

United States Department of the Interior
National Park Service

RECEIVED
FEB 22 1990

National Register of Historic Places Multiple Property Documentation Form

DIVISION OF
NATIONAL REGISTER PROGRAMS
NATIONAL PARK SERVICE

This form is for use in documenting multiple property groups relating to one or several historic contexts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. For additional space use continuation sheets (Form 10-900-a). Type all entries.

A. Name of Multiple Property Listing

Light Stations of Ohio

B. Associated Historic Contexts

Transportation and Commerce on Lake Erie, 1818-1936, Context for
Light Stations on the Great Lakes, 1819-1939

C. Geographical Data

State of Ohio

☐ See continuation sheet

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards for Planning and Evaluation.

Signature of certifying official

Date

State or Federal agency and bureau

I, hereby, certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Signature of the Keeper of the National Register

Date

E. Statement of Historic Contexts

Discuss each historic context listed in Section B.

TRANSPORTATION AND COMMERCE ON LAKE ERIE, 1818-1936

"Lake Erie is intimate and wayward," Ohio historian Harlan Hatcher wrote in 1945, neatly summing up the lake's physical size and temperament. Of the five Great Lakes, Erie is fourth in size; only Ontario is smaller. At its widest point, the Erie shores are only 58 miles apart; at 9,940 square miles, it is a little larger than the state of Vermont. Lake Erie is shallow, with a mean depth of just 90 feet. This accounts for the lake's characteristic turbulence and frequent storms. As Hatcher put it, "Erie's waters stir in this shallow bowl."¹

To the north, Lake Erie's shores belong to Canada. To the south, they belong mostly to Ohio, sweeping across 184 miles of the state's north rim. Here, Erie's harbors occur at the mouths of the rivers that crookedly make their way north: Conneaut, Ashtabula, Fairport Harbor (Grand River), Cleveland (Cuyahoga River), Lorain (Black River), Vermilion, Huron, Sandusky, Port Clinton, and Toledo (Maumee River).

Until completion of the Erie Canal in 1825, settlement in the Great Lakes region was slow. That important inland waterway, linking Buffalo on Lake Erie with New York City via the Hudson River, greatly stimulated western commerce and settlement. "For the first time the bulky products of the West began to flow directly eastward," one historian has written. "The immigrants who crowded the Erie canal boats and settled first in Ohio, Indiana, and Michigan, and later in the more western lake states, soon sent back over the route they had traveled an increasing flow of flour, wheat, and other farm products."² As agricultural products moved east, manufactured products moved west, and the Great Lakes came to serve as a gigantic extension of the Erie Canal; later, the railroads acted as "feeders" to the Great Lakes trade, so that its volume grew geometrically. By 1856, the value of trade on the Great Lakes exceeded \$600 million, eclipsing the value of American foreign trade.³

The first steamboat on Lake Erie, the Walk-in-the-Water, was launched at Black Rock, near Buffalo, in 1818. Following the opening of the Welland Canal in 1829, steamboats passed easily into Lake Erie, and the shallow, turbulent lake became the leading center for lake steamships carrying large numbers of immigrants to the new West. Propelled by paddlewheels, these vessels skimmed passengers across the lake from Buffalo to Detroit in a day and a half. Cleveland became a wayport for such sidewheel steamers and for the small, two-masted schooners that brought manufactured products to the community and took on agricultural products for their outboard journey.⁴ There were 369 steam-powered ships and 1,207 sailing vessels on the Great Lakes in 1860.⁵ The tremendous traffic dictated the improvement not only of harbors, but also of aids to navigation.

During the first two decades of the nineteenth century, the harbors of the Great Lakes remained largely unimproved. The mouths of the rivers were often obstructed by sand, preventing

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation Sheet

Light Stations of Ohio

Section number E Page 1

the safe entrance of vessels. Beginning in 1825, the Federal government provided for the survey and improvement of harbors on the Lakes. By 1837, the mouths of Ohio's Huron, Black, Cuyahoga, Grand, Ashtabula, and Conneaut rivers had been deepened and piers constructed.⁶ Just as imperative as harbor improvements were aids to navigation. Between 1821 and 1936 (the concluding date for this discussion), the Federal government erected a succession of major lights to mark Lake Erie's southern coast. In Ohio, these ranged from the conical masonry tower at Marblehead to the identical steel-clad pierhead towers at Conneaut and Huron. (See associated context, "Light Stations on the Great Lakes, 1819-1939," below.)

Fueled by industrial expansion and population growth, and aided by harbor improvements, including lighthouses, commerce on the Great Lakes expanded throughout the late nineteenth century. Shipments on the Lakes rose from about four million tons in 1852 to eighty million tons by 1910. The kinds of products shipped, meanwhile, changed. Lumber and grain accounted for 75 percent of shipments in the 1870s, but only 10 percent by 1910. Iron ore, mined in the Lake Superior region and shipped to ports on the lower lakes became the single most important cargo, accounting for half the 1910 tonnage. Beginning in the 1880s, steel-hulled freighters replaced sailing ships on the Lakes, gradually evolving in size and efficiency in response to rapid improvements in bulk materials handling technology.⁷

By the 1890s, iron ore was received in quantity at Conneaut, Ashtabula, Fairport Harbor, Cleveland, Lorain, Huron, Sandusky, and Toledo. Lumber and stone were also received in quantity at Cleveland and Lorain, while coal was shipped from Conneaut, Ashtabula, Fairport Harbor, Cleveland, Lorain, Huron, and Sandusky. Sandusky was also an important stopping place for pleasure and passenger steamers from Detroit and Cleveland. The small harbors of Vermilion and Port Clinton, meanwhile, were used mostly by fishing vessels.⁸

The 1920s was a period of high prosperity for the Great Lakes shipping industry, shattering tonnage records. Iron ore was predominate, followed by coal, stone, grain, sand and gravel, iron and steel, petroleum products, and lumber. During the decade 1926-1935, nearly 50 percent of the gross total tonnages of U.S. Great Lakes ports was handled at six ports, three of them in Ohio: Toledo (17 million tons), Cleveland, (10.7 million tons), and Ashtabula (8.7 million tons). In addition, Conneaut, Sandusky, and Lorain all had tonnages in excess of 5,000,000 tons.⁹ Following steep reductions in shipping during the Depression, the industry rebounded. Total shipments rose to 169 million tons in 1941 and averaged 200 million tons annually by 1970.¹⁰

United States Department of the Interior
National Park Service

**National Register of Historic Places
Continuation Sheet**

Light Stations of Ohio

Section number E Page 2

While iron ore continues as the single largest bulk cargo shipped on the Great Lakes, the decline of American steel has greatly reduced the volume of traffic and decimated the once-large lake fleets. The St. Lawrence Seaway, completed in 1959, further changed the character of shipping on the Great Lakes, opening them for the first time to deep-draft foreign vessels. In sheer numbers, pleasure craft today predominate on Lake Erie.

SUB CONTEXT A:

LIGHT STATIONS ON THE GREAT LAKES, 1819-1939

Although the numbers of ships on Lake Erie increased phenomenally during and following the War of 1812, there was nothing to guide the mariner except natural landmarks visible along the shore; early mariners hugged the protective shoreline, relied on instinct, and anchored their craft when night fell. Still, the uncharted lake for years was a "graveyard for ships."¹¹ Congress had authorized construction of the first lighthouses in 1789. The establishment and maintenance of aids to navigation was the province of the U.S. Treasury Department, and until 1820 was directed personally by the Secretary. In 1820, these duties devolved to the Fifth Auditor of the Treasury, Stephen Pleasonton, and continued in his charge until 1852.

The construction of lighthouses on the Great Lakes, at least initially, was a haphazard affair. New lights frequently were established in response to the petition of a locality.¹² The first lighthouse on Lake Erie was erected at Presque Isle (Erie), Pennsylvania, in 1819. This was shortly followed by lights at Buffalo (1820), Marblehead, Ohio (1821), Detroit (1825), Grand River (present-day Fairport Harbor), Ohio (1825), and Cleveland (1829). Construction boomed in the 1830s, when 32 new lighthouses were completed. In Ohio, lights were established at Turtle Island (1831), Port Clinton (1833), Ashtabula (1834), Conneaut (1835), Huron (1835), Black River (Lorain) (1836), and Cedar Point (1838). By 1840, a total of 43 lights marked the Great Lakes, including 17 on Lake Erie, 11 on Lake Michigan, 9 on Lake Ontario, and 4 on Lake Huron; the Detroit River and Lake St. Clair had one each. Between 1841 and 1852, 33 additional lights were established, giving the Great Lakes a total of 76 lighthouses. Two-thirds of these marked harbor or river entrances, while the remainder marked islands, points, shoals, and reefs.¹³

Under Fifth Auditor Stephen Pleasonton, the development of an effective national system of lighthouses was grossly retarded. The Federal government adopted a crude lamp and reflector system patented in 1810 by ship captain Winslow Lewis and hired Lewis to

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation SheetLight Stations of Ohio
Section number E Page 3

outfit all American lighthouses with his system. In 1822, French physicist Augustin Fresnel developed a dramatically different--and vastly superior--lens that was quickly adopted in both France and England. The Fresnel lens consisted of a series of glass prisms surrounding the light in a beehive configuration. A central prism magnified the light, while the prisms above and below refracted (or directed) the light into a single powerful beam. Fresnel devised seven sizes, or orders, of lenses, classified according to the focal distance of the lens (i.e., the distance from the center of the light to the inner surface of the lens). Fresnel also devised a clockwork mechanism for rotating the lens, which, in combination with tinted screens, enabled each light to have a distinct characteristic (fixed, flashing, occulting, etc.), further helping to fix the mariner's position.

Pleasanton, a bookkeeper with no maritime experience, made no move to adopt the Fresnel system. Following an investigation, Congress in 1852 provided for a nine-member Lighthouse Board to administer the nation's aids to navigation. Under the Lighthouse Board, the United States was divided into 12 administrative districts (this was expanded to 16 in 1886), each staffed with an inspector (who was a naval officer) and an engineer (who was an army officer). The Great Lakes region was split into three districts. The Tenth District, based at Buffalo, New York, encompassed Lake Ontario and Lake Erie.¹⁴

Under the Lighthouse Board, aids to navigation improved dramatically. The board moved quickly to adopt the Fresnel lens for new and existing lighthouses, and by the advent of the Civil War, all American lighthouses had been fitted with the Fresnel lens. The new lens doubled the range of existing lights and reduced fuel consumption by 75 percent.

Most lights established on the Great Lakes during the early nineteenth century were rebuilt more substantially within only a few decades. At Grand River (later renamed Fairport Harbor), for example, the master builder Jonathan Goldsmith erected a lighthouse on the east bank of the river in 1825; this tower was in "hazardous condition" by 1868, and in 1870-71 a new stone tower was built to replace it. Still later, the 1871 tower was superseded by a new harbor light on the breakwater, completed in 1925 and still in service. Likewise, virtually all of the nineteenth-century lights that survive in Ohio are the second or third structures to be built on the same site. Exceptions include the light towers at Marblehead (1821) and West Sister Island (1848), though these have been substantially reconstructed, and that at South Bass Island (1897), the last combined light tower/keeper's dwelling on Lake Erie to be built on a land site.

Until 1910, lighthouses were designed by the military

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation Sheet

Light Stations of Ohio

Section number E Page 4

engineers assigned to the various lighthouse districts. Lighthouse design evolved gradually during the nineteenth century. A common design before 1870 consisted of a masonry keeper's dwelling with the light exhibited from a lantern mounted directly on top of the dwelling, as at the former Cedar Point Light (1862), now privately owned; or on top of an attached tower standing 25 to 40 feet tall, as at Green Island (1864) and Turtle Island (1867). Where taller towers were needed, usually for coastal lights, conical masonry towers were built. These sometimes were connected to a keeper's dwelling by an enclosed passageway, as at West Sister Island (1848; renovated 1868). Sometimes the tower only was of masonry, while a detached dwelling was of frame construction. Most older towers of this type were built of brick or stone, with stairway, lantern, and other fittings of cast iron. After 1850, the polygonal lantern, usually with eight or ten sides, became nearly universal on the Great Lakes. Following the Civil War, many harbor lights were moved from the mainland onto piers and breakwaters built as part of a Federal effort to improve harbors on the Great Lakes. Pier lights, although still tended by a keeper, no longer included a residence, which typically remained on shore. Few nineteenth-century pier lights have survived because of numerous later pier extensions and the destructive effects of storms and ice.¹⁵

The network of aids to navigation on the Great Lakes expanded rapidly under the Lighthouse Board, jumping from 76 in 1852 to 102 by 1860. Following a construction lull during the Civil War, 43 new lights were added in the 1870s, and over a hundred in the 1880s. By 1892, navigators on the Great Lakes were assisted by 219 major lights, 79 minor lights (mostly on pierheads), four lightships, 56 fog signals, and 404 buoys. Another construction boom took place in the 1890s. By the beginning of the twentieth century, the Great Lakes had 334 major lighted aids, 67 fog signals, and 563 buoys.¹⁶ Illuminants, meanwhile, evolved from sperm and colza oil (before 1864) to heated lard oil (1864 to 1878) and kerosene (after 1878). Cannons, bells, and trumpets were all employed as the first crude fog signals, but were gradually superseded by steam whistles and, still later, compressed-air sirens driven by gasoline or diesel engines.¹⁷

In 1903, the Lighthouse Board was transferred from Treasury to the new Department of Commerce. In 1910, Congress eliminated the Lighthouse Board, which had become cumbersome, and created the Bureau of Lighthouses in its place. Unlike the Lighthouse Board, which was dominated by military officers, the new bureau was staffed almost entirely by civilians. George R. Putnam, a civil engineer and surveyor, was appointed commissioner of lighthouses and served in that post until the bureau's

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation Sheet

Light Stations of Ohio

Section number E Page 5

responsibilities were transferred to the United States Coast Guard in 1939. Under Putnam, the Lighthouse Service was divided into 19 districts, with a lighthouse inspector in charge of each district; in 1911, the bureau employed 5,500 persons and provided 12,000 aids to navigation, making it the largest lighthouse organization in the world. Under Putnam, the bureau continued to expand the number of aids to navigation, while the number of employees decreased by 20 percent.¹⁸

Nationwide, there were 744 light stations with resident keepers in 1915. According to the Bureau of Lighthouses, a well-equipped light station on a land site usually consisted of the light tower, oil house (for fuel storage), fog-signal building, keepers' dwellings, landing wharf, boathouse, barn, roads, walks, and fences. Major lights continued to be classified under the Fresnel system of orders. On the Great Lakes, lights were exhibited from sunset to sunrise during the nine-month shipping season (March through November). Lighthouse depots served as a base for supplies and repairs; the Tenth District, which included Lake Erie, was served by the principal depot in Buffalo, while minor depots were located at Maumee Bay (Toledo), Sandusky Bay (Cedar Point), and Rock Island, New York. The Tenth District office in Buffalo employed a technical force for the construction and maintenance of both land structures and floating equipment. In the field, a construction and repair crew was assigned to special projects and the installation of signal apparatus.¹⁹

The trend toward automatic equipment accelerated in the 1920s. Many lighthouses were electrified, and by the 1940s, the conversion to electricity was nearly complete on the Great Lakes.²⁰ Automatic equipment could turn the light on and off--even change the bulb--eliminating the need for a resident keeper. With the development of radio and radiobeacons, the Lighthouse Bureau began a long process of eliminating lighthouses. The last light towers built on Lake Erie, the modernistic Huron Harbor Light (1935-36) and Conneaut Harbor West Breakwater Light (1935), were modeled after a prototypical "Remote Control Pierhead Station for the Great Lakes" designed in 1934. These steel-clad towers presaged the now-ubiquitous steel skeleton tower, which could be built cheaply from a standard plan, could support a lens at any height, and required minimal maintenance. In lieu of the Fresnel lens, which required the protection of a lantern and periodic cleaning, airport-type beacons powered by battery or shore power were increasingly employed. The masonry tower with its keeper's dwelling and complement of outbuildings had become obsolete.

The Bureau of Lighthouses was abolished in 1939, and the activities of the Lighthouse Service were transferred to the United States Coast Guard. The Coast Guard today maintains about

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Light Stations of Ohio

Section number E Page 6

2,500 aids to navigation on the Great Lakes. The increased use of electronic aids, including Long Range Navigation (Loran), has reduced the need for lighthouses. In the last four decades, the Coast Guard has taken scores of lights out of service and has automated the rest. At South Bass Island, for example, a skeleton tower has superseded the former light tower with its attached dwelling (1897), now owned by Ohio State University. At Lorain, the Coast Guard sold the Lorain West Breakwater Light (1919) to the Lorain Historical Society for \$1.00 when the community objected to its demolition; although it no longer owns or maintains the building, the Coast Guard continues to exhibit a light from the tower. At Marblehead, the Coast Guard maintains the historic light tower (1821), but has transferred the remainder of the complex to the Ohio Department of Natural Resources, which maintains a small park and picnic ground; the Fresnel lens, which has been replaced with an airport-type beacon, is on display at the nearby Marblehead Coast Guard Station. The last manned light stations on the Great Lakes--at Point Betsie, Michigan, and Sherwood Point, Wisconsin--were fully automated in 1983.²¹

1. Lake Erie, The Great American Lakes Series, edited by Milo M. Quaife (Indianapolis and New York: The Bobbs-Merrill Company, 1945), p. 15.

2. George Rogers Taylor, The Transportation Revolution 1815-1860, The Economic History of the United States, vol. 4 (New York and Toronto: Rinehart & Company, Inc., 1951), p. 166-67.

3. Ibid., pp. 173-74.

4. Richard J. Wright, "Lake Transportation," The Encyclopedia of Cleveland History, edited by David D. Van Tassel and John J. Grabowski (Bloomington, Ind.: Indiana University Press, 1987), p. 608; and Taylor, Transportation Revolution, pp 61-62.

5. Taylor, Transportation Revolution, p. 62.

6. John Brandt Mansfield, History of the Great Lakes, 2 vols. (Chicago: J. H. Beers & Co., 1899), 1:264.

7. Charles K. Hyde, The Northern Lights: Lighthouses of the Upper Great Lakes, Michigan Heritage Series, vol. 6 (Lansing, Mich.: TwoPeninsula Press, 1986), p. 20.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Light Stations of Ohio

Section number E Page 7

8. Mansfield, History of the Great Lakes, 1:294-307.

9. "Great Lakes Shipping Establishes New Records," Marine Engineering and Shipping Age 29 (March 1924): 138; and U.S. War Department, Corps of Engineers, United States Army, Transportation on the Great Lakes, prepared by the Board of Engineers for Rivers and Harbors (Washington, D.C.: Government Printing Office, 1937), p. 439.

10. Hyde, The Northern Lights, p. 38.

11. Hatcher, Lake Erie, pp. 148-49.

12. Ralph G. Plumb, History of the Navigation of the Great Lakes (Washington, D.C.: Government Printing Office, 1911), p. 64.

13. The chronology of lighthouse construction is based on the following sources: Hyde, The Northern Lights, pp. 15-16; Mansfield, History of the Great Lakes, 1:372; and Records of the United States Coast Guard, Record Group 26, National Archives and Records Administration, Washington, D.C.

14. Francis Ross Holland, Jr., America's Lighthouses: Their Illustrated History Since 1716 (Brattleboro, Vt.: The Stephen Greene Press, 1972), pp. 15-21 and 26-36.

15. Hyde, The Northern Lights, pp. 21, 23.

16. Ibid., p. 20.

17. U.S. Department of Commerce, Lighthouse Service, The United States Lighthouse Service, 1915 (Washington, D.C.: Government Printing Office, 1916), pp. 33, 40-43; and Hyde, The Northern Lights, p. 38.

18. Holland, America's Lighthouses, pp. 36-38; see also Annual Report of the Lake Carriers' Association 1911, p. 67..

19. The United States Lighthouse Service, 1915, passim.

20. Hyde, The Northern Lights, p. 43.

21. Hyde, The Northern Lights, p. 46.

F. Associated Property Types

I. Name of Property Type Light Stations of Ohio

II. Description

Light stations, defined as attended lights where resident keepers were once employed, were erected in Ohio between 1821 and 1936. They consisted of an enclosed tower, from which a light was exhibited to aid safe navigation and fix the mariner's position, and an attached or detached dwelling, which served as a residence for the lightkeeper(s). On land sites, there may also have been an oil house (for fuel storage), fog signal house, barn or other storage building, boathouse, wharf, roads, walks, and

III. Significance

Transportation and Commerce on Lake Erie, 1818-1936

Ohio's light stations have made significant contributions to transportation and commerce on Lake Erie by facilitating the safe passage of lake vessels. A practical, reliable system of aids to navigation--marking dangerous points and reefs, and the entrances to safe harbors--was a prerequisite for the steady expansion of lake navigation throughout the late 19th and early 20th centuries. Iron ore and other raw materials arrived in quantity at the Lake Erie ports of Conneaut, Ashtabula, Fairport Harbor, Cleveland, Lorain, Huron, Sandusky, and Toledo. Light stations were constructed at all of these ports, as well as in more remote locations--Green Island and West Sister Island, for example--to mark safe deepwater passages and fix the location of the mariner. As lake commerce increased, Great Lakes harbors were continually

IV. Registration Requirements

For listing in the National Register, properties should possess historical significance and integrity of location, design, setting, workmanship, materials, association, and feeling. They should consist, at a minimum, of a light tower designed to be tended by a resident keeper that preserves its historic form and appearance and conveys its historic function (though it need not be operational). Some material changes are to be expected, as light stations were continually modified or rebuilt in response to technological advances, to enhance the comfort and/or safety of the resident keeper, or to simplify maintenance. Such changes are acceptable if they do not grossly alter the essential form and integrity of the light station. Ancillary buildings erected as part of the light station--barns, oil houses, etc.--enhance the historical significance of the property and its ability to convey its historic function, and therefore should be included as part of the nomination wherever they occur.

☒ See continuation sheet

☐ See continuation sheet for additional property types

**United States Department of the Interior
National Park Service****National Register of Historic Places
Continuation Sheet**

Light Stations of Ohio

Section number F.II Page 1

fences. On water sites, the light station was usually confined to a single structure.

LIGHT TOWERS

There are many types of light towers. In the nineteenth century, a common form was a combined tower and dwelling. The tower and lantern rose from the roof of the dwelling (as at Cedar Point), or from the front or a corner of the dwelling (as at Green Island); or was attached to an adjacent dwelling by a covered passage (as at West Sister Island). Sometimes the light tower was adjacent to, but detached from, the dwelling. Because their function was so critical, light towers were always of fireproof masonry construction. Detached dwellings were usually of frame construction. After 1900, many harbor light stations in exposed locations were built of steel and brick, or steel and reinforced concrete, and clad with iron plate; such stations were commonly built on the ends of breakwaters or on pierheads, using these structures as a foundation. The state's only wave-swept light station, the Toledo Harbor Light, was founded on a crib filled with stone and capped with concrete.

Towers were square or conical in shape. They varied in height according to the character of the shore and the importance of the light. Unlike the Atlantic coast, which required very tall towers because of low land offering little relief, the shores of the Great Lakes commonly offered bold, high land masses; a low tower erected on a prominent headland site was usually sufficient. The light tower consisted of the masonry shaft, at the top of which was the lantern, the protective glass-walled housing for the light and lens. Lanterns were circular, hexagonal, or, less commonly, decagonal in shape. They were usually made of cast iron and brass or bronze, with vertical or, later, helical bars supporting the glass panes; helical bars, which crossed the lantern diagonally, afforded the least obstruction of light. They were reached by a winding cast iron stairway or ladder. A ventilator on the roof, from which an iron and platinum lightning-conductor spindle projected, provided a draft to carry off smoke and fumes from the burning fuel.

The Lighthouse Board adopted glass-prism Fresnel lenses for all lighthouses in 1852. Exhibited on an iron pedestal, these ranged in size from first to sixth order and were manufactured in France. A flashing, or occulting light, was produced by revolving the lens; prior to the installation of electric drive, this was done by a clockwork mechanism. Although some Fresnel lenses remain in service on the Great Lakes (there are three in Ohio, at Ashtabula, Cleveland, and Toledo), most have been replaced with plastic airport-type beacons. No early lamps remain in service.

United States Department of the Interior
National Park Service

**National Register of Historic Places
Continuation Sheet**

Light Stations of Ohio

Section number F.II Page 2

Light stations were erected by local builders; bids were invited by public advertisement. The Huron Harbor Light and Fairport Harbor and Conneaut Harbor west breakwater lights were fabricated at the Buffalo, New York, Lighthouse Depot and transported to their sites by boat.

LIGHTKEEPERS' DWELLINGS

The Lighthouse Service furnished dwellings for keepers at all attended lights. On shore, quarters were provided for keepers and their families; women and children were not permitted to reside at offshore stations, where quarters for keepers only were provided. In 1915, the United States Lighthouse Service provided 857 dwellings for keepers. Dwellings followed no standard type or design, but were adapted to local conditions, according to a Lighthouse Service report:

Attempt is made to have such buildings conform to the prevailing local styles and customs, and at the same time to harmonize them architecturally so far as practicable with the light station and its surroundings. Consideration must also be given to the kind of materials most available in the vicinity, for economical reasons, as the limit of cost for such dwellings is fixed by law and cannot exceed \$6,500, exclusive of site.... Unnecessary or elaborate ornamentation is avoided, and care is taken to use simple and substantial designs appropriate to the purpose.¹

In Ohio, detached keeper's dwellings were usually of frame construction. (The steel-and-brick double keepers' dwelling at Sandusky is a notable exception.) While they varied in design, they were commonly ell-shaped, one-and-one-half story, with steeply pitched gable roof, clapboard siding, and a small porch or veranda. No early nineteenth-century dwellings survive. Extant dwellings at Conneaut, Ashtabula, Huron, and Marblehead, erected in the 1870s and 1880s, are similar in appearance. Drawings in the files of the United States Coast Guard Ninth District suggest that dwellings of a single design were commonly built at more than one location; for example, plans for a "Frame Dwelling for Lightkeeper," prepared by the Engineers Office, Tenth Lighthouse District, in 1871, were intended for both

¹U.S. Department of Commerce, Lighthouse Service, The United States Lighthouse Service 1915 (Washington, D.C.: Government Printing Office, 1916), p. 78.

United States Department of the Interior
National Park Service

**National Register of Historic Places
Continuation Sheet**

Light Stations of Ohio

Section number F.II Page 3

Ashtabula, Ohio, and Fairhaven, New York.

Attached dwellings were usually built of the same material (brick or stone) as the light tower and conformed to prevailing styles, even in isolated island locations. Thus, the keeper's dwellings at Green Island (1864) and Fairport Harbor (1871) have Italianate elements, while that at South Bass Island (1897) is Queen Anne style. At West Sister Island, the rubble limestone dwelling erected in 1868 was enlarged to two stories in 1902 and extensively remodeled in the Foursquare style. (It is no longer extant.) Well into the twentieth century, light stations conformed to current styles. The iron-clad pierhead station at Cleveland (1910) has Colonial Revival elements, while the steel pierhead towers at Conneaut and Huron, erected in the 1930s, are Streamline style.

FOG SIGNAL HOUSES

There are no nineteenth-century fog signal houses extant in Ohio, nor does the literature record any. In the twentieth century, fog signals at Ohio lights were located either within the light station itself, as at the Lorain West Breakwater Light, where the fog signal projected from a dormer in the attic; or in separate buildings adjoining the light station. At Toledo and Ashtabula, the fog signals were housed in attached one-story, steel-frame buildings, rectangular in plan, with a low hipped roof; at Cleveland, the fog signal was housed in a similar gable-roofed building attached to the light tower by a covered passage. At the pierhead towers at Conneaut and Huron, the fog signal is contained within the tower; circular openings in the steel cladding emit the sound.

Early fog signal equipment included a Type "F" Diaphone operated by a 28 h.p. oil engine and compressed air (at Ashtabula); and a siren operated by a 13 h.p. oil engine and compressed air (at Toledo). At West Sister Island, there was an 18-inch bell on top of the carpenter shop, rung by hand. ("Does not belong to L.H. Est.[ablishment] but is sometimes rung by keeper in foggy weather to warn vessels," reads an early twentieth-century inventory of the premises.) No early fog signal equipment remains.

OIL HOUSES

Fuel oil for the light was commonly stored in the keeper's dwelling (usually in the basement) until the late nineteenth century, when highly flammable mineral oil and kerosene supplanted sperm and lard oil as the illuminant. Documentary evidence confirms the presence of "oil rooms" in the keepers' dwellings at Ashtabula, Cedar Point, and West Sister Island. In 1888, Congress authorized the establishment of detached oil storage houses. Free-standing fireproof oil houses were erected

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation Sheet

Light Stations of Ohio

Section number F.II Page 4

a short distance from the tower.

On the Great Lakes, detached oil houses were usually small iron-clad buildings of riveted construction, approximately five feet square, with a pyramidal iron roof with ventilator and a hinged iron door. Three such structures, which lost their purpose with widespread electrification after 1920, are extant in Ohio at the former Cedar Point, South Bass Island, and Fairport Harbor lights. At West Sister Island, a round iron oil house of 225 gallons capacity was erected in 1891, but is no longer extant.

At offshore stations, fuel oil was commonly stored in oil tanks in the basement.

BOATHOUSES

Boathouses must have been common to all light stations--keepers were expected to maintain all aids to navigation in their vicinity (including buoys, for example) and to render assistance to persons or vessels in distress--but none survives. There is documentary evidence of boathouses at Marblehead, Cleveland (erected in 1903 on the west pier, at the entrance to the Cuyahoga River), Cedar Point (14 feet x 26 feet, "built of wood, fitted with winch for pulling boat up, and boat-ways with rollers on the lake side"), and West Sister Island (18 feet x 36 feet). Boat derricks were employed at offshore sites, for example at the Lorain West Breakwater and Toledo Harbor lights, where keepers' required boats to get to and from the mainland. That at Lorain can still be seen on the east elevation.

WALKS

On land sites, plank, gravel, or concrete walks were commonly built to link the various structures of a light station complex, but few survive. A concrete walk (probably twentieth century) is still largely intact at Green Island, though it is obscured by thick brush. Concrete walks at Fairport Harbor (1902) replaced an earlier plank walk installed in 1891.

BARNs

Documentary evidence suggests that barns were another common component of light stations on land sites. There were barns at Conneaut, Cedar Point, Green Island, Marblehead, and South Bass Island, but only the latter two survive. Both are of frame construction, ell-shaped in plan, with intersecting gable roofs. They have a combination of clapboard, board and batten, and wood shingle siding; both have shed-roofed additions. Barns were used for the storage of equipment and supplies, and for the keeper's animals.

**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Continuation Sheet**

Light Stations of Ohio

Section number F.II Page 5

OTHER STRUCTURES

Documentary evidence of numerous other structures at land-based Ohio light stations suggests their self-sufficient character and the quality of daily life of the lightkeeper and his family. These include privies, wharfs, woodsheds, wells, cisterns, and fences; an ice house (at Marblehead); a carpenter shop, chicken house, and "childrens play house and school room" (at West Sister Island); and a buoy house and "unpainted plain workshop" (at Cedar Point). At Turtle Island, the light station was enclosed by a circular concrete seawall.

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation Sheet

Light Stations of Ohio

Section number F.III Page 1

redesigned and enlarged; lighthouses commonly were rebuilt in tandem with these improvements. So vital were lighthouses to the growth of water-borne commerce that the Cleveland-based Lake Carriers' Association regularly included the establishment of new light stations, fog signals, buoys, and other aids to navigation in its annual reports.

Light Stations on the Great Lakes, 1819-1939

Ohio light stations reflect, in their design, workmanship, materials, and location, the evolution of lighthouse management, design, and technology, as well as the broad trends in American architectural styles. This can be illustrated by contrasting the oldest light station in this survey, that at Marblehead--a traditional coast light consisting of a masonry tower with a polygonal glass and iron lantern--with the most recent station, that at Conneaut--a remote-controlled, steel-clad tower, thoroughly modern in design, whose lantern and lens quickly gave way to an unprotected plastic beacon.

The essential design of lighthouses changed very little during the 19th century. An oil-fueled lamp and refracting lens was mounted atop a square or conical masonry tower; a dwelling for a resident lightkeeper--charged with maintaining the light and station premises--was either attached to the tower or located nearby. On land sites, a series of dependencies served the functions of the station and contributed to the health and well-being of the keeper and his family. These usually included oil storage houses, privies, landing wharfs, boathouses, barns, walks, and fences. Light towers and dwellings commonly reflected the prevailing architectural taste. In Ohio, these range from the Italianate elements of the Green Island Light (1864-65) to the Queen Anne-style South Bass Island Light (1897) to the streamlined Huron and Conneaut light stations.

With harbor expansion, many land-based light^s were moved out onto breakwaters. These incorporated quarters for the keepers of the light and maintained the familiar form of a tower surmounted on a dwelling; but they grew squatter (height was now less important) and took advantage of such new building technologies as reinforced concrete and steel cladding. The widespread introduction of electricity after 1920 eliminated the need for a resident lightkeeper and led to the modernistic pierhead stations at Conneaut and Huron: these enclosed, unmanned towers shortly gave way to the ubiquitous steel skeleton tower--easily fabricated, assembled, and maintained, and adaptable to any site--that has rendered so many historic lighthouses obsolete.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Light Stations of Ohio

Section number F.IV Page 1

Eligible property types will qualify under Criterion A for their association with the historic contexts "Transportation and Commerce on Lake Erie" and "Light Stations on the Great Lakes." Some properties will also qualify under Criterion D for their potential to yield important information about the historic function of light stations and the everyday lives of lightkeepers and their families.

Section G. (continued)

survey data was used to assess the relative condition and scarcity of each property type and to determine the degree to which allowances should be made for alteration and deterioration.

Section H. (continued)

Mansfield, John Brandt. History of the Great Lakes. 2 vols.
Chicago: J. H. Beers & Co., 1899.

National Archives and Records Administration. Records of the
United States Coast Guard. Record Group 26. Records of the
Bureau of Lighthouses and Its Predecessors, 1789-1939.

Taylor, George Rogers. The Transportation Revolution 1815-1860.
The Economic History of the United States, vol. 4. New York
and Toronto: Rinehart & Company, 1951.

U.S. Department of Commerce. Lighthouse Service. The United
States Lighthouse Service, 1915. Washington, D.C.:
Government Printing Office, 1916.

U.S. War Department. Corps of Engineers. United States Army.
Transportation on the Great Lakes, prepared by the Board of
Engineers for Rivers and Harbors. Washington, D.C.:
Government Printing Office, 1937.

G. Summary of Identification and Evaluation Methods

Discuss the methods used in developing the multiple property listing.

The multiple property nomination "Light Stations of Ohio" is based on an inventory of United States Coast Guard-owned light stations on the Great Lakes conducted in 1979 for the Historic American Engineering Record, and on an inventory of all light stations in Ohio--active and inactive, including those privately owned--conducted for the Ohio Historic Preservation Office in 1988-89.

The historic contexts were determined based on the historic functions of the property (i.e., Ohio light stations were built to facilitate navigation and commerce on Lake Erie) and on the place of Ohio's light stations within the broader history of light stations on the Great Lakes.

The typology of significant property types is based on function and association with light stations of Ohio. They represent all known structural types and functions relating to the construction and operation of light stations in Ohio.

The standards of integrity were based on those of the National Register. Information from research literature and

☒ See continuation sheet

H. Major Bibliographical References

Drawing and photograph files. United States Coast Guard Ninth District, Cleveland, Ohio.

Hatcher, Harlan. Lake Erie. The Great American Lakes Series. Edited by Milo M. Quaife. Indianapolis and New York: The Bobbs-Merrill Company, 1945.

Holland, Francis Ross, Jr. America's Lighthouses: Their Illustrated History Since 1716. Brattleboro, Vt.: The Stephen Greene Press, 1972.

-----. Great American Lighthouses. Great American Places Series. Washington, D.C.: The Preservation Press, 1989.

Hyde, Charles K. The Northern Lights: Lighthouses of the Upper Great Lakes. Michigan Heritage Series, vol. 6. Lansing, Mich.: TwoPeninsula Press, 1986.

☒ See continuation sheet

Primary location of additional documentation:

- ☐ State historic preservation office
☐ Other State agency
☒ Federal agency

- ☐ Local government
☐ University
☐ Other

Specify repository: National Archives and Records Administration

I. Form Prepared By

name/title Carol Poh Miller/Historical Consultant - under contract with
organization Ohio Historic Preservation Office date 9/28/89
street & number 2940 Somerton Road telephone 216/321-3940
city or town Cleveland Heights state Ohio zip code 44118

Light Stations of Ohio
APPENDIX B

PRESERVATION GOALS FOR OHIO'S LIGHT STATIONS

Light stations today are more efficient and reliable than ever. But the advanced technology that has made them so has also meant elimination of the costly corps of keepers that historically cared for the stations, as well as the replacement of many picturesque stone and brick light towers with standard steel skeletons.

Ohio's 10 National Register-listed and -eligible light stations¹ represent a significant legacy of station types and styles. But time, weather, abandonment, and lack of maintenance have taken a heavy toll. Only five of the 10 stations--Ashtabula, Cleveland, Marblehead, West Sister Island, and Toledo--are still owned and maintained by the United States Coast Guard, which has had responsibility for maintaining the nation's aids to navigation since 1939. The remainder are owned and maintained by a variety of public and private owners. All of the stations--even those still owned and operated by the Coast Guard--face similar problems: inadequate and/or inappropriate maintenance.

No longer are light stations tended by devoted, resident keepers; instead, they are automated, vacant structures whose remote location makes them an easy target for vandals. Maintenance is often limited to an occasional coat of paint. As no one lives in these properties, interior maintenance is virtually nonexistent. On the exterior, light stations are often treated cursorily, without regard for the preservation of historic fabric. Broken or rotting wood sash, for example, are commonly replaced with plywood or Plexiglas, or, where vandals pose a threat, concrete block.

Treatment Needs

Based on the field survey conducted as a part of this project, treatment priorities include the following:

The Lorain Harbor West Breakwater Light has been at risk since the Coast Guard proposed demolishing it in 1965. Local preservationists successfully battled to save the structure. In 1977, the Coast Guard sold it to the Lorain County Historical Society for \$1 (retaining an easement to maintain a beacon in the lantern, which it still does), but the society has been hard-pressed to maintain it. Repainting, financed by Glidden Paint

¹From east to west, these are: Ashtabula Harbor Light, Fairport Harbor Light, Cleveland West Pierhead Light, Lorain West Breakwater Light, Cedar Point Light, Marblehead Light, South Bass Island Light (eligible), Green Island Light (eligible), West Sister Island Light, and Toledo Harbor Light.

several years ago, is the only maintenance the structure has received in over a decade. Among the light station's most critical needs is sash repair; window openings currently are enclosed only by steel shutters, which don't close tightly and therefore expose the interior to moisture, cold, and nesting birds. A long-range plan and a regular maintenance schedule are critical needs for this structure, which has become a sentimental symbol of the city.

The yellow brick walls of the Toledo Harbor Light have severe vertical cracks that require attention.

The former Cedar Point Light is at risk. Located at the tip of Cedar Point, behind Cedar Point Amusement Park, it was part of a larger station that the Coast Guard disposed of last year. The property was acquired by Cedar Fair Limited Partnership, owner of the amusement park, which likely will target the site for park expansion. All of the buildings, including the former buoy shed and double keepers' dwelling, are now vacant.

To enhance historical interpretation, the lantern of the historic Fairport Harbor Light might be restored and the covered way that once connected the tower to the nearby keeper's dwelling (removed ca. 1925) reconstructed.

A thorough physical inspection and inventory of all National Register light stations by a qualified architect or engineer is recommended.

Archival Preservation/Research Needs

Ohio light stations are well documented in the records of the United States Coast Guard preserved by the National Archives and Records Administration. These include annual reports of the Lighthouse Board, logbooks, deeds, and contracts for lighthouse construction. Of special value are the results of a major inventory of all U.S. Lighthouses conducted in 1909 by the then-Department of Commerce and Labor. A field recorder completed a standard inventory booklet for each lighthouse; the booklets contain detailed descriptions of the light's date and construction, its dimensions, fittings, lens and lantern, fog signal--even the paint colors of the keeper's dwelling and the size of the vegetable garden.

A second, equally important source of information are the drawing and photograph files of the U.S. Coast Guard Ninth District Headquarters in Cleveland. Here are located many of the original drawings for Great Lakes light stations. Many of these are hand-colored and finely detailed; they include plans and elevations for light towers, keepers' dwellings, and, sometimes, outbuildings. The drawing files also contain survey maps of lighthouse reservations produced by the Lighthouse Service in

1885. In some cases, these maps are the only record of a station's outbuildings, for these often were of wooden construction and many have vanished with time. Unfortunately, these valuable (and often irreplaceable) materials are haphazardly interfiled with the working drawings of active Coast Guard properties, and thereby subject to abuse and theft. The same is true of historical photographs, which are stored in file cabinets with more recent materials. The permanent preservation of these materials should be a priority.

Little or no archaeology has been conducted at Ohio's light station sites. While much is known about the construction of light stations, comparatively little is known about the everyday lives of lightkeepers and their families. Two sites are believed to offer special opportunities for archaeological investigation:

(1) The Green Island Light (1864-65) has remained undisturbed since its abandonment half a century ago. The remote island was the site of an especially complete light station, with numerous ancillary structures. Further, the keeper and his family were the only occupants of the island; thus, anything found there would pertain to a single household. Historical archaeology could sketch a picture of island life, household economy, and the operation of a remote light station.

(2) Although located in the heart of Cleveland, the site of the former Cleveland Lighthouse (1875, no longer extant), on West 9th Street near Lakeside Avenue, is believed to remain undisturbed. Visible above-ground remains include remnants of foundations and a short flight of sandstone steps. Excavation could answer questions about this undocumented structure: its size, precise location, construction, operation, and occupants.

Public Education

Lighthouses are much-loved, even romantic objects in our marine landscapes, but their historic functions are not well understood by the general public. To build a constituency for the preservation of light stations, the public must be educated about their historical significance. A variety of projects could help heighten public awareness of these unique resources:

1. A traveling exhibit of photographs, drawings, prints, and artifacts. The exhibit need not be elaborate, but it should be of high quality. It might travel to port cities on Lake Erie for display in community centers, city halls, libraries, schools, and other public buildings.

2. Historical markers. A system of special light station markers could be developed. The markers might take the form of pedestal plaques that recount the history each light station. In conjunction with the plaques, a "Lighthouse Trail" could be developed, perhaps in association with the state tourism bureau. A brochure would list each historic light station, with a sketch

map of its location and a thumbnail sketch of its history. The State of Michigan has published a brochure on Michigan lighthouses (available free of charge: Michigan Department of Transportation, Public Information Office, P.O. Box 30050, Lansing, Michigan 48909), which may serve as a model.

3. Marblehead Light represents a special opportunity for preservation and public education. The Coast Guard maintains the light, first established in 1821, while the Ohio Department of Natural Resources maintains the surrounding property as a picnic ground. The entire site--consisting of a light tower, adjacent keeper's dwelling and barn, in a beautiful coastal setting--lends itself to interpretation. Even the historic Fresnel lens, now located at the Marblehead Coast Guard Station, could be replaced.

4. Lighthouse calendar. A wall calendar of Ohio lighthouses, including a professional color photograph and historical sketch of each, might have wide appeal. Calendar dates could note significant anniversaries of the establishment of lights and events of heroism associated with various lights (e.g., the burning of the first Green Island Light and rescue of the keeper and his family).

5. Articles and publications about the state's lighthouses should be encouraged. A Lower Lakes counterpart to Charles K. Hyde's The Northern Lights,² perhaps prepared in conjunction with the states of New York and Pennsylvania, would help foster appreciation for the light stations of Lake Erie and Lake Ontario.

²The Northern Lights: Lighthouses of the Upper Great Lakes, The Michigan Heritage Series, vol. 6 (Lansing, Mich.: TwoPeninsula Press, 1986).