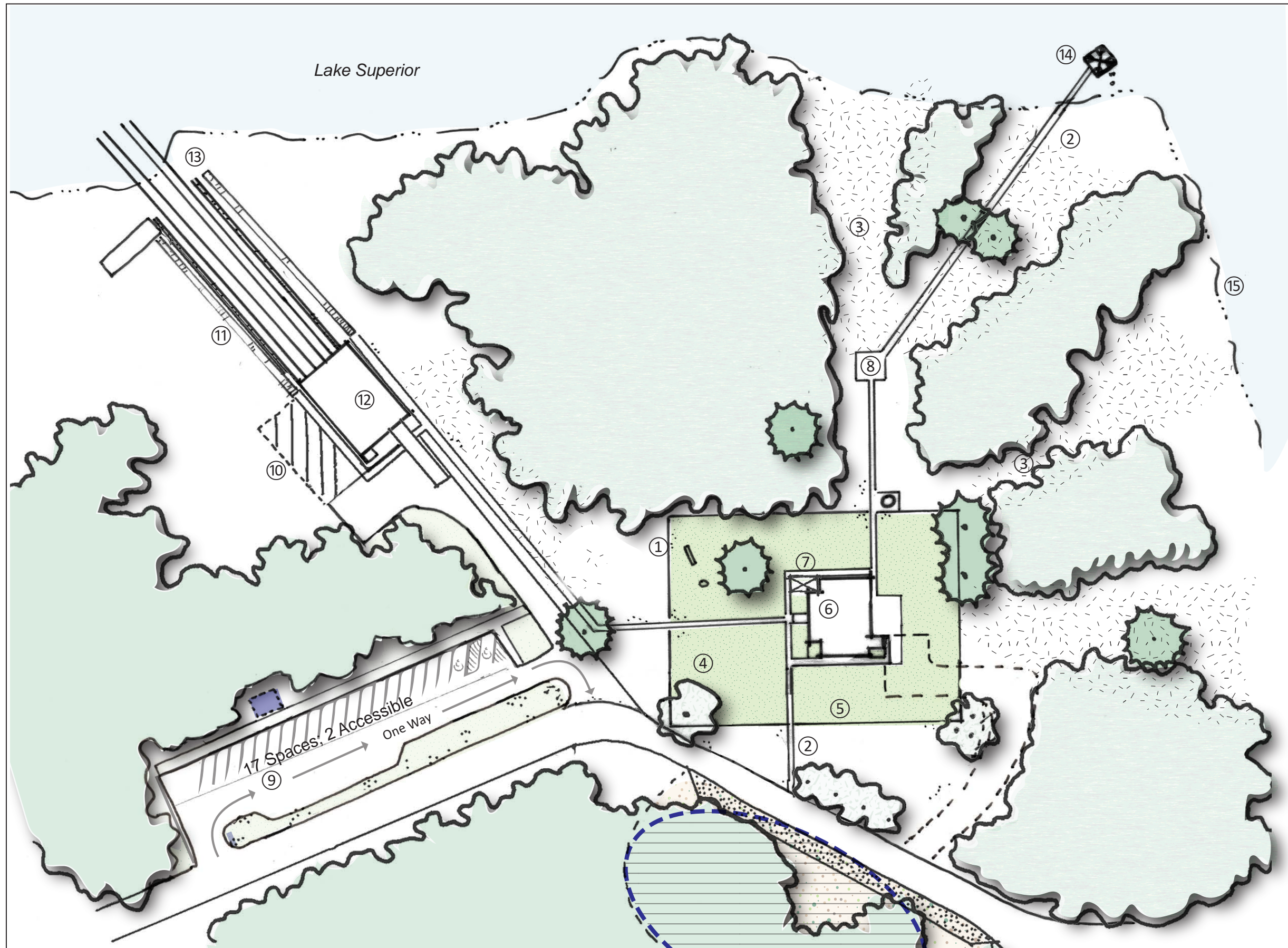
- 2 • Retain Sand Point Road, access drives, and  
 3 pedestrian routes.  
 4
- 5 • Repair network of pedestrian concrete  
 6 paths, resetting and adding material as  
 7 needed to restore the full extent of the  
 8 path.  
 9
- 10 • Remove non-contributing boardwalk, as  
 11 this route does not match the historic  
 12 routes.  
 13
- 14 • Repair the reconstructed dock as needed  
 15 and to match the historic USCG dock.  
 16 Provide additional boardwalks on either  
 17 side of the Launchway, to connect with the  
 18 dock and shoreline.  
 19
- 20 • Remove staff parking area to restore the  
 21 setting of the Munising Life Saving Station  
 22 (HS-01).  
 23
- 24 • Remove the non-contributing gravel area  
 25 south of the Boathouse.  
 26
- 27 • Expand the visitor parking and formalize  
 28 the layout. Improve ingress and egress.  
 29
- 30 • Allow parallel parking at the east edge  
 31 of Sand Point Road as an interim parking  
 32 solution. Long-term, expand parking and  
 33 operations area in the formerly disturbed  
 34 area east of Sand Point Road.  
 35
- 36 • Maintain existing loop drive at the end of  
 37 Sand Point Road. Expand the radius of the  
 38 road terminus in order to accommodate  
 39 larger vehicles.  
 40

### 41 Buildings and Structures

- 42 • Restore the formal setting at the Munising  
 43 Life Saving Station (HS-01) with short  
 44 mown lawn, orthogonal walks, and raised

1	plinth that frames the building. Provide	1	• Preserve extant trees that date from the
2	universal access into the structure with an	2	period of significance.
3	exterior lift at the main entrance.	3	
4		4	• Add new trees and vegetation to blend the
5	• Preserve the Oil House through routine	5	expanded parking area with the setting.
6	and cyclic maintenance.	6	
7		7	• Protect native dune vegetation and
8	• Preserve the Boathouse and rehabilitate	8	encourage visitors to utilize established
9	with an accessible ramp into the	9	trails through sensitive ecological areas.
10	structure.	10	
11		11	
12	• Provide an interim vault toilet adjacent	12	
13	the visitor parking area. Long-term, locate	13	
14	a visitor restroom inside the Boathouse.	14	
15		15	
16	• Preserve the Launchway. Remove sand	16	
17	that obscures the form and function of	17	
18	the structure and reveal the edges of the	18	
19	bulkhead. Restore the rails where they are	19	
20	missing.	20	
21		21	
22	• Preserve the Communications Tower	22	
23	foundation and the Lookout Tower	23	
24	foundation. Consider adding a compatible,	24	
25	contemporary structure that would	25	
26	visually mark the height of these non-	26	
27	extant towers.	27	
28		28	
29	• Remove non-contributing garage	29	
30	foundation.	30	
31		31	
32	<u>Small Scale Features</u>	32	
33	• Repair the concrete curb around the	33	
34	Munising Life Saving Station (HS-01),	34	
35	revealing the full form of the curb.	35	
36		36	
37	<u>Vegetation</u>	37	
38	• Thin trees and vegetation where it	38	
39	encroaches on historic views to the water.	39	
40		40	
41	• Repair the lawn surrounding the Munising	41	
42	Life Saving Station (HS-01) to within the	42	
43	concrete curb as was the historic design	43	
44	intent.	44	
45		45	
46			

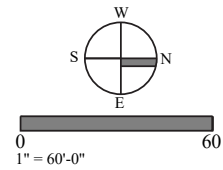




**Legend**

- Preserve Tree Extant from Period of Significance
- New Tree
- Thin Forest Vegetation
- Preserve Existing Trees
- Restore Lawn
- New Vegetation
- Interim Parallel Parking
- Future Parking
- Temporary Vault Toilet

- Notes**
- ① Repair Concrete Curb, full extent
  - ② Repair / Reconstruct Walk
  - ③ Remove Trees for Views
  - ④ Restore Lawn to Historic Extent
  - ⑤ Remove Parking Area
  - ⑥ Expand Visitor Use in Guard Station
  - ⑦ Accessible Lift
  - ⑧ Restore Communications Tower
  - ⑨ Expand Visitor Parking
  - ⑩ Remove Gravel Area
  - ⑪ Realign Boardwalk
  - ⑫ Rehabilitate Boathouse for Visitor Access and Restroom
  - ⑬ Remove Sand from Launchway and Restore Rails
  - ⑭ Restore Lookout Tower
  - ⑮ Shoreline Revetment to Follow EA Guidance



DECEMBER 2016	TITLE OF PROJECT CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT		
UNITED STATES DEPARTMENT OF THE INTERIOR	TITLE OF DRAWING ILLUSTRATION 4-2 TREATMENT ALTERNATIVE B		
PICTURED ROCKS NATIONAL LAKESHORE MUNISING, MICHIGAN	NAME OF PARK SAND POINT/MUNISING USCG LIFE SAVING STATION		
625-135195	REGION MIDWEST	COUNTY ALGER	STATE MICHIGAN 4-11





## Mitigation Measures

- 1 The NPS places strong emphasis on  
 2 protecting resources against potentially  
 3 adverse impacts. Mitigation is used to avoid,  
 4 prevent, or minimize adverse impacts during  
 5 implementation of projects. Mitigation is  
 6 also considered when treatment alternatives  
 7 are developed. An alternative's potential  
 8 impacts to resources are minimized  
 9 whenever possible, while still meeting  
 10 project objectives. For example, the extent  
 11 of proposed vegetation management under  
 12 each treatment alternative is the minimum  
 13 necessary to meet the alternative's objectives.  
 14 To further minimize impacts, general  
 15 measures are implemented during and  
 16 after construction. The following mitigation  
 17 measures would be implemented as part of  
 18 whichever treatment alternative is selected.  
 19 The NPS may need to obtain federal and  
 20 state environmental permits and, as part of  
 21 that process, additional mitigation measures  
 22 could be required by other agencies. The  
 23 NPS would implement an appropriate level  
 24 of monitoring throughout project activities  
 25 to ensure that protective measures are being  
 26 properly implemented and are achieving their  
 27 intended results.
- 28  
 29 **General Measures**
- 30  
 31 The following general measures would be  
 32 implemented during construction of any  
 33 selected treatment alternative.
- 34  
 35 • The work area limits would be clearly  
 36 defined, fenced, flagged, and delineated to  
 37 keep ground disturbance to a minimum.  
 38 No disturbance would occur beyond these  
 39 limits other than protection measures for  
 40 erosion/sediment control.
- 41  
 42 • All contractor employees and  
 43 subcontractors and park seasonal,  
 44 contract, and concession employees
- 1 would attend an orientation session(s)  
 2 regarding park regulations focused  
 3 on minimizing impacts on resources,  
 4 human health and safety, and appropriate  
 5 housekeeping.
- 6  
 7 • All tools, equipment, barricades, signs,  
 8 surplus materials, and rubbish would  
 9 be removed from the project area upon  
 10 project completion. Construction debris  
 11 would be hauled from the park to an  
 12 appropriate disposal location.
- 13  
 14 • Staging, materials, and equipment would  
 15 be in developed areas such as existing  
 16 parking lots to the extent possible.

1 **Water Resources**

- 2
- 3 • If minor earthwork is necessary, standard
- 4 erosion-control measures such as silt
- 5 fencing would be used to minimize
- 6 erosion and the introduction of sediments
- 7 to aquatic habitat during and after
- 8 construction.
- 9
- 10 • All vehicle and equipment fueling would
- 11 occur more than 100 feet from any
- 12 surface water in a location where a fuel
- 13 spill would not be able to enter the water.
- 14
- 15 • A spill prevention and response plan that
- 16 regulates the use of hazardous and toxic
- 17 materials, such as fuels and lubricants
- 18 for construction equipment, would be
- 19 prepared.
- 20

21 **Wildlife and Species of Concern**

- 22
- 23 • Construction personnel would be
- 24 instructed on appropriate behavior in the
- 25 presence of wildlife and on proper storage
- 26 and handling of food, garbage, and other
- 27 attractants.
- 28
- 29 • Plans would identify areas of sensitive
- 30 vegetation to avoid (if any) and would
- 31 designate areas for stockpiling slash
- 32 material.
- 33
- 34 • To reduce noise disturbance and
- 35 limit impacts on breeding avian and
- 36 mammalian species, all tree and shrub
- 37 thinning and removal would be conducted
- 38 from October 1 to March 1, where
- 39 feasible.
- 40
- 41 • If tree and shrub thinning and removal
- 42 must occur between March 1 and October
- 43 1, field surveys for migratory bird nests
- 44 and cavities and bat roosts and nurseries
- 45 would be conducted prior to vegetation-
- 46 disturbing activities. Where active nests

1 or nurseries are present, vegetation

2 removal would not occur until after

3 the young have fledged, and ground-

4 disturbing activities would not occur

5 within 100 feet until the young have

6 fledged.

7

- 8 • Tree and shrub thinning would comply
- 9 with provisions of the final 4(d) Rule
- 10 for the Northern Long-Eared Bat (81 FR
- 11 1900, January 14, 2016) pertaining to
- 12 areas in which white-nose syndrome is
- 13 known to occur, which includes Alger
- 14 County.
- 15

16 **Native Vegetation and Non-native**

17 **Ornamental and Invasive, Exotic Species**

- 18
- 19 • Non-invasive ornamental tree and
- 20 shrub species would be used in cultural
- 21 landscape treatments.
- 22
- 23 • Disturbance to vegetation would
- 24 be avoided as much as possible and
- 25 contained to as small a footprint as
- 26 possible.
- 27
- 28 • Temporary barriers may be provided
- 29 to protect existing trees, plants, and
- 30 root zones not proposed for removal or
- 31 thinning. Trees or other plants would not
- 32 be removed, injured, or destroyed without
- 33 prior approval.
- 34
- 35 • All equipment entering the park would
- 36 be cleaned and pressure washed to
- 37 remove foreign soil, vegetation, and other
- 38 materials that may contain nonnative
- 39 seeds or vegetation.
- 40
- 41 • All disturbed areas would be revegetated
- 42 with native species. Revegetation
- 43 plantings, if necessary, would use native
- 44 species from genetic stocks originating in
- 45 the park, if possible. Revegetation efforts
- 46 would focus on recreating the natural



spacing, abundance, and diversity of native plant species. All disturbed areas would be restored as nearly as possible to preconstruction conditions shortly after construction activities are completed.

- To minimize introduction of exotic plant species, no hay bales would be used for mulch. Hay often contains seed of undesirable or harmful invasive exotic plant species. Therefore, on a case-by-case basis, the following materials may be used for any erosion control that may be necessary: rice straw, straws determined by the NPS to be weed-free (e.g., barley straw or winter wheat straw), cereal grain straw that has been fumigated to kill weed seed, and wood excelsior bales.
- NPS would prepare and implement a site-specific non-native and invasive exotic plant management plan for disturbed and restored areas. The plan would include monitoring and adaptive management measures and would remain active until plan success criteria are met. The plan would be consistent with the park's general and resource management plans.

#### Historic Structures and Cultural Landscapes

- Unless they are part of the project, known historic sites and isolated occurrences would be avoided during construction.
- Accordance with 36 CFR 800.13, Post Review Discoveries. In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) would be followed.
- The park would ensure that all personnel who work on the project are informed of the penalties for illegally collecting

artifacts or intentionally damaging archeological sites or historic properties. Personnel would also be instructed on procedures to follow in case previously unknown archeological resources are uncovered during construction. Equipment traffic would be minimized in the site. Equipment and materials staging areas would also avoid known archeological resources.

#### Public Health and Safety

- Signs, press releases, or other communication methods would be used to inform visitors about construction and any building or area closures or detours during construction.
- Appropriate barriers and barricades would be used to clearly delineate work areas and provide for safe visitor travel near construction areas.
- Emergency response protocols would be developed for implementation during construction. Construction activities would be conducted in accordance with established safety protocols.

#### Comparison of Action Treatment Alternatives

Matrix 4-2 summarizes and compares the elements of each action treatment alternative. As previously described, the no action alternative and action treatment alternatives would include actions identified in the GMP, LRIP, and actions already identified and/or in progress. Because the actions would be undertaken under each of the three alternatives, they are not summarized in Matrix 4-2. The no action alternative would include none of the listed elements and so is not included in the table.

**Matrix 4-2. Comparison of Treatment Alternatives**

Elements	Alternative A - Preservation	Alternative B - Rehabilitation
<b>Spatial Organization / Views</b>	<ul style="list-style-type: none"> <li>• Retain contributing spatial organization, views, and formal arrangement of USCG spaces.</li> <li>• Repair historic views by repairing walks and vegetation patterns.</li> <li>• Thin vegetation in key locations.</li> </ul>	<ul style="list-style-type: none"> <li>• Preserve contributing spatial organization, views, and formal arrangement of USCG spaces.</li> <li>• Restore full extent of historic views and spatial relationships by restoring walks and vegetation patterns.</li> <li>• Remove vegetation where it obscures historic views.</li> </ul>
<b>Archeological Sites</b>	<ul style="list-style-type: none"> <li>• Protect known archeological sites.</li> </ul>	<ul style="list-style-type: none"> <li>• Protect known archeological sites.</li> <li>• In consultation with tribes and Michigan SHPO, consider identifying and interpreting the historic cemetery as part of the visitor experience and interpretation of Native people who utilized Sand Point.</li> </ul>
<b>Small Scale Features</b>	<ul style="list-style-type: none"> <li>• Repair the concrete curb around the Life Saving Station where it is extant above grade.</li> <li>• Replace non-contributing small scale features.</li> </ul>	<ul style="list-style-type: none"> <li>• Repair the concrete curb around the Life Saving Station, revealing its full extent.</li> <li>• Replace non-contributing small scale features.</li> </ul>
<b>Circulation</b>	<ul style="list-style-type: none"> <li>• Retain Sand Point Road, access drives, and pedestrian routes.</li> <li>• Repair concrete paths.</li> <li>• Repair non-contributing boardwalk.</li> <li>• Repair the reconstructed dock.</li> <li>• Modify staff parking area.</li> <li>• Remove the non-contributing parking area to the south of the Boathouse.</li> <li>• Modify the visitor parking area.</li> </ul>	<ul style="list-style-type: none"> <li>• Retain Sand Point Road, access drives, and pedestrian routes.</li> <li>• Repair and restore concrete paths to their full historic extent.</li> <li>• Remove non-contributing boardwalk.</li> <li>• Repair the reconstructed dock.</li> <li>• Remove the staff parking area. Allow an accessible parking space adjacent the building.</li> <li>• Remove the non-contributing parking area to the south of the Boathouse.</li> <li>• Expand the visitor parking area.</li> </ul>

Elements	Alternative A - Preservation	Alternative B - Rehabilitation
<b>Buildings and Structures</b>	<ul style="list-style-type: none"> <li>• Preserve the Life Saving Station and its formal setting with short mown lawn and orthogonal walks.</li> <li>• Provide universal access into the Life Saving Station with a ramp on the building's west edge that connects to the front porch.</li> <li>• Preserve the Oil House.</li> <li>• Preserve the Boathouse and provide an accessible ramp into the Boathouse.</li> <li>• Provide an accessible vault toilet at the visitor parking area.</li> <li>• Preserve the Launchway. Leave sand in Launchway.</li> <li>• Preserve the Communications Tower foundation and the Lookout Tower foundation.</li> <li>• Remove non-contributing garage foundation.</li> </ul>	<ul style="list-style-type: none"> <li>• Restore the formal setting at the Life Saving Station, with short mown lawn, orthogonal walks, and raised plinth that frames the building.</li> <li>• Provide universal access into the Life Saving Station with a heated lift.</li> <li>• Preserve the Oil House.</li> <li>• Preserve the Boathouse and rehabilitate with an accessible ramp into the structure.</li> <li>• Provide a visitor restroom inside the Boathouse.</li> <li>• Preserve the Launchway. Remove an estimated 150 c.y. of sand and restore the rails where they are missing.</li> <li>• Preserve the Communications Tower foundation and the Lookout Tower foundation.</li> <li>• Consider adding a compatible, contemporary structure that would visually mark the height of these nonextant towers.</li> <li>• Remove non-contributing garage foundation.</li> </ul>
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>• Thin woodland vegetation where it has encroached upon historic views to the water.</li> <li>• Maintain existing lawn surrounding the Life Saving Station.</li> <li>• Preserve extant trees that date from the period of significance.</li> </ul>	<ul style="list-style-type: none"> <li>• Remove trees and vegetation where it has encroached upon historic views to the water and between structures.</li> <li>• Repair the lawn surrounding the Life Saving Station to within the concrete curb.</li> <li>• Preserve extant trees that date from the period of significance.</li> <li>• Add new trees and vegetation to blend the expanded parking area with the setting.</li> <li>• Protect native dune vegetation and encourage visitors to use established trails through sensitive ecological areas.</li> </ul>



## Summary of Environmental Consequences

A summary of potential environmental effects for the alternatives is presented in Matrix 4-3.

**Matrix 4-3. Summary of Environmental Consequences**

Impact Topic	No Action	Alternative A - Preservation	Alternative B - Rehabilitation
<b>Historic Structures</b>	Because current management practices and maintenance would continue under the no action alternative, the alternative would likely have no effect on historic structures. If slight adverse changes accumulate over time, there may be small adverse effects.	Existing contributing structures would be repaired and maintained and current uses continued. Where needed, compatible features would be added to meet building codes and maintain safety. Access ramps would be added to the Boat House and Life Saving Station. Effects would be small and beneficial.	Rehabilitation would allow expanded uses and repairs to features. Where needed, compatible features would be added to meet building codes and maintain safety. Interior toilets would be added to the Boat House. An accessible ramp would be added to the Boat House and an accessible elevator added to the Life Saving Station. Effects would be modest and beneficial.
<b>Cultural Landscape</b>	The deterioration of some cultural landscape features and views would continue. Current parking would remain. Bluegrass lawn would remain at 1.35 acres. The alternative would have modest adverse effects. The cumulative effects would be a combination of modest and adverse, along with small and beneficial.	Existing landscape features would be repaired and some noncompatible features would be removed. A vault toilet would be added at the visitor parking area. About 0.63 acre of vegetation would be thinned and bluegrass lawn would be expanded by 0.37 acre. Effects would be small and beneficial. Cumulative impacts would also be small and beneficial.	Existing contributing landscape features would be repaired and missing historic features would be restored. Some noncompatible features would be removed. About 1.14 acres of vegetation would be cleared and thinned. Bluegrass lawn would be reduced to 0.48 acre and 0.26 acre of native vegetation would be restored. 150 cubic yards of sediment would be removed from the Launchway. Effects would be modest and beneficial. Cumulative effects would also be modest and beneficial.

Impact Topic	No Action	Alternative A - Preservation	Alternative B - Rehabilitation
<b>Native Vegetation</b>	There would be no new project-related ground disturbance or restoration of native vegetation. Visitor use and management activities would continue. There would be no new adverse effects on native vegetation, and no incremental contribution to cumulative effects.	Alternative A would include managing about 0.63 acre of vegetation, expanding bluegrass lawn by 0.37 acre. Together, these areas represent less than 1% of the estimated 120 acres of vegetation on Sand Point. Effects would be long-lasting, small and adverse. Cumulative effects would be small and both beneficial and adverse.	Alternative B would include the same effects as under Alternative A, except that 1.14 acres of native vegetation would be cleared or thinned and 0.26 acre of native vegetation would be restored. Effects would be long-lasting, modest and adverse. Cumulative effects would be modest and adverse and small and beneficial.
<b>Non-native Ornamentals and Invasive Exotic Plant Species</b>	There would be no change in the rate of introduction or spread of non-native ornamentals and invasive, exotic plant species. The no action alternative would not contribute to cumulative effects.	Under Alternative A, the establishment and spread of invasive exotic plants, including non-native ornamentals in the cultural landscape, is possible in up to 0.63 acre of thinned native vegetation, particularly in the short-term. With mitigation, adverse effects would, at most, be noticeable, long-term, and adverse. Cumulative effects would also be, at most, noticeable, long-term, and adverse.	Alternative B would include the same effects as under Alternative A, except that 1.14 acres of native vegetation would be affected. With mitigation, Alternative B would, at most, be noticeable, long-term, and adverse. Cumulative effects would also be, at most, noticeable, long-term, and adverse.

1 **NPS Preferred Alternative**

2  
3 Following an alternatives workshop, the park  
4 selected Alternative B - Rehabilitation as  
5 the preferred alternative after considering  
6 how well each alternative met the project  
7 objectives and consideration of the potential  
8 environmental consequences. The preferred  
9 alternative presents NPS's preferred  
10 management action and defines the rationale  
11 for the action in terms of natural and cultural  
12 resource protection and management;  
13 visitor use, operations, and cost; and other  
14 applicable factors. While Alternative A would  
15 meet the project goals to a certain degree,  
16 the preferred alternative has the best overall  
17 combination of features to meet the project  
18 objectives.

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## Chapter 5. Environmental Consequences

### Assessment of Impacts

1 This section provides an analysis of potential  
 2 impacts of the alternatives on resource  
 3 topics that were carried forward for  
 4 further evaluation, and considers how the  
 5 condition of the resources would change,  
 6 either negatively or positively, because  
 7 of implementing each of the alternatives.  
 8 The analysis determined if the proposed  
 9 alternatives, including applied mitigation  
 10 measures, have the potential for significant  
 11 adverse impacts. Overall, NPS based these  
 12 impact analyses and conclusions on the  
 13 review of existing literature and park  
 14 studies and on information provided by  
 15 experts within the park, tribal partners,  
 16 other agencies, and public input. Both  
 17 direct impacts (occur at the same time and  
 18 place as the action) and indirect impacts  
 19 (potentially caused by the action and occur  
 20 later or farther away) were considered in the  
 21 analysis. The impact analysis also considers  
 22 the context in which the impacts occur, in this  
 23 case Sand Point on a small scale and the park  
 24 on a large scale. The impacts were quantified  
 25 wherever possible to convey the intensity  
 26 of impacts, which is the degree to which a  
 27 resource is affected. No significant impacts  
 28 were identified in this assessment.

### Cumulative Impacts

1 Cumulative impacts are defined as “the  
 2 impact on the environment that results from  
 3 the incremental impact of the action when  
 4 added to other past, present, and reasonably  
 5 foreseeable future actions, regardless of what  
 6 agency (federal or nonfederal) or person  
 7 undertakes such other actions” (40 CFR  
 8 1508.7). Cumulative effects can result from  
 9 individually small, but collectively significant,  
 10 actions taking place over time.

11  
 12 Cumulative impacts were determined by  
 13 combining the impacts of each alternative  
 14 with other past, present, and reasonably  
 15 foreseeable future actions. The geographic  
 16 scope for this analysis was limited to Sand  
 17 Point. Past actions include activities that  
 18 influenced and affected the current conditions  
 19 of the environment of Sand Point and are  
 20 reflected in Chapter 3. Ongoing or reasonably  
 21 foreseeable future projects on Sand Point,  
 22 where overlapping resource impacts are  
 23 possible, were considered in the analysis.

24  
 25 The following past, present, and reasonably  
 26 foreseeable actions are relevant to the  
 27 analysis of the effects on resources that would  
 28 result from the alternatives.

29  
 30 Invasive, exotic species, particularly plant  
 31 species, have spread to various degrees  
 32 throughout Sand Point due to past  
 33 disturbance and visitor activities. NPS has  
 34 managed, and continues to manage, invasive  
 35 and exotic plant species on Sand Point and  
 36 these management activities will continue in  
 37 the future.

38  
 39 The park is currently evaluating alternatives  
 40 to address shoreline erosion at the rock  
 41 revetment on Sand Point. The revetment,  
 42 constructed in 1990 and 1991 to protect  
 43 against severe shoreline erosion on Sand  
 44 Point, is failing. The revetment Environmental  
 45



## Historic Structures

1 Assessment identifies the preferred  
2 alternative as removing the rock revetment  
3 and restoring the area with soft-engineering  
4 methods to rehabilitate the shore and  
5 appearance of Sand Point. If the preferred  
6 alternative is selected, implemented,  
7 and functions as intended, the shoreline  
8 would naturalize, potentially resulting in  
9 establishment of a wider beach between  
10 the shoreline and historic structures and  
11 an increase in native-vegetated areas. Some  
12 small amount of sand nourishment may be  
13 undertaken by the park following storm  
14 events that cause erosion.

15 The park has no other current or planned  
16 projects on Sand Point. The actions from the  
17 GMP and LRIP described in the no action  
18 alternative are not reasonably-foreseeable  
19 because they do not have funding or an  
20 established implementation schedule. For  
21 this reason, they are not considered in the  
22 cumulative effects analysis.

23  
24 No actions by others outside of NPS with  
25 potential environmental impacts on Sand  
26 Point are currently known.

27  
28 Management of invasive exotic plant species  
29 and the revetment alternatives would not  
30 incrementally contribute to the impacts to  
31 historic structures described in this chapter,  
32 so cumulative impacts to historic structures  
33 are not considered further. Cumulative  
34 impacts to cultural landscapes; native  
35 vegetation; and non-native ornamentals and  
36 invasive, exotic plant species are described  
37 under each resource impact section.

38  
39  
40  
41  
42  
43  
44

### 1 No Action Alternative

2  
3 The no action alternative would result in the  
4 continuation of existing park management  
5 and maintenance approaches and uses of  
6 the Boat House and Life Saving Station. In  
7 most cases, existing conditions would be  
8 maintained through stabilization, ongoing  
9 maintenance, and repair of historic materials  
10 and features. Second story floor defection  
11 would continue under live loads. Without an  
12 identified treatment approach, incompatible  
13 features and inappropriate materials may  
14 be unintentionally incorporated into the  
15 buildings. Over time, these changes may  
16 slightly diminish the overall integrity of the  
17 resources; although under past and current  
18 practices, the structures retain a high enough  
19 degree of historic integrity to be listed on the  
20 NRHP.

21  
22 *Conclusion.* Because current management  
23 practices and maintenance capabilities would  
24 continue under the no action alternative, the  
25 alternative would likely have no effect on  
26 historic structures. If slight adverse changes  
27 accumulate over time, there may be small,  
28 adverse effects on historic structures.

### 30 Alternative A

31  
32 Alternative A would focus on a preservation  
33 approach that would not include extensive  
34 modifications, but would maintain and  
35 repair features as needed. Where needed,  
36 compatible features would be added to meet  
37 building codes and maintain safety. Upgrades  
38 to accessibility and access are included in this  
39 alternative. Current uses would continue.

40  
41 *Conclusions.* Preservation activities proposed  
42 under Alternative A would result in small  
43 beneficial effects on historic structures.

44

## Cultural Landscapes

### 1 Alternative B

2  
3 The emphasis of Alternative B is  
4 rehabilitation, which would allow expanded  
5 uses and repairs to features. Where needed,  
6 compatible features would be added to meet  
7 building codes and maintain safety. Upgrades  
8 to accessibility and access are included  
9 in this alternative. Under this alternative,  
10 administration functions in the Life Saving  
11 Station would be relocated and visitor use  
12 expanded. Visitor use of the Boat House  
13 would also be expanded and toilets added to  
14 its interior.

15  
16 *Conclusions.* Rehabilitation activities proposed  
17 under Alternative B would result in modest  
18 beneficial effects on historic structures.  
19 Because of its rehabilitation focus, and  
20 removal of administrative functions, the  
21 beneficial effects of Alternative B would  
22 be somewhat greater than those under  
23 Alternative A.

### 1 No Action Alternative

2  
3 Under the no action alternative, the park  
4 would continue current levels of cultural  
5 landscape management. Parking would  
6 remain in its current configuration and  
7 bluegrass lawn would remain at 1.35 acres.  
8 The historic and visual character of the  
9 cultural landscape would continue to not  
10 be fully conveyed. Native vegetation would  
11 continue to encroach into cultural landscapes.  
12 Vegetation encroachment and weathering  
13 would continue to deteriorate some cultural  
14 landscape features such sidewalks and lawn  
15 edging. Thus, the no action alternative would  
16 diminish the overall integrity of the cultural  
17 landscape, resulting in modest adverse  
18 effects.

19  
20 *Cumulative Impacts.* Implementing the  
21 revetment EA preferred alternative may  
22 restore shoreline functions to conditions  
23 similar to those during the period of  
24 significance, which would have a small  
25 beneficial effect on the cultural landscape.  
26 When combined with the revetment work,  
27 the adverse effects of the no action alternative  
28 would have the potential for modest adverse  
29 cumulative effects on the cultural landscape,  
30 along with small beneficial effects.

31  
32 *Conclusions.* The deterioration of the cultural  
33 landscape under the no action alternative  
34 would result in modest adverse effects on the  
35 cultural landscape. The cumulative effects  
36 would be a combination of modest and  
37 adverse, along with small and beneficial.

### 39 Alternative A

40  
41 The preservation approach focuses on  
42 repairing existing cultural landscape features  
43 and spaces. Some noncompatible features  
44 would be removed. Some views that are

1 currently missing would be reestablished  
2 by thinning trees and shrubs in about 0.63  
3 acre of native White Pine/Blueberry Dry-  
4 Mesic Forest. Staff parking would be slightly  
5 reconfigured, which would result in an  
6 increase of about 0.37 acre of bluegrass lawn.  
7 Ten new trees would be added.

8  
9 Preserving cultural landscape features under  
10 Alternative A would result in small beneficial  
11 effects on the cultural landscape that may not  
12 be noticed by some visitors.

13  
14 *Cumulative Impacts.* The beneficial effects of  
15 Alternative A would contribute incrementally  
16 to those of past, present, and reasonably  
17 foreseeable actions, resulting in small  
18 beneficial cumulative effects on cultural  
19 landscapes.

20  
21 *Conclusions.* Under Alternative A, small  
22 beneficial effects would result from  
23 rehabilitation measures. Cumulative impacts  
24 would also be small and beneficial.

## 25 26 **Alternative B**

27  
28 The rehabilitation approach would allow  
29 expanded uses and repairs to landscape  
30 features. The setting of the Life Saving Station  
31 living quarters would be restored to its formal  
32 USCG appearance as a prominent structure  
33 set within a well-maintained and neat  
34 landscape. Existing contributing landscape  
35 features would be repaired or altered, and  
36 missing historic features would be restored.  
37 Some noncompatible features would be  
38 removed. About 1.14 acres of native White  
39 Pine/Blueberry Dry-Mesic Forest would  
40 be managed to better represent the extent  
41 of clearing and views during the period  
42 of significance. Bluegrass lawn would be  
43 reduced by 0.48 acre and the staff parking  
44 area would be removed, resulting in the

1 restoration of 0.26 acre of native vegetation.  
2 Sixteen new trees would be added. An  
3 estimated 150 cubic yards of sand would be  
4 removed from the Launchway. The alternative  
5 may also include adding compatible,  
6 contemporary structures that would  
7 visually mark the height of the nonextant  
8 communication and lookout towers.

9  
10 Rehabilitating cultural landscape features  
11 under Alternative B would result in noticeably  
12 beneficial effects on cultural landscapes.  
13 Because of the rehabilitation focus, the  
14 beneficial effects of Alternative B would be  
15 greater than those for Alternative A.

16  
17 *Cumulative Impacts.* The beneficial effects of  
18 Alternative B would contribute incrementally  
19 to those of past, present, and reasonably  
20 foreseeable actions, resulting in modest  
21 beneficial cumulative effects on cultural  
22 landscapes.

23  
24 *Conclusions.* Under Alternative B, modest  
25 beneficial effects would result from  
26 rehabilitation measures. Cumulative impacts  
27 would also be modest and beneficial.

## Native Vegetation

### 1 No Action Alternative

2  
3 There would be no new project-related  
4 ground disturbance or restoration of native  
5 vegetation under the no action alternative.  
6 Visitor use and management activities in the  
7 study area would continue. The no action  
8 alternative would have no new effect on  
9 native vegetation.

10  
11 *Cumulative Impacts.* Implementing the  
12 preferred revetment EA alternative would  
13 have a small beneficial effect if the extent of  
14 native vegetation increased on stabilized sand  
15 deposits. However, the no action alternative  
16 would not have no additive effects, so the  
17 no action alternative would not have a  
18 cumulative effect.

19  
20 *Conclusion.* The no action alternative would  
21 have no new adverse effects on native  
22 vegetation in the project area, and would not  
23 contribute to cumulative effects.

### 25 Alternative A

26  
27 Alternative A would include select vegetation  
28 thinning of trees and shrubs on about  
29 0.63 acres of native White Pine/Blueberry  
30 Dry-Mesic Forest that has encroached into  
31 historically cleared areas. Additionally, the  
32 extent of bluegrass lawn would be increased  
33 by 0.37 acre from its current 1.35 acres.  
34 The estimated one acre of changes to native  
35 vegetation in the study area would represent  
36 less than 1% of the estimated 120 acres  
37 of vegetation on Sand Point. In addition to  
38 areas in which native vegetation would be  
39 removed or managed, there would be small  
40 areas of disturbance associated with other  
41 treatment elements, including removing  
42 noncontributing features from the cultural  
43 landscape, and repairing or stabilizing  
44 buildings and other structures. Temporarily

1 disturbed areas would be revegetated with  
2 native species.

3  
4 With mitigation measures, adverse effects on  
5 native vegetation would be small.

6  
7 As described in the no action alternative,  
8 past, present, and reasonably foreseeable  
9 future projects may have a small beneficial  
10 effect on native vegetation. Those effects, in  
11 combination with the small adverse effects of  
12 Alternative A, would result in small beneficial  
13 and small adverse cumulative impacts.

14  
15 *Conclusion.* Because Alternative A would  
16 include permanently modifying about 0.63  
17 acres of native vegetation and increase  
18 bluegrass lawn by 0.37 acre, its effects would  
19 be small and adverse. Cumulative effects  
20 would be small and both beneficial and  
21 adverse.

### 23 Alternative B

24  
25 Alternative B would include thinning  
26 trees and shrubs on about 1.14 acres of  
27 native vegetation that has encroached  
28 into historically cleared areas. This would  
29 represent just less than 1% of the estimated  
30 120 acres of vegetation on Sand Point. In  
31 addition to areas in which native vegetation  
32 would be removed or managed, there would  
33 be small areas of disturbance associated with  
34 other treatment elements, including removing  
35 noncontributing features from the cultural  
36 landscape, and repairing or stabilizing  
37 buildings and other structures. Temporarily  
38 disturbed areas would be revegetated with  
39 native species. The extent of bluegrass lawn  
40 would be decreased by 1.24 acres from its  
41 current 1.35 acres. Native vegetation would  
42 be restored on 0.26 acre.



## Non-Native Ornamentals and Invasive, Exotic Plant Species

1 With the mitigation measures that would be  
2 included, adverse effects on native vegetation  
3 would be modest and slightly more noticeable  
4 than under Alternative A. The beneficial effect  
5 of restoring 0.26 acre of native vegetation  
6 would be barely noticeable.

7  
8 As described in the no action alternative,  
9 past, present, and reasonably foreseeable  
10 future projects may have a small beneficial  
11 effect on native vegetation. Those effects,  
12 in combination with the modest adverse  
13 effects of Alternative B, would result in small  
14 beneficial and modest adverse cumulative  
15 impacts.

16  
17 *Conclusion.* Because Alternative B would  
18 include permanently modifying about 1.14  
19 acres of native vegetation, its effects would  
20 be modest and adverse. Cumulative effects  
21 would be modest and adverse and small and  
22 beneficial.

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### 1 No Action Alternative

2  
3 There would be no new project-related  
4 ground disturbance or associated  
5 introduction of non-native ornamentals  
6 or invasive, exotic plant species with  
7 the potential to adversely impact native  
8 vegetation under the no action alternative.  
9 Existing levels of invasive, exotic plant species  
10 would persist. No new non-native ornamental  
11 plant species would be added to the study  
12 area. For these reasons, the no action  
13 alternative would have no new effect on non-  
14 native ornamentals and invasive, exotic plant  
15 species.

16  
17 *Cumulative Impacts.* Past disturbance has  
18 introduced and spread invasive ornamental  
19 and exotic plant species, as will current and  
20 future disturbance. NPS efforts to control the  
21 introduction and spread of these species will  
22 reduce, but not eliminate them, resulting in  
23 small adverse effects. Because the no action  
24 alternative would not introduce or spread  
25 non-native ornamentals or invasive, exotic  
26 plant species, there would be no cumulative  
27 effects.

28  
29 *Conclusion.* No new adverse effects of non-  
30 native ornamentals and invasive, exotic plant  
31 species would result from the no action  
32 alternative and there would be no cumulative  
33 effects.

34

### 35 Alternative A

36

37 Ground-disturbing activities could result  
38 in the establishment or spread of invasive  
39 exotic species and nonnative vegetation  
40 because many of these species outcompete  
41 native vegetation on disturbed sites, reducing  
42 resource values and uses. Invasive exotic  
43 species have the highest potential to establish

1 in areas disturbed by thinning or clearing  
 2 trees and shrubs and in areas where parking  
 3 lots will be removed. Alternative A may  
 4 disturb up to 0.63 acre of native vegetation.  
 5 While the area would not be cleared of  
 6 vegetation, foot traffic and slash removal may  
 7 create areas of loosened or bare soil.

8  
 9 Management of disturbed areas to minimize  
 10 invasive non-native and exotic species is  
 11 difficult in any situation and is made more  
 12 difficult in the study area because of loose  
 13 sandy soils in vegetated areas and compacted  
 14 soils in parking areas that would be converted  
 15 to maintained lawn or native vegetation. The  
 16 project plans for the treatment alternative  
 17 would include measures to minimize the  
 18 establishment and spread of invasive non-  
 19 native and exotic species and a site-specific  
 20 management plan would be developed and  
 21 implemented. Depending on the effectiveness  
 22 of the mitigation measures, the effects of non-  
 23 native ornamentals and invasive, exotic plant  
 24 species resulting from Alternative A would at  
 25 most be noticeable, long-term, and adverse.

26  
 27 *Cumulative Impacts.* As described in the  
 28 no action alternative, past, present, and  
 29 reasonably foreseeable future projects would  
 30 result in invasive exotic species having a small  
 31 adverse effect. Those impacts, in combination  
 32 with Alternative A impacts would, at most,  
 33 result in noticeable, long-term, adverse  
 34 effects.

35  
 36 *Conclusion.* The effects of non-native  
 37 ornamentals and invasive, exotic plant  
 38 species under Alternative A would at most  
 39 be noticeable, long-term, and adverse.  
 40 Cumulative effects would also, at most, be  
 41 noticeable, long-term, and adverse.

42  
 43

## 1 **Alternative B**

2  
 3 The potential for the establishment and  
 4 spread of invasive, exotic plant species is  
 5 similar to that under Alternative A, although  
 6 Alternative B may disturb up to 1.14 acre  
 7 of native vegetation. Depending on the  
 8 effectiveness of the mitigation measures,  
 9 the effects of non-native ornamentals and  
 10 invasive, exotic plant species resulting from  
 11 Alternative B would at most be noticeable,  
 12 long-term, and adverse.

13  
 14 *Cumulative Impacts.* As described in the  
 15 no action alternative, past, present, and  
 16 reasonably foreseeable future projects would  
 17 result in invasive exotic species having a small  
 18 adverse effect. Those impacts, in combination  
 19 with Alternative B impacts would, at most,  
 20 result in noticeable, long-term, adverse  
 21 effects.

22  
 23 *Conclusion.* The effects of non-native  
 24 ornamentals and invasive, exotic plant  
 25 species under Alternative B would at most  
 26 be noticeable, long-term, and adverse.  
 27 Cumulative effects would also, at most, be  
 28 noticeable, long-term, and adverse.

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## Wildlife

### Affected Environment

The park is at the northwestern limits of the hemlock-white pine-northern hardwood forest and contains elements of boreal forest. The park provides a wide range of habitats for wildlife, including scrub-shrub and herbaceous wetlands, hardwood and pine forests, lake and riverine open water, cliffs and valleys, and rocky shores and dune beaches. Not surprisingly, the number of animal species in the park reflects the range of habitats. Fifty-two mammal, 217 bird, 9 reptile, and 13 amphibian species are known or likely to be present in the park.<sup>5.1</sup> The 7.11 acres of habitat in the study area is dominated by white pine-hardwood forest with sparse to dense shrub understory and sandy beach (see the Native Vegetation section for descriptions of plant communities present). The 7.11 acres is part of about 30 acres of similar forest/shrub habitat at the tip of Sand Point.

Mammals listed by NPS as occurring in habitats like those on Sand Point include black bear (*Ursus americanus*), gray wolf (*Canis lupus*), white-tailed deer (*Odocoileus virginianus*), red fox (*Vulpes vulpes*), fisher (*Martes pennanti*), marten (*M. americana*), short-tailed weasel or ermine (*M. erminea*), snowshoe hare (*Lepus americanus*), raccoon (*Procyon lotor*), porcupine (*Erethizon dorsatum*), striped skunk (*Mephitis mephitis*), and red squirrel (*Tamiasciurus hudsonicus*). Small mammals common to Sand Point habitats include the meadow vole (*Microtus pennsylvanicus*), woodland deer mouse (*Peromyscus maniculatus gracilis*), chipmunk species (*Tamias spp.*), and shrew species (*Sorex spp.*).<sup>5.2</sup>

5.1 National Park Service biodiversity database. IRMA Portal version. Accessed Jan 18, 2017. <https://irma.nps.gov/npspecies>.

5.2 National Park Service biodiversity database.

Of interest is the use of Sand Point habitat by bats. Biologists identified six bat species at six sites in the park, including Sand Point.<sup>5.3</sup> Species identified at Sand Point were little brown bat (*Myotis lucifugus*), northern long-eared bat (*M. septentrionalis*), eastern red bat (*Lasiurus borealis*), hoary bat (*L. cinereus*), silver-haired bat (*Lasionycteris noctivagans*), and big brown bat (*Eptesicus fuscus*).<sup>5.4</sup> Little brown bat and northern long-eared bat have a maternity roost in the headquarters building attic.<sup>5.5</sup> Northern long-eared bat is listed as threatened under the Endangered Species Act.

About 171 species of birds have been observed in the park and an additional 46 species are likely present. Common species include ruffed grouse (*Bonasa umbellus*), wading birds and waterfowl such as great blue heron (*Ardea herodias*), and several species of geese, ducks, mergansers, grebes, gulls and shorebirds. Trumpeter swans (*Cygnus buccinator*), a State of Michigan threatened species, have been seen in the water near the shore adjacent to the study area, including near the Launchway. Other common avian species include turkey vulture (*Cathartes aura*), several species of woodpeckers and sapsuckers, and a large variety of songbirds. Several species of raptors are found within the park. These species include bald eagle (*Haliaeetus leucocephalus*), peregrine falcon (*Falco peregrinus*), merlin (*Falco columbarius*),

5.3 Kruger, Laura, and Rolf Peterson. *Occurrence of Temperate Bat Species at Three National Parks in the Great Lakes Region*. Natural Resource Technical Report NPS/GLKN/NRTR-2008/128. Fort Collins, Colorado: U.S. Department of the Interior, National Park Service, 2008.

5.4 National Park Service biodiversity database.

5.5 CLR/EA Workshop for the Cultural Landscape Report and Environmental Assessment for Sand Point/Munising United States Coast Guard Life Saving Station at Pictured Rocks National Lakeshore. Pictured Rocks National Lakeshore. Munising, Michigan, 2016.

1 osprey (*Pandion haliaetus*) northern goshawk  
 2 (*Accipiter gentilis*), northern harrier (*Circus*  
 3 *cyaneus*), sharp-shinned hawk (*Accipiter*  
 4 *striatus*), red-tailed hawk (*Buteo jamaicensis*),  
 5 barred owl (*Strix varia*), and other hawk and  
 6 owl species. While not in the study area, a  
 7 merlin nest is within 0.25 mile of the study  
 8 area boundary and bald eagle are regularly  
 9 seen perching in the study area.

10

11 Sand Point is a particularly important location  
 12 for migratory birds, including shorebirds,  
 13 because Grand Island protects Sand Point  
 14 from weather on Lake Superior. During bad  
 15 weather, wildlife take refuge in the Sand Point  
 16 area, including the study area. This sheltered  
 17 condition is rare for the park and uncommon  
 18 for much of Lake Superior.

19

20 Reptile and amphibian species present  
 21 include wood turtle (*Clemmys insculpta*),  
 22 American toad (*Bufo americanus*), spotted  
 23 salamander (*Ambystoma maculatum*), spring  
 24 peeper (*Hyla crucifer*), leopard frog (*Rana*  
 25 *pipiens*), painted turtle (*Chrysemys picta*),  
 26 snapping turtle (*Chelydra serpentina*), eastern  
 27 garter snake (*Thamnophis sirtalis*), and  
 28 northern water snake (*Nerodia sipedon*).<sup>5.6</sup>

29

30 Information on the presence and effects of  
 31 the proposed alternatives on federal and state  
 32 special status wildlife species such as gray  
 33 wolf, Canada lynx (*Lynx canadensis*), northern  
 34 long-eared bat, piping plover, and merlin  
 35 will be presented in a Special Status Species  
 36 Technical Report (under NPS review).

37

### 38 Environmental Consequences

39

40 The alternative with the largest footprint  
 41 (Alternative B) would disturb up to 1.14  
 42 acres of wildlife habitat consisting of mixed

43

44 <sup>5.6</sup> National Park Service biodiversity database.

1 trees and shrubs within the study area.

2 The 1.14 acres would receive at least some  
 3 vegetation management treatment, with most  
 4 tree and shrub thinning focused on creating  
 5 view corridors in the approximately 3-acre  
 6 woodland at the tip of Sand Point between  
 7 Lake Superior, Boathouse, Life Saving Station,  
 8 and the end of Sand Point Road. Treatment  
 9 Alternative A would have similar effects on  
 10 0.63 acre and the No Action Alternative would  
 11 have no new disturbance on vegetation.

12

### 13 No Action Alternative

14

15 There would be no new impacts to wildlife or  
 16 wildlife habitat from the no action alternative.  
 17 Current vegetation management practices  
 18 and facility maintenance would continue, so  
 19 there would be no changes in habitat types or  
 20 wildlife use of existing habitat.

21

22 Cumulative Impacts. Invasive plant species  
 23 brought to the study area during construction  
 24 or by visitors can have an adverse effect  
 25 on native wildlife by creating unsuitable  
 26 habitat, but some of this effect is offset by  
 27 NPS efforts to manage invasive species.  
 28 Wildlife has also been affected and will  
 29 continue to be affected during routine repair  
 30 and maintenance activities. Past, present,  
 31 and reasonably foreseeable future actions  
 32 have effects on wildlife, although, while the  
 33 study area experiences disturbances from  
 34 park maintenance and visitors, the extent of  
 35 the activities in the 7.11-acre study area, in  
 36 the context of the 30 acres of similar forest-  
 37 shrub habitat on Sand Point, is small and the  
 38 related effects on wildlife are also small. For  
 39 these reasons, past, present, and reasonably  
 40 foreseeable future actions would have a  
 41 small adverse effect on wildlife resources.  
 42 Because the no action alternative would not  
 43 add any effects to the effects of past, present,  
 44 or reasonably foreseeable projects, the



1 alternative would not have a cumulative effect  
2 on wildlife.

3

4 Conclusion. The no action alternative would  
5 have no new effects on wildlife or wildlife  
6 habitat, and would have no cumulative effects.

7

#### 8 **Alternative A**

9

10 Short-term and long-term impacts to wildlife  
11 and habitat would result from vegetation  
12 removal and management on about 0.63  
13 acre associated with treatment Alternative  
14 A. In the short term, human presence and  
15 construction noise would temporarily disturb  
16 and displace resident wildlife, although if  
17 the work were conducted during fall, winter,  
18 and early spring months as proposed, many  
19 wildlife species, including migratory birds  
20 and bats, would be absent. The impacts would  
21 be further limited by restricting work to  
22 daylight hours. The construction contractor  
23 would be required to keep all garbage  
24 and food waste contained and removed  
25 periodically from the work site to avoid  
26 attracting wildlife into the construction zone.  
27 Construction workers would be instructed to  
28 remove food scraps and not feed or approach  
29 wildlife. Following construction, wildlife use  
30 of undisturbed habitat would resume. There  
31 would be additional short-term effects when  
32 cleared areas are periodically maintained by  
33 mowing or brush removal.

34

35 In the long term, about 0.63 acre of habitat  
36 would be permanently modified under  
37 Alternative A, which would result in a long-  
38 term, small loss of habitat for some wildlife  
39 species, including species that prefer forest  
40 habitat, such as red squirrel and nuthatch.  
41 Additionally, areas of thinned vegetation  
42 may allow predators to hunt more effectively  
43 and capture more prey, including migratory  
44 shorebirds. Conversely, the thinned vegetation  
45 may make predators more visible to prey  
46 as there would be less foliage obscuring

1 predators. The adverse effect of changes in  
2 predator/prey interactions would be limited  
3 to the 0.63 acre and would be small, given the  
4 remainder of 30 acres of similar habitat that  
5 will not be disturbed.

6

7 Potential adverse effects would be minimized  
8 by implementing previously-described  
9 measures such as performing vegetation  
10 removal outside of bird and bat breeding  
11 season. Additional measures would be taken  
12 to minimize the chance little brown and  
13 northern long-eared bats would abandon the  
14 attic maternity roost.

15

16 With the mitigation measures included as  
17 part of Alternative A, adverse effects on  
18 wildlife, including migratory shorebirds and  
19 bats, would be small in the short-term and  
20 long-term.

21

22 Cumulative Impacts. As described under  
23 the no action alternative, past, present, and  
24 reasonably foreseeable future actions would  
25 have a local and small adverse effect on  
26 wildlife species and habitat. Those impacts,  
27 in combination with the local short-term and  
28 long-term small adverse effects of Alternative  
29 A, would result in local and small adverse  
30 cumulative impacts.

31

32 Conclusion. The noise and disturbance during  
33 construction would result in local short-term,  
34 small adverse effects on wildlife species in  
35 the study area. The permanent modification  
36 of 0.63 acre of forest and shrub habitat  
37 would result in local long-term, small adverse  
38 impacts to wildlife. Overall, cumulative effects  
39 would be local, small, and adverse.

40

#### 41 **Alternative B**

42

43 The short-term and long-term adverse effects  
44 on wildlife and habitat that would result  
45 from vegetation removal and management  
46 associated with treatment Alternative B are

1 the same as those under Alternative A, except  
2 that up to 1.14 acres of habitat would be  
3 modified by removing trees and trimming  
4 shrubs. Additionally, the Lookout Tower  
5 may be reconstructed under this alternative.  
6 Raptors may perch on the tower, and, as  
7 with the thinned vegetation, predator/prey  
8 interactions may be changed. Like Alternative  
9 A, adverse effects would be small given  
10 remainder of the 30 acres of available similar  
11 habitat in at the tip of Sand Point. Overall,  
12 Alternative B would result in long-term, small  
13 adverse effects on wildlife species.

14  
15 Cumulative Impacts. As described under  
16 the no action alternative, past, present, and  
17 reasonably foreseeable future actions would  
18 have a local, small adverse effect on wildlife.  
19 Those impacts, in combination with the  
20 local long-term and small adverse effects of  
21 Alternative B, would result in local, long-term  
22 and small adverse cumulative effects.

23  
24 Conclusion. The additional noise and  
25 disturbance during construction would result  
26 in local short-term and small adverse effects  
27 on wildlife species that prefer forest habitat.  
28 The permanent modification of about 1.14  
29 acres of forest and shrub habitat would result  
30 in local long-term and small adverse effects  
31 on wildlife species. Overall, cumulative effects  
32 would be local, small, and adverse.

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## Chapter 6. Treatment Recommendations and Implementation

### Introduction

1 The CLR / EA is the principal treatment  
 2 document for the cultural landscape of Sand  
 3 Point/ Munising USCG Life Saving Station.  
 4  
 5 Treatment recommendations guide the  
 6 overall aesthetic, desired future condition  
 7 and appearance of the cultural landscape.  
 8 Recommendations are based upon review  
 9 of historical documentation, assessment of  
 10 existing condition, analysis of integrity, and  
 11 application of the Secretary of Interior's  
 12 standards and guidelines as they apply to  
 13 the treatment of historic landscapes.<sup>6.1</sup> The  
 14 recommendations are in accordance with the  
 15 GMP, RMP, and LRIP.  
 16  
 17 Treatment recommendations address  
 18 management goals presented in Chapter  
 19 1, which include protection of natural  
 20 and cultural resources, and additions for  
 21 contemporary use. The recommendations  
 22 provide guidance on meeting accessibility  
 23 requirements, expanding visitor parking and  
 24 providing restrooms. A new kayak launch for  
 25 recreational was eliminated as part of the  
 26 planning process, but informal access will  
 27 continue.  
 28  
 29 The recommendations for the cultural  
 30 landscape are holistic and provide a  
 31 vision for the landscape overall. These  
 32 recommendations are complemented by  
 33 specific recommendations for the historically  
 34 significant buildings, presented in detail in  
 35 the Historic Structures Report (HSR) that  
 36 accompanies this CLR/EA.  
 37  
 38 Recommendations for treatment of the  
 39 cultural landscape are presented in narrative,  
 40  
 41 6.1 Birnbaum, Charles A. and Christine Capella Peters. The  
 42 Secretary of the Interior's Standards for the Treatment of  
 43 Historic Properties with Guidelines for the Treatment of  
 44 Cultural Landscapes. Washington, DC: U.S. Department of  
 the Interior, National Park Service, 1996.

1 a graphic plan and sketches that illustrate  
 2 the desired future condition. A detailed  
 3 plan is provided in Appendix C, Schematic  
 4 Design Drawing; that provides detailed  
 5 information for implementing these specific  
 6 recommendations. These include siting of  
 7 additional elements, accessibility upgrades to  
 8 walks, and vehicular circulation and parking  
 9 improvements.  
 10  
 11 Treatment recommendations are compatible  
 12 with the period of significance as they  
 13 reveal the physical qualities of the cultural  
 14 landscape that convey the story its evolution.  
 15 The recommendations provide direction on  
 16 rehabilitation of the design and use of the  
 17 USCG station from 1932 to 1958.  
 18  
 19 The preferred treatment for the Sand Point/  
 20 Munising USCG Life Saving Station is based  
 21 upon action alternative B, presented in  
 22 Chapter 4, and expanded upon in this chapter.  
 23

### Treatment Approach

24  
 25  
 26 Rehabilitation is the selected treatment  
 27 approach for Sand Point/ Munising USCG  
 28 Life Saving Station. Rehabilitation provides  
 29 measures to preserve contributing features,  
 30 repair damaged features, and restore  
 31 missing features. Rehabilitation allows for  
 32 additions and adaptive reuse, needed to meet  
 33 contemporary needs.  
 34

### Treatment Terminology

35  
 36  
 37 In recognition of the significance of Sand  
 38 Point/ Munising USCG Life Saving Station,  
 39 all future work planned for the cultural  
 40 landscape will be guided by *The Secretary of*  
 41 *the Interior's Standards for the Treatment of*  
 42 *Historic Properties – Historic Landscapes*. The  
 43  
 44



1 following terminology is used in this CLR / EA  
2 to describe recommended actions.<sup>6.2</sup>

3  
4 *Consider* is to routinely evaluate if a treatment  
5 action can be undertaken. Budget constraints  
6 and long-term maintenance may result in  
7 delayed treatment action. As circumstances  
8 change, the treatment action should be re-  
9 evaluated and eventually completed.

10  
11 *Design intent* refers to the creative objectives  
12 that were applied to the development of a  
13 historic property.

14  
15 *Introduce* is the addition of a new, non-  
16 historic feature compatible with the cultural  
17 landscape. This may also include the  
18 replacement of a missing historic feature.

19  
20 *In-kind* refers to the replacement of features  
21 extensively deteriorated or missing parts  
22 of features using materials that match the  
23 historic detail, configuration, and appearance  
24 as closely as possible.

25  
26 *Maintain* refers to measures that sustain the  
27 form, integrity and materials of contributing  
28 features, either on a regular basis or as a non-  
29 recurring event.

30  
31 *Preserve* refers to those measures necessary  
32 to sustain the existing form, integrity, and  
33 materials of contributing features. It includes  
34 initial stabilization work, where necessary,  
35 as well as ongoing preservation maintenance  
36 and repair of historic materials and features.

37  
38 *Protect* refers to actions to safeguard a  
39 historic feature by defending or guarding it

40  
41 6.2 Adapted from The Secretary of the Interior's Standards  
42 for the Treatment of Historic Properties as amended  
43 and annotated, 1995 and [http://www.nps.gov/dscw/](http://www.nps.gov/dscw/definitions.htm)  
definitions.htm.

1 against further deterioration or loss. Such  
2 action is generally of temporary nature and  
3 anticipates future preservation treatment.

4  
5 *Reconstruct* refers to the act or process of  
6 depicting, by means of new work, the form,  
7 features, and detailing of a non-surviving  
8 historic structure or any part thereof, for the  
9 purpose of replicating its appearance at a  
10 specific time in its original location.

11  
12 *Rehabilitate* refers to the act or process of  
13 allowing a compatible use through repair,  
14 alteration, or additions as long as those  
15 features that convey the historical, cultural, or  
16 architectural values are preserved.

17  
18 *Repair* refers to those measures that are  
19 necessary to correct deteriorated, damaged,  
20 or faulty materials of features. These  
21 measures are more extensive than regular  
22 maintenance and undertake work necessary  
23 to bring a contributing feature or area to good  
24 condition.

25  
26 *Restore* refers to those measures necessary  
27 to accurately depict the form, features, and  
28 character of a property as it appeared during  
29 a particular period of time by means of the  
30 removal of features from other periods in  
31 history and reconstruction of missing features  
32 from the restoration period.

33  
34 *Retain* are those actions that are necessary  
35 to allow a feature (contributing or non-  
36 contributing) to remain in place in its current  
37 configuration and condition.

38  
39 *Stabilize* refers to those measures that require  
40 more work than standard maintenance  
41 practices, and that are necessary to prevent  
42 the further deterioration, failure, or loss of  
43 contributing features.

## Desired Future Condition and Treatment Recommendations

1 The treatment recommendations protect  
 2 significant cultural resources, repair  
 3 contributing features, reestablish diminished  
 4 spatial connections and views, and allow  
 5 contemporary additions to provide a rich and  
 6 improved visitor experience. Expanded visitor  
 7 facilities and access routes are identified, as  
 8 are recommendations for the preservation  
 9 of those features that convey the historic  
 10 character. A holistic visitor experience will be  
 11 created that preserves and protects cultural  
 12 resources and allows natural vegetative and  
 13 hydrological processes to occur.  
 14  
 15 Treatment recommendations emphasize  
 16 the historic design of the USCG station as a  
 17 working landscape. Rehabilitation efforts will  
 18 reveal the full extent of the original designed  
 19 USCG landscape (Illustration 6-1), and visitors  
 20 will gain a better understanding of the daily  
 21 workings of the USCG. Visitors will arrive  
 22 into an expanded parking area, with views  
 23 to the Munising Life Saving Station (HS-01),  
 24 Boathouse (HS-08) and Lake Superior. Access  
 25 to the buildings and site will be along existing  
 26 historic paths, updated to meet accessibility  
 27 requirements, and to connect to the shoreline  
 28 and reconstructed Lookout Tower. The formal  
 29 setting of the Munising Life Saving Station  
 30 will be reestablished by repairing the full  
 31 extent of the concrete curb that encloses the  
 32 raised plinth and lawn. The Launchway will  
 33 be repaired by removing sand and vegetation  
 34 from within the bulkhead. New boardwalks  
 35 will be added adjacent to the Launchway to  
 36 connect to the shore and dock.  
 37  
 38 The historic relationship between the  
 39 Munising Life Saving Station to Lake Superior  
 40 will be repaired by thinning vegetation to  
 41 reestablish select views to and from the  
 42 water. Treatment of the shoreline will follow  
 43 guidance from the Sand Point Rock Revetment  
 44 Modification EA, and will be managed as a  
 45 dynamic natural landscape.

## 1 Natural Systems and Features

2  
 3 The greater geologic formation of Sand Point  
 4 marks the basis for the original establishment  
 5 of the Sand Point/Munising USCG Life Saving  
 6 Station at this location. The natural formation  
 7 provided a wide view to Lake Superior.  
 8 Natural processes that formed the point will  
 9 be allowed to continue and natural systems  
 10 will be protected and retained. The shoreline  
 11 will be dynamic and permitted to adjust,  
 12 ebb and flow as natural processes take their  
 13 course.  
 14  
 15 1. Preserve and protect the natural  
 16 geology and shoreline of Sand Point as  
 17 a natural feature of Lake Superior. This  
 18 natural setting was the basis for the  
 19 establishment of the USCG station in this  
 20 location.  
 21  
 22 2. Preserve and protect natural vegetation  
 23 at the shoreline, forest vegetation, and  
 24 wetland areas. Allow removal of forest  
 25 vegetation where it threatens the integrity  
 26 of cultural resources such the views  
 27 between the Munising Life Saving Station  
 28 and the water.  
 29  
 30 a. The Revetment Modification EA  
 31 recommends a soft-engineering  
 32 approach to stabilize the shoreline.  
 33 This will naturalize the shoreline  
 34 by removing the existing revetment  
 35 and performing sand nourishment  
 36 (e.g. beach/sandspit restoration).  
 37 The goal is to increase the distance  
 38 between the shoreline and the historic  
 39 buildings to protect them from larger  
 40 storms.  
 41  
 42  
 43  
 44  
 45

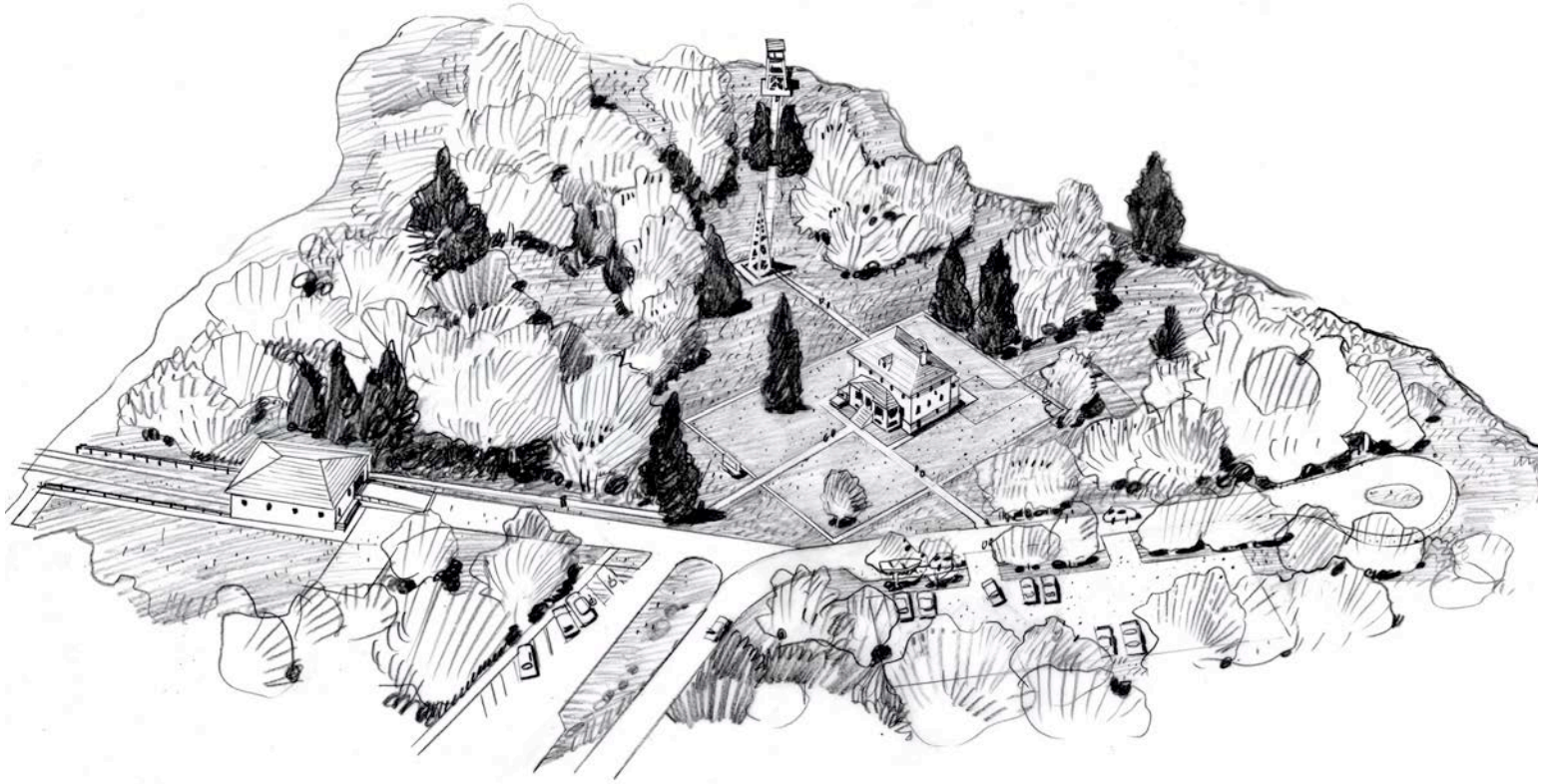


Figure 6-1. The historic character and patterns originally designed by the USCG will be rehabilitated by repairing historic walks, restoring views to the water, and repairing vegetation. The formal military setting and use of the area will be made apparent by repairing spatial patterns and improving access to historic buildings and shoreline. (source: Mundus Bishop 2016)

3. Protect native dune vegetation. Protect threatened and endangered species habitat along the shoreline.

a. Encourage visitors to utilize established trails through sensitive ecological areas.

4. Follow recommendations in the Sand Point Rock Revetment Modification EA for removal of the stone revetment at the north of the point to allow for natural processes to be re-established.<sup>6.3</sup>

a. The existing non-local stone revetment will be removed. Additional sand may be added to build up certain areas.

b. Soft/bio-shoreline stabilization will create a stable zone at the existing shoreline. This stabilization may include coir logs or mats, hay bales, vegetation, geo-fibers) to stabilize the restored area.

c. Plugs of native beach grasses would be established. A dynamic zone would occur at the water's edge and would be expected to erode and accrete based on natural processes.

### Land Use

Sand Point includes NPS administrative offices, interpretation areas, and public access to the beach and historic buildings and structures. As this area is heavily visited, treatment recommendations provide measures to accommodate, and improve, access to the cultural landscape, buildings, and shoreline.

<sup>6.3</sup> National Park Service, Sand Point Rock Revetment Modification Environmental Assessment. U.S. Department of the Interior, National Park Service, Pictured Rocks National Lakeshore, Draft 2015, 16 - 18.

1. The existing well be replaced or the site converted to City water, requiring an extension of the city main to Sand Point. The existing septic is adequate but additional pressure is required to provide fire protection for the buildings.

### Archeological Sites

Archeological sites, including historic sites from the USCG, are within the study area. Known and potential archeological sites will be preserved and protected.

1. Preserve and protect known and potential pre-historic and historic archeological sites to the greatest extent possible.

° Conduct further investigations to understand the archeological resources and to expand knowledge of American Indian use of Sand Point.

2. Consult with affiliated tribes to identify themes and approaches to marking and/or interpreting their history at Sand Point.

### Spatial Organization

The characteristic spatial qualities that contribute to the historic setting will be preserved and repaired. These include a complex of separate buildings that provided key functions within the working landscape, connected visually by clearings in the vegetation, and physically by walkways. The physical setting, with features arranged in response to the natural geography of the point will be preserved.

1. Preserve the broad setting of the study area including those landscape characteristics that create this setting — spatial organization, topography, and views.



1      ° Preserve the spatial relationship of a  
2      formal arrangement of buildings and  
3      structures sited in relationship to the  
4      natural geologic point of Sand Point  
5      and connected by narrow walks.

6  
7      ° Preserve the scale and form of the  
8      cultural landscape as a contributing  
9      feature, USCG design and layout.

10  
11 2. Rehabilitate the formal setting of the  
12 Life Saving Station, with short mown  
13 lawn, orthogonal walks, and a raised  
14 topographic plinth edged by a concrete  
15 curb, and framed by tall trees that frame  
16 the building.

17  
18 3. Repair contributing views and spatial  
19 relationships by repairing walks and  
20 vegetation patterns.

21  
22 4. Locate new propane and electric utilities  
23 out of primary viewsheds to preserve the  
24 historic setting.

## 25 26 **Topography**

27  
28 The topography is primarily level with subtle  
29 variations. As part of the site design, the USCG  
30 modified the topography at the Life Saving  
31 Station, adding fill and leveling the space into  
32 a plinth. Portions of this design remain today,  
33 but will be repaired to the full extent.

34  
35 1. Preserve natural topography  
36 characterized by the shifting sand that  
37 creates dunes and subtle variations in  
38 grade. Allow for natural processes to  
39 modify the topography so long as cultural  
40 resources are not damaged.

41  
42 2. Restore the raised level plinth  
43 surrounding the Life Saving Station,  
44 by removing soil where it obscures the  
45 concrete curb and regrading to remove  
46 low areas.

1 3. Ensure positive drainage away from  
2 building foundations, regrading the  
3 topography as needed.

## 4 5 **Views and Vistas**

6  
7 During use of the Life Saving Station, views  
8 to the water were essential to the successful  
9 life saving operations undertaken by the  
10 USCG. Over time vegetation has grown into  
11 the once open spaces, obscuring views  
12 to the water and the internal views and  
13 sight-lines between structures. Treatment  
14 recommendations aim to reestablish the  
15 visual connection to and from Lake Superior.

16  
17 1. Preserve the visual entry experience from  
18 the south at Sand Point Road towards  
19 the Life Saving Station and Lake Superior  
20 beyond.

21  
22 2. Rehabilitate views by reestablishing a  
23 visual connection from the Life Saving  
24 Station to Lake Superior. Include thinning  
25 of some trees and tree removal in select  
26 areas to provide a view both to and from  
27 the lake.

28  
29 a. Thin/remove vegetation along  
30 historic walks and corridors to repair  
31 spatial relationships.

32  
33 3. Repair contributing views by removing  
34 vegetation where it obscures historic  
35 views.

## 36 37 **Circulation**

38  
39 The overall historic circulation pattern  
40 remains, with Sand Point Road as the only  
41 vehicular route to the point, and extant  
42 network of pedestrian walks. The expanded  
43 parking areas adjacent the Life Saving  
44 Station and Boathouse threaten the historic  
45 setting, and several historic walks are in  
46 poor condition. The circulation system



