

CHAPTER 3: CULTURAL LANDSCAPE REPORT

MICHIGAN ISLAND EXISTING CONDITIONS

Introduction

The cultural landscape of the Michigan Island Light Station is a composition of features that remain from its development over the last 150 years as a light station and aid to navigation. As the first of six light stations constructed in the Apostle Islands, the Michigan Island Light Station played an important role in the initiation and development of the system. The intent of the Cultural Landscape Report (CLR), in conjunction with the Historic Structures Report (HSR) is to guide treatment and use of the aboveground resources associated with the light station. The CLR provides park managers with a comprehensive understanding of the physical evolution of the cultural landscape and provides guidance for its management.

The CLR was conducted at a thorough level of research, investigation and documentation. This level of research uses select documentation of known and presumed relevance, including primary and secondary sources that are readily available. The periods of landscape change are described using narrative text, historic photographs and annotated historic drawings and maps. Archeological investigations are not included.²¹ A more detailed description of the CLR methodology is included in Volume I, Chapter 2: Methodology.

The CLR begins with a description of the site development of the Michigan Island Light Station that documents the physical changes that have occurred on the light station reservation and light station grounds. The light station reservation is the land initially set aside for the development of the light station. The portion of the reservation that contains structures and buildings is referred to as the grounds in the CLR. These in total are referred to as a light station. The site development is presented by the five periods of landscape change.

The second section presents the existing condition and analysis of the cultural landscape. This section is organized by cultural landscape characteristics. In September 2009, field investigations were conducted to document the existing condition of the cultural landscape characteristics: spatial organization, topography, views and vistas, circulation, buildings, structures, small scale features and vegetation. The documentation of the island's existing condition is illustrated with existing condition plans, diagrams and photographs that document its cultural landscape.

The analysis compares the island's history with its existing condition, and identifies those landscape characteristics that retain integrity and contribute to the significance and integrity of the Michigan Island Light Station.

The existing condition plans and period plans were created in AutoCAD using a variety of sources including: historic and current maps and photographs provided by the NPS APIS Archives; field work conducted in September 2009; and additional information was provided by park staff.

²¹ Page et al. 1998.

1 SITE DEVELOPMENT

2 A period of significance of 1852 to 1972 is recommended for the light stations of the Apostle Islands as a
 3 whole to recognize the role of the light at each island and as a connected system of navigational aids for
 4 Lake Superior. The beginning date is the first act of Congress authorizing construction of the first
 5 lighthouse in the Apostle Islands in 1852. The period of significance for the Michigan Island Light Station
 6 begins with the construction of the Old Michigan Island Lighthouse in 1856 and ends when the Second
 7 Tower was automated in 1943. Five periods of landscape change document the evolution of the Michigan
 8 Island Light Station cultural landscape. Of these, three of these five periods are within the Michigan Island
 9 Light Station's period of significance of 1856 to 1943, these periods are noted by italics.

- 10 • Pre-Lighthouse (1852–1855)
- 11 • *Early Lighthouse (1856–1928)*
- 12 • *Light Tower (1929–1938)*
- 13 • *Coast Guard and Automation (1939–1969)*
- 14 • Park Service (1970 to present)

15
 16 The beginning and end of each period of landscape change corresponds to major physical changes related
 17 to either the site's use, technological advances, and/or governmental control of the island. The periods
 18 consider the social history of the island, however there are instances where the social history differs since
 19 physical change in the cultural landscape is the primary rationale in defining the beginning and end of each
 20 period.

21
 22 Brief narrative text, a graphic illustrations (where applicable), and historic maps and photographs where
 23 available, describe each period of landscape change. Additional information regarding the period of
 24 significance for the Apostle Islands light stations is presented in Volume 1, Chapter 3: Context, Current
 25 Designations, and Park Significance.

26 27 28 **Pre-Lighthouse (1852–1855)**

29 This period began in 1852 with Congress authorizing the construction of the first lighthouse in the Apostle
 30 Islands, originally to be built at La Pointe Harbor on Madeline Island.²² The location of the lighthouse was
 31 later revised to Long Island. Before construction began, the location was again revised, and the first
 32 lighthouse was ultimately built on Michigan Island in 1856. No physical improvements related to the light
 33 station were built on Michigan Island during this period.

34 35 36 **Early Lighthouse (1856–1928)**

37 This historic period began in 1856 with the establishment of the Michigan Island Lighthouse Station
 38 Reservation and the construction of the Old Michigan Island Lighthouse. This period documents the time
 39 when the light station had only one lighthouse.

40
 41 The Old Michigan Island Lighthouse, the original lighthouse and oldest building on the island, was built in
 42 1856 and placed into service in 1857.²³ After operating for just one year, the lighthouse was then taken out
 43 of service in 1858, and was replaced by the newly built LaPointe Lighthouse on Long Island.²⁴ For a 10
 44 year period, between 1858 and 1869, the lighthouse was out of service, vacant, and uninhabited.

²² Busch, Jane C. "People and Places: A Human History of the Apostle Islands; Historic Resource Study of Apostle Islands National Lakeshore" Bayfield: Apostle Islands National Lakeshore. 2008. Page 124.

²³ Ibid, page 126.

²⁴ Ibid, page 126.

1 In 1869, the Old Michigan Island Lighthouse was repaired, as it had been looted and exposed to weather
 2 during its abandonment, and returned to service.²⁵ Roswell Pendergast was engaged as the lighthouse
 3 keeper and remained on the island until 1874. During this period, much of the bluff and light station
 4 reservation was cleared of trees to allow the lighthouse to be seen by passing ships. The area immediately
 5 around the lighthouse was fenced and manicured as a lawn by Pendergast and subsequent keepers. Outside
 6 of the fenced area the forest was cleared and parts of the reservation were farmed by Pendergast. He
 7 planted oats, potatoes, beans, corn and raised cattle and chickens. Fences, walks, and other small scale
 8 features were added around the Old Michigan Island Lighthouse. Lighthouse Keeper Pendergast was an
 9 avid horticulturist, establishing an orchard east of the Old Michigan Island Lighthouse. Pendergast planted
 10 apple, cherry, peach, plum and pear trees in the 1870s and also grew nursery stock trees and shrubs.²⁶ The
 11 keepers and their families added domestic landscape plantings to the site including one prominent pine tree
 12 planted by the Pendergast family to the south of the Old Michigan Island Lighthouse.

13
 14 Lighthouse Keeper Ed Lane, who served from 1902 thru 1939, and his wife, Lizzy, added many domestic
 15 plantings to the station. Among the landscape features added by the Lanes were a croquet lawn, located
 16 west of the Old Michigan Island Lighthouse, and numerous landscape plantings. The areas just outside of
 17 lawn remained cleared of forest vegetation and maintained as fields of grasses and wildflowers and
 18 agricultural planting was reduced.

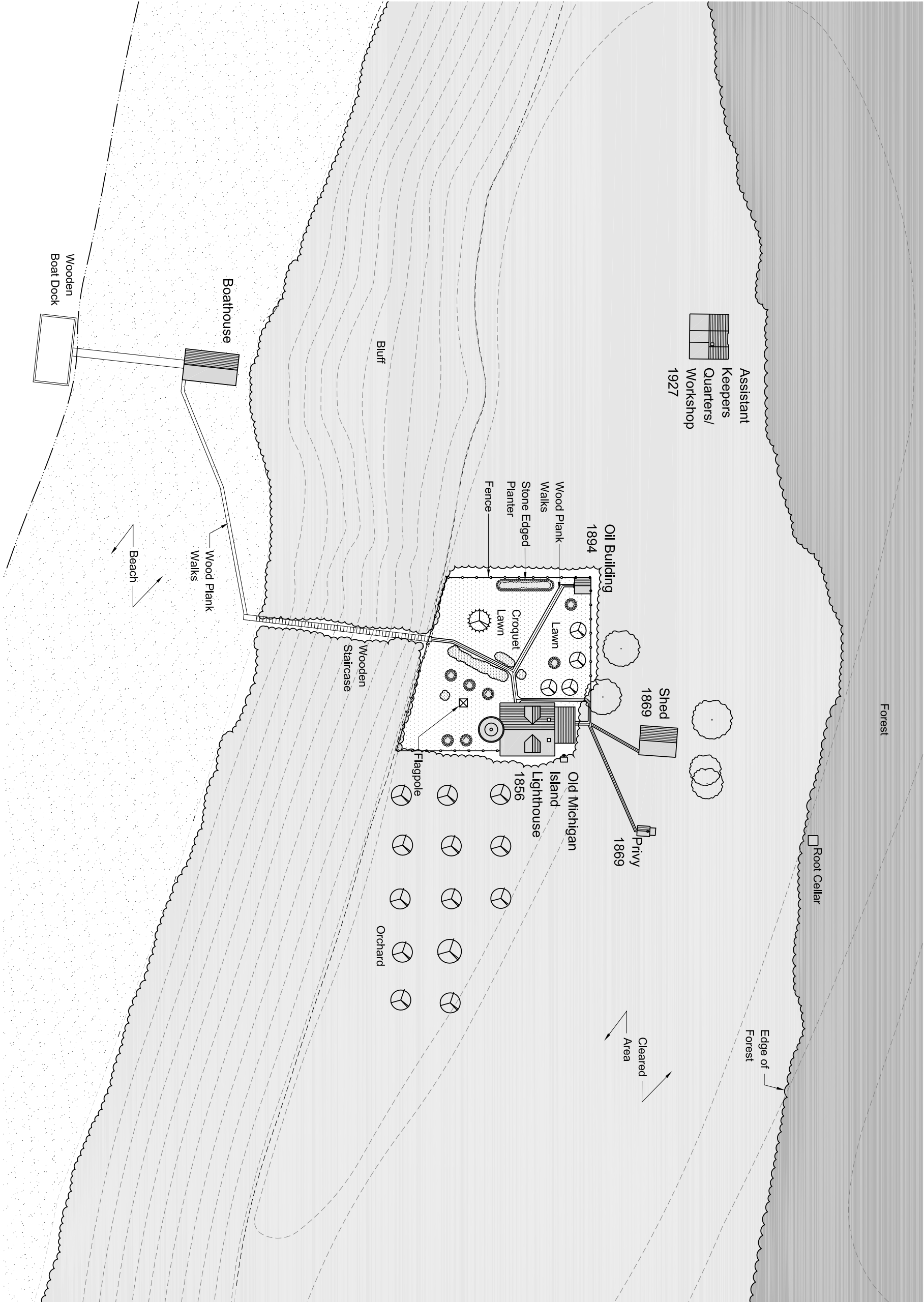
19
 20 Spatially, the Old Michigan Island Lighthouse was the central focus of the light station grounds with
 21 improvements radiating out from it. The keepers and assistant keepers lived and worked in the Lighthouse
 22 structure and fenced and maintained a small area around it. During this period the primary access to the
 23 light station was via a wooden staircase connecting the shoreline to the top of the bluff near the lighthouse.
 24 At the shoreline a dock, landing crib and wooden boathouse were built. The boat dock was a wood
 25 timbered rectangular structure directly connected to a wood boathouse. Historic maps (Site Image MI-03)
 26 suggest that there was a pedestrian connection, possibly wood planks, connecting the staircase and the
 27 boathouse. Due to the harsh wintry weather, the dock and staircase had to be repaired or rebuilt frequently
 28 during this period. Records indicate that the dock was rebuilt three times, in 1890, 1897, and 1902.

29
 30 In the 1880s wood plank walks were introduced to the site. A walk was built to connect the lighthouse to
 31 the Privy. In 1894 the brick Oil Building was built west of the lighthouse. Over the next few years the
 32 original domesticated or manicured area adjacent to the Old Michigan Island Lighthouse was expanded,
 33 fences were removed and replaced so that the Oil Building was within the fenced area. A walk was built
 34 leading from the lighthouse to the Oil Building after its addition to the site.

35
 36 Toward the end of this period, in 1927, a 1½-story wood-framed Assistant Keepers Quarters/Workshop was
 37 built northwest of the Old Michigan Island Lighthouse and surrounding manicured area. The addition of
 38 this building was the first of several new additions to the station described in the following period.
 39

²⁵ Ibid, page 127.

²⁶ Ibid, page 141.



LEGEND

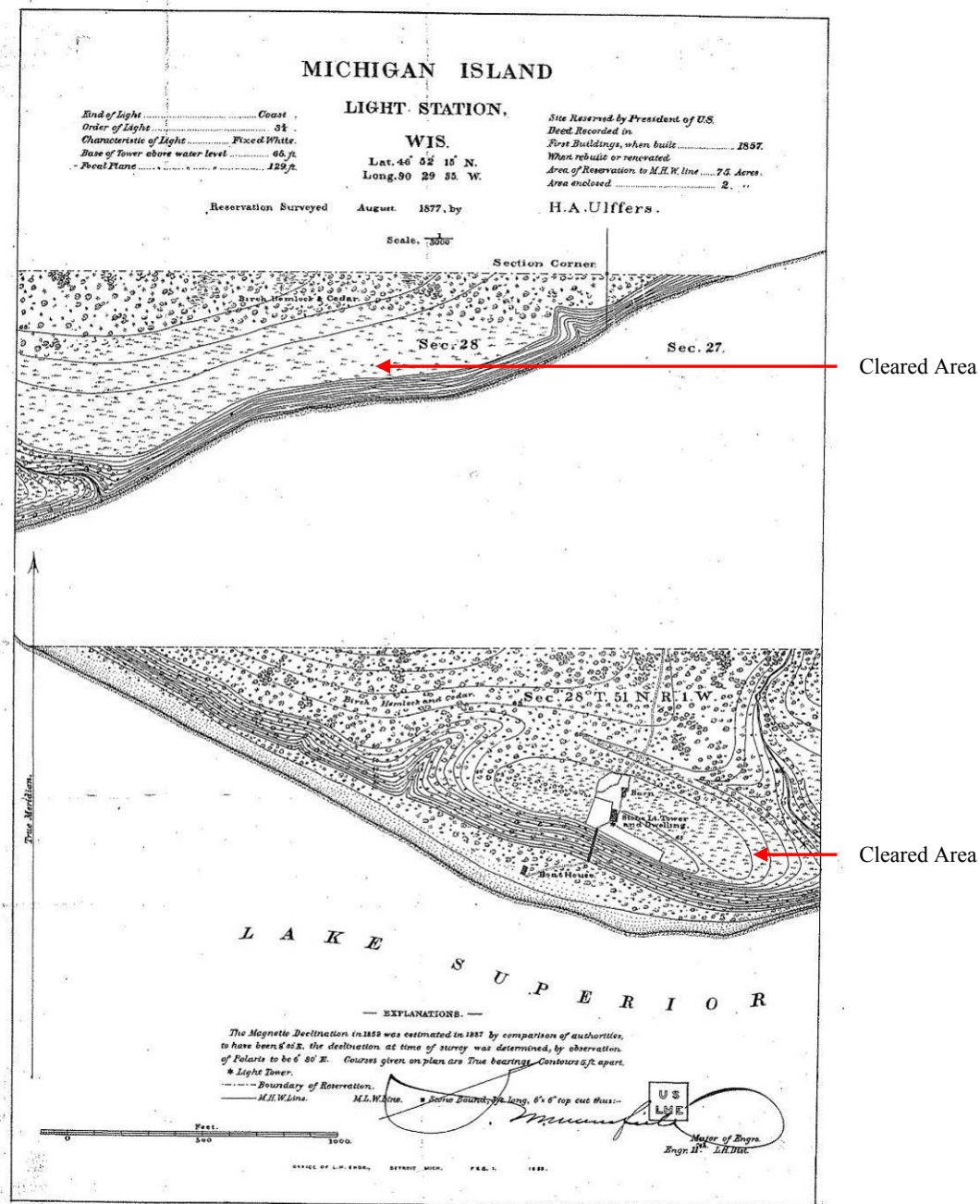
- Forest
- Cleared Area (Field / Brush)
- Lawn
- Beach
- Deciduous Tree
- Evergreen Tree
- Orchard / Fruit Tree
- Lilac
- Stone Planter with Perennials and Annual Plantings

Notes:
1. Shed originally built in 1869 and rebuilt between 1901 and 1902.
2. Privy originally built in 1869 and replaced between 1901 and 1912.

SITE IMAGE MI-01

UNITED STATES DEPARTMENT OF THE INTERIOR APOSTLE ISLANDS NATIONAL LAKESHORE		CULTURAL LANDSCAPE REPORT TITLE OF PROJECT MICHIGAN ISLAND TITLE OF DRAWING EARLY LIGHTHOUSE PERIOD: 1866-1928 NAME OF PARK APOSTLE ISLANDS NATIONAL LAKESHORE	
		REGION MIDWEST	STATE WISCONSIN

1 *Pre-Lighthouse and Early Lighthouse Historic Survey and Photographs*



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- 3
- 4
- 5

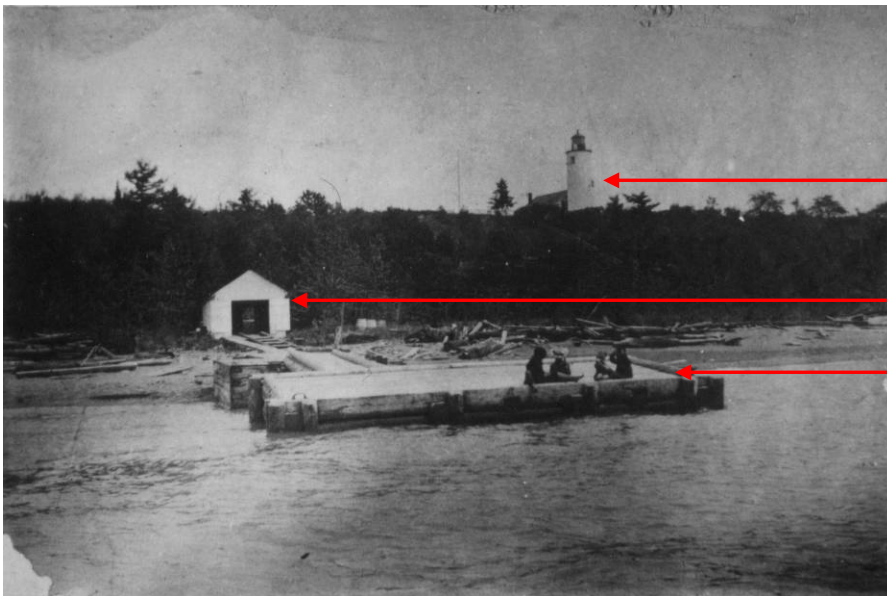
Site Image MI-02: Survey of Michigan Island Light Station showing the reservation boundary, c. 1887 (Source: NPS APIS Archives)



Note Extent of
Clearing

Fence

Site Image MI-03: View of Old Michigan Island Lighthouse from west, c. 1904 (Source: NPS APIS Archives)



Open View of
Tower

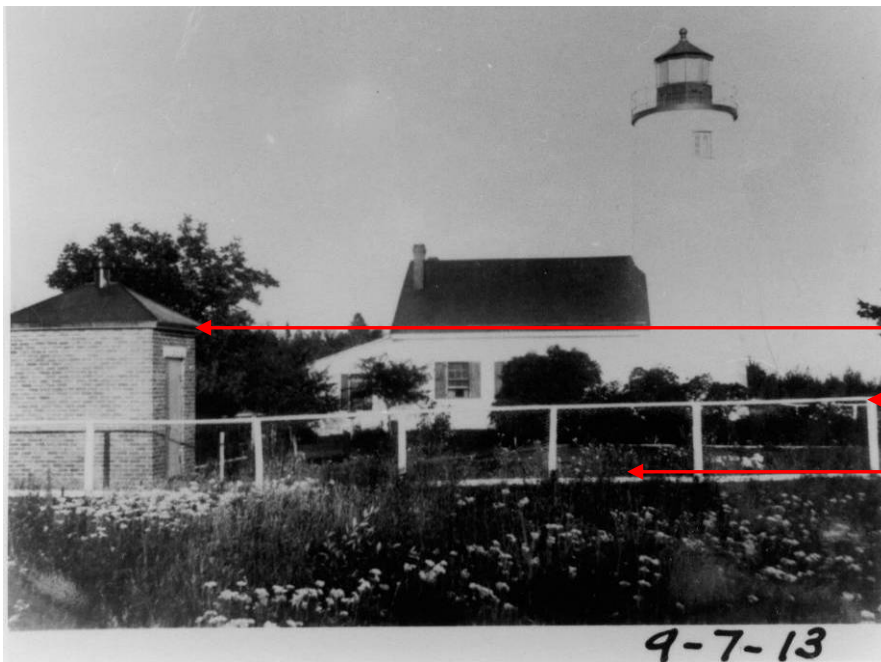
Boathouse

Landing Crib

Site Image MI-04: View of Old Lighthouse from boat dock, c. 1904 (Source: NPS APIS Archives)



Site Image MI-05: View of wooden staircase to Old Michigan Island Lighthouse looking north, date unknown (Source: NPS APIS Archives)



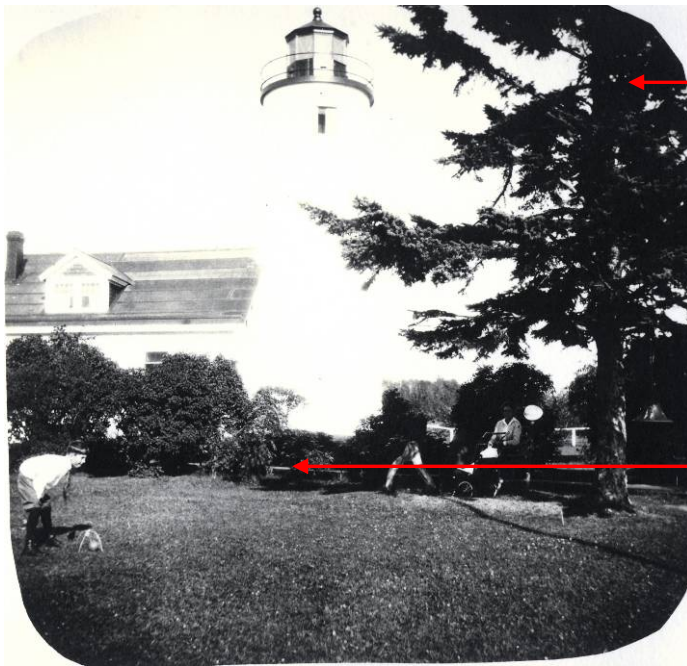
Site Image MI-06: View of Old Michigan Island Lighthouse from west, c. 1913 (Source: NPS APIS Archives)



Shed

Privy

Site Image MI-07: View of Old Michigan Island Lighthouse from southeast – note meadow grasses, c. 1913 (Source: NPS APIS Archives)



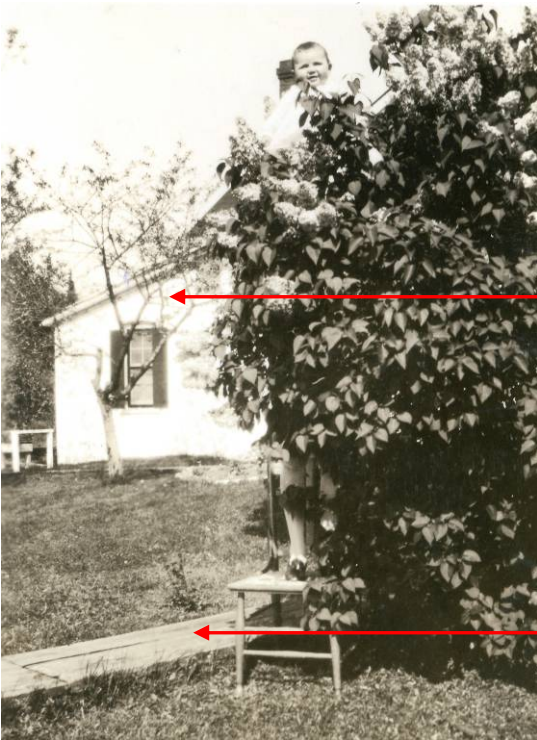
Large Pine
(Currently Extant)

Wood Plank
Walks

Site Image MI-08: Croquet lawn east of Old Michigan Island Lighthouse, late 1910 - early 1920s (Source: NPS APIS Archives)



Site Image MI-09: Mrs. Lane in her garden near the Old Michigan Island Lighthouse, note peonies, date unknown (Source: NPS APIS Archives)



Fruit Tree

Wood Plank Walks

Site Image MI-10: Lilac west of Old Michigan Island Lighthouse. Original inscription on back of photo - "Find the baby. Gerrie Parker Lilac tree at one side of croquet ground which took one third of the yard. Wooden boardwalk," date unknown (Source: NPS APIS Archives)

Light Tower (1929–1938)

The Light Tower period was a time of substantial change for the cultural landscape of Michigan Island. New structures and improvements changed the composition of the light station core area from a loose agrarian arrangement to a more formally composed grouping of buildings and structures connected by a common ‘lawn’ area. The new arrangement of the cultural landscape was directly related to technological advances in navigational aid equipment and operations. The Old Michigan Island Lighthouse was supplanted as the central feature of the grounds by the addition of a new, taller steel light tower. Two new buildings; a Keepers Quarters and a Power House, were added to the grounds during this period, further defining the west side of the station. A new concrete tramway/staircase was added, moving the primary access to the light station further west, away from the Old Michigan Island Lighthouse.

The brick Power House was completed by the beginning of this period. The Power House provided electricity for the light station and eventually housed the engine for the tramway. In 1929, a steel light tower was erected west of the original lighthouse. At a height of 112’, the Light Tower became the dominant feature of the island and was located centrally in the light station grounds. The new tower was almost twice the height of the old lighthouse. This provided a more visible aid to navigation as the light was higher. The height of the tower also reduced the need to clear vegetation in the coming years as the tower rose above much of the adjacent forest. The same year a brick, two-story Keepers Quarters was built on the west edge of the cleared area of the light station grounds. The manicured area of the light station, typically mown grasses, was expanded to include the large common area between all of the new buildings.

The inclined, concrete tramway leading from an elevated wood platform on the Power House down to a new dock was built by 1929. The tramway provided access from the shoreline, replacing the wooden steps to the Old Michigan Island Lighthouse and allowed more efficient transportation of goods and fuel. The tramway was built in two sections; an upper and lower. The upper section was steeper than the lower. Tram tracks were laid on the light station grounds, connecting all of the buildings, easing the movement of supplies and further defining the arrangement of the station.

1929 also saw the addition of an accompanying light on Gull Island, the small island approximately .5 mile off the northeast tip of Michigan Island.²⁷ The steel-framed tower was under the care of the Michigan Island keeper. Prior to the lighting of the Gull Island Tower, the 7 acre island was the site of many shipwrecks.

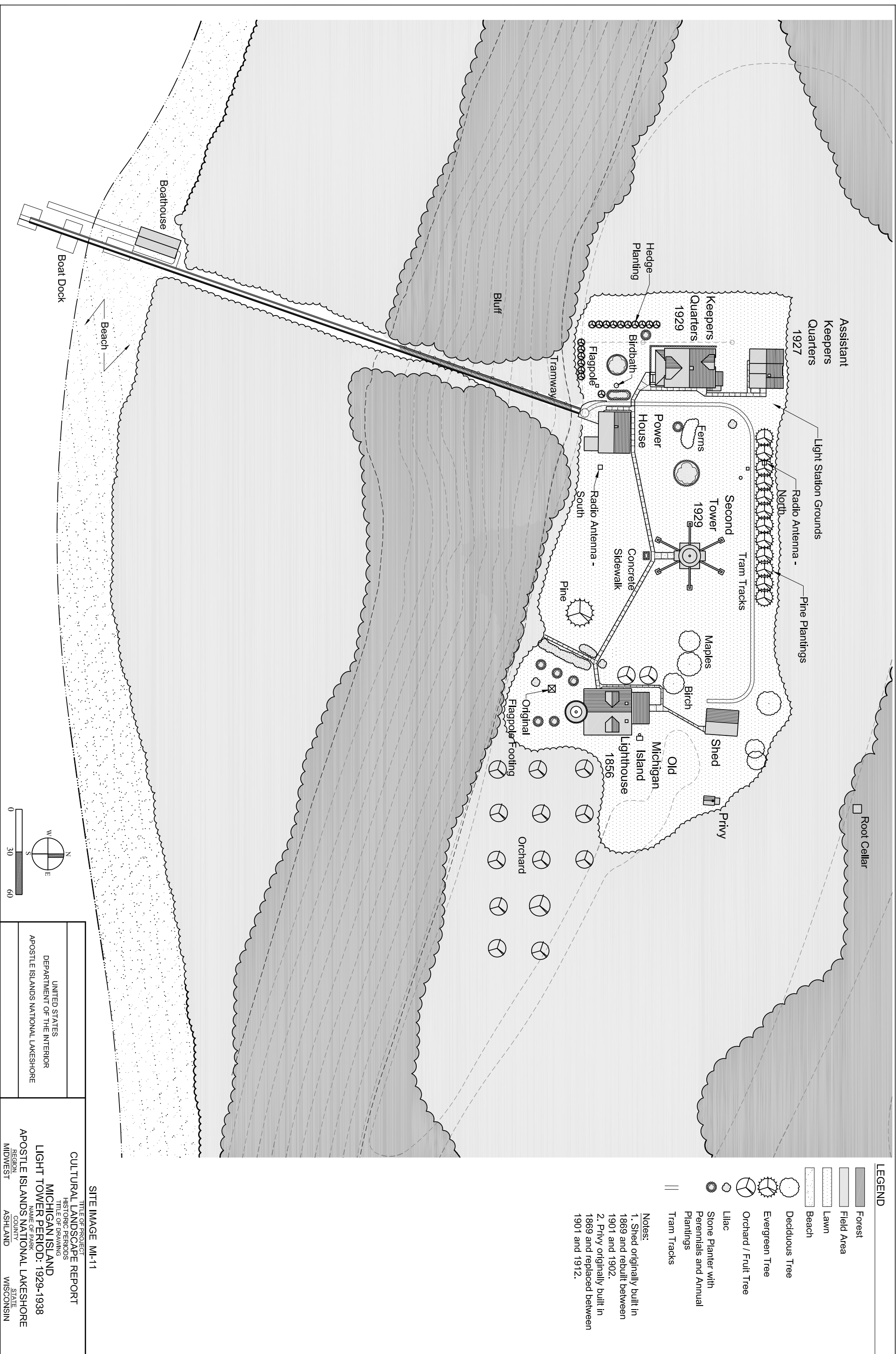
Lighthouse Keeper Ed Lane and his family continued to garden the station during this period. The domestic plantings expanded west with the new Keepers Quarters. The Lanes added plantings in small beds, usually with a white-washed stone edging; and foundation plantings along the Keepers Quarters. Roses predated a linear cedar hedge (still extant) in the southwest corner near the Keepers Quarters. The fence that previously bordered the manicured area west of the Old Michigan Island Lighthouse was removed as well as the 1894 brick Oil Building. Pine trees were transplanted in a line on the north side of the tram track in 1930, delineating the formal enclosure of the grounds on the north and further marking the manicured grounds from the surrounding forest.²⁸ The field east of the Old Lighthouse continued to be maintained as tall grasses and wildflowers by seasonal burning.²⁹ Trees on the embankment were allowed to grow taller than in the previous period due to the new 112’ Light Tower (approximately 60’ higher than the Old Michigan Island Lighthouse), however the trees continued to be maintained for visibility. Historic maps (Site Image MI-10) indicate the orchard planted by former Lighthouse Keeper Pendergast remained southeast of the Old Lighthouse.

²⁷ See 1988 Gull Island Tower photo, Site Image MI-23.

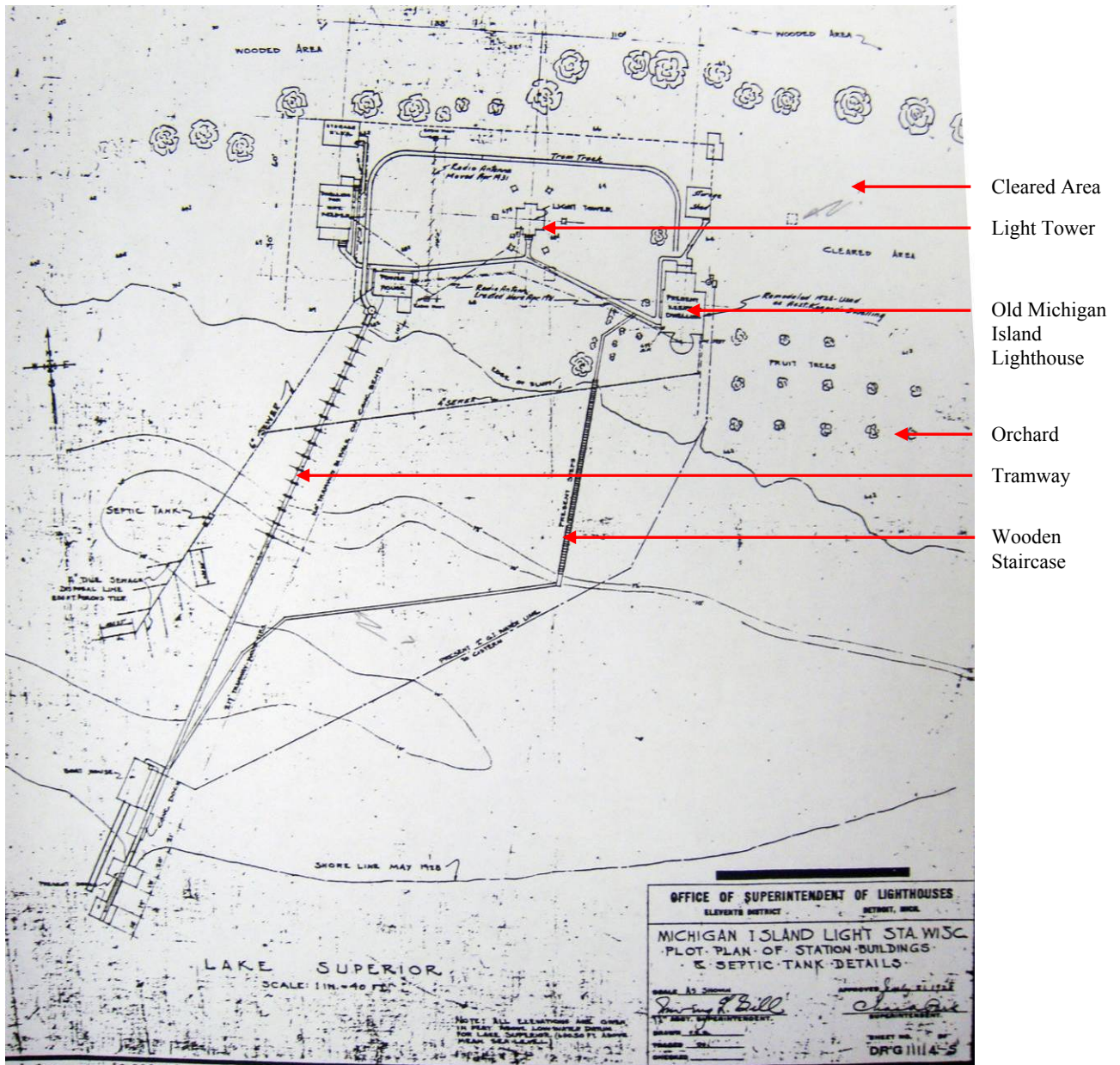
²⁸ Michigan Island Keepers Log, page 31.

²⁹ Record of interview with Edna Lane, 1987.

1 After the completion of the improvements of 1929, which included the Light Tower, Keepers Quarters,
2 Power House, tramway and tram tracks the landscape developed into a more manicured public grounds
3 with mown grasses and extensive landscape plantings. The character of the landscape moved away from
4 the utilitarian, agrarian feeling of the earlier landscape and toward a more public commons landscape type.
5 This change closely followed the technology improvements of the Light Tower, circulation improvements
6 on the grounds and the modernizing of the light keeper's quarters.
7
8



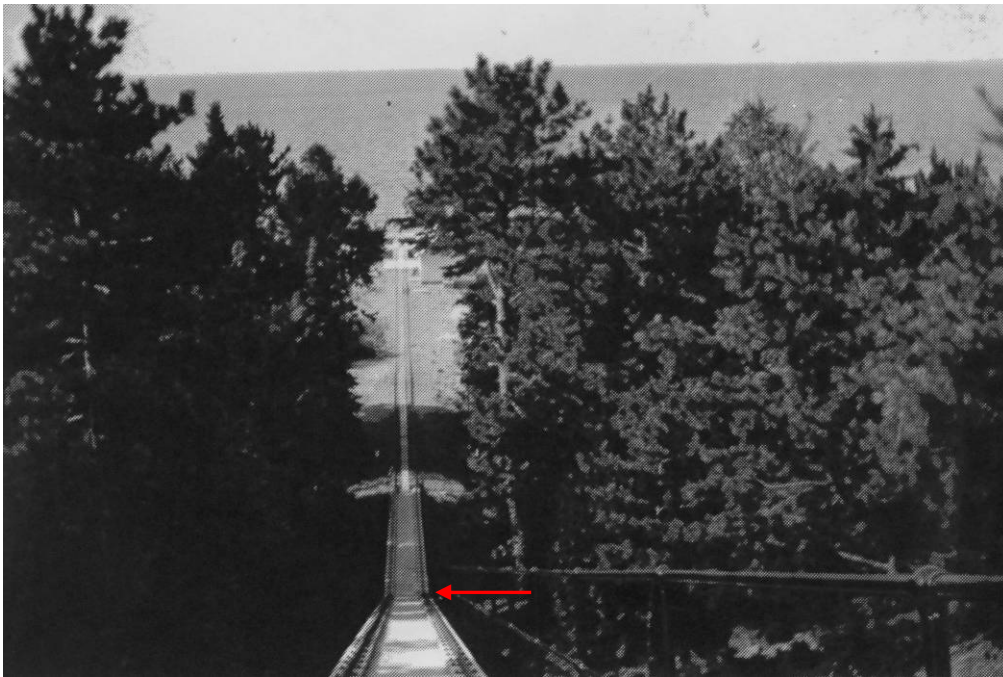
1 **Light Tower Historic Plan and Photographs**



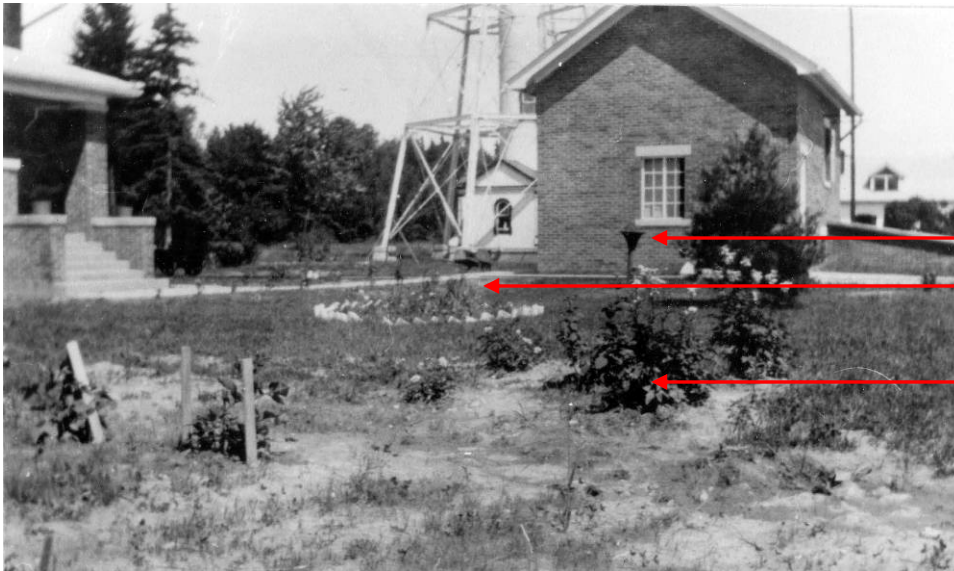
Site Image MI-12: Plan of the Michigan Island Light Station showing new buildings, structures and improvements – note orchard planting to lower right and distance of shoreline from bluff, c.1928–1931 (Source: NPS APIS Archives)



Site Image MI-13: View of upper portion of tramway – note extent of cleared area, c. 1930 (Source: NPS APIS Archives)



Site Image MI-14: Tramway and boat dock. Arrow indicates transition point between lower and upper portions of tramway, c. 1930 (Source: NPS APIS Archives)

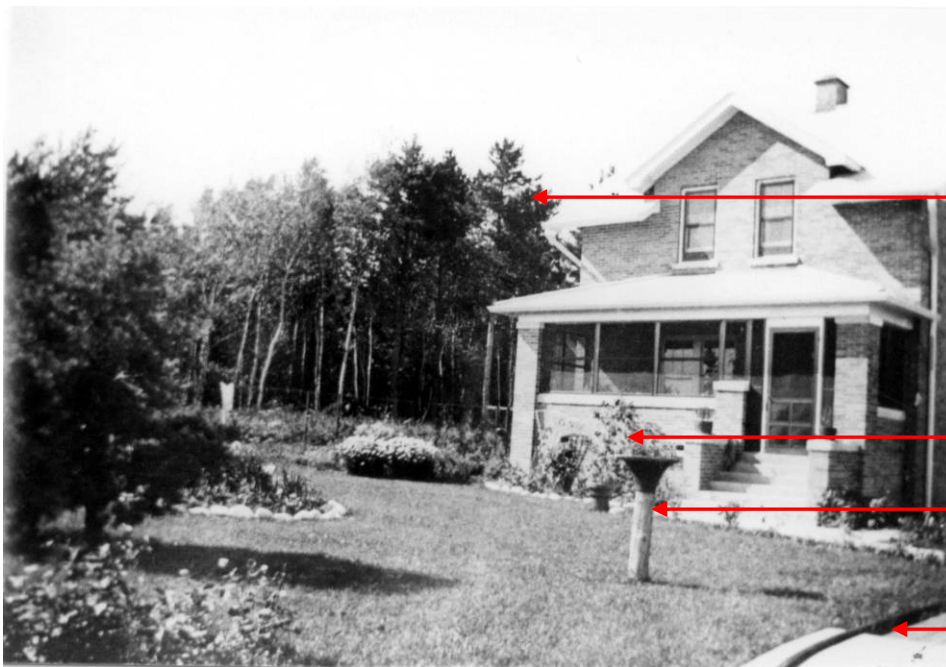


Birdbath

Stone Edged
Planter

Roses

Site Image MI-15: View of Keepers Quarters, Light Tower; Power House; and Old Michigan Island Lighthouse; roses predated cedar hedge (still extant) in area south of the Keepers Quarters, c. 1930 (Source: NPS APIS Archives)



Forest edge

Roses

Birdbath

Tram track

Site Image MI-16: Keepers Quarters with landscape plantings, c. 1930 (Source: NPS APIS Archives)



Ferns

Tram Tracks

Stone Planter

Site Image MI-17: Photo – View of Keepers Quarters and Assistant Keepers Quarters and Workshop with stone landscape planter, c. 1930 (Source: NPS APIS Archives)



Radio Antenna Pole

Stone planter

Ferns

Stone-edged planter

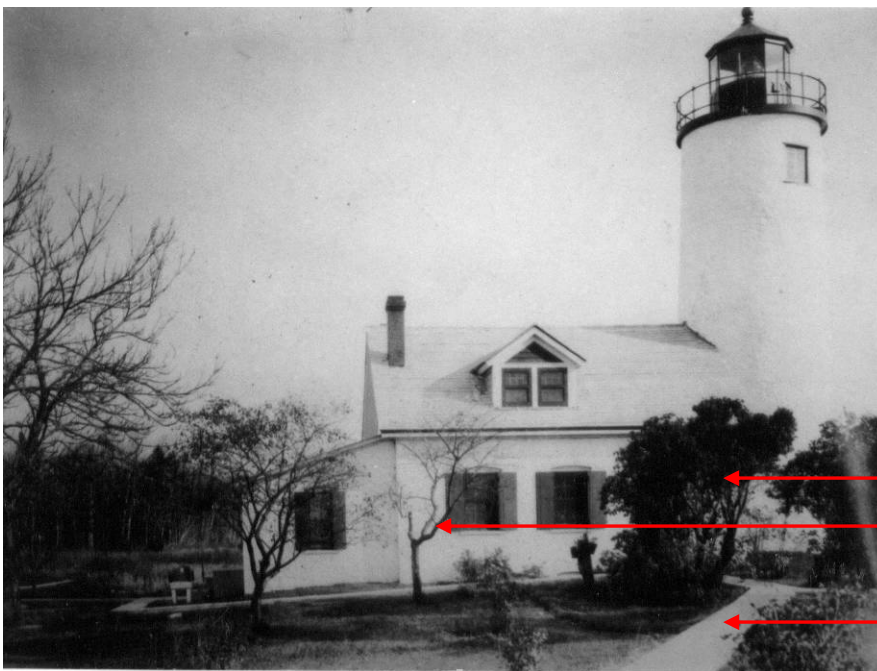
Concrete Walk

Site Image MI-18: View of Keepers Quarters and Assistant Keepers Quarter and Workshop with landscape planters, c. 1930 (Source: NPS APIS Archives)



Concrete Walk

Site Image MI-19: View of Light Tower from south, note stone landscape planter, c.1930 (Source: NPS APIS Archives)



Lilac

Fruit tree

Concrete Walk

Site Image MI-20: View of Old Michigan Island Lighthouse with landscape plantings and concrete walks, c. 1930 (Source: NPS APIS Archives)



Lilacs

Concrete Walk

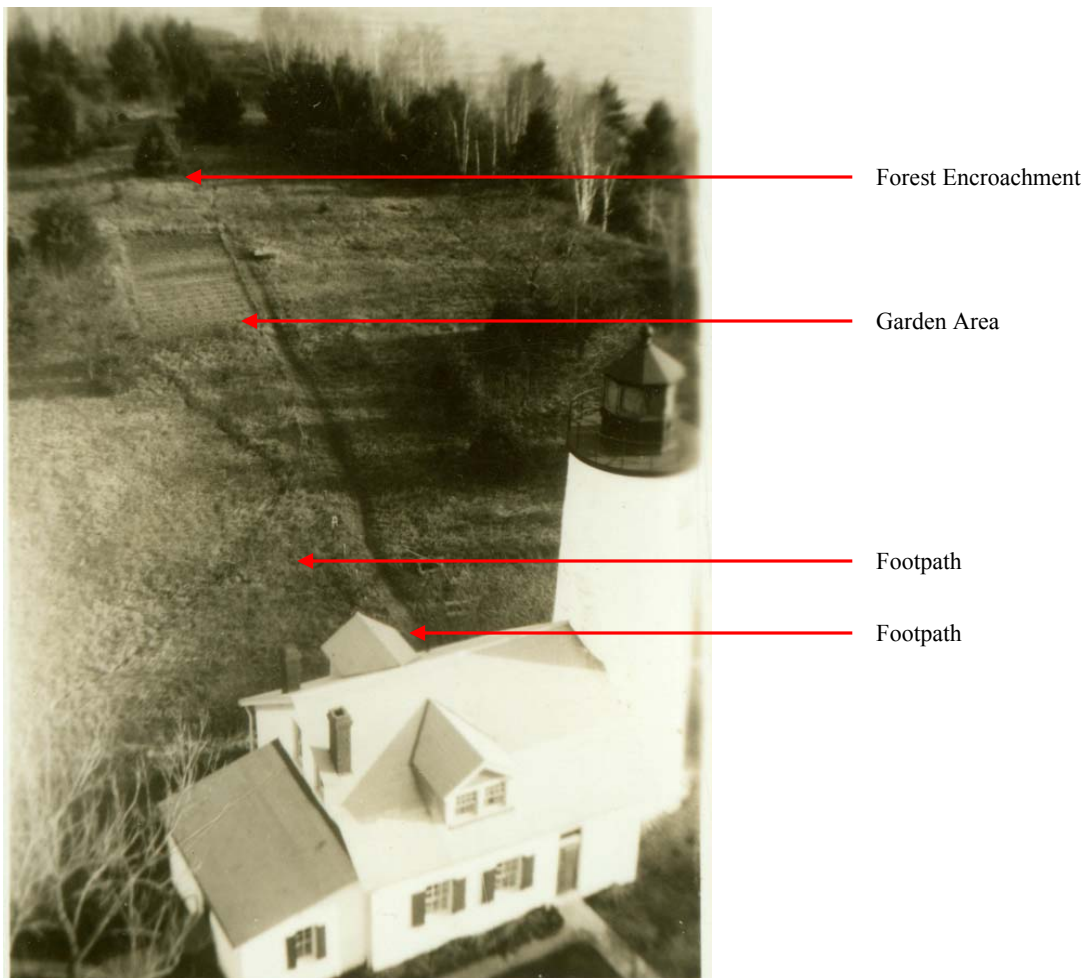
Stone-edged
Landscape Planter

Site Image MI-21: Domestic planting beds and lilacs south of Old Michigan Island Lighthouse date unknown (Source: NPS APIS Archives)

Coast Guard and Automation (1939–1969)

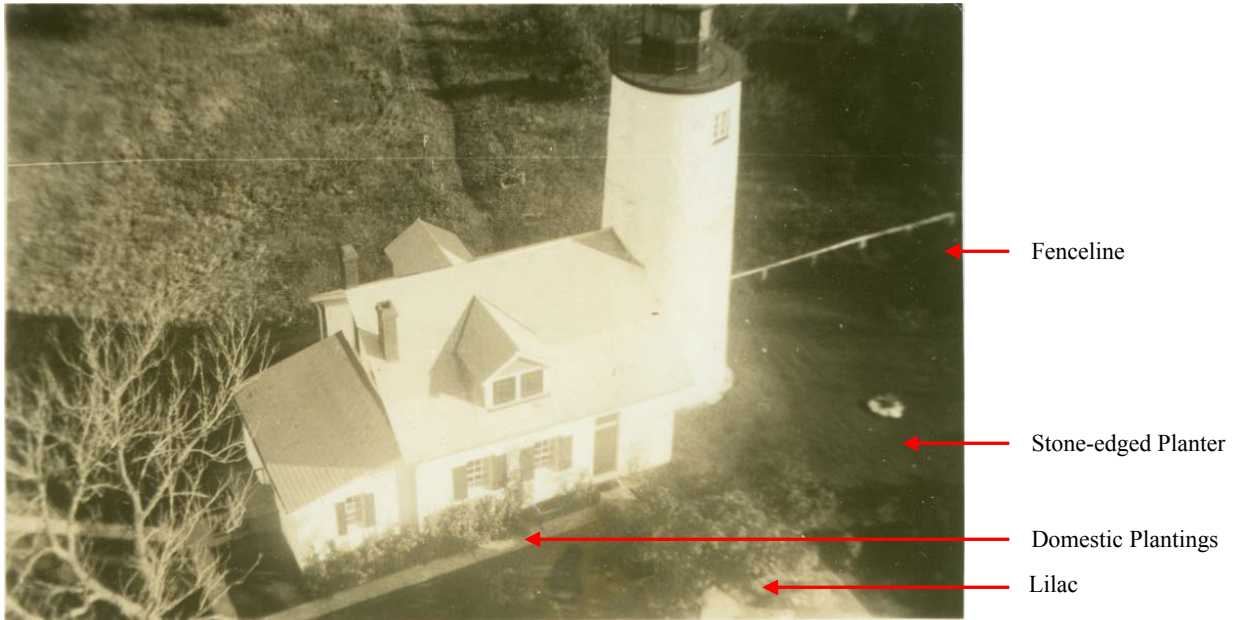
In 1939, the Bureau of Lighthouses was eliminated and the Coast Guard took over management of the light station. By 1943, the light station was automated and the keeper position on the island was eliminated.³⁰ This period resulted in limited additions to the light station grounds and landscape with only a few improvements added. A 1943 historic photo shows a garden existed east of the Old Michigan Island Lighthouse. This garden could have been present in earlier historic periods, although no documentation exists. The primary physical changes during this period were associated with the loss or diminishment of landscape features. After the departure of the light keeper, many of the domestic plantings installed by the lighthouse keepers, such as flower beds and fruit trees, no longer received annual maintenance and slowly fell into disrepair or were eliminated. Without regular maintenance or a need for them, fences also deteriorated or were removed. During this period the open, cleared area of the reservation was gradually reduced as the adjacent forest encroached into the reservation and light station grounds.

Coast Guard and Automation Photographs



Site Image MI-22: Cleared area with garden east of Old Michigan Island Lighthouse, 1943 (Source: NPS APIS Archives-Beals Collection)

³⁰ Busch, Jane C. "People and Places: A Human History of the Apostle Islands; Historic Resource Study of Apostle Islands National Lakeshore" Bayfield: Apostle Islands National Lakeshore. 2008. Page 147.



Site Image MI-23: Domestic planting beds and lilacs west of Old Michigan Island Lighthouse, 1943 (Source: NPS APIS Archives-Beals Collection)

Park Service (1970 to present)

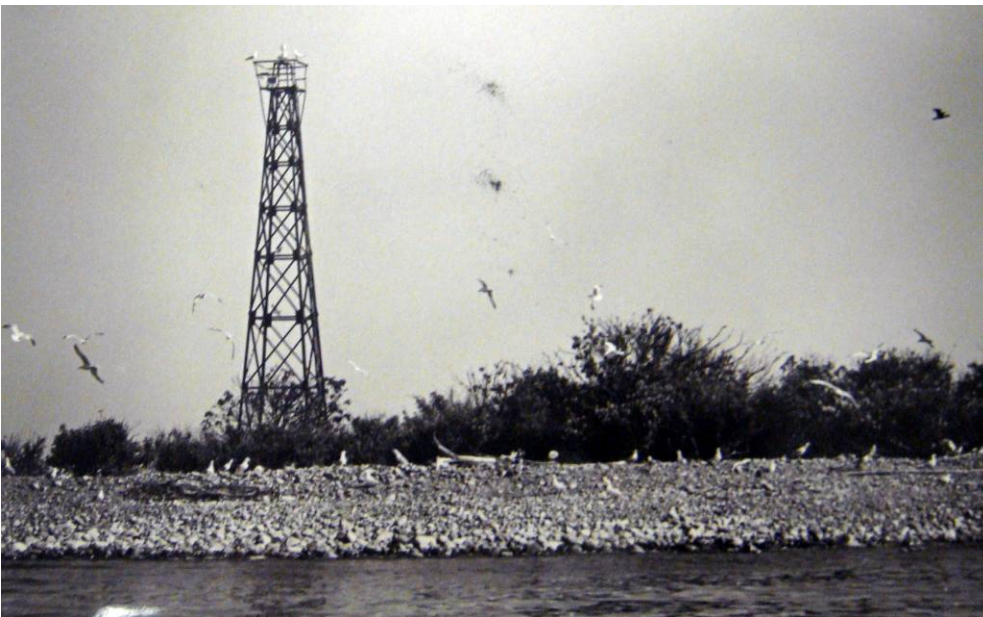
In 1970, the Apostle Islands National Lakeshore was established. This is the beginning of the NPS period that continues to present day. This period opened the island to additional visitors and brought about changes in the landscape that primarily related to island access, recreation and visitor use.

The most significant changes were the 1987 construction of a new boat dock and the 1993 rehabilitation of the lower portion of the tramway and dock. This work reconnected the tramway directly to the boat dock. Other work in this period included the addition of visitor hiking trails, park signage, a pit toilet restroom, a solar panel and minor rehabilitation of the buildings and structures.

1 **Park Service Photographs**



2
3 *Site Image MI-24: Stairs connecting to the tramway, replaced by current-day lower portion of the tramway in 1993, date*
4 *unknown (Source: NPS APIS Archives)*



6
7 *Site Image MI-25: Gull Island Tower, c.1988 (Source: NPS APIS Archives)*
8

ENVIRONMENTAL CONTEXT

Michigan Island is at the continental northwestern limits of the hemlock-white pine-northern hardwood forest and also contains elements of the boreal forest.³¹ The maximum elevation above the lake is 93'.³² The vegetation on the island has been disturbed by several types of human activities, including clearing associated with establishing and maintaining the light station. Additionally, a series of small farms, each around 100 acres, were established and eventually abandoned in the late 19th century.³³ The Island was also extensively logged for timber in the late 19th and early 20th centuries. The majority of the island is now covered with a maturing second-growth northern hardwood forest dominated by white birch (*Betula papyrifera*), sugar and red maples (*Acer saccharum* and *Acer rubrum*), balsam fir (*Abies balsamea*), and white cedar (*Thuja occidentalis*). Michigan Island includes a bog/lagoon complex associated with the sandscape at the southwest end of the island.

As with the other islands within Apostle Islands National Lakeshore, wildlife on Michigan Island is not as diverse or abundant as that on the mainland.³⁴ Common mammal species include red squirrel (*Tamiasciurus vulgaris*), snowshoe hare (*Lepus americanus*), deer mouse (*Peromyscus maniculatus*), masked shrew (*Sorex cinereus*), and boreal redback vole (*Clethrionomys gapperi*). Bear (*Ursus americanus*), river otter (*Lutra canadensis*), and beaver (*Castor canadensis*) are also found on the island. A variety of migratory birds use the island for foraging, nesting, and as a stopover during migration, including the piping plover (*Charadrius melodus*), which is a federally and state endangered species. Bald eagles (*Haliaeetus leucocephalus*) nest on the island as they did in the early historic periods. The U.S. Fish and Wildlife Service has designated the Michigan Island sandspit at the southwest corner of the island as critical habitat for piping plover.

³¹ National Park Service. 2009. Apostle Islands National Lakeshore Draft General Management Plan/Wilderness Management Plan/Environmental Impact Statement. Bayfield, WI.

³² National Park Service. 2006. Apostle Islands National Lakeshore Website. Island Statistics. Last updated August 23, 2006. Available at <http://www.nps.gov/apis/parkmgmt/upload/island%20statistics.PDF>. Accessed December 7, 2009.

³³ Alanen, Arnold R. and William H. Tishler. "Farming the Lake Superior shore: agriculture and horticulture on the Apostle Islands, 1840–1940," Wisconsin Magazine of History. Volume:79/Issue:3 (1995–1996).

³⁴ National Park Service. 2009. Apostle Islands National Lakeshore Draft General Management Plan/Wilderness Management Plan/Environmental Impact Statement. Bayfield, WI.

EXISTING CONDITION ASSESSMENT AND LANDSCAPE ANALYSIS

The existing condition assessment and landscape analysis for the Michigan Island Light Station are presented in this section. The light station reservation and grounds are documented as one entity through those landscape characteristics that together comprise its cultural landscape. The presentation of the existing conditions assessment and analysis is organized by landscape characteristics - spatial organization, topography, views and vistas, and circulation. The landscape analysis identifies those buildings, structures, small scale features and vegetation that contribute to the significance and integrity of the cultural landscape of the light station. An overview of the CLR methodology is presented in Volume I, Chapter 2: Methodology.

The landscape analysis, presented as narrative text, follows and provides an evaluation of the significance and integrity of each characteristic. The landscape characteristics for the Michigan Island Light Station are as follows. Their associated character-defining features contribute to the overall integrity of location, design, materials, workmanship, setting, association, and feeling.

- Spatial Organization - is the arrangement of elements creating the ground, vertical and overhead planes that define and create space, including the arrangement of topography and buildings.
- Topography – is the three-dimensional configuration of the landscape surface characterized by features and orientation; includes bluffs, cliffs, slopes and drainages.
- Views and Vistas – are features that create or allow a range of vision which can be natural or designed and controlled; these include views of the light stations from Lake Superior and views from the light towers and lighthouses.
- Circulation – are spaces, features, and materials that constitute systems of movement.
- Buildings - buildings that are either currently or were historically habitable are presented in the Historic Structure Report.
- Structures - are smaller nonhabitable buildings or significant features (now or historically) such as privies, tramways, and outbuildings.
- Small scale Features – are elements that provide detail and diversity combined with function and aesthetics; including paving, structural remnants, site walls, signs, and walls of building ruins.
- Vegetation – are indigenous or introduced trees, shrubs, vines, ground covers, and herbaceous materials; including lawns, shrubs and landscape garden areas.

The existing condition of the Michigan Island Light Station is presented first as a paragraph description. Annotated photographs support the condition assessment. The following criteria were used to evaluate condition:

- **GOOD** – Those features of the landscape that do not require intervention; only minor or routine maintenance is needed at this time.
- **FAIR** – Some deterioration, decline, or damage is noticeable; the feature may require immediate intervention; if intervention is deferred, the feature will require extensive attention in a few years.
- **POOR** – Deterioration, decline, or damage is serious; the feature is seriously deteriorated or damaged, or presents a hazardous condition; due to the level of deterioration, damage, or danger the feature requires extensive and immediate attention.

The landscape analysis compares the site history with its existing condition to identify and evaluate those landscape characteristics that retain integrity and contribute to the significance of the light station.

The Michigan Island Light Station has integrity as it retains the majority of its character-defining features and buildings that depict its role in the development of navigational aids in the Apostle Islands. The most important features include the buildings, tramway, tram tracks and landscape as these defined the setting and lifestyle of the keepers that created many of the landscape features.

Spatial Organization

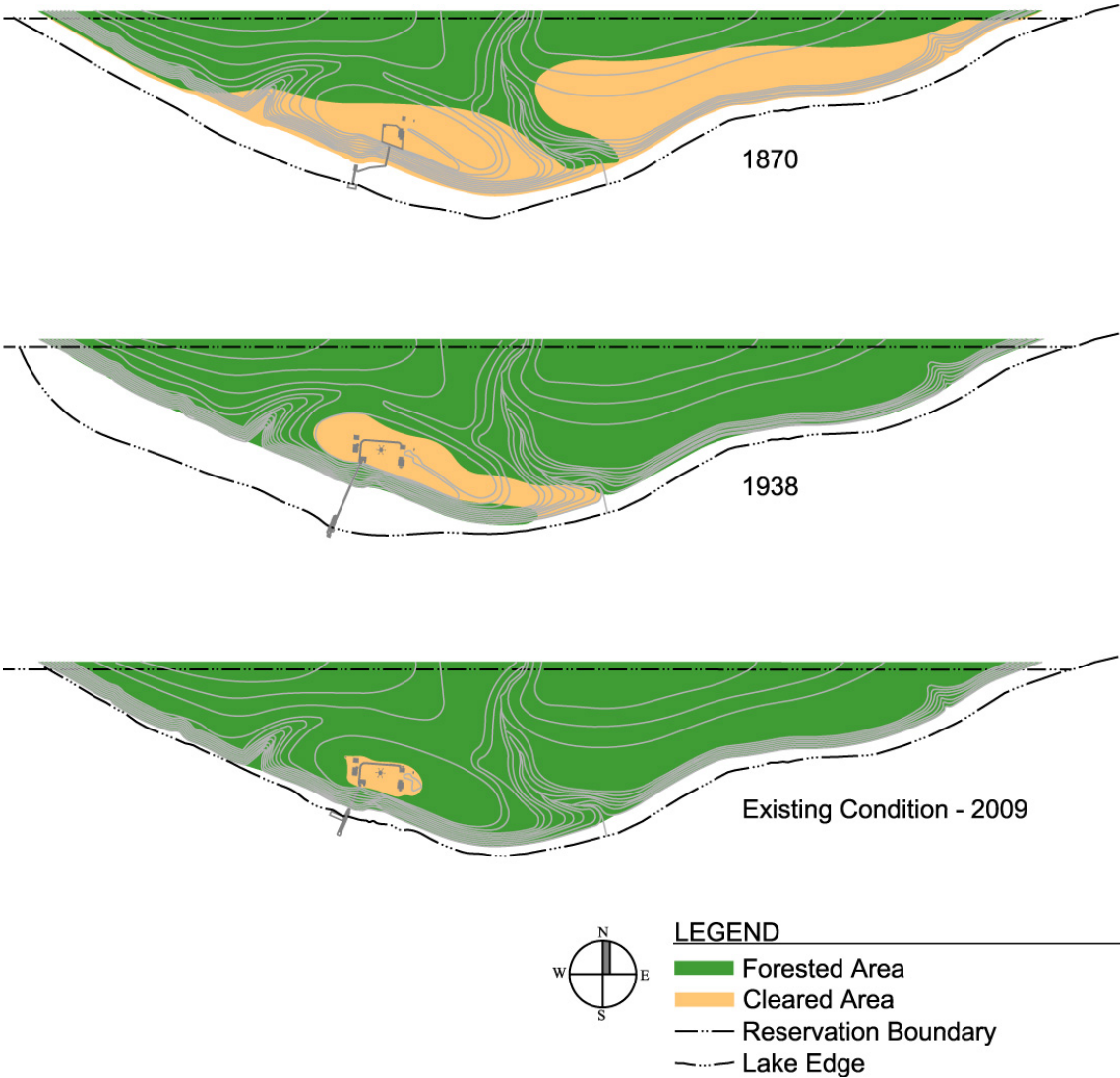
Spatial organization at the Michigan Island Light Station is of two distinct scales, the organization of the reservation and that of the light station grounds. While they are distinct they are also directly related. The cleared area of the reservation is also discussed under the vegetation section.

Existing Condition. The spatial organization of the light station reservation is simply defined by the relationship of the forest to the cleared area of the reservation. Spatially this creates wide open areas that contrast with the heavily forested areas outside of the clearing. The amount of cleared area is significantly less than present during the period of significance, more specifically the Light Tower period.

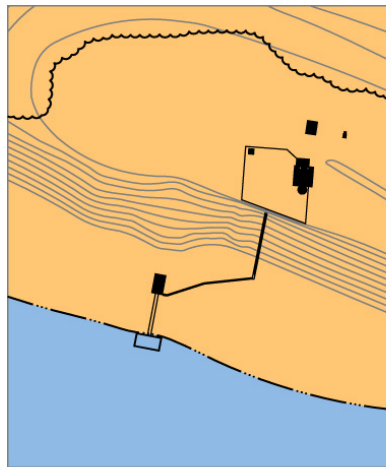
The light station grounds are arranged in a fairly formal, rectangular shape. The forest/encroaching vegetation creates an outer perimeter, the buildings and tram tracks form an inner perimeter, with the open lawn in the central portion of the site. Within the grounds the structures and tram tracks reinforce this outdoor common space. Centered in the grounds is the dominant element, the tall, steel Light Tower. The overall feeling is one of enclosure, on all four sides as the maintained landscape is surrounded by the encroaching forest. Overall the spatial organization of the light station, reservation and grounds, is in poor condition

Analysis. The spatial composition of the light station reservation has significantly changed from the island's early history as an aid to navigation. While the spatial organization of the light station's buildings, structures, and small scale features remains in place from the period of significance, the surrounding clearing has been greatly reduced due to forest encroachment (Site Image MI-24, MI -25). Once the island was no longer operated as a light station with a light keeper, the forest vegetation was not cleared as regularly as the height of the new tower reduced the need for extensive clearing that occurred during the early years of the light station. Spatial composition is an important contributing feature to the cultural landscape. The encroachment of the forest has diminished the integrity of this feature and the light station.

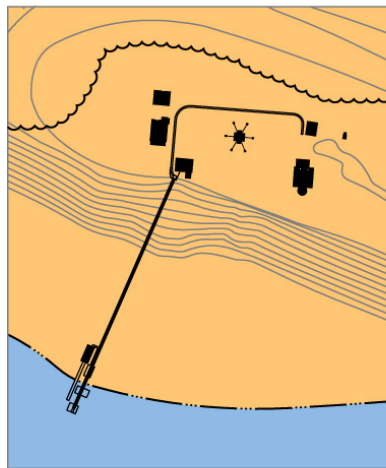
Spatial Organization Diagrams and Photographs



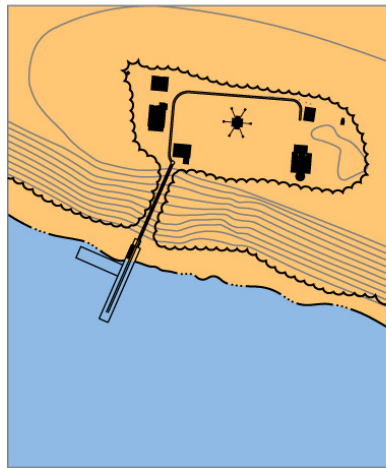
Site Image MI-26: Cleared area diagram (Source: MBD 2009)



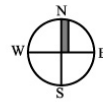
1870



1938



Existing Condition - 2009



LEGEND

- Built Feature
- Michigan Island
- Lake Superior
- Forest Edge
- Lake Edge

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Site Image MI-27: Evolution of the spatial organization of the light station grounds (Source: MBD 2009)



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Site Image MI-28: View of Old Michigan Island Lighthouse; top, c. 1913; below, 2009 (Source: MBD DSC00579.jpg)



Site Image MI-29: View of light station grounds from Light Tower, 2009 (Source: MBD DSC_0010.jpg)



Site Image MI-30: View of light station grounds from Light Tower, 2009 (Source: MBD DSC_0018.jpg)

Topography

Existing Condition. The light station grounds on Michigan Island are located on a bluff, rising approximately 60' above Lake Superior. The overall island topography consists of a landscape of gently rolling, forested hills ending in steep banks that slope down to rocky or sandy beaches. The light station grounds are primarily flat with several small drainages leading from the interior of the island to the bluff edge and shoreline. The embankment slope is highly erodible but stable. The shoreline adjacent to the light station is primarily a narrow rocky cobble beach east of the boat dock with sand beaches to the west fluctuating in width. The topography of the light station and reservation is in good condition.

Analysis. The topography of the reservation generally remains as it has been since development of the light station with two exceptions.

First, the embankment has eroded and affected the area of the light station grounds primarily at the top of the slope. Because of concerns relating to erosion of the embankment slope, baselines were established in 1979 and monitored periodically until 1994. The average rate of erosion on the east side of the dock ranged from .3 to .6 meters per year.³⁵ The Michigan Island Light Station embankment is currently stable, but with a high erosion potential.

Secondly, historic drawings and photos indicate that the shoreline zone has become significantly narrower in width. Edna Lane Sauer, daughter of Lighthouse Keeper Lane, stated that, "There were only cobblestones east of the dock – all the way around the island except for a bit of red clay. Wonderful sand beaches from dock westward and north for a ways. So wide and clean."³⁶ Whether the narrowing of the shoreline zone is due to natural forces, man-made developments (boat dock) or a combination is unknown.

The topography of the reservation and light station grounds retains its integrity and is a contributing feature.

Topography Photograph



Site Image MI-31: Bluff along lake edge, east of dock, 2009 (Source: MBD DSC00585.JPG)

³⁵ Van Stappen 1994 (Van Stappen, J. 1994. Bluff erosion monitoring, Michigan, Outer, and Raspberry Islands, Apostle Islands National Lakeshore, Bayfield, Wisconsin).

³⁶ Edna Lane Sauer, APIS 2682, Museum collection photo.

Views and Vistas

Existing Condition. Notable views to Michigan Island include those of the Light Tower and Old Michigan Island Lighthouse from passing ships and pleasure boats on Lake Superior. Notable views from the island include those to the south over Lake Superior from the Light Station grounds, and vistas from the top of the Light Tower and Old Michigan Island Lighthouse across the island and outward over the water. Selective clearing projects have been undertaken to open vistas to and from the light station. Views and vistas are generally in poor condition.

Analysis. The extent of views and vistas to and from the light station grounds has been reduced due to the encroachment of forest vegetation resulting from a reduction in vegetation clearing on the reservation. Views from Lake Superior to the Old Lighthouse and Light Tower are greatly obscured by vegetation. A review of historic photographs indicates that the Old Lighthouse was clearly visible from the water. Today, the Old Lighthouse is only visible from Lake Superior where recent clearing activities have opened up narrow vistas. The Light Tower remains visible above the trees due to its height, reducing the navigational need for clearing of the forest. Views from the light station grounds and Old Lighthouse are also obscured due to encroaching and maturing vegetation. Views from the Light Tower over Lake Superior and the north portion of the Island remain intact due to the height of the tower.

Views and vistas are an important contributing feature to the cultural landscape of the Michigan Island Light Station. The loss of these diminishes the integrity of the light station.

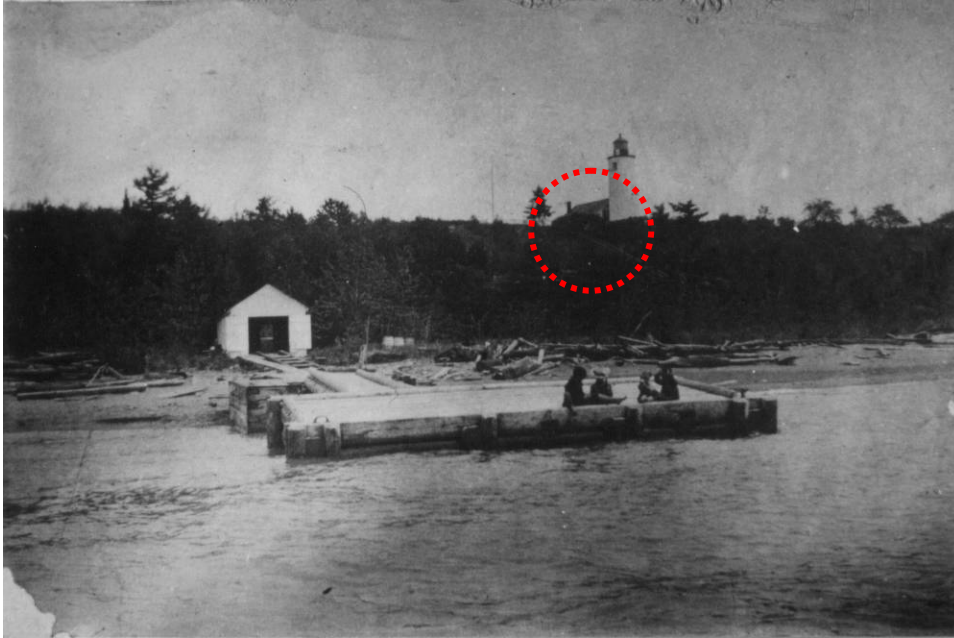
1 ***Views and Vistas Photographs***



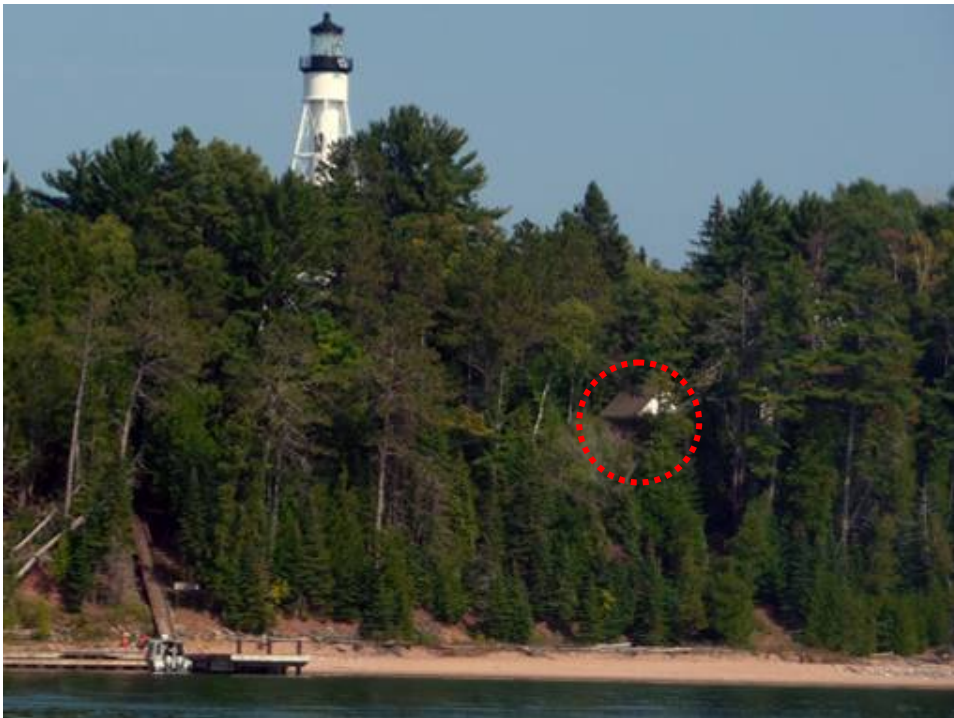
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5 *Site Image MI-32: View from the Lighthouse to the boat dock below, top, c.1856–1928 (Source: NPS APIS Archives); below,*
6 *c. 2009 (Source: MBD P1010701.JPG)*



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5 *Site Image MI-33: View from water to Old Michigan Island Lighthouse (and Light Tower) showing growth of forest; top, c. 1904 (Source: NPS APIS Archives); below, c. 2009 (Source: MBD P1010811.jpg)*



Site Image MI-34: View from Light Tower to south over Lake Superior, 2009 (Source: MBD DSC_0014.jpg)

Circulation/Accessibility

Existing Condition. Circulation on Michigan Island is focused on the boat dock and light station grounds. Access to the island is water based and the boat dock is the only formal boat landing on the island. The boat dock is used by NPS staff and visitors in small pleasure boats. The dock cannot be accessed by large day-cruise boats. The inclined, concrete tramway provides pedestrian circulation from the boat dock to the light station grounds and a method of transporting goods between the two. Concrete walks connect the Light Tower, Old Lighthouse, buildings and small scale features. A trail originates near the Keepers Quarters and leads west, through the forest across the reservation to a campsite, sand spit and lagoon on the west side of the island.

The boat dock, tramway and tram tracks are described in detail under the Structures section. The concrete walks are described under the small scale features section.

In general, circulation at the light station is in good condition. The condition of individual features is discussed within their respective sections.

Analysis. Circulation on Michigan Island has remained similar to the access and basic routes that were developed during the Light Tower period. Primary transit to the island was historically, and continues to be by boat, landing on the boat dock on the island's south side.

Originally, pedestrian circulation from the shore to the light station was along a wooden stairway leading to the Old Michigan Island Lighthouse. An existing concrete walk leads to the nonextant location of these stairs. During the Light Tower period a new point of access was established with the construction of a new boat dock, tramway and stairs which were built west of the original wooden staircase and boat dock. This substantial change brought new technology and a more efficient method of transporting goods up to the light station and fuel to the new Power House. The construction of the tramway reoriented the main pedestrian route to the new Keepers Quarters rather than the Old Michigan Island Lighthouse and significantly changed the circulation routes on the site. The tram tracks were also laid at this time and used for moving goods and fuel on the light station grounds.

Concrete walks were installed in both the Early Lighthouse period and Light Tower period, many of which remain today. Typical to the Apostle Islands light stations, the concrete walks were narrow in width; placed in straight lines connecting buildings and other site features. Concrete walks linked the Old Michigan Island Lighthouse with the Shed, wooden staircase and eventually the Privy and Oil Building. The concrete walks were preceded by wooden plank walks, laid on the ground surface. Later concrete walks were built to connect the Power House, Keepers Quarters, Assistant Keepers Quarters and Light Tower. In the 1990s a hiking trail was built leading from the light station westward to the southwest corner of the island.

Today, the historic circulation system, consisting of: the primary access at the boat dock; the inclined tramway; the tram tracks; and the concrete walks on the light station grounds contribute to the island's significance as a cultural landscape. The 1990s hiking trail does not detract from the cultural landscape.

Accessibility (ABAAS). Visitor accessibility to the light station, including its buildings and structures, is limited due to the extreme difference in elevation from the boat dock to the light station and limited ABAAS compliant improvements. Barriers to universal accessibility include 123 steps on the tramway connecting the boat dock to the light station, steps leading into and through buildings and structures, and the narrow width of site walks. The light station grounds present few barriers to accessibility as the terrain is generally flat. The buildings present individual accessibility barriers and are discussed in the HSR.

Buildings

The Michigan Island Light Station buildings include: the Old Michigan Island Lighthouse, Keepers Quarters, Assistant Keepers Quarters / Workshop, Power House, Shed and Privy No. 1. For information refer to the Historic Structure Report for Michigan Island.

Structures

The structures on Michigan Island provide a human scale to the island and convey important history and use of the light station. The structures include the boat dock, tramway, tram turntable and tram tracks. A physical description of each structure and its condition is presented first. An analysis of each structure follows and includes a determination of whether the structure is contributing or noncontributing.

Boat Dock

Existing Condition. The concrete boat dock extends from the shore in an 'L' shape to the south (140') and west (70') of the shore. The existing dock was constructed in 1987 and was modified in 1993. It is a steel sheet pile structure infilled with stone rubble and capped with a concrete deck. The top of the boat dock has tram rails set into the surface, which are connected to the inclined tramway. Due to the nature and location of the boat dock, this dock and its predecessors have frequently been damaged or destroyed by the harsh wave and ice action of Lake Superior. The boat dock is in good condition but has functionality issues related to sedimentation and water depth.

Analysis. The original boat dock was built about 50' to the east of the current boat dock and was connected to a wooden staircase leading up to the Old Lighthouse. Historic photographs indicate that there was a small Boathouse present on the shoreline during the Early Lighthouse period. The existing boat dock location has been in place since 1929, but the actual dock has been modified, repaired and rebuilt several times. The location of the existing boat dock is consistent with the locations of previous docks, specifically the 1929 dock. The materials and form of the dock are not consistent with the historic character. The boat dock has operational deficiencies due to the basic design of a solid L shaped structure that does not allow flows to pass underneath it. The current boat dock is considered a noncontributing, noncompatible feature due to the 'L' shaped form of the structure.

Boat dock planning work is currently under study by the NPS under separate but related projects, including the Great Lakes Restoration Initiative.

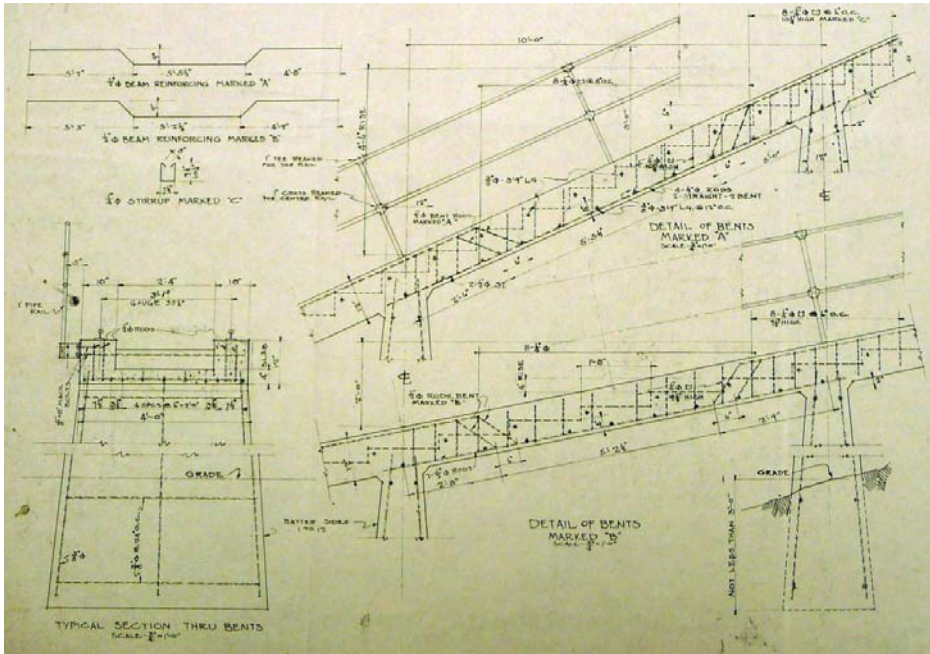
Tramway

Existing Condition. The inclined tramway is 158' long and connects the boat dock to the bluff, rising approximately 60' above the shoreline. The tramway consists of: cast iron tram rails with formed concrete steps between the rails; and a steel pipe railing located on the west side of the structure. The tramway is built of cast-in-place, reinforced concrete and is supported by 15 concrete footings spaced evenly along its length. The footings are rectangular in shape and battered at 1/12 on all four sides, tapering to a wider base at, and below the ground. All exposed portions of the footings have a board form finish. The tramway structure is 4' wide with 25-pound rails spaced at 36" on center. The rails are secured to the concrete with flats and imbed bolts at approximately 24" on center. The steps are 28" wide and centered in the structure. The lower portion of the tramway has 20" treads and the upper portion has 14" treads. The 123 risers vary between 4½" and 6" high. The steel pipe railing is secured to the outside vertical surface of the tramway structure with steel brackets and painted. The upper portion of the tramway structure (approximately 120')

is constructed at a slope of approximately 40 degrees. The lower portion (approximately 34') is constructed at a lesser slope. The lower portion was reconstructed in 1993, replacing a wooden platform and steps and connecting directly to the boat dock.

The tramway is in good condition and retains all of its original elements of the upper portion including: concrete footings and stairs, steel handrail, and cast iron tram rails.

Historic Drawing of Tramway, c. 1929



Site Image MI-35: Historic Drawing, 1928, of the Michigan Island Tramway (Source: APIS Archives)

Analysis. The tramway was built in 1928 and with the tram tracks was a major component in reshaping the light station grounds. The tramway and stairs replaced the wooden steps below the Original Lighthouse as the primary access to the light station moving it to the west, focused on the Power House and Keepers Quarters. This construction of this transportation system brought a new technology to the light station and allowed a much more efficient movement of goods and fuel up the bank and on the light station grounds. At this time, the water line that was previously in a separate location was rebuilt to run along the tramway, much like at Outer Island. The tramway and tram tracks changed the both the physical organization of the landscape and the way in which the light station operated.

The original lower 34-foot section was removed sometime following automation in 1943. It was reconstructed in 1993, and replaced an elevated, wooden landing platform and directly connecting the tramway to the boat dock (c. 1987). The tracks were extended onto the boat dock at this time. The 1993 reconstruction was done using the existing footings and compatible materials in a form similar to the original construction. The tramway presents several issues with regard to ABAAS and code compliance. The width of the steps, at 28", falls short of the required 36" width; the handrails are too far from the edge of the steps (currently 12", should be directly adjacent); and a handrail and guardrail are lacking on the east side of the structure. The riser to tread ratio of the upper portion of the tramway, at 40 degrees, exceeds ABAAS standards. The tramway is considered a contributing feature.

Tram Turntable

Existing Condition. At the top of the tramway is a manufactured steel turntable used to turn carts and connect them to the tram tracks that extend into the light station grounds. The turntable is 5' in diameter and is covered with a large cast iron plate stamped "KOPPEL CO PF 79, KOPPEL, PA." The turntable is currently locked in one position, nonfunctional, and in poor operating condition.

Analysis. The tram turntable was installed in 1929 as part of the tram system. The turntable is a contributing feature.

Tram Tracks

Existing Condition. The tram tracks lead from the Power House tramway turntable north past the Keepers Quarters, then turn to the east along the row of pine trees, before turning south and connecting to the Shed behind the Old Michigan Island Lighthouse. The tracks are cast iron 25-pound rails, spaced 36" on center matching the tramway and secured to timbers set in gravel. The tracks are a system and are intact and remain in place, although portions of the rails have been damaged and bent and a great portion of the tracks have excessive soil and vegetation between the rails. The wooden timbers beneath the tracks are extant but are generally in poor condition. Overall the tram tracks are in fair to poor condition.

Analysis. The tram tracks were built in 1929 at the beginning of the Light Tower period as part of the tram system and were an integral part of the technological advances in equipment on the light station. Tram tracks are a feature common to Michigan, Devils, Outer, and Raspberry islands, making the transportation of goods within the station easier and more efficient. Spatially, the tracks assist in defining the northern edge of the light station grounds. Encroaching vegetation (grasses) and soil have gradually settled into the track area limiting drainage and accelerating the decay of the timbers beneath. The tram tracks are a contributing feature.

Original Wood Staircase

The original wood staircase is nonextant with no traces of it remaining. A concrete walk leads to the site of the former staircase.

Root Cellar

Existing Condition. The root cellar at the Michigan Island Light Station was located approximately 100' north of the Privy on the east side of the station. It is nonextant; however, there is evidence of its location in the form of a 10' x 14' rectangular depression in the ground where it once existed. The depression is bordered by four earth mounds, approximately 2' to 4' high.

Analysis. The date of the original construction of the root cellar is unknown. Since it is closer to the Old Michigan Island Lighthouse than the Keepers Quarters, it follows that the root cellar might have been constructed when the Old Michigan Island Lighthouse was the primary residence (1856–1929). If so, at that time, the root cellar would have been in a cleared area rather than the heavily forested area it is in today. The remaining landform where the root cellar once existed is a contributing feature to the cultural landscape.

Gull Island Tower

Existing Condition. The Gull Island Tower is a steel light located on Gull Island, northeast of Michigan Island. The island was not visited during the field work for the CLR, but the tower is fully operational and in good condition.³⁷

Analysis. As the site of many of the archipelago's most notable shipwrecks, and as one of the most feared hazards in the vicinity, Gull Island and its surrounding shoals played a critical role in the region's maritime history. Gull Island wrecks included the 1865 stranding of the steamer Iron City, carrying goods intended for the final treaty payment at Grand Portage; the tragicomic 1899 grounding and fire which destroyed the packet steamer R.G. Stewart; the 1905 stranding of the Pittsburgh Steamship Company's flagship, the W.E. Corey; and numerous other incidents.³⁸

The need for a light on Gull Island was a constant subject of agitation in the late 19th and early 20th centuries, and its construction in 1929, simultaneous to the erection of the new Michigan Island Tower, was part of a carefully planned two-part strategy to enhance the safety of vessels transiting the Apostles. Moreover, its intrinsic connection with the Michigan Island station is clear: entries in the Michigan Island keepers log show that maintenance of the Gull Island beacon was an integral, and frequent, part of that station's duties.³⁹ The Gull Island Tower is a contributing feature.

NPS Vault Toilet

Existing Condition. The NPS Vault Toilet is a wood-framed structure and vault located northeast of the Assistant Keepers Quarters. The Vault Toilet is not an accessible structure.

Analysis. The NPS Vault Toilet is a recent addition to the station and is a noncontributing feature. The location of the Privy does not detract from the spatial organization of the Michigan Island Light Station and, therefore, is a compatible feature.

Table MI-1. Structures

Feature	Site Image #	Description	Condition	Contributing? /Rationale
Boat Dock (c. 1979)	MI-36, MI-37	see above	Good	Noncontributing – contemporary Noncompatible; see text
Tramway (c. 1928)	MI-36, MI-38, MI-39, MI-40, MI-41	see above	Good	Contributing; see text
Tram Turntable (c. 1928)	MI-42	see above	Good	Contributing; see text
Tram Tracks (c. 1929)	MI-43	see above	Fair to Poor	Contributing; See text
Root Cellar (1856–1929)	MI-44	see above	Poor	Contributing; see text
NPS Vault Toilet (1970–2009)	MI-45	NPS wood-framed Vault Toilet	Good	Noncontributing – contemporary; Compatible
Gull Island Tower	MI-46	see above	Good	Contributing; see text

³⁷ APIS NPS staff.

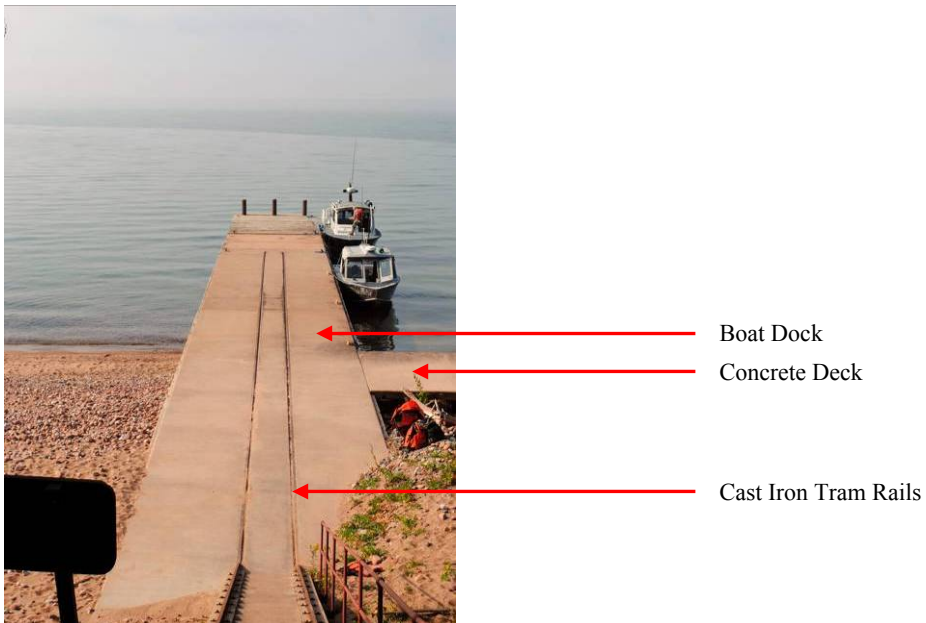
³⁸ Susan Mackreth 2010.

³⁹ Ibid.

1 **Site Structure Photographs**



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3 Site Image MI-36: Boat dock and tramway, 2009 (Source: MBD P1010680.jpg)
4



5
6 Site Image MI-37: Boat dock, 2009 (Source: MBD DSC_0036.jpg)
7



Steel Painted Handrail

Tram Rails

Concrete Staircase

Tramway Footing



Steel Painted Handrail

Tram Rails

Concrete Staircase (28" width)

Site Image MI-39: Upper section of tramway, 2009 (Source: MBD DSC_0037.jpg)



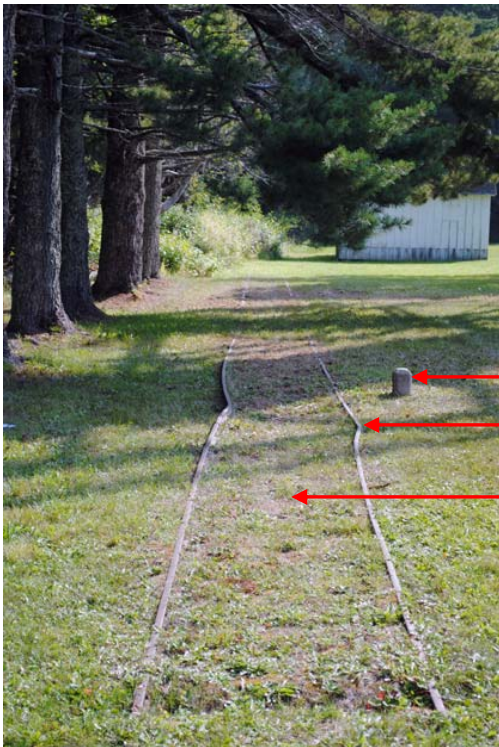
Site Image MI-40: Upper section of tramway, tram tracks, and railing, 2009 (Source: MBD DSC_0037.jpg)



Site Image MI-41: Tramway, railing, and footings, 2009 (Source: MBD DSC_0037.jpg)



Site Image MI-42: Tram turntable, 2009 (Source: MBD DSC00599.JPG)



USGS Marker

Area of Damaged Rail

Encroaching Vegetation

Site Image MI-43: Tram tracks, 2009 (Source: MBD DSC_0054.jpg)



Root Cellar
Depression

Site Image MI-44: Root cellar depression 100' north of historic Privy, 2010 (Source: Rubin Stenseng, Michigan Island Light Station Summer 2010 Volunteer)



Site Image MI-45: NPS Vault toilet in northwest corner of light station grounds, 2009 (Source: MBD DSC_0106.jpg)



Site Image MI-46: Gull Island Tower, c. 2000 (Source: Picasa Web Albums)