MP 3160

NPS Form 10-900
(Expires 5/31/2012)
Wisconsin Word Processing Format (Approved 1/92)

OMB No. 10024-0018

United States Department of Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900A). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Port Washington North Breakwater Light
other names/site number U.S. Coastguard Light List No. 20770

2. Location

street & number 550 East Jackson Street N/A **not for publication**
city or town Port Washington N/A **vicinity**
state Wisconsin **code** WI **county** Ozaukee **code** 089 **zip code** 53074

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this X nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property X meets _ does not meet the National Register criteria. I recommend that this property be considered significant _ nationally _ statewide X locally. (_ See continuation sheet for additional comments.)

Signature of certifying official/Title — Date: 10/15/2018

State Historic Preservation Office - Wisconsin
State or Federal agency and bureau

In my opinion, the property _ meets _ does not meet the National Register criteria.
(_ See continuation sheet for additional comments.)

Signature of commenting official/Title — Date

State or Federal agency and bureau

Port Washington North Breakwater Light	Ozaukee	Wisconsin
Name of Property	County and State	

4. National Park Service Certification

I hereby certify that the property is:
X entered in the National Register.
___ See continuation sheet.
__ determined eligible for the National Register.
___ See continuation sheet.
__ determined not eligible for the National Register.
___ See continuation sheet.
__ removed from the National Register.
__ other, (explain:)

Barbara Wyatt
Signature of the Keeper

12-3-18
Date of Action

5. Classification

Ownership of Property
(check as many boxes as as apply)

	private
X	public-local
X	public-State
X	public-Federal

Category of Property
(Check only one box)

	building(s)
	district
X	structure
	site
	object

Number of Resources within Property
(Do not include previously listed resources in the count)

contributing	noncontributing	
		buildings
		sites
2		structures
		objects
2	0	total

Name of related multiple property listing:
(Enter "N/A" if property not part of a multiple property listing.)
Light Stations of the United States

Number of contributing resources previously listed in the National Register
0

6. Function or Use

Historic Functions
(Enter categories from instructions)
TRANSPORTATION/water-related

Current Functions
(Enter categories from instructions)
TRANSPORTATION/water-related

7. Description

Architectural Classification
(Enter categories from instructions)
Moderne

Materials
(Enter categories from instructions)
foundation CONCRETE
walls Steel
roof Steel
other STONE

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for the National Register listing.)

X A Property is associated with events that have made a significant contribution to the broad patterns of our history.

_ B Property is associated with the lives of persons significant in our past.

X C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

_ D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

_ A owned by a religious institution or used for religious purposes.

_ B removed from its original location.

_ C a birthplace or grave.

_ D a cemetery.

_ E a reconstructed building, object, or structure.

_ F a commemorative property.

_ G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)

Transportation (A)
Maritime History (A)
Architecture (C)
Engineering (C)

Period of Significance

1934-1968 (Criterion A)
1935 (Criterion C)

Significant Dates

1935

Significant Person
(Complete if Criterion B is marked)

N/A

Cultural Affiliation

N/A

Architect/Builder

U.S. Lighthouse Service (Lighthouse)
Great Lakes Dredge & Dock Co. (Breakwater)

Narrative Statement of Significance
(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographic References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous Documentation on File (National Park Service):
- _ preliminary determination of individual listing (36 CFR 67) has been requested
- _ previously listed in the National Register
- X previously determined eligible by the National Register
- _ designated a National Historic landmark
- _ recorded by Historic American Buildings Survey #
- _ recorded by Historic American Engineering Record #

Primary location of additional data:
- X State Historic Preservation Office
- _ Other State Agency
- X Federal Agency
- _ Local government
- _ University
- X Other:

Name of repository:
U.S. National Archives

10. Geographical Data

Acreage of Property Less than one acre

UTM References (Place additional UTM references on a continuation sheet.)

	Zone	Easting	Northing
1	16	430750	4803375
2			
3			
4			

☐ See Continuation Sheet

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet)

Boundary Justification (Explain why the boundaries were selected on a continuation sheet)

11. Form Prepared By

name/title	Timothy F. Heggland				
organization				**date**	February 16, 2017
street & number	6391 Hillsandwood Road			**telephone**	608-795-2650
city or town	Mazomanie	**state**	WI	**zip code**	53560

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps A USGS map (7.5 or 15 minute series) indicating the property's location.
A sketch map for historic districts and properties having large acreage or numerous resources.

Photographs Representative black and white photographs of the property.

Additional Items (Check with the SHPO or FPO for any additional items)

Property Owner

Complete this item at the request of SHPO or FPO.)

name/title	Martin T. Becker - Mayor				
organization	City of Port Washington			**date**	10/16/2018
street & number	100 W. Grand Ave. P.O. Box 307			**telephone**	
city or town	Port Washington	**state**	WI	**zip code**	53074

name/title	Jonathan Barry, Executive Secretary				
organization	Wisconsin Board of Commissioners of Public Lands			**date**	10/16/2018
street & number	PO Box 8943			**telephone**	
city or town	Madison	**state**	WI	**zip code**	53708-8943

name/title	Christopher Page – Interim Federal Preservation Officer				
organization	Office of the Assistant Secretary of the Army for Civil Works			**date**	10/16/2018
street & number	108 Army Pentagon, Room 3E441			**telephone**	
city or town	Washington	**state**	DC	**zip code**	20310-0108

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects, (1024-0018), Washington, DC 20503.

Description

The Art Moderne style-influenced Port Washington North Breakwater Light was built by and for the U.S. Lighthouse Service in 1935. It is located at the extreme southeast offshore end of the associated North Breakwater, which was built in 1934 by the Great Lakes Dredge and Dock Co. of Chicago for the U.S. Army Corps of Engineers. These two contributing structures are integral parts of the artificial harbor that serves the city of Port Washington, which is located in Ozaukee County, Wisconsin, on the west shore of Lake Michigan. Both of these structures are intact today and continue to fulfill their original functions.[1] This unmanned lighthouse has a 16-foot-tall reinforced concrete, arched base that measures 26-feet-square, and a 46-foot-tall superstructure of riveted steel plates over a steel frame, sits on this base. This was the first example to be completed of a new standardized superstructure design that had been developed by engineers of the U.S. Lighthouse Service in the early 1930s specifically for use on the Great Lakes, and elements of this design reflected aspects of the Art Moderne style that was then coming into prominence nationally. Seven more nearly identical examples of this design would subsequently be built, the last one of which was completed in 1950. All eight of these lighthouses are still active aids to navigation today and are now fully automated with their original optics having been replaced with modern plastic ones. Four of these lighthouses have been listed in the National Register of Historic Places and the highly intact Port Washington example is the equal of these.

A lighthouse was first established on top of the bluffs above the Port Washington lakeshore as early as 1849, at which time Port Washington's harbor consisted of three privately owned piers that extended out from the lakeshore into deeper water. This first lighthouse was subsequently replaced by a second one atop the bluffs in 1860; this lighthouse is extant today and is listed in the NRHP (NRIS # 99001222).[2] This new lighthouse continued to serve the harbor until 1889, but in that year it was replaced by a new pierhead light that was built at the end of the harbor's north pier. This north pier was one of two parallel Federal government-owned piers built by the government in 1870 to act as a channel to guide ships into two basins that had been dredged out of flat land located at the base of the bluffs. The old lighthouse then became the home of the lighthouse keeper and his family and the new pierhead light served the harbor as its principal aid to navigation until the early 1930s, during which period the design of Port Washington's harbor remained essentially unchanged.

In 1930, news that a new $30,000,000 steam-electric power plant was about to be built on the lakeshore just south of the Port Washington harbor's entrance meant that the existing harbor was no longer adequate to handle the vastly increased tonnage of coal that would be arriving by ship for the power plant. As a result, plans were made for the construction of a new harbor that was large enough

[1] The city of Port Washington had a population of 11,250 in 2010 and it is the county seat of Ozaukee County.
[2] The 1860 Lighthouse was listed in the National Register in 1999 and is now a museum. It is known as the Port Washington Light Station.

to handle the new demands, of which the new North Breakwater was a key component.[3] Construction on the new breakwater began in late 1933 and was completed in 1934; the 1889 pierhead light and the old north pier were both demolished. The lighthouse that is the subject of this nomination was built on top of the offshore end of the new breakwater.

The new unmanned 1935 lighthouse (or "light") became the harbor's principal aid to navigation and the new harbor that came into being in 1935 continued to serve the needs of Port Washington almost without change until 1980, when a portion of the 1935 harbor basin was transformed into a marina serving recreational boaters. Since then, still more changes have transformed the old coal docks into a public park and the harbor now serves only recreational boaters. Nevertheless, the 1935 Port Washington North Breakwater Light and its associated North Breakwater still help to define and protect the harbor and its users today and the lighthouse in particular, which can be accessed on foot by walking the length of the breakwater, has since become the trademark symbol of the city.

Setting

Once the new north and south breakwaters were completed, Port Washington finally possessed a greatly enlarged and reasonably safe harbor, complete with a new lighthouse at the end of the north breakwater and a new flashing red light mounted on a pole at the end of the south breakwater. Using these two more powerful lights as navigational aids, mariners approaching the new port could now readily pick out the harbor entrance, which was located in between them, and the replacement of the old fog horn with a new one added one more safety feature as well.

Port Washington North Breakwater Light

The Port Washington North Breakwater Light was built in 1935 by and for the U.S. Lighthouse Service at a cost of $35,000.00. It is located at the extreme southeast end of Port Washington harbor's 2,535-feet-long North Breakwater and it rests on a rectangular base that comprises the southeast end of that breakwater. This base consists of two 54-foot-long by 20-feet-wide rectilinear caissons that rest on a rubble stone substructure that lies on the lake bottom. The vertical sides of that portion of these caissons that is underwater are protected by a thick layer of rubble stone and the tops of these cement-lined, rock-filled caissons are covered by an eight-foot-thick reinforced concrete cap. Stone rip-rap has also been placed in the water against the southeast side of this base in order to moderate the effects of wave action.

The lighthouse itself consists of two separate elements: a 16-foot-tall, 26-foot-square, monolithic, reinforced concrete base, and a 40-foot-tall steel superstructure above. The lighthouse's reinforced

[3] The other part of the new harbor consisted of a new privately owned south breakwater that extended off the end of a 1000-foot-long coal dock that the company that owned the new power plant was building at its own expense.

concrete base is centered on and attached to the 54-foot by 40-foot reinforced concrete end of the breakwater and it has four corner posts, each of which is five-feet-square, and these posts support four semi-circular stilted arch openings, one per side, and the four corners are oriented pointing towards the north, east, west, and south.

According to the Port Washington Breakwater Light Determination of Eligibility:

> Each of the four sides of the base is configured as an open archway between two posts; the space inside the base is also open. This serves to provide mariners with better visibility of the vicinity than a solid base would allow.
>
> The concrete base has a flat, open-air deck surrounded by a two-tier steel pipe guardrail painted grey. A steel ladder affixed to the base's southwestern leg provides access to this deck, upon which sits the lighthouse's superstructure.
>
> An automated electric horn fog signal is mounted atop the concrete deck on the southeast side. It sounds two blasts every 30 seconds and operates when activated by keying a radio microphone five times on VHF-FM radio channel 83A. A solar array stands atop the deck at the southern corner. It is used to recharge batteries that power the lighthouse's aids to navigation.[4]

The five-story-tall Art Moderne style-influenced steel superstructure that sits on top of this base was described as follows in the Lighthouse Service's portion of the Annual Report of the Secretary of Commerce in 1937:

> A square steel tower of slender proportions emerges from the center of the roof [of the first story of the superstructure itself] on wide sweeping curves. The tower encloses a series of stair flights extending up to the helical-bar lantern which surmounts it. The simple architectural treatment, in which horizontal lines and projections are subdued or suppressed, is effected entirely by means of steel plates and standard steel shapes.[5]

This superstructure is square in plan and 47-feet-tall, from the top of the deck of the concrete base to the top of the railing that encircles the observation deck above. The entire superstructure is fashioned of steel plates that are riveted together, the rivet heads are about six inches apart. The entire structure

[4] Koski-Karell, Daniel. Port Washington Breakwater Light Determination of Eligibility Form. U.S. Coastguard, Washington D.C., 2015, 5. This excellent Determination of Eligibility was the source of much of the information that is contained in the present NR nomination. It did not, however, address the history of the North Breakwater itself or its potential for inclusion in the NR as a contributing resource, which led to the writing of this nomination.
[5] *Twenty-Fifth Annual Report of the Secretary of Commerce for the Fiscal Year Ended June 30, 1937*. Washington D.C., United States Government Printing Office, 1937, 119.

is painted an ivory-color that is original to the Light. These sheets are then attached to the structural steel frame inside the superstructure that gives the structure its rigidity and strength. The first story of this superstructure measures 18-feet square, it is 12-feet-tall, and its sides are vertical. The second story has concave sides that curve inward and upward and the top of this story forms the bottom of the third, fourth, and fifth stories above. These upper three stories also have vertical sides and these stories are each square in plan and measure 8.5 feet wide by 8.5 feet deep. In addition, all four of the corners of the five stories of this superstructure are chamfered.

Exterior

Northwest-facing (North) Elevation

As one walks the breakwater, one approaches the northwest-facing elevation of the superstructure. The first story has a centered, three-foot-wide by six-foot-tall steel door, flanked on either side by a 14-inch diameter porthole window having a riveted steel frame. Also positioned between the left-hand porthole and the door is a steel rung ladder that is attached to the exterior wall surface and which ascends to the second story above. The curved wall of the second story has a centered, 24-inch diameter porthole window that is set into an arched dormer; the third story above has no openings; the fourth story has a single, centered 14-inch diameter porthole window; and the fifth story also has a centered 14-inch diameter porthole window.

Southwest-facing (West) Elevation

The southwest-facing elevation of the superstructure faces into the harbor. The first story has two 14-inch diameter porthole windows that have riveted steel frames placed symmetrically across its width. The curved wall of the second story has a centered, 24-inch diameter porthole window that is set into an arched dormer; the third story above has no openings; the fourth story has a single, centered, 14-inch diameter porthole window; and the fifth story also has a centered, 14-inch diameter porthole window.

Southeast-facing (South) Elevation

The southwest-facing elevation of the superstructure faces the lake. The first story has two 14-inch diameter porthole windows having riveted steel frames that are placed symmetrically across its width. The curved wall of the second story has a centered, 24-inch diameter porthole window that is set into an arched dormer; the third story above has no openings; the fourth story has a single, centered, 14-inch diameter porthole window; while the fifth story has a centered, nearly three-foot-square opening that is closed with a steel door that is latched inside.

Northeast-facing (East) Elevation

The northeast-facing elevation of the superstructure also faces the lake. The first story has two 14-inch diameter porthole windows having riveted steel frames that are placed symmetrically across its width. The curved wall of the second story has a centered, 24-inch diameter porthole window set into an arched dormer; the third story above has no openings; the fourth story has a single, centered 14-inch diameter porthole window; and the fifth story also has a centered, 14-inch diameter circular window.

Interior

The interior of the superstructure's 16-foot-square first story consists of a single room that is entered via the steel door on this story's northwest facing wall.[6] The walls, floor, and ceiling of this room are of poured concrete, structural steel beams crisscross the ceiling, and a structural steel post is placed in the center of the room and supports the point of intersection of the ceiling beams. In addition, each of this room's walls is pierced by two 14-inch porthole windows. This room now houses electrical apparatus that services the light at the top of lighthouse. A steel ladder ascends from the room's floor up to a square trapdoor opening in the ceiling that gives access to the second story.

The second story has steel sheet walls that curve upward and inward while its floor and ceiling are of poured concrete. A square trapdoor opening is placed in the floor of the single room that comprises this story, which measures 16-feet-square, and a second square trapdoor opening is placed in the ceiling, which is also crisscrossed with structural steel beams and which measures 8.5-feet square, thanks to the curvature of the room's side walls. Each of this room's four sides is pierced by a single, centered, 24-inch-diameter porthole window and a steel ladder ascends from the room's floor up to a square trapdoor opening in the ceiling that gives access to the third story.

The third story is also square in plan and measures 8.5-feet-square and consists of a single room. This room has a concrete floor, steel plate walls, and a ceiling that is ten-feet-tall and which is also made of steel plates and crisscrossed by steel structural beams. The walls of this room have no openings and a steel ladder ascends from the room's floor to a square trapdoor opening in the ceiling that gives access to the fourth story.

The fourth story is also square in plan and measures 8.5-feet-square and consists of a single room. This room has a floor made out of steel plates, walls that are also made out of steel plates, and a ceiling that is ten-feet-tall and which is also made out of steel plates and is crisscrossed by steel structural beams. Each of the room's walls is pierced by a centered 14-inch diameter porthole window

[6] While the exterior of this room measures 18-feet-square, the thick concrete that lines the walls of this room reduces the interior space to 16-feet-square.

and a steel ladder ascends from the room's floor to a square trapdoor opening in the ceiling that gives access to the fifth story.

The fifth story is square in plan, measures 8.5-feet-square, and consists of a single room. This room has a floor of steel plates, walls that are also of steel plates, and a ceiling that is ten-feet-tall and which is also of steel plates and crisscrossed by steel structural beams. Three of the walls of this room are pierced by a single 14-inch porthole window, but the southeast wall contains a three-foot-square opening that is closed by a steel plate that is latched on the inside. A steel ladder ascends from the room's floor to a square trapdoor opening in the ceiling that gives access to the lighthouse's roof.

The roof of the lighthouse is flat, square in plan, and also measures 8.5-feet-square. This roof is of steel plates set in poured concrete. A trapdoor provides access from the inside, and the roof is encircled with an open guardrail composed of steel pipes. Centered on this roof is a steel pedestal that supports the lighthouse's current beacon, which is covered with a plastic dome. This modern optic signals a one-second red flash every six seconds, its focal plane is 78 feet above water level, and on a clear day it is visible for seven miles. A small solar array charges a battery that provides power to the new optic and to the new foghorn.

Port Washington North Breakwater

The 2,535-foot-long North Breakwater that leads to and supports the North Breakwater Light was built for the federal Government in 1934 by the Chicago-based Great Lakes Dredge & Dock Co. and its west end is attached to the Lake Michigan shore in Port Washington at the east end of Jackson Street. Reading from west to east, the seven sections of the breakwater (see the attached map, Figure 1) are described below as they were originally constructed.

Sections E and E-1.

These sections comprise the westernmost portion of the breakwater and their west end extends into the western shore of the lake. The Section E portion measures 335-feet-long and it extends at first straight out and due east from the shore, then makes a 70° bend to the southeast, and Section E-1 continues southeast for another 130-feet. The heart of this section is of rubble mound construction and consists of stone placed on the lake bed so as to form a continuous triangular section mound, and stone scour protection is placed on the slopes of this mound. Single wall interlocking sheet steel piles that rise above lake level were then driven into the lake bed along the length of the north and northeast-facing lake sides of this mound and perpendicular buttress piles were placed every eight feet along the harbor side and were also driven into the lake bed.

Sections D and D-1.

The combined length of Sections D and D-1 is 990 feet and these sections continue the breakwater in a southeasterly direction. Section D is 770-feet-long and consists of sixteen oval-shaped cells driven into the lake bed that measure 45-feet in length and these cells have widths that range from 14.25-feet-wide to 19.75-feet-wide. Each cell has vertical walls formed out of single wall interlocking steel sheets and they were filled with stone and were capped with large cut rip rap stones grouted in place. In addition, rubble stone was also placed along the sides of these cells as scour protection and this stone was placed so to slope up from the lake bottom to the sides of the cells. Section D-1 is 220-feet-long and consists of four oval-shaped cells driven into the lake bed that measure 45-feet in length and 19.75-feet-wide. Each cell has vertical walls formed out of single wall interlocking steel sheets and they were filled with stone and were capped with large cut rip rap stones grouted in place. In addition, rubble stone was placed along the sides of these cells as scour protection and this stone was placed so as to slope up from the lake bottom to the sides of the cells.

Section C.

Section C is 216.25-feet-long and consists of four trapezoidal-shaped caissons that measure 54-feet in length and 20-feet-wide at the bottom and 6.2-feet wide at the top. These caissons were placed end to end, each caisson has angled walls formed out of poured concrete, and each of these were filled with stone and were also capped with concrete. These caissons form a superstructure that rests on a broad rubble mound substructure that rests on the lake bed and this rubble stone substructure has sloping sides and stone scour protection is placed on top of the slopes of this mound.

Section B.

Section B is 324.50-feet-long and consists of six trapezoidal-shaped caissons that measure 54-feet in length and 20-feet-wide at the bottom and 6.2-feet wide at the top. These caissons were placed end to end and each caisson has angled walls formed out of poured concrete and these were filled with stone and were also capped with concrete. These caissons form a superstructure that rests on a broad rubble mound substructure that rests on the lake bed and this rubble stone substructure has sloping sides and stone scour protection is also placed on the top of the slopes of this mound.

Section A.

Section A is 541-feet-long and consists of nine trapezoidal-shaped caissons that measure 54-feet in length and 24-feet-wide at the bottom and 6.2-feet wide at the top. These caissons were placed end to end, each caisson had angled walls formed out of poured concrete, and these caissons were all filled with stone and were also capped with concrete. At the extreme east end of this section are two more

rectangular shape caissons that were placed side by side. These two caissons each measure 54-feet-long by 20-feet-wide and together they form the east end of the breakwater and serve as the base that supports the lighthouse that was built on top of them in 1935. All eleven of these caissons form a superstructure that rests on a broad rubble mound substructure. This substructure rests on the lake bed and has sloping sides and stone scour protection is also placed on the top of the slopes of this mound.

This breakwater was constructed in such a way that the top surface of each of the several section forms a continuous flat stone path leading from the shore to the lighthouse, which facilitated access both for the lighthouse keepers and for recreational users as well.

Alterations

Changes to the Light occurred in 1976 when the operations of the lighthouse were fully automated. As part of that process, the following elements were removed: the original cast iron-framed, circular lantern that enclosed the original optic; the original rotating optic; the lighthouse's original Type CC diaphone foghorn signal, which was operated by compressed air and could be heard for 18 miles at sea in good weather; and the compressor that powered the diaphone, which was housed in the first story of the lighthouse superstructure. Today, this first story houses an electrical service panel and a control box for the solar panels that power the new optic and also the new, less powerful foghorn. All of this is in keeping with the technological upgrades that were made around the same time to the other seven now fully automated examples of this type of lighthouse that are located elsewhere on the Great Lakes.

The more exposed nature of the 2,535-foot-long North Breakwater, however, and the constant wear and tear inflicted by waves and ice over the years means that it has needed to be repaired from time to time in order to keep it functioning safely. These repairs are listed below by section and in the same order as described above.

Section E. In the 1970s, a steel grate mesh walkway was constructed along the full length of the tops of the buttress piles in this section in order to provide safe shore access and in the 1980s a cable handrail was installed along the harbor side of this walkway in order to improve access. In 1992, small rip rap stones were also placed along the harbor side of this section to act as a wave absorber.

Section E-1. In the 1970s, the steel grate mesh walkway was also continued along the full length of the tops of the buttress piles in this section as well in order to provide safe shore access. In the 1980s a cable handrail was also installed along the harbor side of this walkway in order to improve access and in addition, additional interlocking steel sheet pile extensions were also built along the lake side of this section in order to form a taller parapet wall along the length of the section. Small rip rap stones were also placed along the harbor side of this section in 1992 as well in order to act as a wave absorber.

Section D-1. In 1980 the stone cap and stone fill along the top of this section was grouted and re-grouted in order to stabilize the structure and a reinforced concrete parapet wall was constructed along the full length of the centerline of the section in order to provide safer access for fishermen and sightseers.

Section D. In 1982 a trench was cut into the cap stone of this section for the installation of a US. Coastguard power line conduit. The power line was later replaced with a marine cable, but the conduit remained in place. In addition, a concrete parapet wall was also constructed along the full length of the centerline of this section as well in order to provide safer access for fishermen and sightseers.

East Breakwater Addition
In 1979-1980, as a part of the construction of the new marina in the harbor, a new 380-foot-long breakwater addition was built within the harbor at right angles to the North Breakwater. This new East Breakwater is attached to the harbor side of the North Breakwater at a point that is located just east of the point of intersection of Section D-1 with Section D as shown on the Figure 1. This breakwater consists of a rubble mound of large rip rap cover stone with a 13-foot berm placed over a core of various size fill stone, and a steel cable and post handrail was also constructed along the centerline of the top of this new breakwater, and a small signal light was placed at its offshore end; the signal light is of insignificant scale to be counted in the inventory. Based on its date of construction, this signal light is outside of the period of significance and, at this time, is non-contributing to the significance of the breakwater light that is the subject of this nomination.

After 1982, little more was done to repair or maintain the North Breakwater until 2014, by which time a report prepared by the U.S. Army Corps of Engineers found that it was showing signs of significant deterioration and immediate action was necessary to prevent structural failure in some of its sections.

As a result, the Corps, in conjunction with the city of Port Washington, undertook the first two phases of a rehabilitation project whose eventual goal is to ensure the safety and usability of the North Breakwater. The first step was to place massive armor stones along the entire lakeside length of Sections A, B, and C, which was done at a cost of $1,000,000, and was paid for by the Corps. The second phase involved straightening the vertical sides of the cell walls that are formed out of single wall interlocking steel sheets in Sections D and D-1. The tops of these cells were then covered with a foot-thick cap of poured concrete, which created a flat, smooth surface on either side of the reinforced concrete parapet wall that had previously been constructed along the full length of the centerline of these two sections. This second phase also cost $1,000,000, which came from various sources and was paid for by the city of Port Washington.

More rehabilitation work is needed on Sections E and E-1 and on Sections A, B, and C, with work on E and E-1 to begin in 2017.

Integrity

The Port Washington North Breakwater Light, despite being in somewhat deteriorated condition, retains a high degree of integrity, is in use, and serves its original purpose. The only significant change to the Light occurred in 1976 when operations of the lighthouse were fully automated. Due to these upgrades, all of these lighthouses, including the one in Port Washington, are still in active service today, and four of them have already been listed in the National Register of Historic Places with very similar alterations having been made to them. Otherwise, the Light retains its original design, including its structure, plan, and materials.

All repairs that have been made to the North Breakwater over the years have been made to ensure that the still unaltered core of the original 1934 structure survives and continues to fulfill its historic functions; protecting the harbor of which it is an essential part, creating a safe base for the still active 1935 North Breakwater Lighthouse, and providing a locally important venue for recreational use. All of the repairs and alterations listed above have left the historic core of the breakwater essentially intact. The North Breakwater retains sufficient integrity to be eligible for NRHP listing as a contributing structure within the context of this nomination.[7]

[7] The East Breakwater that was completed in 1980 and which is attached to the North Breakwater represents the continuing evolution of the Port Washington harbor and its presence does not affect the overall integrity of the North Breakwater.

Significance

Lighthouses have long exerted an emotional pull on those who visit them and the lighthouse that guides ships into the city of Port Washington's harbor is no exception. Built in 1935 and located at the end of a 2535-foot-long breakwater that was completed the year before, the unmanned Art Moderne style, concrete and steel Port Washington North Breakwater Light is one of eight Great Lakes lighthouses that were built between 1934 and 1950 to a standard design developed by the U.S. Lighthouse Service specifically for use on the Great Lakes. It is one of only two of the eight that today's visitors can access on foot.[8] The impetus for the lighthouse's construction came in 1930 when the Milwaukee Electric Railway & Light Co. announced that it had purchased a large parcel of land on the lake shore in Port Washington just south of the harbor's already existing 1888 shipping channel as the site for a new $30,000,000 steam-electric power plant. In order to bring ships carrying coal for the new plant safely into port, a new, much larger harbor was needed; building the new North Breakwater was a key component in the creation of this enlarged harbor. At the same time, the construction of the new breakwater also created an opportunity to replace the harbor's existing 1889 pierhead light with a larger, up-to-date structure that was more in tune with the needs of the greatly increased shipping traffic that the harbor was now going to be handling. By the end of 1935, both the breakwater and the new lighthouse were in place and they still serve their original functions today. Graphic representations of the 1935 lighthouse's silhouette have been adopted by Port Washington as the City's official logo and defining image.[9]

In 2015, a Determination of Eligibility written for this lighthouse, was accepted by the National Park Service. This document made an argument for individual eligibility based on the *Light Stations of the United States* multiple property documentation, which developed the overarching arguments for eligibility of these lighthouses. Within this multiple property documentation, historic contexts that apply to the eligibility of the Port Washington North Breakwater Light include: *Bureau of Lighthouses or the U.S. Lighthouse Service (1910-1939)* and *Lighthouses under the U.S. Coastguard (1939-present)*. The property type sections relating to the registration are *U.S. Lighthouse Construction Type – Non-cast iron Tower*, and *Foundation Type –Crib (Submarine) (1832-1938)*. Information and historic contexts available in the overarching MPDF are not repeated here.[10]

Criterion C
The Port Washington North Breakwater Light is being nominated to the National Register of Historic Places, locally significant under Criterion C, in the areas of Architecture and Engineering, representative of second-quarter twentieth century lighthouse architecture and engineering. It

[8] The other lighthouse is the Huron Harbor Pierhead Lighthouse.
[9] See: cityofportwashington.com/
[10] Koski-Karell, Daniel. Port Washington Breakwater Light Determination of Eligibility Form, 14.

exemplifies characteristics of Modern Movement Streamlined Moderne design which was popular during that time period. Its manner of construction is representative of contemporary construction methods and materials used in building steel superstructure lighthouses supported by a concrete base. These developments proved to be well-suited for marking piers and breakwaters in the Great Lakes. The Light's existing structural integrity attests to the lasting value of its design, as well as the high quality of its materials and construction. Its period of significance is the completion date of 1935.

This Light was put in place in 1935 as a replacement for the 1889 pierhead light at Port Washington. The current Light was the first built to the Art Moderne standard lighthouse design, developed by U.S. Lighthouse Service engineers in the early 1930s, for use in the Great Lakes. In all, eight examples of this design were built between 1935 and 1950 and seven, including the one in Port Washington, were built in the 1930's with funds provided by the Federal government's Public Works Administration. All eight of these lighthouses are extant and in operation; four of them have been listed in the National Register to date. The Port Washington example of this design cost $35,000, is in good condition and has excellent integrity being a very good representative example of U.S. lighthouse design from this period.

Criterion A
The Port Washington North Breakwater Light and its associated North Breakwater are being nominated to the National Register of Historic Places, locally significant under Criterion A in the areas of Maritime History and Transportation, for its association with the Federal government's program for establishing and maintaining an integrated system of maritime aids to navigation throughout the United States. It exemplifies how this important nationwide program took form in Ozaukee County, and the way in which it was customized for navigational needs on the Great Lakes. Today, the Port Washington North Breakwater Light relates its important role in the history of transportation on the Great Lakes and as a federally sponsored aid to navigation in the 1930s, and maintains its historical association with maritime safety and transportation history by continuing to function as an operating lighthouse.

The construction of the Port Washington North Breakwater Light was preceded by the construction of the 2,535-foot-long stone and steel North Breakwater itself, built in response to the need of a larger and more satisfactory harbor at this location to allow ships bringing coal to a new steam-electric power plant (then being built on the shore of Port Washington) to unload their cargo safely. As part of this process it was also decided to build a new, modern steel lighthouse at the end of the new breakwater as a replacement for the outmoded 1889 pierhead light that was then in service. The completion of the breakwater in late 1934 was followed in 1935 by the placement of the new lighthouse at its extreme eastern end. These two modern structures, working as an integral system, enabled Port Washington's harbor to achieve a new level of economic importance. Today, this harbor is still a vital part of the

city's economy and civic identity. The Port Washington North Breakwater Light and its associated North Breakwater still play important roles in maintaining the harbor's use and safety. Its period of significance begins in 1934 when the breakwater was constructed, and because it is still an active lighthouse, ends in 1968 using the 50-year National Register program guidance.

The breakwater and light are eligible according to other contextual sources including Cultural Resource Management in Wisconsin (in the areas of Architecture, Engineering, Maritime History and Transportation) and *National Register Bulletin 34: Guidelines for Evaluating and Documenting Historic Aids to Navigation*.[11] The Port Washington North Breakwater Light was determined eligible for the National Register by the National Park Service in December of 2015.

Developmental History of Port Washington

A detailed history of the city of Port Washington and its historic resources is embodied in the 1998 *City of Port Washington Intensive Survey Report*.[12] Consequently, the historic context that follows deals primarily with the history of the North Breakwater Lighthouse itself, the associated North Breakwater, and the Port Washington harbor that they serve.

Today, Port Washington is the county seat of Ozaukee County and in 2010 has a population of 11,250 people. In 1835, when Wooster Harrison, the first European settler of what was to become the city of Port Washington, arrived all this land was included within the boundaries of the larger and as yet undivided Washington County and it was then without formal governmental organization. Harrison arrived on the site with several other land speculators and traders, and the site they chose was a beautiful one whose natural beauty was still apparent when it was described in the 1881 history of the county:

> The natural beauties of Port Washington, the county seat of Ozaukee County, are unsurpassed by any of the lake-shore towns. The village is built in a recess formed by nature, in the shape of a U. Two bluffs, three quarters of a mile apart from north to south, with an elevation of a hundred feet at the lake, recede westward a distance of half a mile, where they are joined by a bluff, running north and south, forming walls on three sides, from the base of which the land takes a gradual slope to the lake, leaving a natural basin. Through the west bluff is an aperture, by which Sauk Creek finds its way to Lake Michigan. Back of this hill are a number of smaller elevations, extending along the banks of Sauk Creek; resting on these knolls are handsome residences, many of them having terraces fringed with shade trees and flower beds.[13]

Harrison and his company arrived on this site on September 7, 1835 and during the fall, laid out a town

[11] Delgado, James P. and Kevin J. Foster. *National Register Bulletin No. 34, Guidelines for Evaluating and Documenting Historic Aids to Navigation*. U.S. Department of the Interior, National Park Service, Interagency Resources Division.
[12] Heggland, Timothy F. *City of Port Washington Intensive Survey Report*. Port Washington: 1998.
[13] *History of Washington & Ozaukee Counties, Wisconsin*. Chicago: Western Historical Co., 1881, 507.

on 16 acres of gently sloping land at the mouth of Sauk Creek where it emptied into Lake Michigan. Harrison, like so many other town founders of that time, settled along a river or stream because it provided both a reliable source of water and the only readily available means of generating power for industrial purposes. He also settled on the shore of Lake Michigan for a similar reason; the ships that sailed it provided the only reliable means of transporting large numbers of people and goods in the day before roads and railroads had been developed. After creating lots to sell, Harrison and his fellows next set about building six or seven modest new buildings for their own use and to impress visitors. These were built out of milled lumber that had arrived by ship rather than use the logs that were everywhere in evidence on the site. The first name of the new community was Wisconsin City, but, finding that there was already a city of that name in the territory, they then renamed it Washington City.

Harrison and perhaps a few others resided in the new village until 1837, when the speculative bubble that had brought them there in the first place burst. As a result, interest in the village disappeared and all involved left the buildings and the village and went their different ways. Harrison didn't return until 1843, by which time a squatter named Aurora Case had turned one of the 1835 buildings into a kind of hotel for travelers using the old Indian trail that linked the city of Milwaukee thirty miles to the south with Sheboygan thirty miles to the north.

> In 1843, Wooster Harrison returned in company with Orman Coe, Ira C. Loomis, Solon Johnson, O. A. Watrous, Col. Teall and others, and began to make permanent improvements. As there was no pier built at that time, they were compelled to wade quite a distance before they could effect a landing, and when on shore, rough crafts were built on which to convey the women and children. Houses were speedily erected, and the establishing of a town began in earnest. A pier was built out to a point in the lake where boats could land their passengers and cargoes, after which the vessels touched regularly.[14]

In 1844, the first schoolhouse in the village was built and in the same year the name of the community was changed from Washington City to Port Washington, a decision made by village leaders who wanted the commercial potential of the village's lakeside location to be embodied in its name. While Port Washington does not possess a natural harbor, the flat land bordering the mouth of Sauk Creek was the only place along the 60 mile stretch of lakeshore between Milwaukee and Sheboygan where a commercial harbor could be developed during this period. Almost all the rest of the lakeshore that lies between these two large ports consists of 100-foot-tall bluffs that slope steeply down to the lake, which made landfalls impossible during storms that frequently sweep the lake. This situation posed a real threat to Great Lakes shipping in the days when sail was the principle means of propulsion and even later, so the creation of a new harbor where ships could find safety in a storm was a matter of

[14] *History of Washington & Ozaukee Counties, Wisconsin,* 508.

importance not only to the shipping industry of that day but also to the federal government, which was charged with the safe-guarding of this shipping.

Transportation and Maritime History

The Port Washington North Breakwater Light and the associated North Breakwater are eligible for the National Register, locally significant for their association with transportation and maritime history. The 2535-foot-long North Breakwater was built for the Federal government in 1934 by the Great Lakes Dredge and Dock Co. of Chicago as part of the expansion of the city of Port Washington's harbor. The North Breakwater Light was built by the U.S. Lighthouse Service at the extreme end of the breakwater in 1935 as an aid to mariners searching for the entrance to this enlarged harbor. Together, these two structures exemplify the continuous efforts that the Federal government was making during this period to establish and maintain a system of navigational aids throughout the Great Lakes and they are integral to the modern history of this harbor and the important role that the harbor has played in the economic life of the city of Port Washington. The historic significance of these structures is further underscored by the fact that they are still very much in use today and continue to fulfill their historic roles. The period of significance under Criterion A is 1934, the year the breakwater was completed, until 1968, which is the date that is applicable under the National Register's fifty-year rule.

History of Navigational Aids and Shipping in Port Washington
The construction of a pier that extended out from the shore of Port Washington into deeper water offshore in 1843 created a mooring dock from which both goods and people could be transferred; this was the first step towards creating a harbor at this location. Although this pier did not offer much in the way of protection from storms and wave action it nevertheless filled a need and it led to a marked upturn in the economy of the village and the surrounding area. As a result, by 1845, business interests in the village began petitioning the federal government to establish a lighthouse at this point in order to aid the shipping traffic that was now finding its way to Port Washington.

While the petition made its way through channels, the village of Port Washington continued to evolve and grow. The first town meeting was held in April 1846 and a slate of officers was elected. In the same year, Woodruff & Richards began the first brick yard in the village, which followed in 1847 by the development of the first saw mill in the area by Harvey and S. A. Moore, who dammed Sauk Creek and erected a mill on the west bank.[15] They were followed in 1848 by George and Julius

[15] Another important event that occurred in 1847 was the naming of Port Washington as the county seat of what was then still Washington County. This led to a battle royal between Port Washington and other communities in the county who sought the honor of being the county seat and this issue was not ultimately resolved until 1852, when an exasperated state legislature finally divided the county in two and made Port Washington the seat of the newly created Ozaukee County.

Tomilinson, who erected the first grist mill in the area, which was also run by water power from Sauk Creek.[16] The construction of such a mill was typically a crucial step in the building up of a town in the days before the coming of the railroads, because the locale surrounding a grist mill was a natural gathering place for area farmers and was thus a logical place around which to build a trading center. This held true in Port Washington as well and with the Tomlinson's mill in place, the rich, gently rolling prairie that surrounded the village became more attractive to settlers wishing to engage in agricultural pursuits. This act enhanced the growing importance of Port Washington as a transit point for the goods produced in the area.

In 1848, the same year that Wisconsin became a state, Port Washington received its village charter and officially became the Village of Port Washington. In June of the same year, word was received that the federal government had appropriated $35,000.00 to build the new Port Washington Light Station. Construction of the lighthouse, which was located atop a steep bluff on the north side of the village, known locally as the North Bluff and later as St. Mary's Hill, began in 1849 and was completed later in that year. The light station consisted of a brick light-keeper's dwelling and a circular 30-foot-tall brick tower that was topped by a lantern.

> This lighthouse was initially equipped with [an] optic consisting of an array of five Lewis-patent oil lamps with 14-inch diameter reflectors. This beacon was elevated 109 feet above Lake Michigan and served as a landfall for approaching mariners.[17]

The Port Washington lighthouse was built under the auspices of the Federal government's U.S. Lighthouse Establishment, which was administered by the U.S. Treasury Department. The construction of this lighthouse was an important step in the development of a harbor at the Port Washington location and it had an immediate positive effect on the lake shipping that was increasingly making use of this harbor.

> Water commerce was brisk. Steamers sailed into the harbor with increasing frequency using the new [first] lighthouse built in 1849, as a navigational aid. In 1849, 414 ships docked at the commercial piers; by 1851 the number climbed to 740. The population of Port Washington reached 1500 by 1853, and the town consisted of 300 dwellings, 10 stores, five hotels, three mills, two breweries, a foundry, five blacksmiths, four wagon shops, six shoe shops and five tailor shops as well as the two commercial piers.
>
> Eventually, three commercial piers were built off the shore at Port Washington to serve the settlement's thriving shipping interests. The first pier, located at the foot of Jackson Street, was

[16] *History of Washington & Ozaukee Counties, Wisconsin*, 513.
[17] Koski-Karell, Daniel, 14.

> built by either Wooster Harrison or Solon Johnson around 1843, and was known as the North Pier or Old Pier. Blake's Pier was constructed sometime between 1848 and 1856 at the foot of Pier Street by Barnum Blake, a lumberman. The third, the South Pier, was located at the site of the present [1985] south breakwater, and was owned by Lyon Silverman, who also served as an early sheriff.[18]

The construction of these three privately-owned piers (all non-extant), each of which extended far enough out into deeper water to permit lake-going ships to unload and unload passengers and freight, did much to increase the economic importance of Port Washington's harbor. Unfortunately, though, they still offered ships moored at them very little in the way of protection from the storms that continued to lash Lake Michigan.

> In most circumstances, ships with business at the Port Washington harbor chose to ride out heavy seas at anchor, rather than risk pounding on the piers. Since riding at anchor in a storm is a dangerous choice in itself, several ships off Port Washington's piers met their demise at sea or on nearby sand bars when anchors failed during a storm. The wrecks of the schooner Bohemia and the steamer Toledo within a month of each other in the fall of 1856 exemplified the dangers of Port Washington's harbor and added to the growing perception of the harbor's limitations; both wrecks resulted from anchoring failures in high seas within sight of Port Washington.[19]

Inadequate though Port Washington's harbor may have been at this time, it nevertheless filled an important need and its importance continued to be recognized by the now reorganized Federal government's lighthouse service.

> Until the early 1850s, the Federal government's U.S. Lighthouse Establishment (USLHE) was administered by the U.S. Treasury Department's Fifth Auditor. This was not conducive to optimal management practices such as quality control for lighthouse construction and the promotion of navigational aid technological innovations. The resulting situation led to widespread dissatisfaction among mariners. However, this improved significantly after 1852 when Congress authorized the Treasury Department to establish the U.S. Lighthouse Board. The Lighthouse Board provided well-qualified management and brought professional naval, military, and civilian persons with practical maritime and engineering experience into the Federal lighthouse program. This resulted in better construction practices and included

[18] *Port Washington: 1835-1985*. Port Washington, 1985, 7.
[19] National Register of Historic Places, Port Washington Light Station, Port Washington, Ozaukee County, Wisconsin, National Register #99001222, p. 8-5.

> coordinating the establishment of new lighthouses with Federally-funded harbor improvement projects undertaken by the U.S. Army Corps of Engineers.
>
> One of the Lighthouse Board's early acts was to adopt state-of-the-art Fresnel lenses to replace the old Lewis lamp-reflector beacons which were of limits effectiveness. This innovative lens technology had been developed in the early nineteenth century by the French physicist Augustin-Jean Fresnel. It focused lamp light into a robust beam that could be seen from greater distances than previous lighthouse beacons. In 1856, the Port Washington Light's original Lewis lamp-reflector beacon was replaced with a sixth order Fresnel lens.[20]

By the end of the 1850s the Lighthouse Board was addressing other deficiencies in Port Washington's 1849 lighthouse:

> The Port Washington Light Station's 1849 tower had been constructed poorly and deteriorated substantially during the 1850s. This led the Lighthouse Board to replace it with a two-story brick building with a wooden light tower on the roof above the front gable. This new lighthouse was completed in 1860. The 1849 tower was demolished after its lantern and sixth order Fresnel lens were installed atop the new structure. The 1860 lighthouse's beacon had a focal plane 113 feet above lake level. It could be seen from nine miles away in clear weather.
>
> The Port Washington Light Station was upgraded in 1870 by changing out its sixth order Fresnel for a more powerful fourth order Fresnel lens. This increased its visibility range to 18 miles.[21]

By 1870, the unsafe harbor was of concern not only to Port Washington, but to the state of Wisconsin's legislature as well, which in that year sent a Memorial Resolution to Congress asking for funding to construct a safe harbor at Port Washington. The results were successful and on July 11, 1870, the River and Harbor Act approved by Congress provided funding for work on the new artificial harbor, which was undertaken by the U.S. Army Corps of Engineers. The first portion of the work involved widening the mouth of Sauk Creek where it emptied into the lake to a width of 150 feet. A dog-leg-plan, 150-foot-wide basin that extended inland from the mouth of the creek a distance of 490 feet and with a surface area of 1½-acres was then dredged out, creating a small basin lined with wooden piles that was known locally as the west slip, which was protected from winds coming from the north, west, and south. In addition, two linear revetments (or piers) made out of wooden piles were also built on either side of a newly dredged 11-foot-deep entrance channel that led to this basin. These parallel structures extended 400 feet out into deeper water from the shore and provided still

[20] Koski-Karell, Daniel, 15.
[21] Koski-Karell, Daniel, 15.

further protection. The new artificial harbor was still highly vulnerable to storms blowing in from the northeast, east, and southeast; however, and storms coming from those directions frequently damaged the banks of the new harbor. Thus began efforts to improve Port Washington's harbor that continue today.

In 1875, the new harbor basin was dredged out once again to a depth of 12 feet and plans were also made at this time to extend the two revetments (known locally as the north and south piers) out another 300 feet into the lake and to dredge out a second, larger basin that would run north from the mouth of the west slip.[22] A new resolution to Congress requesting additional funding for this new work on the harbor was approved under the River and Harbor Act of August 14, 1876. Work on these projects was undertaken by the U.S. Army Corps of Engineers and by the early 1880s the 700-foot-long by 190-feet-wide 3½-acre north basin (called the north slip, locally) had been completed and in 1888 the two revetment pier extensions were also completed.

Ironically, by the time these new projects were completed, changes in the way goods and people were being transported had begun to lessen the importance of lake shipping for Port Washington and many other Great Lakes ports. By 1873 the newly created Milwaukee, Lakeshore and Western Railroad had been built north from Milwaukee to Port Washington and further north to Sheboygan and Manitowoc. Soon thereafter, growth in Port Washington began to move westward toward the location of the new railroad depot. From that time on, the continued development of the state's railroad network and the parallel development of a road network in Ozaukee County and elsewhere meant that goods and people would increasingly be moved by land-based transportation, to the gradual detriment of the lake shipping industry.

Nevertheless, lake shipping continued to play an important part in Port Washington's economy until the early twentieth century. The harbor became the home of a sizable commercial fishing fleet, and the navigational aids continued to be upgraded as newer technology became available.[23]

> A wooden pyramidal lighthouse was erected at the north pier's offshore end in 1889. Designated as the Port Washington North Pierhead Light, it included a skeletal tower supporting an enclosed service room that was topped with an octagonal cast iron lantern. The pierhead light's optic was a sixth order Fresnel lens displaying a fixed red light with a focal plane 42 feet 6 inches above lake level. It served to guide vessels approaching the harbor entrance. The 1860 Port Washington Light continued in service as a landfall light. Now that

[22] Map of Port Washington Harbor/Henry M. Robert. New York: American Photo-Lithographic Co., 1876. Wisconsin Historical Society Archives Map Collection.
[23] In 1876, the first year that logs of ship's arrivals were kept, 350 steamers and 450 sailing vessels were recorded as docking at Port Washington and passenger ships docked there on a regular schedule.

Port Washington had two lighted aids to navigation, an assistant was hired to help the resident keeper maintain them.

The North Pierhead Light became Port Washington's principal aid to navigation in 1903 when the 1860 Port Washington Light was discontinued as unnecessary. The 1860 lighthouse building continued in use, however, as the light-keeper's dwelling until 1924.

The U.S. Lighthouse Establishment and its administrative parent, the Lighthouse Board, were abolished by Congress in 1910 and reorganized as the Bureau of Lighthouses and U.S. Lighthouse Service (USLHS).

The Port Washington North Pierhead Light was electrified in 1924, allowing it to be operated remotely and reducing its burden of maintenance. The chief keeper, Charles Lewis, subsequently retired from the USLHS but continued to occupy the 1860 lighthouse as caretaker until 1934. The Port Washington North Pierhead Light was maintained during the 1924 to 1934 period by U.S. Lighthouse Service personnel from Milwaukee.[24]

Little was done to improve the harbor itself during this period, except for the occasional dredging of the shipping channel located between the north and south piers and within the two basins. Partly this was due to the fact that the importance of Port Washington's harbor had declined over the years. Passenger service into and out of the harbor had been provided by the Hill Steamship Line between 1910 and 1918; the numbers peaked at 2,500 persons in 1910; fell to as low as 50 in 1913; and rose again to 2,100 in 1918, the year that passenger service to Port Washington by ship finally ceased. Freight tonnage, meanwhile, had been 8,790 in 1910; rose to 20,184 in 1914; fell to as low as 482 in 1921; and rose again to 18,800 in 1929, and consisted by and large of bulk shipments into and out of the harbor of sand, coal, fish, cedar posts, and crushed stone.[25] Nevertheless, the amount of shipping traffic into and out of the harbor was still sufficient to justify consideration of reconditioning the two existing government-owned piers that lined the entrance channel, which by 1929 were in a seriously dilapidated state.

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[24] Koski-Karell, Daniel, 16. The 1889 Pierhead light measured 16-feet-square at its base and 10-feet-square at the level of the parapet that encircled the enclosed service rooms, which consisted of an oil room below and a watch room above. Access to the light was via a raised wooden walkway that extended the entire length of the North Pier and which was supported on cast iron stanchions. This walkway was positioned eight feet above the wooden surface of the pier itself, which surface was located several feet above the lake level.

[25] Letter From the Secretary of War transmitting report from the Chief of Engineers on preliminary examination and survey of Port Washington Harbor, Wis. U.S. Congress, House Committee on Rivers and Harbors, Document No. 168, 1931, 6. https://search.library.wisc.edu/catalog/9997524513602122 Accessed January 5, 2017.

> The existing project provides for two parallel piers about 150 feet apart, and 920 feet long, with a channel 16 feet deep from the depth of the lake to two interior basins having the same depth, the west basin being 150 feet by 490 feet and the north basin 190 feet by 770 feet. The piers are formed of stone-filled timber cribs of very shallow depths, setting on stone foundations above the present channel bottom. The piers were extensively damaged during the severe storms of 1929 and have been repaired only to such extent as would keep them in serviceable condition for a relatively few more years. The inner portion of the north pier started to slide into the channel under the effect of these severe storms, and it has been necessary to place a large amount of riprap on the harbor side of it to prevent further movement of the cribs. These piers have never been provided with concrete superstructure because they have not been regarded as being any too safe, and also because of the uncertainty as to the probable future developments of the harbor. The existing project for 16 feet depth in the channel and the basins was authorized by the river and harbor act of June 25, 1910, in accordance with House Document No. 306, Sixty-first Congress, second session, and was completed in 1911.[26]

What might have ultimately happened to the two government piers under normal circumstances is conjectural, because in 1930, The Milwaukee Electric Railway & Light Co. (T.M.E.R. & L.) announced that it had purchased a large parcel of land on the lake shore in Port Washington just south of the shipping channel and that it would immediately commence to build a new $30,000,000 steam-electric power plant on this property. Coming as it did at the beginning of the Great Depression, this was welcome news to the city. Since the new plant was to be fueled by coal brought in by ship at an annual rate of 250,000 tons at first and up to 700,000 tons when the plant was finally completed, it also meant that the city's existing harbor was totally incapable of handling this enormous increase in volume. Up until this time, large self-unloading ships that delivered coal and other bulk products to Port Washington could only come into the harbor on the calmest days, of which there were not many during the shipping season. As a result, local interests and T. M. E. R. & L, petitioned Congress for funding to build a government-owned north breakwater that would run in a southeasterly direction from a point on the lake shore just south of the city's water works plant. This new breakwater would both partially enclose and help protect the newly enlarged harbor. Funding was also requested for dredging the new harbor and entrance channel to a depth of 21 feet and the two existing basins to a depth of 18 feet. Having the federal government build the north breakwater was also seen as absolutely necessary to protect ships unloading at the harbor wharves from storm waves, and the local fishing fleet also stood to be a major beneficiary as well.

[26] Letter From the Secretary of War transmitting report from the Chief of Engineers on preliminary examination and survey of Port Washington Harbor, Wis., 7.

> The fish business at this harbor has been long established and is an item of commerce of great value. At present, fishermen state that it is practically impossible to get into the harbor in severe storms and after they are in port, it is almost impossible to hold the vessels at their moorings on account of the short piers and large seas which run into the basins. Under present conditions, it has always been necessary for the small fish boats to moor their boats away from the docks to anchors, or with lines reaching entirely across the basins, in order to keep them from being pounded to pieces against the docks.[27]

The T. M. E. R. & L. Co. was to be an active participant in the rebuilding of the harbor:

> Preliminary work on the plant has already been commenced. A Federal permit was granted recently to the power company to build extensive coal wharves in Lake Michigan immediately south of the present Government South pier. The initial portion of the wharf proposed to be built extends about 200 feet outside of the lake end of the south pier. The proposed future extensions of this wharf will extend 800 feet beyond the lake end of the south pier. The permit provides for the removal of the south Government pier, after the initial coal wharf is built, and for dredging necessary channels alongside the wharves. The coal wharf will have rail connection with the Chicago & North Western Railway as well as the Milwaukee Northern Electric Railway. It is proposed to receive over the new coal wharf not only the coal for the power plant, but also such coal as is required by the local coal company. It is estimated that the local coal business will be increased from about 15,000 to 150,000 tons per annum in the next few years because of improved facilities for handling the coal, and because it is proposed to transship coal by rail and auto truck to the near-by villages and cities to a much greater extent than has been done to date.[28]

All of this work was to be paid for by the electric company itself, as was the continuing cost of re-dredging its wharf channels.

The conclusion reached by the Chief of Engineers of the War Department in his report was that the economic benefits to the city, the electric company, and to the general public that would be served by the electric company, justified the expenditures necessary to build the north breakwater and dredge the resulting harbor to a depth of 21 feet, which expenditure was estimated at $750,000.

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[27] Letter From the Secretary of War transmitting report from the Chief of Engineers on preliminary examination and survey of Port Washington Harbor, Wis., 9.
[28] Letter From the Secretary of War transmitting report from the Chief of Engineers on preliminary examination and survey of Port Washington Harbor, Wis., 8-9.

Congress approved this project in June of 1932, by which time the initial construction phase of the electric company's coal wharves was completed, the old south pier had been demolished, and a rubble mound breakwater 50-feet-long and 44-feet wide was extended out into the lake from the northeast corner of the new coal dock, this location being opposite to and parallel with the end of the still extant north pier. By September of 1933, the necessary Congressional appropriations had been made to fund the north breakwater and harbor-dredging project and soon thereafter, bids for the project were solicited. The winning bid was to the Great Lakes Dredge and Dock Co. of Chicago, which bid $408,000 for the project, with additional winning bids in the amount of $50,000 for the steel to be used in the construction going to Inland Steel and Bethlehem Steel.[29] Work on the north breakwater began in April of 1934 and by May progress was reported:

> The Port Washington harbor is the scene of considerable activity at the present time because of the building of the breakwater. A huge pile driver has been at work the past week driving large iron piles, and considerable progress has been made. Large quantities of rock have been received and altogether the work is going along rapidly.[30]

Two months later, still more progress was reported:

> The sinking of caissons for the breakwater here was begun this week by the Great Lakes Dredge & Dock Co. They are being sunk at the rate of 2 a day, and 8 of them have been placed so far. The caissons are towed from Milwaukee by U.S. government tugs, two at a time. They are then placed in position in the lake, on a rock bed prepared by and leveled by the divers. The rock which has been stored on the north pier for the past two months is being taken off by the dredges, towed out in scows and dumped into the caissons by another dredge. They are filled up to within 4½ feet from the top. At a later date a solid square-cut slab of rock 4½ feet thick, and weighing as high as 10 ton will be placed on top of the rock. A casing of large quarried stones will also be placed around the outside of the caissons. A load of this stone from Sturgeon Bay was brought in Tuesday by the Ormidale…. All of these caissons are 54 feet long by 24 feet wide at the bottom, and 54 feet long by 10 feet wide at the top. The depth of the caisson, of course, varies with the depth of the water but they will be set out with three foot step-ups. For instance, the first one will be 15 feet deep, the second 18, the third 21, etc.… The building of the lighthouse, dredging of the harbor, etc. will not be done until next year.[31]

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[29] "Contracts Are Approved." *Port Washington Pilot*, November 30, 1933, p. 1. The Great Lakes Dredge and Dock Co. is still very much in business today and had a revenue of $731,000,000 in 2013.
[30] "Considerable Progress on Breakwater Being Made." *Port Washington Pilot*, May 31, 1934, p. 1.
[31] "Have Chance To Complete Local Breakwater This Year." *Port Washington Pilot*, July 26, 1934, p. 1.

In August, the existing light (built 1889) at the end of the North pier was demolished and dredging began in the original shipping channel, west, and north basins. Work on the north breakwater continued as well.

> The specifications of Port Washington's $625,000 breakwater calls for 21 caissons in its construction. 17 of these have already been set in and the other four will be set within a few days. 12 of the caissons are complete with their outside protection of rip-rap and steel piles.
>
> These outside protective cells are laid at the rate of one a day—weather permitting. The Great Lakes Dredge & Dock Co.'s concrete plant will be here in a short time to finish the caisson work, that is, the pouring of the concrete on two caissons set together to form the base of the new lighthouse.
>
> Work on the Electric Co. breakwater will begin Monday, August 27. The Great Lakes Co. also has this job. The breakwater will begin at the northeast corner of the T. M. E. R. & L. Co.'s coal dock and will extend 550 feet straight east. It will be constructed entirely of stone with a six foot top and a varying base depending on the depth of the water. The stones used on the six foot top strip will be five feet thick.[32]

By the end of November, the 2,535-foot-long north breakwater had been completed and the dredging of the harbor was also nearly completed.[33] By late December, the dredging of the newly expanded harbor area (also known as the turning basin) was complete and the T. M. E. R. & L. Co.'s privately owned 550-foot-long south breakwater was just a few days from completion as well.[34] In addition, the Great Lakes Co. had also been busy installing new sheet steel piling around the sides of portions of the new harbor and the old north and west basins. Unfortunately, the almost 800-foot-wide harbor entrance located between the outer ends of the new federal government-owned North Breakwater and the new T. M. E. R. & L. Co.-owned south breakwater allowed storms from the east, northeast, and southeast to roll unchecked into the new harbor. Adding to the problem was the fact that the waves that bounced off of the new stone-clad breakwaters and the new sheet steel pilings were magnified as a result and were wreaking havoc on the small vessels belonging to Port Washington's commercial fishing fleet and on those portions of the shoreline and docks of the harbor and the west and north basins that were not already protected by stone and steel.

The solution to the problem was two-fold: completing the placement of steel pilings around the entire inner edges of the harbor and the west and north basins, and also building an angled extension off the

[32] "55 Year Old Lighthouse Is Torn Down This Week." *Port Washington Pilot*, August 23, 1934, p. 1.
[33] "Port's New Breakwater Was Entirely Completed Friday." *Port Washington Pilot*, November 29, 1934, p. 1.
[34] "All Dredging Is Completed This Week In Breakwater And Harbor." *Port Washington Pilot*, December 20, 1934, p. 1.

end of the south breakwater that would narrow the harbor entrance to 275-feet. The placement of additional steel sheet piles around the harbor would continue throughout 1935 and would be funded by the city of Port Washington and by affected harbor front business owners. In addition, a new request was made to Congress in May of 1935 asking for an additional $250,000 worth of funding for the construction of the south breakwater extension.[35]

While these matters were being attended to, work also began on the construction of the new lighthouse at the end of the North Breakwater. A rendering of the new 40-foot-tall Art Moderne style-influenced steel lighthouse and its 16-foot-tall concrete pedestal had already appeared in the local newspaper in October of 1934 and the two concrete caissons that formed its base were the last portions of the north breakwater to be completed.[36] After the 1889 lighthouse was demolished in August of 1934, a temporary light was put in place to guide mariners, and by spring of 1935 work on the new lighthouse began.

> Work on the new 40 foot steel lighthouse being erected on the end of the breakwater here began the latter part of last week. By Wednesday of this week they had the job about half finished. The square steel lighthouse, set atop four heavy concrete arches, will tower over 60 feet above the normal water line. The type of light to be used will be of the latest and most modern kind made today and will give ample protection to all ships using this harbor. The work on the lighthouse is being done by the crew of the [lighthouse tender] Hyacinth, a federal boat patrolling Lake Michigan, with the addition of a few men of this city.[37]

By August of 1935 work on the new lighthouse was nearly complete.

> Port Washington's new lighthouse on the end of the breakwater, started here several months ago, is expected to be in operation within two or three weeks. The heavy marine cable extending from the lighthouse to the shore was laid last week and the underground land cable is being laid this week. … The lighthouse, when in operation, will throw an 18,000 candlepower beam, produced by two 500 watt bulbs, from eight bull lenses. This unit will revolve and show a red flash every seven and one-half seconds. The foghorn will sound a blast of one second, silent two seconds, blast of two seconds, silent twenty-five seconds. Both the light and the foghorn will be operated by remote control from the old lighthouse on top of the church hill.[38]

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[35] "$250,000 Port Breakwater Recommended To Congress." *Port Washington Pilot*, May 23, 1935, p. 1.
[36] "Breakwater To Have 40 Foot Lighthouse." *Port Washington Pilot*, October 11, 1934, p. 5 (illustrated).
[37] "New Lighthouse on Port's Breakwater Half Finished." *Port Washington Pilot*, March 28, 1935, p. 1.
[38] "Port's Lighthouse To Operate Soon." *Port Washington Pilot*, August 15, 1935, p. 1.

Two weeks later, word was received in Port Washington that a $250,000 grant for the construction of the addition to the south breakwater had been approved. In April of 1936, Congress passed and President Roosevelt signed, a bill appropriating the necessary money.[39] With the money secured, the project was put out for bids and the winner was once again the Great Lakes Dredge and Dock Co. Work on the breakwater addition started in late July of 1936.

> The additional breakwater will consist of 63 feet of rubble mound extending east of the T. M. E. R. & L. Co. rubble mound, three caissons each 54 feet long, will join this, and then four caissons of the same size will be laid in a northeasterly direction, the end of the new breakwater stopping about 200 feet west of the lighthouse on the north breakwater. The 800 foot entrance of the harbor will be cut down to approximately 350 feet at the top and 300 feet at the bottom. … All of the skilled hands employed on this job will be brought here by the Great Lakes company while the common labor will be employed from this city.[40]

The new federal government-owned south breakwater addition was completed in late October of 1936 and its lake end sported a fixed 3,000 candlepower red light placed on top of a 32-foot-tall pole.[41] While the new breakwater addition was successful in mitigating some storm damage, storms arriving from the east continued to cause damage to the fishing fleet and they would continue to do so for many decades thereafter. Nevertheless, the completed harbor, with its two new breakwaters, represented a major improvement over the original one and it achieved its principal objective, which was to allow coal ships servicing the new steam-electric power plant to unload safely. By this time, the local newspaper was quite realistic about the results.

> Although possibly not providing as adequate protection as other harbors, with the completion of this breakwater Port Washington has a harbor that is in a class with the other major ports on the Great Lakes, easily able to accommodate the largest coal boats traveling on the lakes today.[42]

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[39] "Bill Including $250,000 For Port Harbor Passes Congress." *Port Washington Pilot*, April 30, 1936, p. 1.
[40] "Start Work on Breakwater Addition in Port Monday." *Port Washington Pilot*, July 30, 1936, p. 1.
[41] The flashing red light that originally shown from the North Breakwater Lighthouse and the fixed red light that originally shown from the South Breakwater served to mark the two ends of the breakwaters and they also defined the entrance into the harbor. The new 1937 South Breakwater light cost $3,500 and it was visible for 6 miles. In the 1960s the original South Breakwater light and its post were replaced with a Type D9 Cylindrical Light, which in this case is a 34-foot-tall steel tubular cylinder that rests on a circular, steel-clad concrete base. This light has a modern plastic optic on top of it that has a green light that flashes at four second intervals and this cylinder is painted white and has a green band painted around its midsection.
[42] "South Breakwater Finished Saturday." *Port Washington Pilot*, October 29, 1936, p. 1.

Just how important this was to Port Washington can be seen from subsequent annual shipping tonnage totals. As mentioned earlier, the 1929 tonnage entering and leaving Port Washington's harbor was 18,800 tons. By 1942, this number had risen to 336,492 tons and by 1951, to 1,177,135 tons, a 65-fold increase, almost all of which represented coal that was delivered to the power plant by ship.[43] These figures reflect the continued expansion of the T. M. E. R. & L. Co.'s power plant, which had its fifth and final unit installed in 1950, and these tonnage figures remained fairly constant until 2004, when the former T. M. E. R. & L. Co. (now WE Energies) generating plant was converted from coal to natural gas in order to produce electricity, after which coal shipments by ship to Port Washington ended. By this time, the Port Washington-based fishing fleet had also shrunk as well, partly because of the difficulty of operating out of Port Washington's harbor, but also because Lake Michigan's fishing stocks were also shrinking.

Thus, by 2004, Port Washington's era as a commercial port was essentially at an end, but well before that year, other changes were giving the harbor renewed economic and social importance. In 1979-80, the city of Port Washington decided to construct a marina within the harbor that could serve recreational boat owners. In order to do this, two new rubble mound breakwaters were built within the existing harbor: a 725-foot-long west breakwater that extended in a northeasterly direction into the harbor from the harbor's west shore, and a 350-foot-long east breakwater that extended in a southwesterly direction from the harbor side of the north breakwater. These structures were positioned so as to be parallel with each other and approximately 200-feet apart; together they formed the entrance channel into a new marina area located in the northwest corner of the harbor. In addition, the south end of the old north slip basin was reconfigured so that instead of opening into the original shipping channel it now opened into the new marina basin instead. The revised north slip basin was then repurposed as another docking area for the new marina.

Still more changes were to come starting in 1999, when the land that had been dredged up to close off the south end of the original north basin was landscaped and was named Rotary Park, which is also connected to the south end of the west breakwater by a bridge. An even more important change occurred afterwards and over a period of years when the former T. M. E. R. & L. Co.'s coal dock was leased to the City by WE-Energies, was landscaped, and became Coal Dock Park, which opened to the public in 2013.[44]

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[43] Letter From the Secretary of the Army transmitting report from the Chief of Engineers, Department of the Army, dated August 19, 1953, submitting a report, together with accompanying papers and an illustration, on a review of reports on Port Washington Harbor, Wis., with a view to determining what work is necessary to prevent further destruction of existing Harbor works, and determining whether any modification is justified at this time: requested by a resolution of the Committee on Public Works, House of Representatives, adopted on April 13, 1948. U.S. Congress, House Committee on Public Works, 15. https://search.library.wisc.edu/catalog/9998164563602122 Accessed January 5, 2017.

[44] http://www.ozaukeepress.com/communities/port-washington/4496-a-coal-dock-transformed Accessed January 7, 2017.

Today, Port Washington's harbor is mostly used by recreational boaters and the Port Washington Marina is now the most important commercial enterprise that utilizes the harbor. But despite the changes that have occurred, the original north and south breakwaters still continue to define the shape of the harbor and the 1935 lighthouse continues to guide boats into it just as it has always done. Consequently, the Port Washington North Breakwater Light and its associated North Breakwater are considered to be eligible for listing in the NRHP because of their historic importance to the economic life of Port Washington and because they exemplify the important role that the Federal government has played and continues to play in ensuring the safety of those who venture onto Lake Michigan.

Architecture

The Port Washington North Breakwater Light is being nominated for listing in the National Register of Historic Places, locally significant in the areas of Architecture and Engineering as an excellent example of a concrete and steel-construction, 1930s period federal navigational aid. Specifically, the Light is a fine example of Art Moderne style lighthouse design devised by the U.S. Lighthouse Service's engineers in the early 1930s specifically for service on the Great Lakes. This design featured a steel superstructure that exhibited Art Moderne design features, placed on a concrete base whose designs varied depending on the particular circumstances of the intended site. This design could be either manned or unmanned, again depending on the site, and it represented a step forward in the evolution of Great Lakes lighthouse designs and it presaged later steel skeleton tower designs that have since become ubiquitous throughout the Great Lakes. Eight of these new lighthouses were built between 1935 and 1950, the one in Port Washington, built in 1935, having been the first to be put into service, and all of these lighthouses are extant and are in active service, which is a testament to the soundness of their design and to the high quality of their construction. Four of these lighthouses have already been listed in the National Register of Historic Places and the Port Washington Light is in every way the equal of its National Register-listed peers. The Criterion C period of significance for the Port Washington North Breakwater Light is 1935, when it was put into service.

Lighthouse Design
The long history of the efforts made by the federal government to ensure the safety of those venturing out onto the oceans that border this country and onto the Great Lakes has been marked by a willingness to adapt new technologies and new construction methods as they became available in order to improve the design of the nation's navigational aids.

Lighthouses built on the coasts of the evolving United States first came under federal supervision in 1789, when Congress passed the National Lighthouse Act, which was administered by the Secretary of the Treasury's office. By 1852, the lamentable state of the nation's lighthouses and the nation's rapidly

expanding maritime trade resulted in the creation of the U.S. Light-House Board, which was also at first placed under the supervision of the Secretary of the Treasury. The Board had responsibility for creating and administering all the nation's navigational aids, which included not only those found on the nation's seacoasts, but also on rivers and on the Great Lakes.

> The Lighthouse Board prepared extensive and detailed drawings of lighthouses it built, leaving little to the imagination of builders. Later, personnel from the U.S. Army Corp. of Engineers designed lighthouses. The Bureau of Lighthouses, established in 1910, apparently had its own group of designers, as does the Coast Guard, the administrator of U.S. lighthouses since 1939. Over the years some lighthouse plans became standardized.[45]

The lighthouses that attract the most attention today are the tall, conical or round-shaped freestanding masonry construction towers such as the celebrated Cape Hatteras Light Station in North Carolina, which was built of brick in 1870, and was recently moved to a site further inland. Many of these lights were essentially one-off designs that applied one of the Lighthouse Board's general design types to a unique geographical location. Many other early light towers were incorporated into the building that housed the keeper's quarters, creating what was quite literally a "lighthouse." Such an expediency recognized the fact that all of the earliest lights needed to be continuously manned during the shipping season because their source of illumination was some type of flammable material such as whale oil or kerosene. Many of Wisconsin's Lake Superior lighthouses, for instance, including most of those within the Apostle Islands Lighthouses Thematic Group (NRIS # 77000145) are examples of this type of light station, as is the 1860 Port Washington Lighthouse. Such buildings were built of wood, brick, or stone and a number of the oldest surviving wooden light stations on the Great Lakes are examples of this type. Not surprisingly, many others have not survived, due to deterioration, obsolescence, or the too potent combination of oil storage and an open flame in the same wooden building having sometimes resulted in their destruction.

Other early types of lights were pierhead lights and breakwater lights, both of which were especially prevalent on the Great Lakes. These types were generally more modest structures and were usually found in association with a harbor entrance. The development of safe harbors along the coasts of the Great Lakes was a matter of the greatest importance in the nineteenth century because good natural harbors were exceedingly rare and this was especially true on Lake Michigan.

> Most of the towns on Lake Michigan were established where small streams empty into the lake. The lower reaches and mouths of the rivers served as unimproved harbors. Unfortunately, the rivers were usually obstructed at their mouths by bars of sand and clay. …

[45] Holland, Jr., F. Ross. *Great American Lighthouses*. Washington D.C: The Preservation Press, 1989, p. 29.

> On the western shore of Lake Michigan, the river channels also had a tendency to be deflected in a southerly direction from a straight course into the lake by shore currents driven before the prevailing northerly winds. The shore currents bent the natural channel off at a right angle and carried it parallel to the shoreline to form a long spit of sand between the river and the lake. Thus deflected, the river quickly became more shallow and would often run one-half mile or more before rejoining the lake.[46]

Lake Michigan harbor improvement projects designed to improve these naturally occurring conditions took many forms but "in all cases, harbors were improved by constructing parallel piers from just upstream of a river's mouth or the start of a dredged channel into the deeper water of the lake. The piers were constructed two hundred feet apart or less, as close to one another as was practical, so that the river freshets would wash away any sand that tended to settle in the channel between the piers."[47] Such piers had to be lit in order for incoming ships to identify what was actually a quite narrow passageway, and this led to the development of specialized light types designed specifically for this purpose.

> Lake Michigan ports, more than any others on the Great Lakes, are known for their lighthouses on piers and breakwaters. Structures built to house lights on the outer end of a pier are referred to as "pierhead" lights. Early pierhead lights were built of wood as that material was readily available and easily worked. Wood was also light in weight and would not overstress a timber crib foundation. Pierhead lights had to be strong in order to withstand the impact of waves and vibrations, yet compact in size because of the limited space available on the piers. As piers were extended out into deeper and deeper water, the lights at their ends were repeatedly picked up and moved out to the new end. … The keeper assigned to maintain pier lights usually lived in a dwelling on shore near the base of the pier. To provide a means of access to the light structure during periods of stormy weather when large waves would break over the pier, an elevated walkway or catwalk was built along the length of the pier to shore. Early catwalk were also built of wood. Using a catwalk to get back and forth from a pier light was no stroll in the park. Wind, waves, rain, ice, and snow often made their use a dicey business. Many keepers recorded harrowing experiences encountered while tending a pier light during inclement weather.[48]

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[46] Sapulski, Wayne S. *Lighthouses of Lake Michigan: Past and Present*. Manchester, MI: Wilderness Adventure Books, 2001, 12-13. This was essentially the condition that prevailed at Port Washington before harbor improvement began in 1870.
[47] Sapulski, Wayne S., 15.
[48] Sapulski, Wayne S., 17.

The pierhead light that was placed on Port Washington's North Pier in 1889 (since demolished) was a typical example of this type of navigational aid.[49] Piers were not an ideal solution to the creation of harbors. In the nineteenth century such structures typically consisted of a series of wood cribs filled with stones that were sunk to the bottom and on which a log or timber superstructure was built that was also filled with stones. A wood plank walkway was then built on top of the superstructure and cargo and passengers were loaded onto or off waiting ships and then made their way to their destination. Such structures were vulnerable to wave action and fire, though, and they were all gradually replaced by more permanent stone breakwaters of various designs and pierhead light designs were gradually modified to serve a similar purpose on breakwaters.

> Breakwater lights were established as breakwaters neared completion. As breakwater lights were the first encountered by approaching vessels, they soon became the prominent lights at many ports. Pier lights at many locations were scaled back or eliminated altogether. Between 1916 and 1930, Federal harbor improvement work on the Great Lakes mainly consisted of completing earlier projects, replacing wooden pier and breakwater superstructures with concrete, general repair and maintenance, and dredging to maintain harbor depths.[50]

Improvements in the design and engineering of breakwater lights and lighthouse superstructures also continued throughout this period. Lighthouses and also pierhead and breakwater lights are all composed of two basic elements: a base and a superstructure that rests on this base, and the actual light itself is placed at the top of the superstructure. The design of the base of a light is greatly dependent on the particular circumstances of its site and a number of different construction methods exist to form these bases. The designs of a light's superstructure, however, proved to be more amenable to being standardized and changes in available technologies facilitated the trend towards standardization. As noted earlier, the earliest lighthouse superstructures on the Great Lakes were either of masonry or wood construction and the earliest pierhead and breakwater lights typically also had wooden superstructures. Gradually, more watertight and sturdier cast iron designs took wood's place and this made possible increasingly standardized designs that were developed by the U.S. Lighthouse Board and later, the U.S. Lighthouse Service. These new superstructures could be prefabricated and shipped to a site where they were then assembled, and as steel prices fell, this still more robust material eventually supplanted cast iron and became the new standard.

Other important improvements that affected lighthouse design during the period from 1916 to 1930 included the gradual electrification of the lights, which greatly reduced both maintenance and the number of persons needed to perform maintenance. By 1934, electrification made remote control operation of the lights possible.

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[49] Sapulski, Wayne S., 162 (illustrated).
[50] Sapulski, Wayne S., 19.

> The design of a completely automatic light and fog signal station with attendance contemplated only at considerable intervals has been completed, and a trial will be made soon. In addition to the automatic function of the light and battery-charging units in accord with need, a device will be included for operating the air compressors and fog signal automatically as the need may be indicated by the condition of the atmosphere over a testing range. The results will be of much importance to the Service.[51]

In addition, the Lighthouse Service was taking advantage of greatly increased funding provided by the Depression-era federal government's Public Works Administration (PWA) to create a new standardized lighthouse superstructure design for service on the Great Lakes. Because several of these new lighthouses were to be built in very prominent locations, the Lighthouse Service decided to give the new design more than ordinary attention.

> New structures being erected under the Public Works program are receiving adequate architectural study with a view to obtaining dignified and simple buildings but adapted to actual use and enduring as to style and construction. The cooperation of the Commission of Fine Arts has been secured in passing on designs which will be carried out at eight different locations.[52]

The result was the Art Moderne style superstructure design that characterizes the Port Washington North Breakwater Light. This design was based on a prototypical "Remote Control Pierhead Station for the Great Lakes" that was designed by the U.S. Lighthouse Service in 1934."[53] Sources differ as to the names of the actual designers of this lighthouse type and their identity is still uncertain. The names that most often appear in connection with this design, however, are either F. P. Dillon (in conjunction with W. G. Will) or C. A. Park (in conjunction with G. B. Skinner), both of whom had had long careers in the Lighthouse Service by this date.

Frederick P. Dillon entered the federal civil service as an assistant civil engineer in the Quartermaster Corps of the U.S. Army in August of 1908 and was subsequently promoted to civil engineer and superintendent of construction. He entered the U.S. Lighthouse Service in March of 1911 as assistant superintendent of lighthouses and served as superintendent of lighthouses in Puerto Rico, on general

[51] Report of the Bureau of Lighthouse Service. Twenty-Second Annual Report of the Secretary of Commerce For the Fiscal Year Ended June 30, 1934. U.S. Government Printing Office, 1934, 105.
[52] Report of the Bureau of Lighthouse Service. Twenty-Second Annual Report of the Secretary of Commerce for the Fiscal Year Ended June 30, 1934, 105.
[53] National Register of Historic Places, Light Stations of Ohio Multiple Property Listing, National Register #64500480, Section E, p. 5.

duty, and in Detroit, Michigan. By 1931, Dillon was Superintendent on general duty of the entire Lighthouse Service. In 1939, the Lighthouse Service was consolidated with the U.S. Coastguard and its employees were given a choice of remaining civilian employees or receiving a military commission. Dillon resigned his position as superintendent of lighthouses (principal lighthouse engineer in the civil service) and accepted a commission as a Commander in the U.S. Coastguard. Subsequently he was advanced first to Captain and then to Commodore and he was Chief of the Aids to Navigation Division in Operations from July 1942 until his retirement in August of 1946.[54]

Charles Abraham Park (1882-1966) was born in New Lexington, Ohio in 1882 and attended Ohio State University, graduating with a B.S. degree in civil engineering in 1907. The following year he was employed as a draftsman in the Land Office in Wyoming and from 1908 to 1911 he worked for the War Department as a civil engineer and supervisor of construction, also in Wyoming. Parks joined the U.S. Lighthouse Service in 1911 and spent the next 13 years with the Eleventh District in Detroit, Michigan, first as principal assistant to the Inspector of the district and then as principal assistant to the Supervisor of the district, having charge of all engineering work and assisting in general administration. In 1924 he was appointed Superintendent of the Eleventh District and in 1933 he was appointed Chief Engineer of the entire Lighthouse Service. In 1939, when the Lighthouse Service was consolidated with the U.S. Coastguard, Park accepted a commission as a captain in the U.S. Coastguard. In 1942, Parks became the Chief Operations Officer and in July, 1943 he was promoted to Rear Admiral and served as Chief of the Operations Division until his retirement in August of 1946.[55]

Clearly, either Dillon or Park would have been capable of designing the Lighthouse Service's new Great Lakes lighthouse. Since both men served in the Eleventh District at the same time, they clearly knew each other, and one or both undoubtedly had an influential role in the development of the new design. However, given the senior positions that these men held at that time, it is more likely that the actual design work was done by members of their staffs and that they exercised final design approval. Whoever the designers were, their final design was a success and represented something new in lighthouse design. When a similar lighthouse, the Conneaut (Ohio) West Harbor Breakwater Light, was reviewed for inclusion in the National Register in 1992, the National Park Service reviewer, Patrick Andrus, said that "In the 1930s there was a conscious effort to represent the machine age, speed, and efficiency. The style of this lighthouse is a clear attempt to look modern and to make a break with the past."[56]

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[54] https://archive.org/stream/coastguardbullet324unit/coastguardbullet324unit_djvu.txt Accessed January 10, 2017. No information was found about W. G. Will.
[55] https://www.uscg.mil/history/people/RetiredFlagOfficerIndex.asp Accessed January 20, 2017. All that is known about G. B. Skinner is that by 1942 he was a Commander in the U. S. Coastguard's Chicago district office.
[56] http://www.lighthousefriends.com/light.asp?ID=288 Accessed January 10, 2017.

The Lighthouse Service's new Great Lakes lighthouse had a square plan superstructure that had a steel frame and was sheathed in pre-fabricated steel sheets that were riveted together. This superstructure featured a square, one-story-tall first story, above which was a smaller square plan three-to-four-story-tall steel shaft, and connecting the two was a one-story-tall curved section. This design featured Art Moderne stylistic (sometimes called "Streamline Moderne") influences such as curved design elements, circular "porthole" windows that in this instance are clear references to the maritime heritage of the structure, and chamfered corners that referenced the curved corners that appeared on many Art Moderne style buildings. The entire superstructure was typically forty to sixty-feet-tall, it was often prefabricated on shore and then transferred to the site in one piece, and it could be attached to whatever type of base was most suitable to its intended location.

Comparative Analysis

Eight of these new lighthouses were ultimately built, all of them located on the Great Lakes. The first to be put into service was the example at Port Washington, which was completed late in August or early in September of 1935 and its steel superstructure was placed on a tall, arched concrete base that was located atop the end of a long new breakwater (U.S. Coastguard Light List No. 20770).[57] The second example to be put into service was the Indiana Harbor East Breakwater Light located at Indiana Harbor, Indiana, also at the end of a long new breakwater, and completed early in 1936. It is an almost exact duplicate of the one in Port Washington, including the arched concrete base (U.S. Coastguard Light List No. 19675). The third example to be completed was the Minneapolis Shoal Light Station located near Escanaba, Michigan, which was also completed in 1936. This lighthouse rests on a shoal in open water and it was manned at first and has a 64-foot-square concrete base into which the basement story of the light was built. The base of the light's superstructure rests on this larger base and it is also square in plan, though smaller, and the steel superstructure of this light rests on this two-story-tall base (U.S. Coastguard Light List No. 21610, listed in the National Register of Historic Places 11/15/2006, NRIS# 06001025). The fourth example to be put into service was the Grays's Reef Lighthouse near St. Ignace, Michigan, completed in 1936. This is also an offshore light and it is very similar in design to the one at Minneapolis Shoal; it too was also manned at first (U.S. Coastguard Light List No. 17775, listed in the National Register 11/09/2005, NRIS# 05001210). The fifth example to be put into service was the Huron Harbor Pierhead Light located in Huron, Ohio. This light is located on the end of a stone pier, rests on a tall, solid concrete base, completed in 1936, and its superstructure is identical to the one in Port Washington (U.S. Coastguard Light List No. 4475, listed in the National Register 12/19/1991, NRIS # 91000971). The sixth example is the Conneaut West Breakwater Lighthouse, Conneaut Harbor, Ohio. This lighthouse was completed late in 1936, it is located at the end of a long stone breakwater, and its superstructure is identical to the one in Port

[57] https://www.navcen.uscg.gov/pdf/lightLists/LightList%20V7.pdf Accessed January 21, 2017.

Washington (U.S. Coastguard Light List No. 3705, listed in the National Register 4/10/1992, NRIS# 92000243). The seventh example was the Gravely Shoal Lighthouse located near Point Lookout, Michigan, this being another offshore lighthouse, completed in 1939 and has a superstructure that is also almost identical to the one at Port Washington (U.S. Coastguard Light List No. 10540). The last of the eight is the Keweenaw Waterway Upper Entrance Light, located near Houghton, Michigan, another offshore light that was completed in 1950 and once again it has a superstructure that is also almost identical to the one at Port Washington (U.S. Coastguard Light List No. 15120).[58]

All but the last one of these lighthouses were built with funds provided by the federal government's Public Works Administration program, but so far as it is known, the Port Washington light is the only one of the eight that was constructed by personnel from the U.S. Lighthouse Service; most of the others having been bid out to private contractors. Once completed, the Port Washington North Breakwater Light became Port Washington harbor's principal aid to navigation and it still enjoys that status today. At first the light was operated remotely by the lighthouse keeper, who was housed in the original 1860 lighthouse located on top of the bluff above.

> The old lighthouse on St. Mary's Hill continued to be used as a residence after the new breakwater light went into service. The keeper and assistant were still needed to operate generators and that powered the new tower and fog signal equipment housed in its base.[59]

This arrangement survived until 1976, when the lighthouse's original black-painted circular lantern, its fourth order Fresnel lens optic, and its Type CC diaphone foghorn were all replaced with a modern plastic optic placed in the open air and a modern, less powerful foghorn. The operations of both of these aids to navigation were then completely automated.

Remarkably, all eight lighthouses of this type are still in operation today and most still exhibit a high degree of integrity. Nevertheless, in order to keep them operational and useful, some changes have been made to all of them in order to ensure their continued usefulness. Most significantly, all of these lighthouses are now completely automated and their original optics have been replaced with modern ones. In addition, all of the breakwater and pierhead examples of this type of lighthouse, including the one at Port Washington, were originally surmounted by a circular plan, black-painted cast iron lantern room that that housed the optic, but beginning in 1972 these lanterns were all removed when the lighthouse operations were automated and their original optics were replaced with more modern ones that were better suited to automation.

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[58] The Minneapolis Shoal and Gray's Reef Lighthouses are identical to each other, they were the only ones of the eight that were intended to be manned by resident crews, and their superstructures differ from the other eight in having rectilinear rather than circular windows and their lowest sections have a different design as well.
[59] Sapulski, Wayne S., 163.

Conclusion

Today, the Port Washington North Breakwater Light continues to serve in its historic role as an aid to navigation and retains a high degree of integrity. The Port Washington North Breakwater Light is eligible for listing in the National Register of Historic Places for its design and for its role in transportation and maritime history in Port Washington. The Port Washington North Breakwater Light was the first example to be built of what proved to be a very successful modern all-steel lighthouse design that was developed by the U.S. Lighthouse Service in the early 1930s specifically for use on the Great Lakes. This design represented a conscious effort on the part of the Service to create a standardized design that was forward looking and dignified in appearance, but was also rugged enough to withstand the constant battering from waves and ice that accompanied its exposed locations on the Great Lakes. Funding for this lighthouse's construction was provided by the Depression-era Public Works Administration as part of a much larger effort whose overall aim was to update and improve the Lighthouse Service's aids to navigation nationwide, and the same funding source also financed the construction of six more examples of the same design that are located elsewhere on the Great Lakes, four of which are already listed in the National Register. Since its construction in 1935, the Port Washington North Breakwater Light has played an essential role in ensuring the safety of those who use Port Washington's harbor and despite its 82 years of hard service it retains excellent integrity. The significance of this lighthouse is further enhanced by the continued existence of Port Washington's National Register-listed 1860 lighthouse, which, when combined with the one built in 1935, makes it possible to both see and visit buildings and structures that span almost the entire history of the Federal government's lighthouse development work at Port Washington.

Ownership of the Port Washington North Breakwater Light has been transferred from the U.S. Coastguard to the City of Port Washington, which intends to restore it.

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Verbal Boundary Description:

The 2,535-foot-long North Breakwater that leads to and supports the North Breakwater Light its west end is attached to the Lake Michigan shore in Port Washington at the east end of Jackson Street. The boundary consists of a line drawn ten-feet outside the outer edges of all sides of the North Breakwater and the attached East Breakwater.

Boundary Justification:

The boundaries enclose all the land that has historically been associated with Port Washington's North and East Breakwaters and with the North Breakwater Light

United States Department of the Interior
National Park Service

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Continuation Sheet

Items a-d are the same for photos 1 – 23.

Photo 1
a) Port Washington North Breakwater Light
b) Port Washington, Ozaukee County, WI
c) Timothy F. Heggland, November 8, 2016
d) Wisconsin Historical Society
e) General View, View looking S
f) Photo 1 of 23

Photo 2
e) North Breakwater, Sec. A-B, View looking S
f) Photo 2 of 23

Photo 3
e) North Breakwater, Sec. D-D1, View looking S
f) Photo 3 of 23

Photo 4
e) North Breakwater, Sec. E-E1, View looking SSW
f) Photo 4 of 23

Photo 5
e) Lighthouse, View looking SE
f) Photo 5 of 23

Photo 6
e) Lighthouse Base, View looking SE
f) Photo 6 of 23

Photo 7
e) Lighthouse Base Detail, View looking E
f) Photo 7 of 23

Photo 8
e) Lighthouse Superstructure, View looking SE
f) Photo 8 of 23

Photo 9
e) Lighthouse Superstructure Detail, View looking SE
f) Photo 9 of 23

Photo 10
e) Lighthouse Superstructure Detail, View looking E
f) Photo 10 of 23

Photo 11
e) Lighthouse Superstructure 1st Story Detail, View looking SW
f) Photo 11 of 23

Photo 12
e) Lighthouse Interior, First Story, View looking SE
f) Photo 12 of 23

Photo 13
e) Lighthouse Interior, Second Story, View looking SE
f) Photo 13 of 23

Photo 14
e) Lighthouse Interior, Second Story View looking Up
f) Photo 14 of 23

Photo 15
e) Lighthouse Interior, Third Story, View looking Down
f) Photo 15 of 23

Photo 16
e) Lighthouse Interior, Fourth Story, View looking Down
f) Photo 16 of 23

Photo 17
e) Lighthouse Interior, Fourth Story View looking Down
f) Photo 17 of 23

Photo 18
e) Lighthouse Interior, Fourth Story, View looking Up
f) Photo 18 of 23

Photo 19
e) Lighthouse Interior, Fifth Story, View looking Up
f) Photo 19 of 23

Photo 20
e) Lighthouse Roof Deck, View looking NW
f) Photo 20 of 23

Photo 21
e) Lighthouse Optic, View looking N
f) Photo 21 of 23

Photo 22
e) Lighthouse NW-Facing Elevation, View looking NW
f) Photo 22 of 23

Photo 23
e) General View, View looking E
f) Photo 23 of 23

List of Figures

Figure 1.
Harbor Plan, U.S. Army Corps of Engineers, 1985

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Lighthouse Northwest (North) Elevation Drawing

Figure 3.
Lighthouse Southwest (West) Elevation Drawing

Figure 4.
Lighthouse Southwest (West) Elevation (Interior) Drawing

Figure 5.
North Breakwater Sections Drawings, U.S. Army Corps of Engineers, 1985

Figure 6.
Site plan with boundary

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Figure 1.
Harbor Plan, U.S. Army Corps of Engineers, 1985

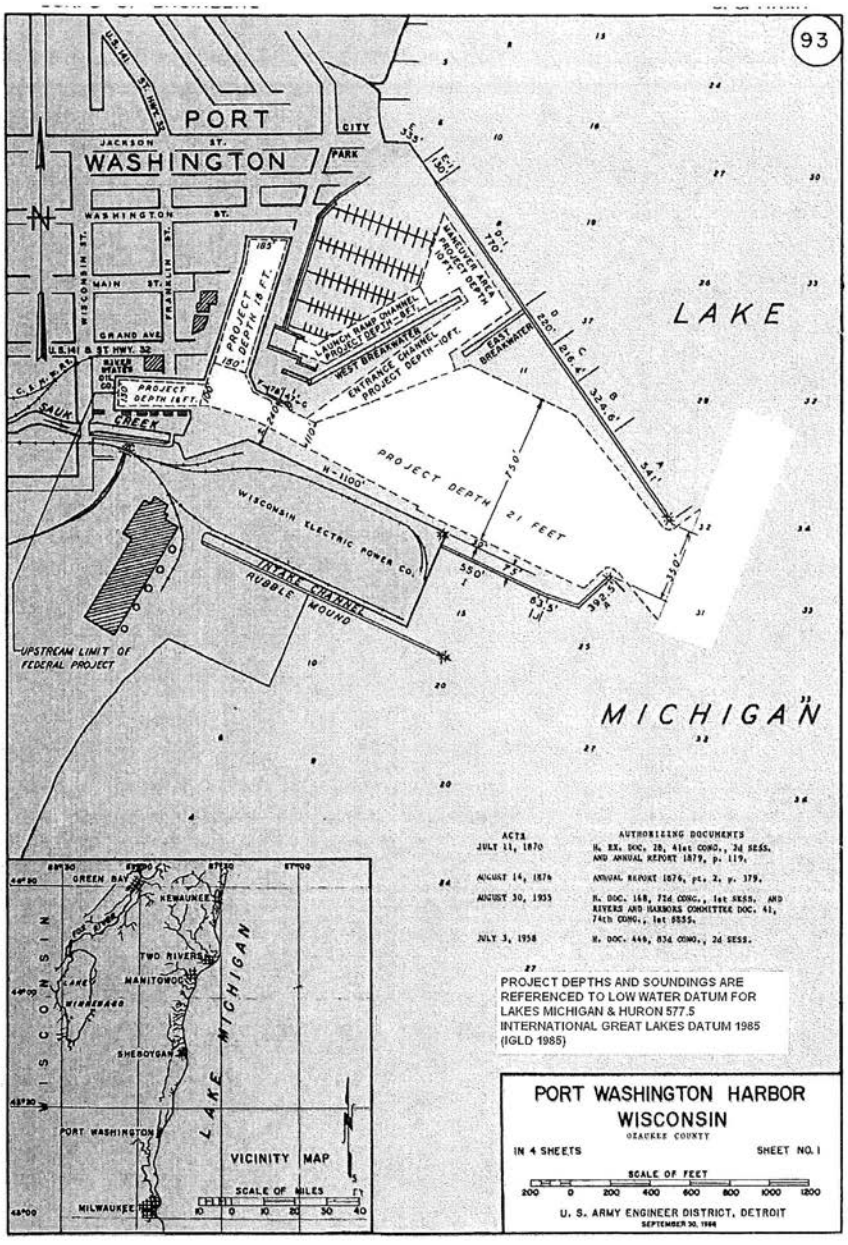


Figure 2.
Lighthouse Northwest (North) Elevation Drawing

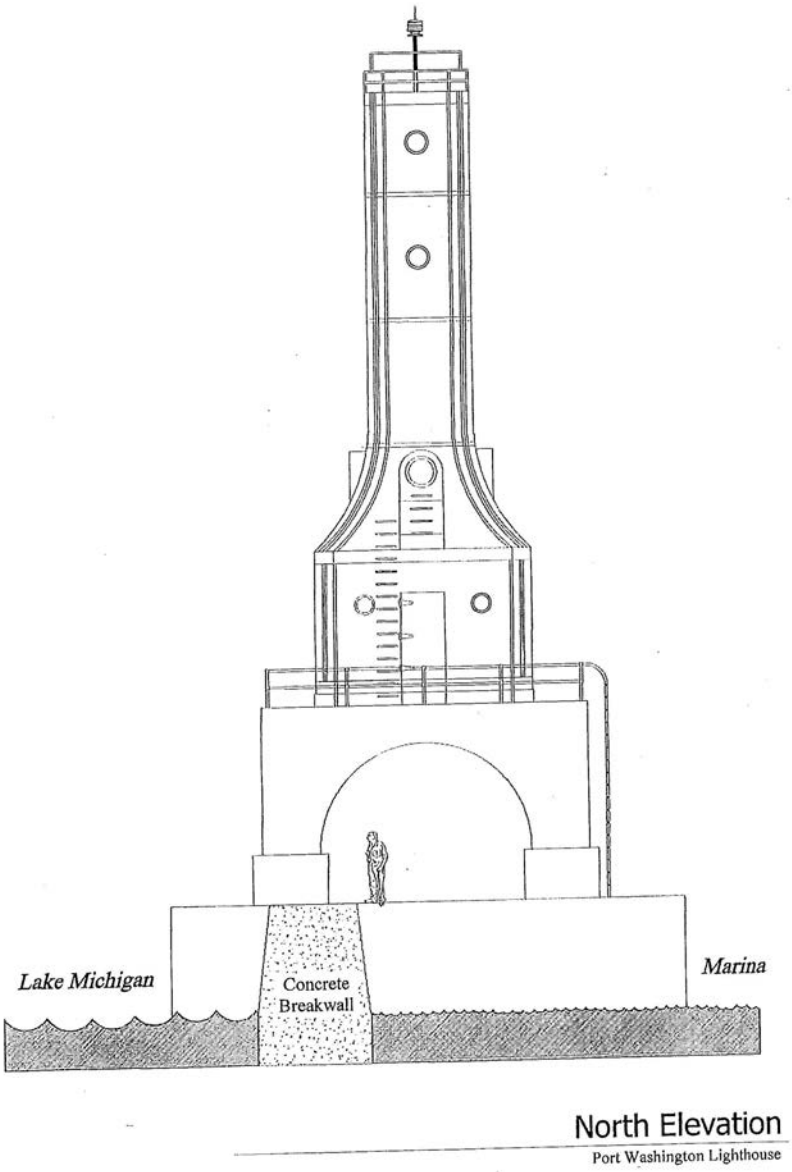


Figure 3.
Lighthouse Southwest (West) Elevation Drawing

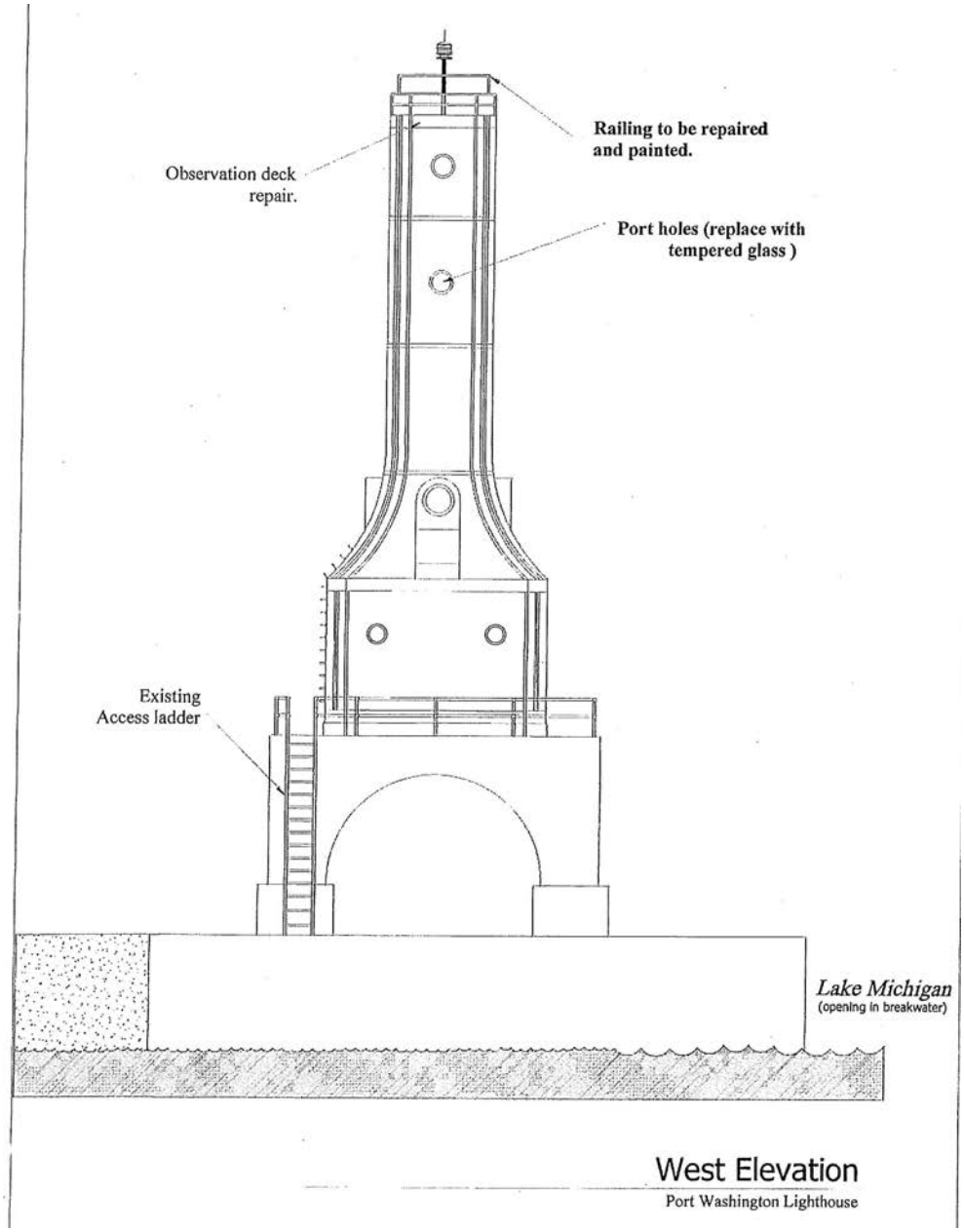
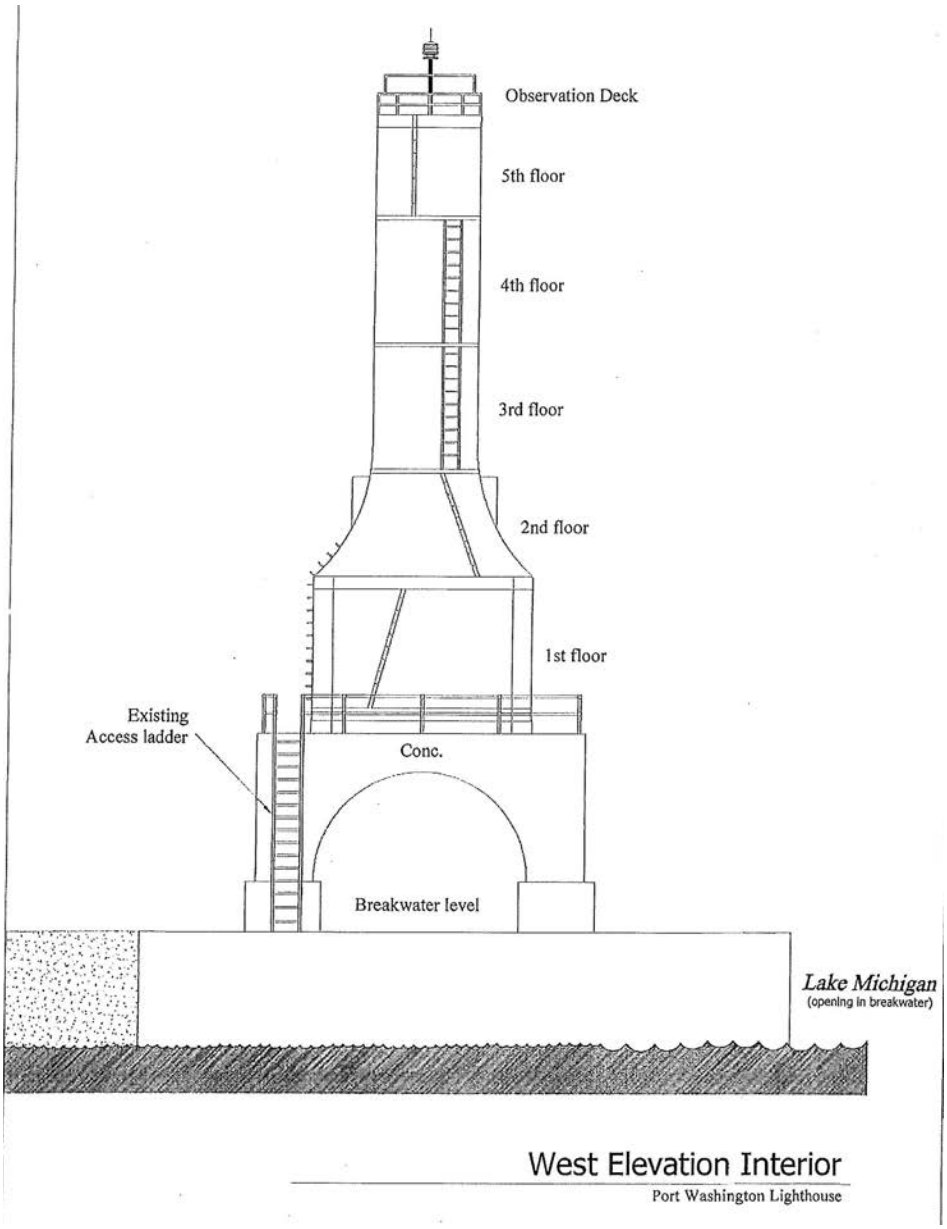


Figure 4.
Lighthouse Southwest (West) Elevation (Interior) Drawing



United States Department of the Interior
National Park Service

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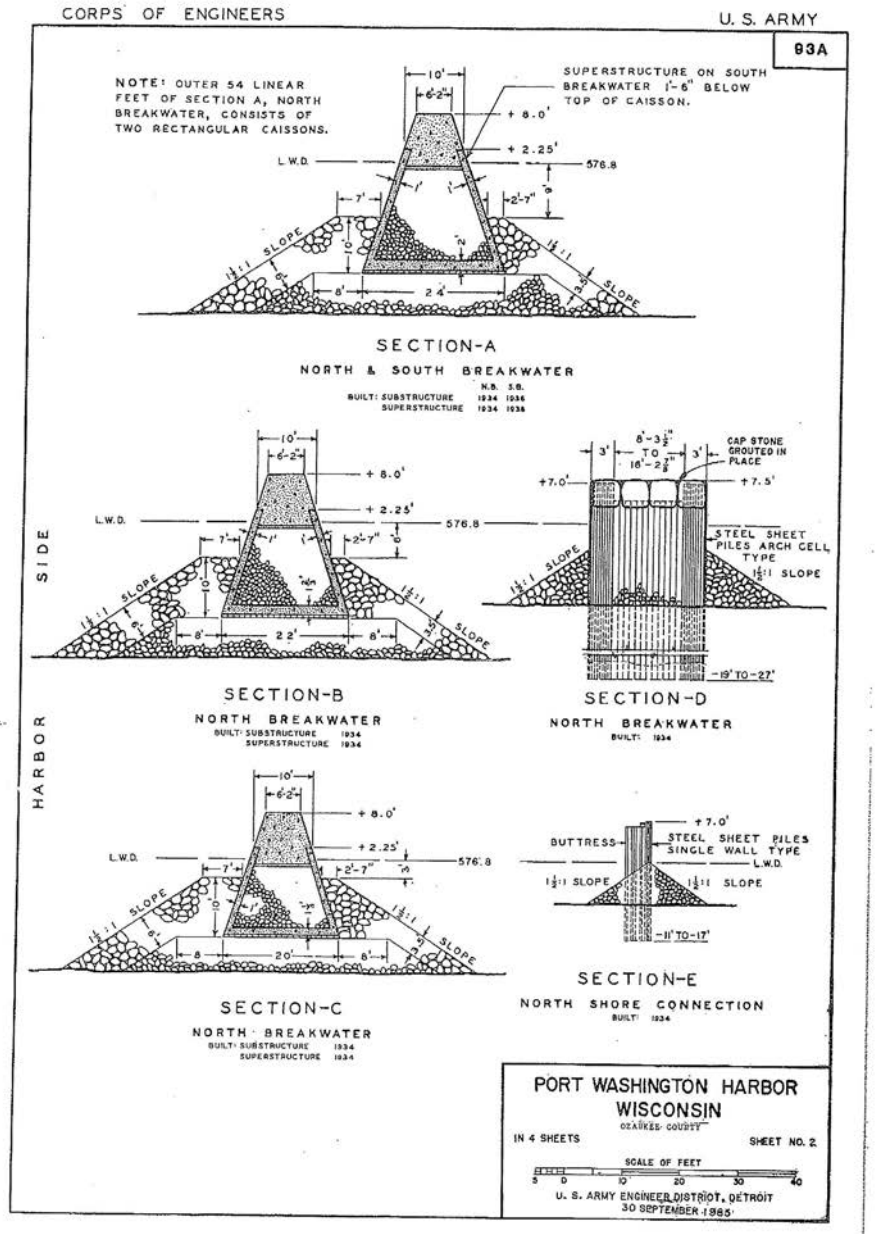
Continuation Sheet

Figure 5.
North Breakwater Sections Drawings, U.S. Army Corps of Engineers, 1985



United States Department of the Interior
National Park Service

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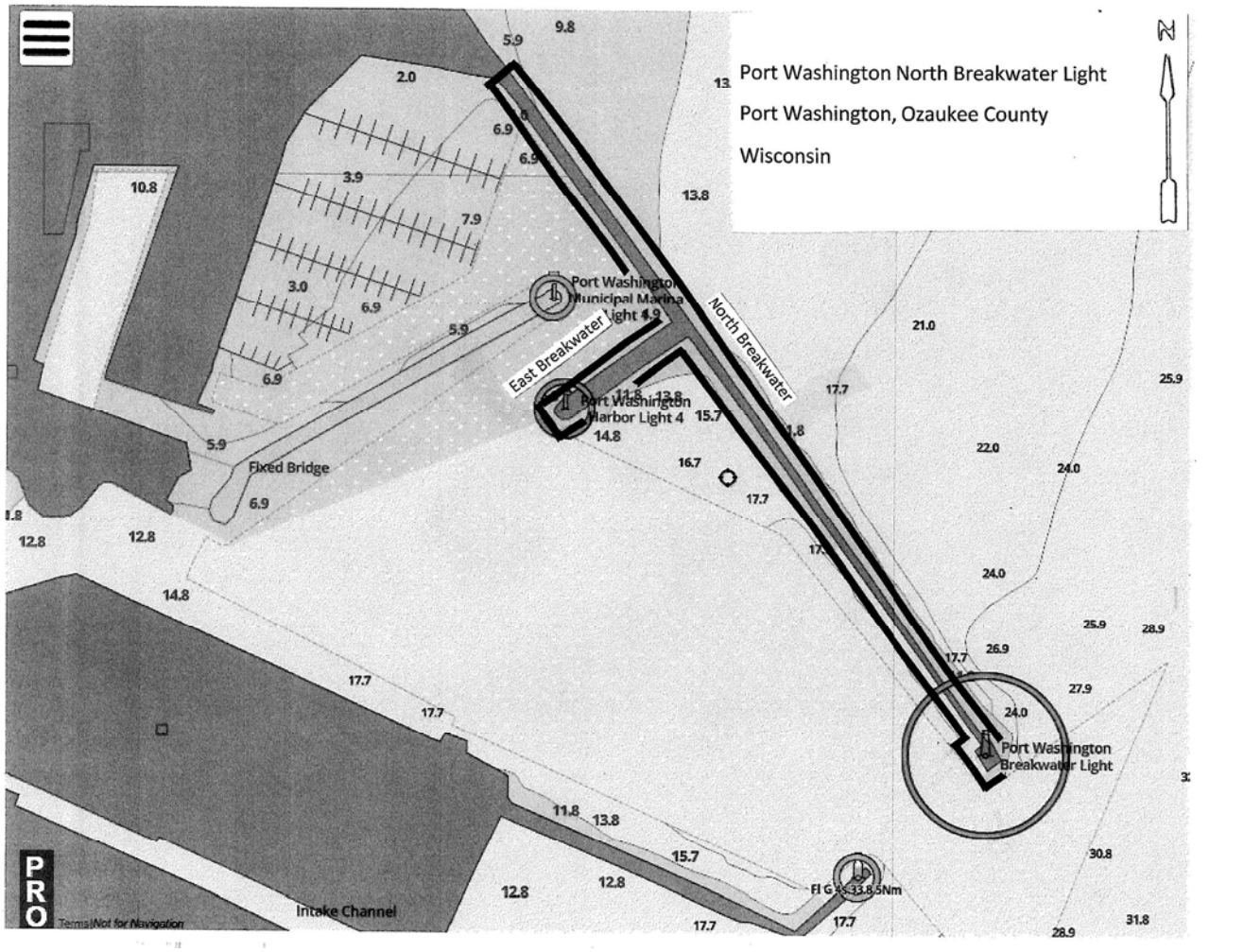
Continuation Sheet

Figure 6.
Site plan with boundary

Not to scale



United States Department of the Interior
National Park Service

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Continuation Sheet

Figure 7.
U.S. Army Corp map

U.S. Army Corps of Engineers

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PORT WASHINGTON EAST QUADRANGLE

WISCONSIN – OZAUKEE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
NE/4 PORT WASHINGTON 15′ QUADRANGLE

87°52′30″ 43°30′ 430 000m E. 4 MI. TO WIS. 144 431 50′ SHEBOYGAN (WIS. 28) 18 MI. 434 R. 22 E. R. 23 E. 47′30″ 437 2 590 000 FEET 438 439 87°45′ 43°30′

3.9 MI. TO WIS. 57

Belgium
BM 736
Water Tank
Lake Church
HARRINGTON BEACH STATE PARK
Wreck
Gravel Pit
Stark Creek
BM 739
B E L G I U M
Decker
Sucker Creek
Golf Course
Gravel Pit
Druecker
Gravel Pit
BM 721
BM 709
Cr
Stark
P O R T W A S H I N G T O N
Knellsville
L A K E M I C H I G A N
APPROXIMATE MEAN LAKE ELEVATION 580
WHITEFISH RD
WALTERS ST
LAKE PARK DRIVE
Park
BOOSE ST
MONTGOMERY ST
WISCONSIN ST
WASHINGTON ST
PORT WASHINGTON
Sewage Disposal
Filtration Plant
PIPELINE
Crib
CABLE
Light
Lights
Lighthouse
Light

FREDONIA 3.4 MI.
HOLY CROSS 1.4 MI.
BOLTONVILLE 14 MI.
FREDONIA 5.4 MI.
MILWAUKEE (I-94) 28 MI.
WEST BEND 16 MI.
SAUKVILLE 3.4 MI.

T. 12 N.
T. 11 N.
T 12 N
T 11 N
R 22 E
R 23 E

4816 4815 000m N. 4814 4813 4812 27′30″ 4811 4810 4809 4808 4807 25′ 4806 4805 4804 4803 000m N.
550 000 FEET
510 000 FEET

43°22′30″ 87°52′30″ 430 2 570 000 FEET 432 50′ 433 434 435 47′30″ 436 437 000m E. 43°22′30″ 87°45′

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1994

Port Washington
North Breakwater
Light
Port Washington
Ozaukee County
Wisconsin
UTM coordinates
Z E N
16 430750 4803375

Produced by the U. S. Geological Survey
Control by USGS, NOS/NOAA, and U. S. Lake Survey
Topography by photogrammetric methods from aerial photographs taken 1954-55. Field checked 1958
Hydrography compiled from U. S. Lake Survey chart 74 (1957)
Projection and 10,000-foot grid ticks: Wisconsin coordinate system, south zone (Lambert conformal conic)
1000-meter Universal Transverse Mercator grid ticks, zone 16, shown in blue
1927 North American Datum (NAD 27)
North American Datum of 1983 (NAD 83) is shown by dashed corner ticks
The values of the shift between NAD 27 and NAD 83 for 7.5-minute intersections are given in USGS Bulletin 1875
There may be private inholdings within the boundaries of the National or State reservations shown on this map
Red tint indicates area in which only landmark buildings are shown
Photoinspected from 1992 source; no major culture or drainage changes observed. Boundaries and names revised 1994

Revisions shown in purple compiled from aerial photographs taken 1971 and 1976. This information not field checked

Purple tint indicates extension of urban areas

MN 2° 36 MILS GN 0°33′ 10 MILS
UTM GRID AND 1994 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000
1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
SEA LEVEL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS 578 FEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
AND WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, MADISON, WISCONSIN 53706
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

WISCONSIN
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Random Lake
2 Cedar Grove
3
4 Port Washington West
5
6 Cedarburg
7
8

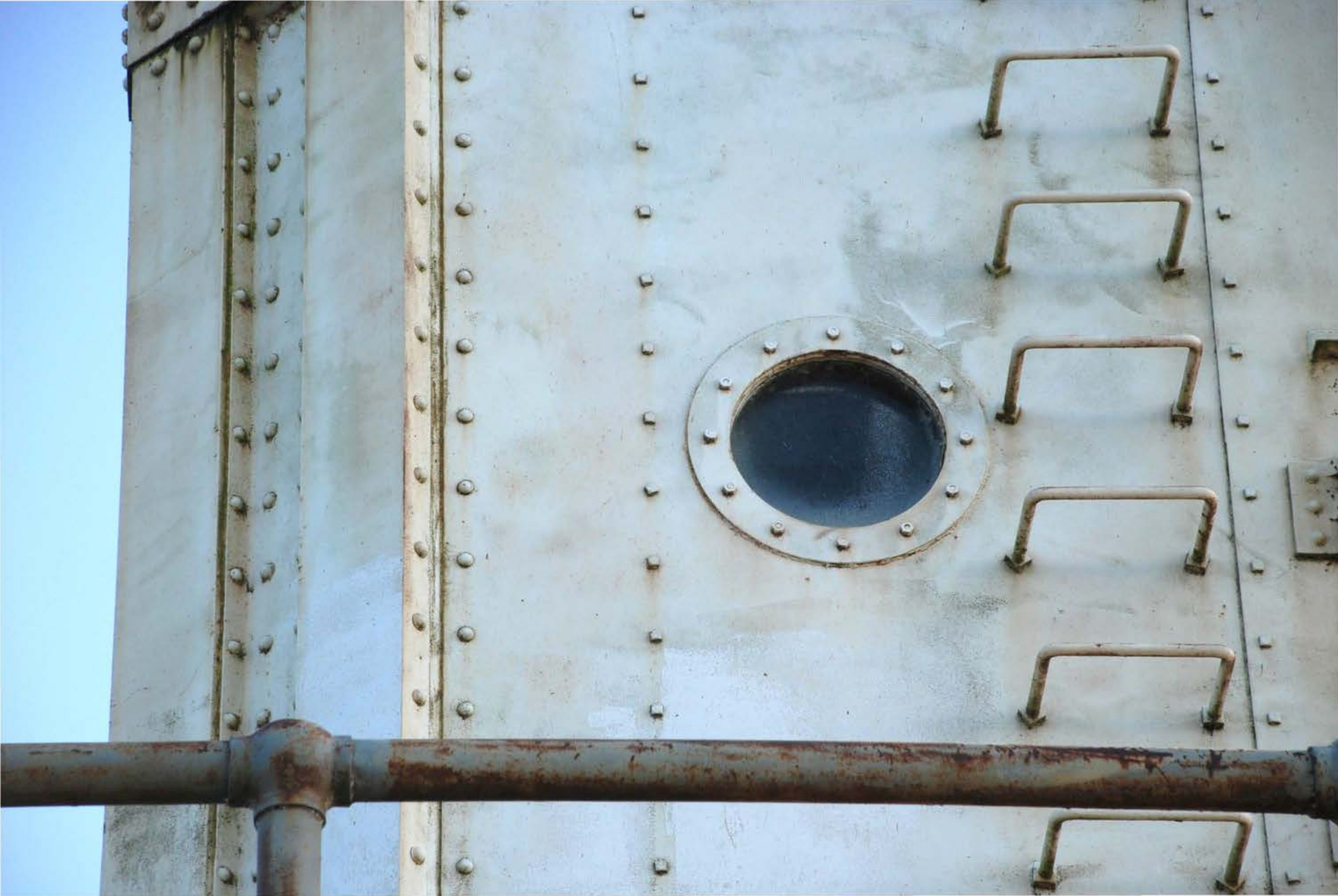
ADJOINING 7.5′ QUADRANGLE NAMES

ROAD CLASSIFICATION
Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route U. S. Route State Route

PORT WASHINGTON EAST, WIS.

NE/4 PORT WASHINGTON 15′ QUADRANGLE
43087-D7-TF-024

1958
PHOTOREVISED 1971 AND 1976
MINOR REVISION 1994
DMA 3470 IV NE – SERIES V861




TO ENERGIZE THE FOG
MICROPHONE FIVE
TIMES ON CHANNEL 83A

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

Requested Action:	Nomination
Property Name:	Port Washington North Breakwater Light
Multiple Name:	Light Stations of the United States MPS
State & County:	WISCONSIN, Ozaukee

Date Received:	Date of Pending List:	Date of 16th Day:	Date of 45th Day:	Date of Weekly List:
10/19/2018	11/5/2018	11/20/2018	12/3/2018	12/7/2018

Reference number:	MP100003160
Nominator:	SHPO

Reason For Review:

__ Appeal	__ PDIL	__ Text/Data Issue
__ SHPO Request	__ Landscape	__ Photo
__ Waiver	__ National	__ Map/Boundary
__ Resubmission	__ Mobile Resource	__ Period
X Other	__ TCP	__ Less than 50 years
	__ CLG	

__**X**__ Accept _____ Return _____ Reject __**12/3/2018**__ Date

Abstract/Summary Comments:	
Recommendation/ Criteria	

Reviewer Barbara Wyatt Discipline Historian

Telephone (202)354-2252 Date

DOCUMENTATION: see attached comments : No see attached SLR : No

If a nomination is returned to the nomination authority, the nomination is no longer under consideration by the National Park Service.

WISCONSIN
HISTORICAL
SOCIETY

July 12, 2018

Mr. Christopher Page
Interim Federal Preservation Officer
Office of the Assistant Secretary of the Army for Civil Works
108 Army Pentagon, Room 3E441
Washington, DC 20310-0108

Dear Mr. Page:

Enclosed, please find a copy of a National Register nomination for the **Port Washington North Breakwater Light**, in **Port Washington, Ozaukee County, Wisconsin** for your review and comment. The nomination includes the North and East Breakwater as the lighthouse sits at the end of the North Breakwater. Because the U.S. Army Corps of Engineers owns the breakwater, you are being notified. The North Breakwater Light was formally determined eligible for the National Register of Historic Places by the U.S. Coast Guard and the Keeper of the National Register at the National Park Service in November 2015. Ownership of the lighthouse has recently transferred to the City of Port Washington (in 2018) and is now being formally nominated for listing in the National Register.

The property will be considered for listing in the Wisconsin State Register of Historic Places as well as for submittal to the National Park Service for listing in the National Register of Historic Places at our upcoming State Review Board meeting on August 17, 2018.

If you have any questions or require additional information, please call me at (608) 264-6501. I may also be reached at peggy.veregin@wisconsinhistory.org.

Sincerely,

Peggy Veregin

Peggy Veregin
National Register Coordinator

ROBERT BROOKS
STATE REPRESENTATIVE • 60TH ASSEMBLY DISTRICT

16 July 2018

Wisconsin Historic Preservation Review Board
Attention: Peggy Veregin
816 State Street
Madison, WI 53706

Dear Ms. Veregin:

The purpose of this letter is to express my support for recognizing the Port Washington North Breakwater Light on the Wisconsin State Register of Historic Places and National Register of Historic Places.

My staff and I had the opportunity, last summer, to tour the lighthouse and newly reconstructed breakwall leading to the lighthouse. I conversed with constituents during my tour and it is evident that the lighthouse serves as an important pillar of the community. When individuals think of or hear the name Port Washington, harbors and lighthouses immediately come to mind.

Designation of the lighthouse preserves Port Washington's heritage and will ensure that future generations will be able to enjoy this landmark. The lighthouse is not only valued and appreciated by the local community, but is a significant tourism attraction within Port Washington that draws interest from around the state. The lighthouse is synonymous with Port Washington and its nautical legacy is most deserving of this recognition.

All the best,

Representative Rob Brooks

Capitol Office: Post Office Box 8952 • Madison, WI 53708-8952 • (608) 267-2369 • Toll-Free: (888) 534-0060 • Fax: (608) 282-3660
Rep.Rob.Brooks@legis.wi.gov

GLENN GROTHMAN
6TH DISTRICT, WISCONSIN

COMMITTEE ON EDUCATION AND THE WORKFORCE

COMMITTEE ON THE BUDGET

COMMITTEE ON
OVERSIGHT AND GOVERNMENT REFORM

UNITED STATES
HOUSE OF REPRESENTATIVES

24 WEST PIONEER ROAD
FOND DU LAC, WI 54935
(920) 907-0624

1217 LONGWORTH BUILDING
WASHINGTON, DC 20515
(202) 225-2476

GROTHMAN.HOUSE.GOV

July 24, 2018

Wisconsin Historic Preservation Review Board
C/o Peggy Veregin
Wisconsin Historical Society
816 State Street
Madison, WI 53706

Wisconsin Historic Preservation Review Board:

I am writing in support of the Port Washington North Breakwater Light nomination to the Wisconsin State Register of Historic Places and the National Register of Historic Places. The building, located in Port Washington, is part of the Sixth Congressional District which I represent.

The Port Washington North Breakwater Light has been a critical navigational aid at Port Washington's harbor, and an integral component of Wisconsin's maritime history since it was constructed in 1935. Throughout the nineteenth and twentieth centuries, industry and commerce depended on the safe and fast shipment of raw materials and finished goods, transported by ship on the Great Lakes for delivery both within and outside of the region. Lighthouses and navigational aids were critical components to ensuring safe shipping during an era when the Great Lakes were a marine superhighway. The light is significant for its association with this transportation and maritime history.

Industrial expansion and therefore increased demand for a safe shipping harbor, influenced the improvement of the harbor beginning in 1934 when the breakwater was constructed, replacing a much smaller harbor and pierhead light from 1889. The lighthouse was designed in the Modern style, popular during the 1930s and incorporated structural design which improved efficiency and safety. The light is constructed of steel and concrete, one of the earliest to a standard design used between 1934 and 1950, developed by the U.S. Lighthouse Service specifically for use on the Great Lakes. The Port Washington North Breakwater Light is significant for its association with navigational aid design and as a very good example of the Modern style applied to a lighthouse.

Please give all due and fair consideration consistent with current federal and state laws and agency regulations. Keep me apprised of your efforts and findings by contacting my District Director, Alan Ott, at 24 West Pioneer Road Fond du Lac, WI 54935 or by calling (920) 907-0624. Thank you for your consideration.

Sincerely,

Glenn Grothman

Glenn Grothman
Member of Congress

WISCONSIN HISTORICAL SOCIETY

TO: Keeper
National Register of Historic Places

FROM: Peggy Veregin
National Register Coordinator

SUBJECT: National Register Nomination

The following materials are submitted on this Eighteenth day of October 2018, for the nomination of the Port Washington North Breakwater Light to the National Register of Historic Places:

1	Original National Register of Historic Places Nomination Form
1	CD with NRHP Nomination form PDF
	Multiple Property Nomination form
23	Photograph(s)
1	CD with image files
1	Map(s)
7	Sketch map(s)/figures(s)/exhibit(s)
3	Piece(s) of correspondence
	Other:

COMMENTS:

	Please ensure that this nomination is reviewed
	This property has been certified under 36 CFR 67
	The enclosed owner objection(s) do or do not constitute a majority of property owners
	Other: