

1 **MICHIGAN ISLAND CLR TREATMENT**

2 **Introduction**

3 The treatment section of the CLR in conjunction with the HSR describes a strategy for the long-term
4 management of the cultural landscape and historic structures of the Michigan Island Light Station. The
5 strategy is based on the analysis of the cultural landscape’s characteristics, the history and period of
6 significance for the light station, the existing condition of the historic features, and contemporary use of the
7 light station. A general management philosophy of rehabilitation has been identified as the most
8 appropriate approach for the cultural landscape. Rehabilitation will allow for repairs, alterations, and
9 additions that will be necessary for the compatible use of the light station, and will preserve the
10 characteristics and features that convey the light station’s historical, cultural and architectural values.⁴⁰
11 These actions will enable the park to preserve the contributing resources of the cultural landscape, while
12 allowing for specific alterations to accommodate contemporary use and interpretation of its history.
13
14

15 **TREATMENT GOALS**

- 16
- 17 • Preserve extant contributing cultural resources
 - 18 • Reestablish missing resources
 - 19 • Reveal the cultural landscape by representing the important characteristics from the period of
20 significance
 - 21 • Improve the understanding of the overall system of light stations in the Apostle Islands for both
22 visitors and park staff by incorporating interpretation of landscape resources that have been
23 repaired or reestablished
 - 24 • Aid in the preserving the natural resources of the light station reservation by monitoring and
25 controlling invasive plant material, erosion of shoreline slopes and directing visitor use
26

27 **TREATMENT TERMINOLOGY**

28 The following terms are used frequently in the CLR for actions that address the cultural landscape and its
29 features, and are defined below. A more detailed glossary is presented in the Glossary of Terms at the end
30 of this volume.

31

32 **Maintain.** Maintain includes the standard maintenance practices (mowing, pruning, thinning of vegetation,
33 painting and cleaning of small scale features) that are necessary to retain a features or area as a contributing
34 resource. Maintenance activities are usually not classified as repair, however minor repair such as
35 replacement of posts or railings or segments of paving are included.
36

37 **Plant.** Plant or planting includes the planting or removal and replanting of landscape material and
38 vegetation as part of maintenance activities, or the restoration of missing landscape planting features.
39

40 **Reestablish.** The measures necessary to depict a feature or area as it occurred historically. Reestablish may
41 include replacement of missing features (such as replacement of a pattern of planting) or a missing quality
42 (e.g., reestablishment of a view).
43

44 **Relocate.** Relocate includes the removal and resetting of features in new locations. This is usually
45 associated with noncontributing features.
46

⁴⁰ Landscape Lines.

1 **Remove.** The actions required to remove nonhistoric or noncontributing features. This is usually associated
2 with noncompatible features in the landscape.

3
4 **Repair.** Repair includes the measures necessary to maintain features, components of features, and materials
5 that require additional work. These may include repairing declining structures, small scale features (e.g.,
6 repair of a railing) or landscape plantings (e.g., repair mass planting by adding infill plantings). Features
7 that are repaired shall match the original in design, color, texture, and where possible, material.

8
9 **Restore.** The measures necessary to depict a feature or area as it occurred historically. Restoration may
10 include repair of a feature so that it appears as it did historically.

11
12 **Retain.** These are actions that are necessary to allow for a feature (contributing or noncontributing) to
13 remain in place in its current configuration and condition.

14
15 **Stabilize.** Stabilize refers to immediate measures (more extensive than standard maintenance practices) that
16 are needed to prevent deterioration, failure, or loss of features.

17 18 19 **PREFERRED TREATMENT ALTERNATIVE**

20 During the development of the CLR/HSR three treatment alternatives were produced and examined. The
21 CLR/HSR contains only the Preferred Treatment Alternative. The additional treatment alternatives
22 considered can be found in the Environmental Assessment.

23 24 25 **Intent of Preferred Treatment Alternative**

26 The Michigan Island Light Station is most significant to the Apostle Islands system of light stations
27 because of 1) its representation of the development of navigational aids as the first light along the southern
28 shipping route to Ashland and Bayfield, 2) its intertwined relationship with the Long Island Light Station
29 and 3) its clear depiction of improvements in navigational and light station technology. The lives of the
30 keepers and their families were impacted by the progression of new navigational technologies, made
31 evident by the historic features of the cultural landscape. By preserving, rehabilitating, or reestablishing
32 these features, the treatment approach of the CLR/HSR strives to clearly depict the story of the Michigan
33 Island Light Station.

34
35 The intent of the preferred treatment is to rehabilitate the cultural landscape of the Michigan Island Light
36 Station to portray the period of navigational history that the light station best represents within the system.
37 The period of significance for the Michigan Island Light Station (1856 –1943) begins with the
38 establishment of the Old Michigan Island Lighthouse, and ends with automation of the Light Tower. The
39 extant contributing features best represent the Light Tower period (1929–1938) described in the Site
40 Development section of this chapter. The treatment approach for the extant contributing features
41 emphasizes this period when the light station was in its most vibrant state. Recommendations also include
42 the restoration of landscape features lost since the period of significance.

43 44 45 **Preferred Treatment Alternative (Site Image MI-84, Site Image MI-85, Site Image MI-86)**

46 The treatment measures are intended to preserve and rehabilitate the cultural landscape features. This
47 requires a variety of actions that may be accomplished by either a series of preservation steps implemented
48 over time or as a one-time action paired with future maintenance. Emphasis should be placed on the

1 preservation and/or rehabilitation of the contributing features that most strongly define the character of the
2 landscape as outlined above.

3
4 Specific treatment measures are depicted in a series of plan drawings and are accompanied by detailed
5 narrative descriptions, organized by landscape characteristics and presented as follows.

8 **SPATIAL ORGANIZATION/VIEWS AND VISTAS**

9 Spatial organization and views and vistas are key features of the cultural landscape. Spatial organization is
10 primarily defined by the relationship between the built structures and features and the cleared area of the
11 light station. Views from the waters of Lake Superior to the light station are an important feature of the
12 light stations. While the arrangement of built features has remained intact, the encroachment of forest
13 vegetation has reduced the historic cleared area and obscured views of the light station. This loss of the
14 cleared area and views has diminished the integrity of the cultural landscape.

15
16 Additional discussions regarding the means and methods of clearing forest vegetation from the light station
17 and the removal of trees from the shoreline slopes are included in Volume I, Chapter 5: Management
18 Issues.

21 **Light Station Clearing (Meadow)**

22 Clearing of forest vegetation is intended to reestablish the cleared area of light station to a condition that
23 better represents the period of significance, specifically the Light Tower period (1929–1938). Specific
24 actions related to clearing are presented in the vegetation section.

25
26 Clearing to reestablish a portion of the cleared area may be undertaken on an incremental approach
27 addressing the most critical and beneficial areas of clearing areas first. Emphasis should be placed areas
28 that most strongly define the character of the landscape listed below in order of priority:

- 29
- 30 • Clearing for fire protection (50 foot buffer) adjacent to existing buildings and structures;
- 31 • The nonextant orchard area immediately east of the Old Michigan Island Lighthouse;
- 32 • The area north of the tram tracks;
- 33 • The area west of the Keepers Quarters;
- 34 • Selective tree removal from areas along the shoreline bank that impact views from the water to the
35 Old Michigan Island Lighthouse (see below).
- 36
- 37

38 **Shoreline Bank-Selective Clearing**

39 The intent of this treatment measure is to reestablish open views of the Light Tower, Original Michigan
40 Island Lighthouse, and other structures to better represent their condition during the period of significance,
41 specifically the Light Tower period (1929–1938).

42
43 Clearing work along the shoreline banks shall be done carefully and selectively, and care should be taken
44 not to initiate erosion by overworking the slope. The clay and till banks at the Michigan Island Light
45 Station are stable but have a high erosion potential. Experience has shown that erosion of the shoreline
46 banks could result in the loss of portions of the lighthouse station landscape and possibly the loss of historic
47 structures. Only through careful planning and management action will these banks be kept stable. This
48 work may best be accomplished in an incremental manner with a sound erosion monitoring program in
49 place and a plan for biostabilization of the banks. An area of approximately 0.5 acre has been identified as

1 the area where the selective removal of large trees by hinge-felling will be most beneficial for views of the
2 light station.

3
4 An appropriate plan for long-term biostabilization must accompany any clearing and incorporate two key
5 concepts. The first concept being the need for on-going operations and maintenance requirements. A
6 properly biostabilized landform is not a static structure but is a dynamic system requiring close observation,
7 regular maintenance, and periodic reevaluation. Secondly, a properly biostabilized landform is a
8 harmonized, working plant community, evolving through vegetative succession, and filling environmental
9 niches at the level of root, ground surface, understory, and canopy. Effective biostabilization will appear
10 natural and not engineered and will require a community of plants which can establish themselves in a
11 range of soil types, depths, aspects, grades, and moisture regimes. The development of a smoothed,
12 homogenous and unnatural bank is to be avoided. The community of plants will utilize the natural slope
13 contours and develop a mix of vigorous young growth, deep root systems, and more mature canopy
14 elements to provide effective stabilization from a range of erosion threats including: surface drainage down
15 and seepage onto the slope face; lake action at the slope toe; impacts from precipitation; wind throw; and
16 loss of understory though over mature canopy and excessive shading.

17
18 Periodic maintenance will include the evaluation of the biostabilization effort, the thinning and hinge-
19 felling of large trees, and the lowering (but not removal) of unstable or overcrowded elements.

20 21 22 **CIRCULATION/ SITE ACCESSIBILITY/STRUCTURES**

23 Overall, the site circulation patterns and features remain and are important elements of the cultural
24 landscape. The circulation patterns significantly changed in 1928 with the construction of the tramway,
25 tram tracks, and concrete walks and new buildings. The construction of the tramway provided a new
26 primary access up to the light station and the concrete walks connected the Old Michigan Island Lighthouse
27 to the new Keepers Quarters, Power House and Second Light Tower. The tram tracks provided a new route
28 for transporting supplies from the tramway across the site. All of these improvements were installed to
29 support the navigational and day-to-day operations of the light station and are extant. These features remain
30 in much the same configuration as they were during the Light Tower period (1929–1938). The circulation
31 features help to define the spatial arrangement of the site and are important to the integrity of the cultural
32 landscape. The treatment measures focus on retaining the circulation patterns and rehabilitating or
33 preserving the circulation features including the tramway, tram tracks and concrete walks. Detailed
34 treatment recommendations for the dock, tramway, and tram tracks are included in the Structures
35 section.

36 37 38 **Concrete Walks**

39 Retain the pattern and configuration of concrete walks on the light station grounds. Repair of walks is
40 presented under Small Scale Features and widening of walks is addressed under Accessibility (ABAAS).

41 42 43 **Trails and Paths**

44 Maintain the hiking trail leading from the light station to the campsite, sand spit and lagoon.
45
46

1 Accessibility (ABAAS)

2 An accessibility analysis separate from the CLR/HSR has been developed to provide an overall plan for the
3 six light stations in the Apostle Islands – Raspberry, Michigan, Outer, Devils, Long, and Sand islands. This
4 work is intended to address the light station system as a whole and the accessibility requirements to be
5 achieved at each individual light station. At the time of this report publication the final accessibility report
6 is in progress. The CLR/HSR incorporates the draft recommendations into each of the light station’s plans.
7 As part of an overall plan for the light stations the following actions have been identified for the Michigan
8 Island Light Station. These actions are part of an accessibility plan for the six light stations of the Apostle
9 Islands.

- 10 • Provide an outdoor accessible route (minimum 36” width) to a new accessible NPS restroom
11 (location to be determined by the Park Service)
- 12 • Provide an outdoor accessible route from the top of the tramway to the Keepers Quarters, Old
13 Michigan Island Lighthouse and Assistant Keepers Quarters and Workshop
- 14 • Provide an accessible route to the front door of Old Michigan Island Lighthouse (see HSR)

15
16 The accessibility work on the light station primarily entails the widening of the existing concrete walks as
17 previously discussed. Outdoor accessible routes shall meet the requirements of the ABAAS for width (36”
18 minimum), slopes (less than 4.75%), and include passing areas. Widening shall be done by the addition of
19 new, precast concrete stones, 18” wide, installed adjacent to historic material. For example, the primary
20 walk across the site is 30” wide, the addition of 18” wide precast sections alongside the existing would
21 produce a walking width of 4’. Wider dimensions of new material will be required in several areas where
22 the existing walks are 18” wide. New material shall match existing in form, texture and craftsmanship.

23
24 These requirements are readily achievable on the light station. Further discussion regarding the overall
25 accessibility approach for the system of light stations is included in Volume I, Chapter 5: Management
26 Issues.

29 STRUCTURES

30 There are several important structures within the light station. These features convey important details
31 regarding the historical use and operation of the light station. Treatment recommendations are described in
32 detail for major structures. In general the recommendations for these features are focused on the
33 preservation and maintenance of existing contributing features.

36 Tramway

37 Repair the tramway to a working condition. This work includes:

- 38 • Minor repair of cast iron tramway rails. The rails should be reattached where plates are missing,
39 loose, or lacking bolts.
- 40 • Minor repair of railing including painting and repair of attachments on the west side of concrete
41 tramway.
- 42 • Maintain the concrete tramway abutments by insuring that adequate soil and rock protection
43 remains at the base of each abutment.
- 44 • Install a guardrail along the east side of the concrete tramway as portions of the tramway are well
45 more than 30” above grade. Guardrail shall match the west side railing in basic form and materials.
- 46 • The tramway lacks a handrailing meeting ABAAS standards; however installing a handrail
47 meeting these standards may impede the use of the tram carts on the tramway.
- 48 • Retain the tram turntable in its current location and condition. The turntable does not rotate.

- Recommendations for replacing the tramway hoist and other work in the Power House are included in the HSR.

Tram Tracks

Repair the tram tracks connecting the Power House to the Shed to a working condition. The work includes complete rail removal, repair and resetting on new timbers and setting bed. The majority of the milled lumber timbers require replacement as they are severely rotted. New material shall match existing in wood type and dimension. Further investigation of materials, timber size and type and base course material type is needed. One area along the northern track requires a straightening of the rails. Several other areas will require the removal and replacement of concrete adjacent to the rails.

Boat Dock

The location of the boat dock should be retained. This general location has remained consistent since the construction of the tramway in 1929; however the materials and L-shape of the boat dock are not consistent with the historic character of previous docks and landings. The configuration of the dock has resulted in the buildup of sediments on the east side of the dock and erosion of the shoreline on the west side of the dock. The sediment build up has reduced the functionality of the dock. The boat dock should be altered to allow the flow of near-shore sediments under the dock structure, reducing the erosion and sediment deposition issues. The design and construction of durable boat docks in the harsh conditions of Lake Superior is extremely challenging and should be engineered and constructed carefully to insure the longevity of the dock and the protection of the adjacent beach and shoreline slope. Further discussion regarding the boat dock is included in Volume I, Chapter 1: Management Philosophy and Management Issues.

SMALL SCALE FEATURES

There are numerous small scale features on the light station. These features provide a human scale to the cultural landscape while conveying important details regarding the history and use of the light station. Treatment recommendations are described in detail for contributing small scale features, and noncontributing features are presented in Table MI-5. In general the recommendations for these features are focused on preservation and include:

- Retain all contributing small scale features.
- Retain noncontributing, compatible features including park and trail signs.
- Remove noncontributing, noncompatible features

Concrete Walks

Repair and maintain all concrete walks in the current, historic locations. Repair includes the removal and replacement of several severely cracked sections. Maintenance includes vegetation removal and minor leveling to eliminate trip hazards. Replacement of damaged sections shall be completed with precast units matching the various dimensions of the existing concrete slabs, poured and finished prior to installation. The finish of the replacement sections should match the finish of the historic material including aggregate size and tooling.

1 **Root Cellar**

2 The nonextant root cellar is located north of the Shed. Protect the area of the root cellar from visitor use or
3 damage. This area may warrant further archeological investigation.
4

5
6 **Radio Antenna Poles**

7 The radio antenna poles represent a technological advance on the light station and should be repaired and
8 maintained as an important contributing feature. Maintain the southern pole near the Power House by
9 painting the pole. The northern pole should be reset to an upright position and painted.
10

11
12 **Flagpole**

13 Maintain the flagpole in its current location by repainting.
14

15
16 **Birdbath (Keepers Quarters)**

17 Reestablish this missing feature to the landscape.
18

19
20 **USGS Marker**

21 Retain marker in place.
22

23
24 **Original Flagpole Footing**

25 Reset the concrete square in historic location
26

27
28 **Broken Concrete Footing**

29 Retain broken concrete collar. This piece is thought to be the collar for a nonexant bird house or elevated
30 planter.
31

32
33 **Old Michigan Island Lighthouse Cistern and Well Basin**

34 Maintain cistern in place. Maintain the concrete well head basin adjacent to the cistern. Remove vegetation
35 and soil, and add 12” of clean gravel.
36

37
38 **Steel Piling on Beach**

39 Retain in place.
40

41
42 **Nonextant Wood Staircase**

43 Maintain concrete walk that leads to former location of wood staircase.

1 **Nonextant Oil Building**

2 The brick Oil Building was removed at the time of the light tower construction. The location of this Oil
 3 Building marked the edge of the manicured and fenced area during the Early Light Tower period. As an
 4 interpretive feature the location of building corners could be to delineate the limit of the manicured area
 5 during the Early Light Tower period. Alternatively, this building could be interpreted with other methods.
 6 Coordinate this work with interpretive planning undertaken for the Michigan Island Light Station.
 7

8
 9 **Fencing**

10 During the Early Lighthouse period a small area adjacent to the Old Michigan Island Lighthouse was
 11 fenced. Several locations and types of fencing have been documented from historic photographs. After the
 12 1929 additions to the site the fencing was removed. This treatment measure includes marking the location
 13 of nonextant fencing with one foot-square concrete markers, flush to the ground, to provide an
 14 understanding of the evolution of the light station from the Early Light Tower period to the Light Tower
 15 period. Alternatively, this information could be provided by another interpretive technique. Coordinate this
 16 work with interpretive planning work undertaken by the Park Service.
 17

18
 19 **Gull Island Light Tower**

20 Maintain the Gull Island Light Tower in a working condition.
 21

22
 23 **Park and Interpretive Signs**

24 Measures related to park signage is not included in the CLR. Interpretive signage on the light station is
 25 addressed under the *Parks Long Range Interpretive Plan* and other studies. Additional discussion regarding
 26 interpretation is included in Volume I, Chapter 5: Management Issues.
 27

28
 29 The following table (Table MI-5) provides recommendations for small scale features identified as
 30 noncontributing.
 31

32 **Table MI-5. Small Scale Features (Noncontributing)**

Feature	Compatible?	Status
Park Sign	Noncontributing Compatible	Not addressed in CLR
Interpretive Sign	Noncontributing Compatible	Not addressed in CLR
Trail Sign	Noncontributing Compatible	Retain trail signs
Information Kiosk	Noncontributing Compatible	Remove and replace with new signage
Septic Tank	Noncontributing Compatible	Retain septic tanks
Propane Tank	Noncontributing Compatible	Retain propane tanks
Fire Pit	Noncontributing Noncompatible	Relocate fire pit
Drainage System at Keepers Quarters	Noncontributing Compatible	Maintain drainage system, by cleaning and clearing, monitor erosion at outlet.

1 **VEGETATION**

2 **Reservation Vegetation**

3 ***Light Station Clearing (Meadow)***

4 As previously presented under Spatial Organization the cleared area of the light station reservation and the
 5 light station grounds has been substantially reduced from the period of significance. Historic photographs
 6 and correspondence from this period indicate the cleared area outside of the immediate light station
 7 grounds was vegetated with grasses and wildflowers. This action includes the removal of forest vegetation
 8 (approximately 2 acres) that has encroached into the historic cleared area of the light station, and the
 9 establishment of a meadow-like vegetation to reestablish the spatial qualities of the light station. The
 10 meadow may contain native grasses, forbs, wildflowers, ground covers and compatible nonnative species.
 11 Additional study will be needed to develop a method of revegetation and a list of species that will be
 12 suitable and noninvasive, as meadow species native to the island are limited. Further discussion on means
 13 and methods of clearing are discussed in Volume I, Chapter 5: Management Issues. Maintain newly cleared
 14 areas as meadow vegetation at a 12”-24” height by mowing or brushing twice per year.
 15

16 The light station reservation and grounds should be monitored for the presence and growth of invasive
 17 plants. The most apparent invasive plant is Periwinkle (*Vinca minor*). This plant is thought to have been
 18 introduced as a domestic landscape plant on the light station. Existing patches of Periwinkle, in the forest
 19 should be removed, and areas of Periwinkle in the manicured area of the light station grounds should be
 20 monitored and maintained carefully. Do not introduce any potentially invasive plant material into the light
 21 station light station.
 22
 23

24 **Station Vegetation**

25 Historically, domestic landscape, garden and orchard plantings played a significant role in the cultural
 26 landscape of the Michigan Island Light Station. The lighthouse keepers and their families planted and
 27 maintained an extensive landscape on the light station. While some plantings remain, many of these
 28 features have been lost and under this treatment are recommended to be reestablished. The intent of this
 29 treatment is to rehabilitate the landscape by reestablishing missing features of the landscape and
 30 maintaining extant features to better depict the landscape during the period of significance, with an
 31 emphasis on the Light Tower period (1929–1938) when the landscape planting features were most intact.
 32
 33

34 ***Light Station Clearing (Lawn)***

35 This treatment measure is a moderate expansion of the existing cleared lawn area of approximately 8,000
 36 square feet. The work includes clearing of forest trees, shrubs and ground covers and establishing lawn
 37 grasses in the newly cleared area. Maintenance includes regular mowing of the lawn area to discourage
 38 forest encroachment.
 39
 40

41 ***Orchard Plantings***

42 Reestablish the pattern of orchard planting previously established southeast of the Old Michigan Island
 43 Lighthouse by planting new fruit trees in the historical spacing and maintaining the lone remaining apple
 44 tree. This measure includes the clearing of the orchard area as described previously and pruning and
 45 maintaining the single extant apple tree found in the area. Consider horticultural methods to develop new
 46 plant material from the remaining apple tree and other cherry trees on the grounds.
 47

1 *Pine Plantings*

2 The row of planted pines (*Pinus strobus*) along the northern edge of the light station mark the northern
 3 edge of the light station grounds and separate the grounds from the adjacent forest. The uniformity of the
 4 row has been diminished over time and the trees are in various states of health and form. This measure
 5 includes removal of the existing pines and the planting of a new row of uniformly sized pines, matching the
 6 existing species. Historic documents indicate that the trees were originally transplanted from the adjacent
 7 forest. The intent of the treatment measure is to reestablish the line of pine trees as a significant linear
 8 landscape feature of the light station.

11 *Cedar Hedge*

12 To the south and west of the Keepers Quarters a cedar hedge was planted during the Light Tower period.
 13 The hedge defined the ‘front yard’ of the Keepers Quarters. The treatment measure includes removing the
 14 existing hedge which has become overgrown and planting a new hedge of the same species and
 15 configuration.

18 *Domestic Plantings*

19 The light station grounds historically contained tree, shrub, perennial and annual plantings in the landscape
 20 and in a variety of landscape planters. The plantings were planted and maintained by the lighthouse keepers
 21 and their families. The treatment recommendations emphasize the Light Tower period as the extent and
 22 detail of the plantings peaked during this period under Lighthouse Keeper Ed Lane’s tenure. The planters
 23 included white-washed, stone lined planting beds, raised stone planters, a raised ‘birdbath’ planter, raised
 24 ‘stump’ planters (objects placed on stumps and planted) and other decorative pots. Plant material has been
 25 identified through a review of letters and correspondence, and through the analysis of historic photographs.
 26 Plants used in landscape plantings include ornamental species and domesticated native forest species.
 27 Several tree and perennial species present on the site and are believed to remain from the period of
 28 significance.

31 Table MI-6 outlines a preliminary list of historic plant material to be used in reestablishing missing features
 32 of the landscape and Site Images MI-87 and MI-88 show locations of plantings and features. Treatment
 33 measures related to plantings include:

- 34 • Reestablishing the stone planters and stone edges and their plantings in the landscape
 35 including planters at the Old Michigan Island Lighthouse, Keeper Quarters and Second Light
 36 Tower.
- 37 • Reestablish the small hanging planters and ‘stump’ planters at the Old Michigan Island
 38 Lighthouse and Keepers Quarters.
- 39 • Maintain the fern plantings east of the Keepers Quarters and reestablish the stone edge around
 40 them.
- 41 • Reestablish the lilac plantings along the walkway southwest of the Old Michigan Island
 42 Lighthouse.
- 43 • Maintain the planted pine tree near the croquet lawn.
- 44 • Reestablish fruit tree plantings on the west side of the Old Michigan Island Lighthouse.
- 45 • Maintain the cherry tree on the east side of the lighthouse and the trees north of the Privy. Test
 46 the trees by coring and analysis to determine age and cultivar of tree.

1 **Table MI-6. Domestic Plantings**

Trees	Shrubs	Perennials	Annuals
Cherry (Prunus sp.)	Japanese roses (Rosa sp.)	Periwinkle (Vinca minor) (Invasive)	Pansies (Viola sp.)
Apple (Malus sp.)	Cedar (Thuja sp.)	Peonies (Paeonia sp.)	Nasturtium (Nasturtium sp.)
White birch (Betula papyrifera)	Lilac (Syringa sp.)	Daylily (Hemerocallus sp.)	Impatiens (Impatiens sp.)
White pine (Pinus strobus)		Coneflower (Gaillardia sp.)	
Sugar maple (Acer saccharinum)		Fern	
		Iris (Iris sp.)	
		Oriental Poppy (Papaver orientale)	
		Foxglove (Digitalis sp.)	

2
3
4

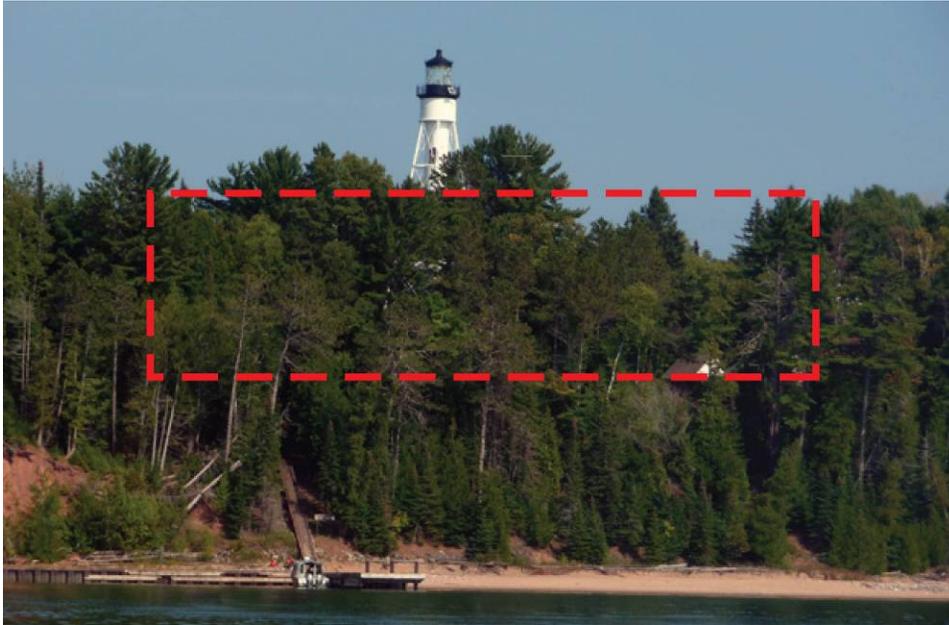
AREAS OF FURTHER INVESTIGATION

5 **Archeological Investigations**

6 Complete an archeological survey for all known resources in light station reservation using nondestructive
7 investigations to document the extent of buried or nonvisible cultural resources that exist across the Island.
8 Consider using ground penetrating radar and other noninvasive measures to assist in locating resources. If a
9 comprehensive survey for the entire Island is not possible, complete archeological investigations for
10 proposed projects in advance of any other work on the project, including demolition. In compliance with
11 the National Historic Preservation Act, and in consultation with the NPS Midwest Archeological Center,
12 undertake archeological investigations for all projects, as appropriate to their scale, impacts, and extent of
13 ground disturbance.

14
15
16

1 ***Areas of Further Investigation Photographs***



2
3 *Site Image MI-82: Area of selective clearing for the restoration of views to the light station from Lake Superior, 2010*
4 *(Source: MBD P1010811_annotated.JPG)*

5



6
7 *Site Image MI-83: Historic condition of cleared area east of the Old Michigan Island Lighthouse, c. 1913; (Source: NPS*
8 *APIS Archives)*

9

10



Precast Concrete
Stones

1
2
3
4

Site Image MI-84: Widen walks by retaining existing historic walks in place and installing new precast concrete material to achieve an accessible width, 2010 (Source: MBD P1010741_annotated.JPG)



Location of Nonextant Oil Building

Location of Nonextant Fence

5
6
7
8
9

Site Image MI-85: Mark the location of the nonextant oil building and fencing, 2010 (Source: MBD P1010698_annotated.JPG)

