

United States Department of the Interior
National Park Service

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National Register of Historic Places Registration Form

Nat. Register of Historic Places
National Park Service

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any 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.

1. Name of Property

Historic name: Duluth Harbor South Breakwater Outer Light

Other names/site number: Duluth South Breakwater Light

Name of related multiple property listing: Light Stations of the United States

(Enter "N/A" if property is not part of a multiple property listing)

2. Location

Street & number: In Lake Superior at E end of Duluth Harbor Ship Canal South Breakwater

City or town: Duluth State: Minnesota County: St. Louis

Not For Publication: Vicinity:

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

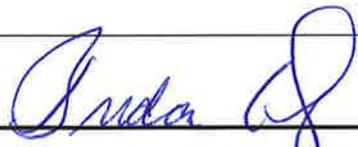
I hereby certify that this X nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property X meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___ national ___ statewide X local

Applicable National Register Criteria:

X A ___ B X C ___ D

	<u>2-22-2016</u>
Signature of certifying official/Title:	Date
<u>United States Coast Guard</u>	
State or Federal agency/bureau or Tribal Government	

In my opinion, the property <u>X</u> meets ___ does not meet the National Register criteria.	
<u>Barron H. Conrad</u>	<u>March 2, 2016</u>
Signature of commenting official: Deputy SHPO, MNHS	Date
Title :	State or Federal agency/bureau or Tribal Government

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4. National Park Service Certification

I hereby certify that this property is:

- entered in the National Register
- determined eligible for the National Register
- determined not eligible for the National Register
- removed from the National Register
- other (explain:)

for Edson H. Beall
Signature of the Keeper

6-7-16
Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

- Private:
- Public – Local
- Public – State
- Public – Federal

Category of Property

(Check only **one** box.)

- Building(s)
- District
- Site
- Structure
- Object

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Number of Resources within Property

(Do not include previously listed resources in the count)

Contributing	Noncontributing	
<u> </u>	<u> </u>	buildings
<u> </u>	<u> </u>	sites
<u> 1 </u>	<u> </u>	structures
<u> </u>	<u> </u>	objects
<u> 1 </u>	<u> 0 </u>	Total

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.)

 No style

Materials: (enter categories from instructions.)

Principal exterior materials of the property: Wooden crib foundation, reinforced concrete pier, brick superstructure, metal roof and lantern.

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Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

The Duluth Harbor South Breakwater Outer Light is located in Lake Superior at the port of Duluth in St. Louis County, Minnesota. Established as a Federal aid to navigation in 1901, it marks the entry to the Duluth Harbor Ship Canal for approaching vessels by forming a range alignment in tandem with the Duluth Harbor South Breakwater Inner Light. This property includes a concrete pier foundation and a brickwork superstructure. The superstructure consists of a one-and-a-half story rectangular fog signal building with an integral two-story light tower surmounted by a lantern. The Duluth Harbor South Breakwater Outer Light is painted white and has a red roof. It is owned by the U.S. Coast Guard and identified as number 15845 on the Great Lakes Light List. This lighthouse is equipped with an optic that has a focal plane 44 feet above water level. It signals a fixed green light that is visible for 17 miles in clear weather. It is also equipped with a modern automated fog signal and a standby beacon light for use if the main optic fails. The Duluth Harbor South Breakwater Outer Light is accessible on foot from shore by way of the Duluth Harbor Ship Canal's south breakwater. It is not open to public visitation.

Narrative Description

Setting and Nearby Cultural Properties

The Duluth Harbor South Breakwater Outer Light is located offshore in Lake Superior at the entry to the Duluth Harbor Ship Canal in the City of Duluth, St. Louis County, Minnesota. This property is situated approximately 1,000 feet from shore at the eastern end of the Ship Canal's southern breakwater. It is surrounded by water except on the western side which adjoins the south breakwater. This lighthouse's setting is essentially unchanged from when it was established as a Federal aid to navigation in 1901.

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The Duluth Harbor Ship Canal is 300 feet wide and approximately 0.3 mile long including its north pier and south breakwater. This canal was initially dug in 1870 to 1871 and cuts through Minnesota Point, a narrow peninsula separating the waters of Duluth Harbor from Lake Superior. It is owned and maintained by the U.S. Army Corps of Engineers (USACE). The canal's north pier is marked by the Duluth Harbor North Pier Light, which is located approximately 300 feet north of the South Breakwater Outer Light. The North Pier Light was built in 1910 and is approximately 37 feet tall. It includes a conical tower built of metal plates that is painted white with a black base, and is topped with a lantern painted black.

The onshore area in this vicinity is part of the City of Duluth's waterfront. It is characterized by buildings and structures that are mostly greater than 50 years in age, and includes the Canal Park which is located on the Ship Canal's northern side. The Canal Park contains a building that houses USACE administrative offices and the Lake Superior Maritime Visitor Center, a nautical museum.

Contributing Resource: Lighthouse

The Duluth Harbor South Breakwater Outer Light is a Federal aid to navigation owned and operated by the U.S. Coast Guard. It is identified as 15845 in the Great Lakes light list. This property consists of one contributing resource, the lighthouse structure. It includes a foundation pier, fog signal building, and light tower with lantern. The light tower is integral to the structure and is built into the fog signal building's southeast corner.

Foundation Pier:

The lighthouse's foundation is a rectangular pier built of concrete that is supported by a massive timber crib filled with rock. It sits upon submerged land at the south breakwater's offshore (eastern) end where the water depth is 21 feet. This foundation is approximately 100 feet long east-west by 36 feet wide north-south. It is surrounded by water on the north, east, and south, and rises to approximately 18 feet above water level. These sides include an inward slope at an angle of approximately 45 degrees to deflect and dissipate wave action. The foundation's eastern end is triangular in plan with its pointed tip oriented eastward toward the open waters of Lake Superior. The western side faces toward land and adjoins the ship canal's south breakwater. The foundation pier's deck is approximately 14 feet above water level and is surrounded by a four-foot tall parapet wall on each side. There is open-air walkway space on the lighthouse's eastern, northern, and western sides. A 14-step concrete stairway with steel pipe handrails rises approximately seven feet from the south breakwater's deck to the foundation pier's open-air deck on the lighthouse's western side.

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The foundation pier contains the lighthouse's basement which consists of two rooms with arched ceilings. These are configured in a side-by-side fashion with their long axis oriented east-west. The basement is accessed from above by way of two trap doors, one on the pier's open-air deck next to the lighthouse's western side and the other inside the lighthouse's first story. The basement's southern end includes an opening to a tunnel extending to shore beneath the south breakwater's deck. This tunnel provided for sheltered movement between shore and the lighthouse during times of inclement weather.

Fog Signal Building:

The lighthouse's fog signal building sits atop the foundation pier and is one-and-a-half stories tall and painted white with a red roof. It is 45 feet long east-west by 20 feet wide north-south. This part of the structure includes a three-foot tall base made with cut stone that supports brick masonry exterior walls. The fabric above the stone base is buff-colored, machine-made Cream City brick.

The first story exterior includes several segmental arched window openings and a doorway. The sills and wooden frames of these windows are painted black. Non-original brickwork has been used to fill-in former original doorways on the northern and southern façades, and former original windows on the eastern and southern façades. A decorative brickwork cornice extends around most of the fog signal building's exterior above the first story. It includes segmental arches above each first-story window.

The fog signal building's upper half-story is enclosed and covered by a gable roof oriented east-west that includes a large dormer at each end. The dormers are capped with clipped-gable roofs. The western end dormer is fitted with a large non-original window that holds a side-by-side pair of one-over-one double-hung sash. A metal stove pipe smokestack pierces the roof near this dormer. The eastern dormer is made with solid metal plates on its front and sides that are painted white. The front plate is pierced with two round openings that have been closed off with plywood. These formerly held a pair of resonator horns for a diaphone fog signal that has been removed.

A cross gable on the roof's southern side extends perpendicular from the roof's principal alignment near the light tower's western side. This gable is pierced by a rectangular brick chimney having a decorative brickwork top. The chimney rises 22 feet above the gable to approximately three feet higher than the lighthouse's lantern.

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The brick chimney is painted white and reinforced with four pairs of metal beams oriented vertically, one pair on each side. These beams are secured with horizontal metal straps spaced approximately every two feet vertically from the cross gable's roof to the chimney top. The chimney is also stabilized with a metal strut on the north side, as well as with metal cables extending to anchor points on the light tower's lantern and fog signal building roof.

The fog signal building's northern side on the first-story level includes four window openings and an original 6-foot wide doorway that has been filled with brickwork. The doorway's original stone sill remains in place. A 6-foot wide by 1.5-foot tall window extends across the top of the former doorway, above its brick filling. This window includes three rectangular glass lights arranged horizontally. The filled-in doorway is flanked on its eastern side by two segmental arch windows; one of these is fitted with a ventilation louver and the other holds original double-hung sash. There are two additional segmental arch windows on the former doorway's western side. These retain their original sash.

The lighthouse's eastern façade faces the open waters of Lake Superior. It includes places where non-original brickwork has replaced the original brick fabric. This is evidenced at one place by absence of the original decorative brick cornice that extends around most of the first story. In addition, plain brickwork now exists where brick segmental arches formerly topped original window openings. Non-original brick is also present at a first story segmental arch window on the eastern side of the lighthouse's brick masonry light tower (which is built into the fog signal building's southeastern corner). This former window opening has been filled with brick. The lighthouse's eastern façade also includes an angle iron bracket at its northern corner above the first story. It holds a rectangular metal plate painted white.

The lighthouse's southern façade is flush with the foundation pier's southern side. There is no open-air walkway here. An original double doorway on this side has been filled with brick masonry. There are several segmental arch window openings on this side, including one to the east of the filled-in doorway and another above it in the side gable on the upper half-story level. There are also three segmental arch windows to the west of the filled-in doorway. The one nearest the doorway is partly filled with brickwork and includes a ventilation louver. The other two windows farther west are entirely filled with brick.

The fog signal building's existing entrance is a six-foot wide double doorway on the first story's western side. It includes a six-inch tall stone sill. This doorway is fitted with a two-leaf metal door painted black. Two segmental arch window openings flank the entrance door, one each on the left and right. Both are fitted with a louver ventilation opening. A large sign reading "Danger – Loud Fog Signal" is mounted above the door.

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There is a partially-enclosed vestibule inside the entrance. Cabinets holding cleaning materials and a paint locker are attached to the wall on the right (south) side. A containment curb on the left (north) side bounds a former coal bin that is now vacant. There is an enclosed loft room above the vestibule where the roof's west end dormer is located. This loft room includes an inside window opening overlooking the first story's main room. A doorway on the vestibule's eastern side leads to the fog signal building's main first story room.

The main room is vacant except for a heating furnace and electrical panels. This room's walls are painted gray from the floor to a height of approximately four feet, and then painted white above this to the ceiling. A square trapdoor opening in the floor near the room's northwestern corner opens to a metal ladder leading down into the basement.

The main room's eastern end is occupied by an enclosed wood-framed room that is one-story tall and topped with a flat deck accessed by way of a metal ladder attached to the wood-framed room's western wall. This deck is level with the lighthouse roof's east end dormer.

The lighthouse's brick masonry light tower stands at the main room's southeastern corner, next to the wood-framed room. A doorway in the tower's western side provides for access from the main room to the tower's interior.

Light Tower:

The light tower is built into the fog signal building's southeastern corner and is integral to the structure. It is 35 feet tall, rectangular in plan, and measures eight feet long on each side. Like the fog signal building, the tower includes a three-foot tall base made with cut stone masonry. The superstructure above the base is built with the same buff-colored brick as the fog signal building. The tower's outer walls on the lighthouse's exterior are painted white like the rest of the structure. The light tower's eastern façade includes an original first story segmental arch window now filled with brick.

The tower's exterior sides rise vertically until the second story's upper half where five brickwork courses project in corbel fashion successively outward from lowest to highest. Above this corbelling, the exterior brickwork rises vertically to the tower's top at the lantern platform. On each of the tower's four sides, the corbelled portion includes a centered brickwork segmental arch hood above a round port-light window. Each hood is painted black, as are the exterior metal frames of the round windows.

Inside the tower's first story level, a cast iron spiral stairway leads upward two stories to an overhead metal trapdoor in the base of the rectangular cast iron platform that caps the light tower. This iron platform supports the lantern, which is accessed by way of the trapdoor.

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The lighthouse's lantern is circular and sits centered atop its rectangular platform. It is approximately nine feet in diameter and eight feet tall. A metal pedestal centered in the lantern room floor supports the lighthouse's optic which signals a fixed green light with a focal plane 44 feet above water level. It is visible for 17 miles in clear weather.

The lantern's lower part is a cast iron parapet wall painted white inside and out. This parapet wall is pierced with four circular vent openings spaced at equal intervals. It supports muntins arranged in a helical configuration that hold the lantern's glazing. A soffit above the glazing supports the lantern's conical metal roof, which is topped with a vent ball and lightning rod. The roof and vent ball are painted red. A six-foot tall door in the lantern's southern side provides access to the open-air lantern gallery. This door is curved to conform to the lantern's circular configuration. The door's upper half is a curved glazing pane. Its lower half is a solid panel with the same height as the lantern's parapet wall.

The outdoor gallery surrounding the lantern is rectangular and bounded by a railing made with cast iron bars supported by metal stanchions topped with round finials. The gallery's iron floor and railing are painted black. A section of railing between two stanchions on the northern side is missing. It has been replaced with two horizontal angle iron bars. This gap allows for removing the lighthouse's existing fog signal which is a modern electric-powered FA-232 device affixed to the gallery's northeastern corner. This fog signal sounds two blasts of three-second duration every sixty seconds and operates from April to December. A modern standby beacon light is mounted on a metal bracket attached to the lantern gallery's eastern railing. It is available if the lighthouse's main optic fails to function. This standby light displays a green signal of lesser intensity than the main optic.

Changes Through Time:

The overall structure of the Duluth Harbor South Breakwater Light remains largely unchanged from when it was built. Structural changes that have been made include rebuilding part of its eastern façade's masonry, filling several original doorways and windows with brickwork, installation of a new roof, and improvements to the lighthouse's foundation pier. Non-structural changes include the replacement of outdated aids to navigation and removal of unneeded supporting equipment.

The lighthouse's original foundation pier was narrower than it is today. During the late twentieth century improvement work was undertaken to strengthen and stabilize it. That project included installing a sheet-pile perimeter several feet away from the original pier's vertical sides, pouring concrete to fill the space between the sheet piles and original pier, and shaping the pier's upper sides with an inward slope of approximately 45 degrees.

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The pier improvements also included installing steel ladders to provide better access between water level and the pier's deck. In addition to work at the lighthouse, the overall improvement project accomplished similar work along the Ship Canal's south breakwater.

Modifications to the lighthouse's superstructure have included changes to the fog signal building's eastern façade and closing off doorways and several windows with brickwork. The eastern façade faces Lake Superior's open waters and is more exposed to harsh environmental conditions than the structure's other sides. It originally included a continuation of the decorative brickwork cornice that extends around the upper part of the lighthouse's first story. The eastern side also originally featured two large side-by-side segmental arch windows centered in the façade's brickwork beneath the cornice and just above the cut stone base. These windows were flanked by narrower segmental arch windows higher up on the façade, one to the left and the other on the right. The fog signal building's eastern side was rebuilt during the first half of the twentieth century with solid brickwork from its base to upper half-story level. This eliminated the two large lower windows, the upper narrower window on the right, and the decorative cornice. The eastern façade at the light tower remains structurally intact with only its first story narrow segmental arch window being closed off with brickwork filling. The eastern façade's rebuilding occurred during the property's period of historical significance and has become part of the lighthouse's historic fabric.

Other changes to the fog signal building include closing off two original 6-foot wide doorway openings on the first story. The one is on the northern side retains its original stone sill. This doorway opening was filled above the sill with brickwork, although leaving a 6-foot wide by 1.5-foot tall window made with three side-by-side glass lights extending across the top of the former doorway. The other filled doorway is a former double-door opening on the fog signal building's southern side. It has also been closed off with brickwork.

Two segmental arch windows on the fog signal building's southern side have also been filled with brick. A third was partially filled with a space remaining where a louver ventilation opening has been installed. One window on the building's northern side to the east of the filled-in doorway has been modified by installation of a ventilation louver in place of its original sash.

The structure's glass glazing has also been partially replaced with acrylic lexan. While broken glass was formerly replaced with new glass, late twentieth century maintenance practices have resulted in lexan panes being installed instead because of its better resistance to damage and breaking.

The lighthouse's roof was originally clad with sheets of corrugated iron. This was replaced around the middle twentieth century with red asphalt shingles.

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The lighthouse's aids to navigation have been changed out through time as technological developments made older equipment obsolete. This includes the lighthouse's optic. The original beacon light installed in 1901 was a fourth order Fresnel lens manufactured in 1877 by Barbier and Fenestre of Paris. It had been previously installed in the original Duluth Harbor South Breakwater Lighthouse, which was established in 1874 and subsequently replaced by the existing lighthouse. In 2014, the Coast Guard determined that this Fresnel lens could no longer be maintained as an active aid to navigation and undertook to replace it with a modern automated light-emitting diode (LED) marine beacon. The lighthouse's antique fourth order Fresnel lens will be loaned by the U.S. Coast Guard for public display at Duluth's Canal Park Visitor Center.

Other equipment formerly associated with the lighthouse has been removed, also. This includes the original 1885 steam-powered fog signal and boiler assembly which was replaced in 1915 with a pair of locomotive whistles, also powered with steam. The locomotive whistles were replaced in 1923 with a dual-horn Type "F" diaphone fog signal that used compressed air to generate sound and included air compressors and large steel air storage tanks. The diaphone included two resonator horns mounted in the upper half-story dormer at the fog signal building's eastern end. When the diaphone was changed out for the existing fog signal, its resonator horns were removed and the two circular holes in the roof dormer's front side closed off with plywood.

8. Statement of Significance

Applicable National Register Criteria

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

- 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.
- 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.

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Criteria Considerations

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

- 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 old or achieving significance within the past 50 years

Areas of Significance

(Enter categories from instructions.)

Maritime History
Transportation
Engineering

Period of Significance

1901 to 1966

Significant Dates

1901

Significant Person

(Complete only if Criterion B is marked above.)

Cultural Affiliation

N/A

Architect/Builder

Office of the Superintendent of Lighthouses
U.S. Lighthouse Establishment, Eleventh District

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Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

The Duluth Harbor South Breakwater Outer Light is significant on the local level in St. Louis County, Minnesota, and is eligible for inclusion in the National Register of Historic Places under Criteria A and C. It is significant under Criterion A for its association with Federal efforts to provide for an integrated system of navigational aids throughout the United States. This property also qualifies for National Register listing under Criterion C because it embodies and exemplifies distinctive aspects of architectural design and engineering that were characteristic of lighthouses built on harbor entry breakwaters in the Great Lakes during the early twentieth century. The Duluth Harbor South Breakwater Outer Light's period of historical significance begins in 1901 when it was established as a Federal aid to navigation and ends in 1966, the most recent year of its operation 50 years before the present. This property retains integrity in terms of location, setting, design, materials, workmanship, association, and feeling. It is a well-known and widely recognized landmark in St. Louis County.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

The Duluth Harbor South Breakwater Outer Light is significant in the local maritime and transportation history of St. Louis County, Minnesota. It is eligible for inclusion in the National Register of Historic Places (NRHP) under Criteria A and C. Established as a Federal aid to navigation in 1901, this property marks the offshore end of the southern breakwater at the entry to Duluth Harbor, the largest commercial port on Lake Superior. The Duluth Harbor South Breakwater Outer Light's period of historical significance begins in 1901 and ends in 1966, the most recent year of its operation 50 years before the present. This lighthouse's character and appearance remain essentially the same as during its period of significance.

This property is historically significant in terms of National Register Criterion A for its association with events related to the Federal government's program to provide for an integrated system of navigational aids throughout the United States. It exemplifies how this important program was manifested by the U.S. Lighthouse Establishment, U.S. Lighthouse Service, and the U.S. Coast Guard in St. Louis County, Minnesota. The 1901 construction of this lighthouse on the south breakwater at the entry to Duluth Harbor was part of the U.S. Lighthouse Establishment's program for establishing a system of aids to navigation in the Great Lakes region, and was an important enhancement to navigational safety in western Lake Superior. Today, the Duluth Harbor South Breakwater Outer Light maintains its historical association with maritime safety by continuing to function as an operating lighthouse.

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The Duluth Harbor South Breakwater Outer Light is also significant under National Register Criterion C. It embodies and exemplifies distinctive aspects of architectural design and engineering that were characteristic of early twentieth century lighthouses built on breakwaters in the Great Lakes. This property remains largely the same as during its period of historical significance. Its good state of preservation attests to the durable and weather-resistant character of the materials used, construction workmanship, and appropriateness of the lighthouse's design to its natural setting. The Duluth Harbor South Breakwater Outer Light continues to occupy its original location in a setting that is essentially unchanged from when it was established in 1901. Changes that have been made to the property include strengthening its foundation, masonry modifications to the fog signal building's eastern end, brickwork filling of exterior doorways and window openings, and replacement of obsolete equipment. These changes do not significantly detract from the property's historic character and several of the changes are reversible.

This NRHP registration form is submitted as an individual listing under the overarching *Light Stations of the United States* multiple property documentation form (MPDF). The specific historic contexts that apply are *Establishment of the U.S. Lighthouse Board (1852-1910)*, *Bureau of Lighthouses or the U.S. Lighthouse Service (1910-1939)* and *Lighthouses under the U.S. Coast Guard (1939-present)*. The property type sections relating to this registration are *U.S. Lighthouse Construction Type – Masonry Tower and Crib Foundation*. The Duluth Harbor South Breakwater Outer Light exemplifies these lighthouse construction types in its brick masonry light tower and wooden crib foundation. Other information and historic contexts available in the overarching MPDF are not repeated here. This submission emphasizes the historical significance of the Duluth Harbor South Breakwater Outer Light as an individual property.

There are a number of National Register-listed properties in the vicinity of the Duluth Harbor South Breakwater Outer Light. These include the Duluth Harbor South Breakwater Inner Light (NRHP registration number 83000945). It began operating in 1901 and stands near the western end of the Duluth Harbor Ship Canal south breakwater. This lighthouse was built to function in partnership with the Duluth Harbor South Breakwater Outer Light to mark a range for vessels approaching the Ship Canal from Lake Superior. Mariners navigate their vessels to align the taller Inner Light directly above the shorter Outer Light in order to follow the proper course for safe entry.

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Another historic property is the Minnesota Point Lighthouse, located approximately six miles southeast from the Duluth Harbor South Breakwater Outer Light. Now in ruins, it was the first Federal lighthouse constructed in the Duluth vicinity and operated from 1858 to 1885. The Minnesota Point Lighthouse marked the Superior Entry inlet, a natural navigation channel providing access to the ports of Superior, Wisconsin, and Duluth, Minnesota. It is listed in the National Register (NRHP number 74002206).

The Minnesota Point Lighthouse was discontinued following the 1880s completion of navigation structure piers at the Superior Entry inlet. Those piers were marked with their own lights which made the original lighthouse unnecessary. The Minnesota Point Lighthouse keepers dwelling remained in use by the keeper of the pier lights until 1895 when it was vacated after a replacement dwelling was built on the Superior Entry's Wisconsin side. In 1902 the old lighthouse's real property reservation was selected to be the site of the Duluth Buoy Depot which opened in 1905. This buoy depot facility was later closed. Today, the Minnesota Point Lighthouse property is part of Duluth's Park Point Recreation Area.

The Aerial Lift Bridge over the Duluth Harbor Ship Canal is located next to the Duluth Harbor South Breakwater Inner Light. It was originally built in 1905 to support a suspended gondola that carried vehicles and people from one side of the canal to the other. The Aerial Bridge was modified in 1929 to become a lift bridge with its center span raised up horizontally to allow ships to pass beneath, and lowered down to allow vehicles and pedestrians to cross. It is listed on the National Register (NRHP number 73002174). Other historic properties in the vicinity include the U.S. Army Corps of Engineers Duluth Vessel Yard (NRHP number 95001163), and Duluth's DeWitt-Seitz Building (NRHP number 85001999).

Three maritime vessels in the Duluth Harbor South Breakwater Outer Light's vicinity are included in the National Register. One is the WILLIAM A. IRVIN, a Great Lakes iron ore freighter launched in 1937 (NRHP number 89000858). It operated until 1978 and is permanently moored in Duluth Harbor at the Minnesota Slip as a museum ship open to public visitation. Another vessel is the USS ESSEX, commissioned as a U.S. Navy warship in 1876. After a long career it was burned for scrap in 1931 on the shore of Minnesota Point. Its remains are located in Duluth's Park Point Recreation Area. The USS ESSEX Shipwreck Site is listed in the National Register (NRHP number 94000342). The third vessel is the THOMAS A. WILSON, a Great Lakes whaleback-type freighter that was launched in 1892 and sunk in 1902. It went down in Lake Superior approximately one mile from the Duluth Harbor Ship Canal following a collision. The THOMAS A. WILSON Shipwreck is listed in the National Register (NRHP number 92000844).

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Historical Context

The Great Lakes region includes Lakes Superior, Michigan, Huron, Erie, and Ontario along with their connecting waters and the St. Lawrence River. It is one of the largest concentrations of fresh water on earth. This waterway system has a total shore length of about 11,000 statute miles and a total water surface area of about 95,000 square miles. The completion of the Erie Canal in 1825 linked Lake Erie at Buffalo, New York, with the port of New York City via the Hudson River. The Welland Canal in Canada opened in 1829 and established a link between Lake Erie and Lake Ontario. These developments marked the beginning of a period of enormous growth in population, maritime traffic, and trade in the Great Lakes Region.

The St. Mary's Falls Ship Canal (the Soo Locks) opened in 1855 at Sault Sainte Marie in Michigan's Upper Peninsula. Its completion linked Lake Huron with Lake Superior and established one of the last major links in the Great Lakes navigation system. The final major link was the St. Lawrence Seaway which opened in 1959. It allows deep-draft vessels to navigate between the Atlantic Ocean and the Great Lakes, and provides international access to the industrial and agricultural heartland of North America. The Great Lakes Waterways and St. Lawrence Seaway maritime transportation system extends some 2,300 miles from the Atlantic Ocean to Duluth, the system's farthest inland and most western Great Lakes port. In addition, commercial barge traffic and small watercraft are able today to reach the Great Lakes from the Gulf of Mexico via the Mississippi River and the Illinois Waterway, as well as from the Hudson River by way of the New York State Barge Canal System.

Commerce grew rapidly in the Great Lakes region throughout the second half of the nineteenth century and into the twentieth century. The lumber industry was an important part of the early development and expansion of marine traffic. Iron ore production in Michigan's Upper Peninsula, Wisconsin and Minnesota, as well as grain from farms and flour from mills in the upper Midwest, furnished cargoes carried aboard vessels bound for more southerly lake ports. These shipments corresponded with the heavy up-bound movement of coal and manufactured goods from ports in the lower Great Lakes.

The amount of goods shipped annually on the Great Lakes increased to 80 million tons by 1910, mostly bulk cargo such as iron ore and coal. Shipped freight tonnage reached a record of 217 million tons in 1948. The combined movement of lumber, grain, flour, iron ore and coal, together with limestone cargoes from the Lake Michigan area to centers of steel production, resulted in the greatest bulk freight maritime commerce the world has ever seen.

Duluth Harbor South Breakwater Outer Light
Name of Property

St. Louis County, MN
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The need for aids to navigation on the Great Lakes increased along with the expansion of shipping and settlement. Seven lighthouses were built in the region between 1818 and 1822, and 32 were completed during the 1830s. From 1841 to 1852, the U.S. Lighthouse Establishment added 33 new lights. Between 1852 and 1860, the total number of aids to navigation increased from 76 to 102. A major construction boom occurred during the last quarter of the nineteenth century. By 1900, the Great Lakes had 334 lighted aids, 67 fog signals, and 563 buoys.

Several distinct designs or types of lighthouses emerged during the nineteenth century. The most common design until around 1870 consisted of a wood, stone, or brick keeper's dwelling that exhibited the lighthouse's optic in a lantern on the roof or atop an attached square tower. By the 1870s, taller towers connected to a keeper's dwelling by an enclosed passageway became popular. From 1870 to around 1910, lighthouse engineers practiced and perfected the construction of light stations built on isolated islands, and on submerged land atop crib foundations.

Another widespread Great Lakes lighthouse type is the pierhead light, which is used to mark the offshore ends of piers at the entry to many ports in the region. Such lights differ from East Coast lights on land that mark harbor entrances in that pierhead lights are constructed on navigation structures that project from shore into the lakes. Great Lakes breakwater lights are closely related to pierhead lights. They are generally tower-like structures positioned at the head of a breakwater and are often constructed of metal plates.

Light vessels also served in the Great Lakes region during the nineteenth century and early twentieth century. They were a substitute for building expensive lighthouses at offshore sites, but their use sometimes resulted in dangerous areas being left unmarked for a period of time. Harsh late autumn weather often forced lightships to leave their stations before the end of the navigation season. In the spring, light vessels often had to wait in port until larger, stronger vessels broke the ice that was preventing their return to assigned locations. To overcome this shortcoming, lighthouse engineers worked throughout the 1920s and 1930s to replace all lightships on the Great Lakes with permanent aids to navigation. This effort enhanced maritime safety a great deal and served to promote commerce.

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Local Historical Context

The Duluth vicinity's historical record dates to 1618 when the explorer Étienne Brûlé (Stephen Brulé), an associate of Samuel de Champlain, became the first European to visit Lake Superior's western end. Brûlé encountered scattered settlements of Chippewa (Ojibwa) Indians while exploring the lake's southwestern shore. From them, he learned of a portage that provided a convenient route for travel between Lake Superior and the Mississippi River drainage. It traversed the short overland distance between the headwaters of the Brule River and the St. Croix River. This portage later became an important route used by fur traders.

Other French explorers, missionaries and fur traders visited western Lake Superior during the second half of the seventeenth century. They called the lake's southwestern corner where Duluth is located the *fond du lac* (bottom of the lake). One of them was Daniel Greysolon, Sieur de Lhut. He was a career soldier who conducted extensive explorations in the Great Lakes region and sought to promote good relations between France and Native American tribes. Among his accomplishments was the establishment of multiple frontier forts in western Lake Superior which developed into fur trading posts. De Lhut's important role in the region's early history led nineteenth century settlers to give the name "Duluth" to the town they established at the lake's southwestern corner.

The world's longest freshwater sand spit is located at Lake Superior's southwestern end. Its northern strand, named Minnesota Point, extends some seven miles southward from adjoining uplands to what was a natural channel where the St. Louis River emptied into the lake. This channel came to be called the Superior Entry. On the inlet's southern side, a sister sand spit named Wisconsin Point extends another three miles further south. Minnesota Point and Wisconsin Point separate Lake Superior from a large natural harbor consisting of the waters of Allouez Bay and the lower St. Louis River. The bay and river's sheltered waters provided a natural corridor for water-borne transportation by local native peoples, as well as the seventeenth and eighteenth century Europeans who came to trade with them.

French colonial influence was dominant in the Lake Superior region until the end of the Seven Years' War (called the French and Indian War in North America). That conflict's outcome, codified in the 1763 Treaty of Paris, transferred sovereignty over the entire Great Lakes region from France to Britain. This led to a British exploring party commanded by Captain Jonathan Carver visiting western Lake Superior in 1767. Fort St. Louis, established near the mouth of the St. Louis River at present-day Superior, Wisconsin, operated as a center of British fur trading until the early 1800s.

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The American Revolution resulted in another important national sovereignty change in the Great Lakes region. The 1783 peace treaty between Britain and the newly-independent United States of America provided for U.S. ownership for much of the region including the Northwest Territory (later to become all or part of several Midwestern states). United States sovereignty extended across portions of Lakes Ontario, Erie, Huron and Superior, and included all of Lake Michigan. This made Lake Superior's southern shore and a section of its western shore a part of the U.S., opening it to American trading activity and future development. An American fur trading post was established on the St. Louis River by John Jacob Astor in 1816-1817. It was the first permanent settlement at what later became Duluth. Treaties negotiated during the first half of the nineteenth century between the United States government and Indian inhabitants of the Great Lakes region led to Native American groups giving up rights to large areas of undeveloped land. This allowed for subsequent pioneer settlement, timber harvesting, and mineral deposit exploitation.

The Wisconsin Territory, established in 1836, initially included a vast area west of Lake Michigan and all U.S. lands along Lake Superior west of Michigan's Upper Peninsula. The western part of this was subsequently split off from Wisconsin, which became a state in 1848. The divided lands were assigned to the Minnesota Territory, which was formally established in 1849.

The 1854 Treaty of LaPointe, and other treaties between Lake Superior-region Chippewa Indians and the U.S. government, stimulated interest in settling available lands bordering western Lake Superior. This was enhanced by the 1855 opening of the St. Mary's Falls Ship Canal (Soo Locks) at the lake's eastern end. The Soo Locks provided for increased maritime transportation by facilitating the movement of people and cargoes between the lower Great Lakes and Lake Superior. Its opening boosted mineral resource development, settlement, and commerce. An abundance of timber resources in the lands bordering Lake Superior provided another aspect that promoted population and economic growth.

The settlement named Duluth was initially platted in 1856. While maritime transportation was an essential aspect of the local economy, attention was also directed to the area's inland transportation infrastructure. This included railroads, which were an important aspect of economic development and population expansion throughout the U.S. during the middle and late nineteenth century. A prominent 1860s financier in Duluth, Jay Cooke, saw great economic opportunity in establishing a railroad network extending from there to inland northern states as far west as Washington.

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The port of Superior, Wisconsin, is situated on the lower St. Louis River near the Superior Entry channel. During the middle nineteenth century that strategic position gave it an advantage in maritime commerce over Duluth, which was farther up the river. Economic competition between the two ports provided an impetus in 1870 for business interests favoring Duluth to undertake excavation of a canal across Minnesota Point. This led to the opening of the Duluth Harbor Ship Canal in April 1871. It provided a direct connection short-cut between Duluth's harbor and Lake Superior, and boosted the volume of shipping traffic navigating to and from the port.

Subsequent improvements to the Ship Canal included constructing a breakwater and pier, and lengthening them over time. The canal's need for a lighted aid to navigation led the U.S. Lighthouse Establishment to construct a wooden pyramidal tower lighthouse at the south breakwater's offshore end. A wood-framed keeper's dwelling was also built nearby, and a wooden elevated walkway was erected along the south breakwater between the lighthouse and shore to allow for access during inclement weather. The Duluth South Breakwater Light became operational on 2 June 1874. Its optic was a fifth order Fresnel lens that signaled a fixed red light with a focal plane 40 feet above water level. It could be seen for 12.5 miles in clear weather. This optic was replaced in 1877 with a more powerful fourth order Fresnel lens manufactured by Barbier and Fenestre of Paris, France.

The development of Duluth's economic potential achieved an important milestone in 1875 when a line of the Lake Superior and Mississippi Railroad was completed to connect it with the city of St. Paul. Over subsequent years other railroad companies competed for access to the Duluth-Superior port area. One important accomplishment was the 1883 completion of the transcontinental Northern Pacific Railway that extended from Superior to the Pacific Ocean at Puget Sound, Washington. Duluth subsequently gained its own link to Puget Sound when the Great Northern Railway was completed in 1893.

In 1887 the U.S. Army Corps of Engineers took over sole responsibility for the Duluth Harbor Ship Canal's maintenance and improvement. One issue requiring attention was the need to assist vessels in aligning themselves for safe passage between the canal's pier and breakwater. Obtaining and maintaining proper alignment is facilitated by the presence of range lights where a pair of lighthouses marks the course to be followed. An approaching vessel must simply keep the taller rear range light in vertical alignment above the range's shorter front light. A range light system was established at the Ship Canal in 1889 when the Duluth Harbor South Breakwater Inner Light became operational. It was a wooden pyramidal tower that was taller than the 1874 breakwater light, which was renamed the South Breakwater Outer Light.

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Foggy conditions on western Lake Superior sometimes makes it difficult for approaching vessels to discern the Duluth Harbor Ship Canal's narrow entrance. To alleviate that problem, an automated fog bell was installed at the South Breakwater Light in 1880. This bell was replaced in 1885 when a wooden fog signal building was built on the south breakwater near the lighthouse and equipped with a pair of steam-powered fog whistles.

In 1895 the U.S. Congress appropriated three million dollars to improve the ports of Duluth and Superior. This included dredging to widen and deepen shipping channels and the construction of navigation structures. The Ship Canal gained a concrete south breakwater and concrete north pier which were completed in 1900. During the course of this work the south breakwater's wooden Inner and Outer Lights were demolished and replaced with temporary lights. The Eleventh U.S. Lighthouse District, which had jurisdiction over Duluth, undertook the construction of replacement lighthouses and completed work on the south breakwater's new Inner and Outer Lights in 1901.

The South Breakwater Outer Light became operational on 1 September 1901. Combining the functions of a lighted aid to navigation and fog signal in a single structure, it was equipped with the 1877 fourth order Fresnel lens and 1885 fog whistles and steam plant. The new South Breakwater Inner Light, a skeletal tower structure, became operating in 1901 as well.

The Duluth Harbor South Breakwater Inner and Outer Lights' operation required that three resident keepers be assigned to the light station. The 1874 frame dwelling was used as quarters for the chief keeper. The two assistant keepers rented housing in the community from 1901 until 1913 when a brick duplex residence was built for them and their families. The dwellings for the chief keeper and assistant keepers remain standing today. They are located across the street from one another, near the south end of the Duluth Aerial Lift Bridge.

In 1910 the U.S. Congress dissolved the U.S. Lighthouse Board and established the Bureau of Lighthouses in the Department of Commerce and Labor (DCL) to replace it. (The DCL was later split into the Department of Commerce and Department of Labor.) The 1910 reorganization also caused the U.S. Lighthouse Establishment to become the U.S. Lighthouse Service. This lighthouse administration system continued until 1939 when a subsequent governmental reorganization caused it to be subsumed by the U.S. Coast Guard which was under the Department of the Treasury.

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The South Breakwater Outer Light's 1885 steam-powered fog signal was replaced in 1915 with a pair of locomotive whistles, also powered with steam. Further advances in fog signal technology led to the locomotive whistles being removed in 1923 and replaced with a dual resonator Type "F" diaphone fog signal. The diaphone was operated by compressed air, so the earlier steam plant equipment was removed and replaced with compressors and air storage tanks. The lighthouse's diaphone remained in operation until 1968 when it was changed out for a modern automated electric-powered fog signal. The Outer Light continued to be operated by resident keepers until 1976 when it was automated. In 2014 the Coast Guard determined that the fourth order Fresnel lens that had been in service since 1877 needed to be retired. It was replaced with a modern automated light emitting diode (LED) marine beacon.

Today, the Duluth Harbor South Breakwater Outer Light continues to operate as a Federal aid to navigation. It still occupies the same location that it has since 1901. The property's setting remains largely unchanged from its 1901 to 1966 period of historical significance. The South Breakwater Outer Light retains significant integrity in the historical qualities of design, materials, and workmanship. Its good state of preservation reflects their quality and appropriateness to this location. As an operating lighthouse, the South Breakwater Outer Light maintains its association with the Federal government's long-term program for promoting maritime safety on the Great Lakes. It also serves to illustrate the spirit of innovation that characterized American lighthouse engineers during the first half of the twentieth century. Their focus on lasting results has characterized generations of U.S. lighthouse builders. The Duluth Harbor South Breakwater Outer Light evokes feelings that recall the dedication to duty characteristic of lighthouse keepers throughout the course of United States history. It is widely recognized as a prominent landmark in St. Louis County, and serves as a lasting reminder of the importance of maritime commerce in Great Lakes history.

Duluth Harbor South Breakwater Outer Light
Name of Property

St. Louis County, MN
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9. Major Bibliographic References

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Duluth Harbor South Breakwater Outer Light
Name of Property

St. Louis County, MN
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Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____
- recorded by Historic American Landscape Survey # _____

Primary location of additional data:

- State Historic Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other

Name of repository: U.S. Coast Guard Civil Engineering Unit Cleveland, Cleveland, Ohio; U.S. Coast Guard Historian's Office, USCG Headquarters, Washington, DC; U.S. National Archives, Washington DC.

Historic Resources Survey Number (if assigned): _____

10. Geographical Data

Acreage of Property Less than one (1) acre.

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates Datum if other than WGS84: _____

1. Latitude: 46 – 46 – 48.460000 North Longitude: 092 – 05 – 15.020000 West

Or

UTM References Datum (indicated on USGS map):

NAD 1927 or NAD 1983

1. Zone:

Easting:

Northing:

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Verbal Boundary Description (Describe the boundaries of the property.)

The property's boundary is the exterior limit of the base of its foundation.

Boundary Justification (Explain why the boundaries were selected.)

The property's boundary corresponds to the footprint of the lighthouse structure. This encompasses the entirety of the U.S. Coast Guard-owned Duluth Harbor South Breakwater Outer Light.

11. Form Prepared By

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date: 11 February 2016

Duluth Harbor South Breakwater Outer Light

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Additional Documentation

- **Map:** Figure 1. USGS 7.5 minute series map (1953) indicating the property's location.
- **Photographs:**

Historic Photograph: Lighthouse southern and eastern elevations, with Aerial Bridge and South Breakwater Inner Light in background, camera facing northwest. Photo taken 26 June 1913, source: Lake Superior Maritime Collections, Jim Dan Hill Library, University of Wisconsin-Superior.

Contemporary Photographs:

Name of Property: Duluth Harbor South Breakwater Outer Light
City or Vicinity: Duluth County: St. Louis County State: MN
Name of Photographer: Paul Sadin and Leigh Cutler
Date of Photographs: September 2006 Number of Photographs: 7
Location of Original Digital Files: U.S. Coast Guard Historian's Office, U.S. Coast Guard Headquarters, 2703 Martin Luther King Jr. Ave. SE, Washington, DC 20593

1. Lighthouse northern elevation, camera facing south.
(Digital file: MN_St. Louis County_Duluth Harbor South Breakwater Light_0001)
2. View from lighthouse along south breakwater toward Aerial Lift Bridge and Duluth Harbor South Breakwater Inner Light, camera facing west.
(Digital file: MN_St. Louis County_Duluth Harbor South Breakwater Light_0002)
3. Lighthouse east elevation, camera facing southwest.
(Digital file: MN_St. Louis County_Duluth Harbor South Breakwater Light_0003)
4. Lighthouse west elevation, camera facing east.
(Digital file: MN_St. Louis County_Duluth Harbor South Breakwater Light_0004)
5. Light tower interior, second story port-light.
(Digital file: MN_St. Louis County_Duluth Harbor South Breakwater Light_0005)
6. Light tower stairway looking down from lantern room.
(Digital file: MN_St. Louis County_Duluth Harbor South Breakwater Light_0006)
7. Modern fog signal and standby light on lantern gallery, camera facing north.
(Digital file: MN_St. Louis County_Duluth Harbor South Breakwater Light_0007)

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.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 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 Office of Planning and Performance Management.

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Duluth Harbor South Breakwater Outer Light
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Light Stations of the United States
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Figure 1. Location Map. This is a portion of the "Duluth Quadrangle, Minnesota – St. Louis Co." 7.5 minute quadrangle topographic map, scale 1:24,000 (United States Geological Survey 1953).



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Duluth Harbor South Breakwater Outer
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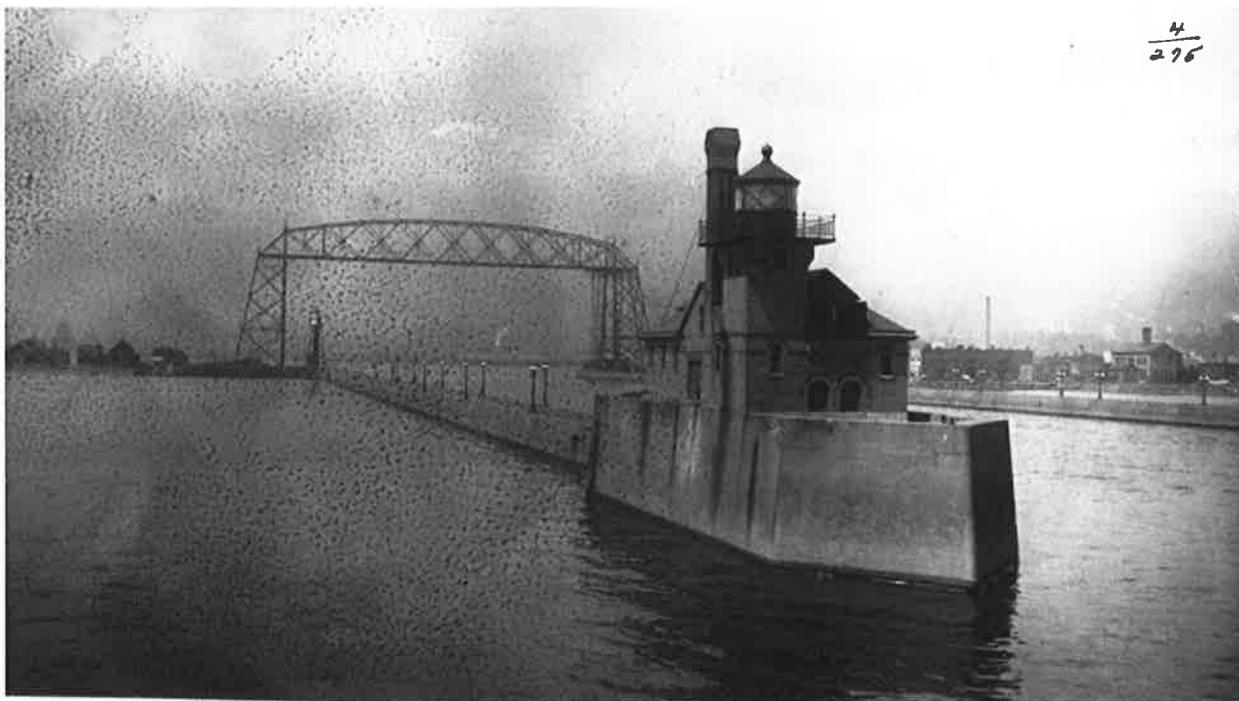
St. Louis County, Minnesota

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Light Stations of the United States

Name of multiple listing (if applicable)

Historic Photograph: View of the Duluth Harbor South Breakwater Outer Light's southern and eastern elevations, camera facing northwest. The Aerial Bridge (later the Aerial Lift Bridge) and the Duluth Harbor South Breakwater Inner Light are in the background. Photo taken 26 June 1913. Source: Lake Superior Maritime Collections, Jim Dan Hill Library, University of Wisconsin-Superior.



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Photo 1. Lighthouse northern elevation, camera facing south.



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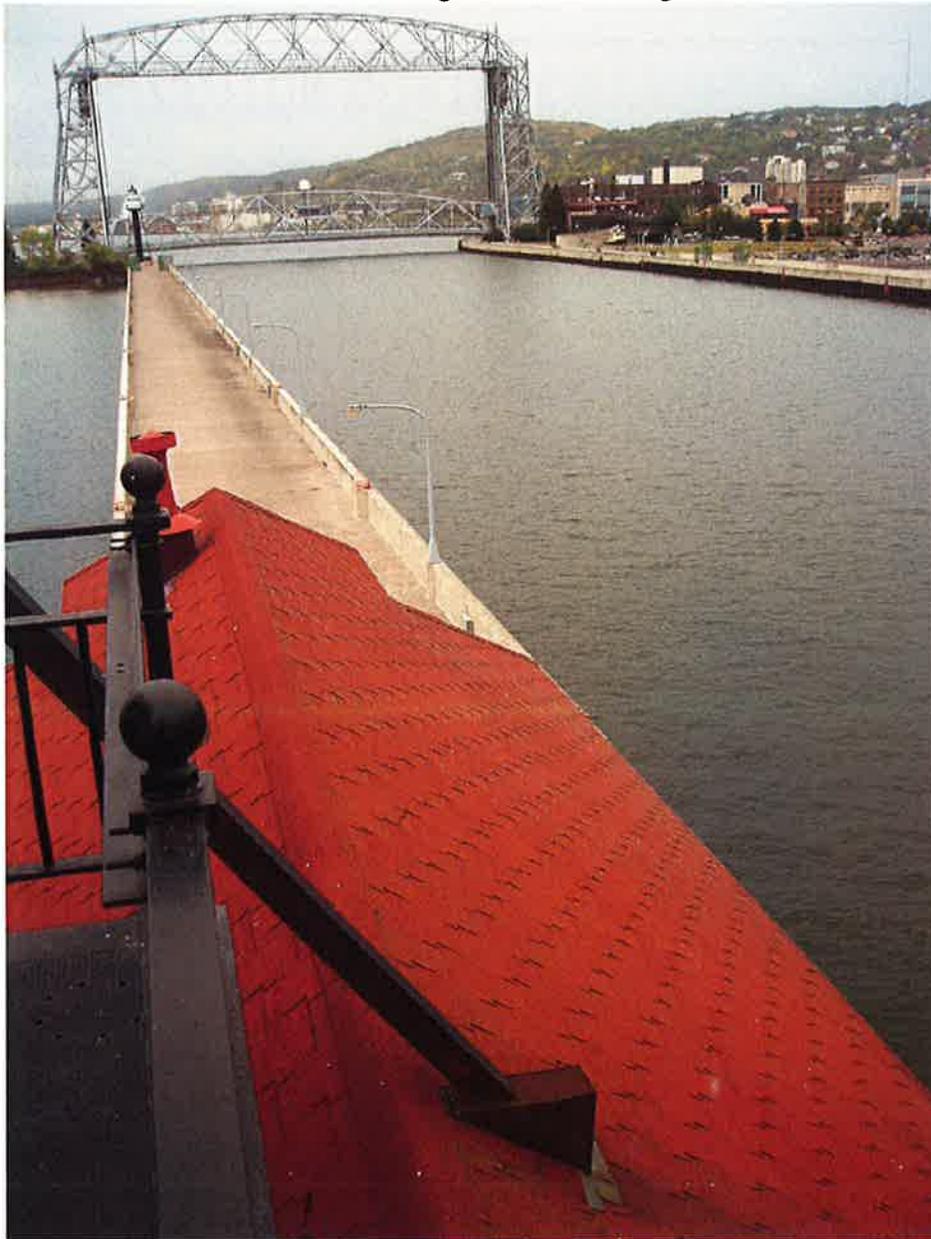
County and State

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Photo 2. View from lighthouse along the south breakwater looking toward the Aerial Lift Bridge and the Duluth Harbor South Breakwater Inner Light, camera facing west.



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Photo 3. Lighthouse east elevation, camera facing southwest.



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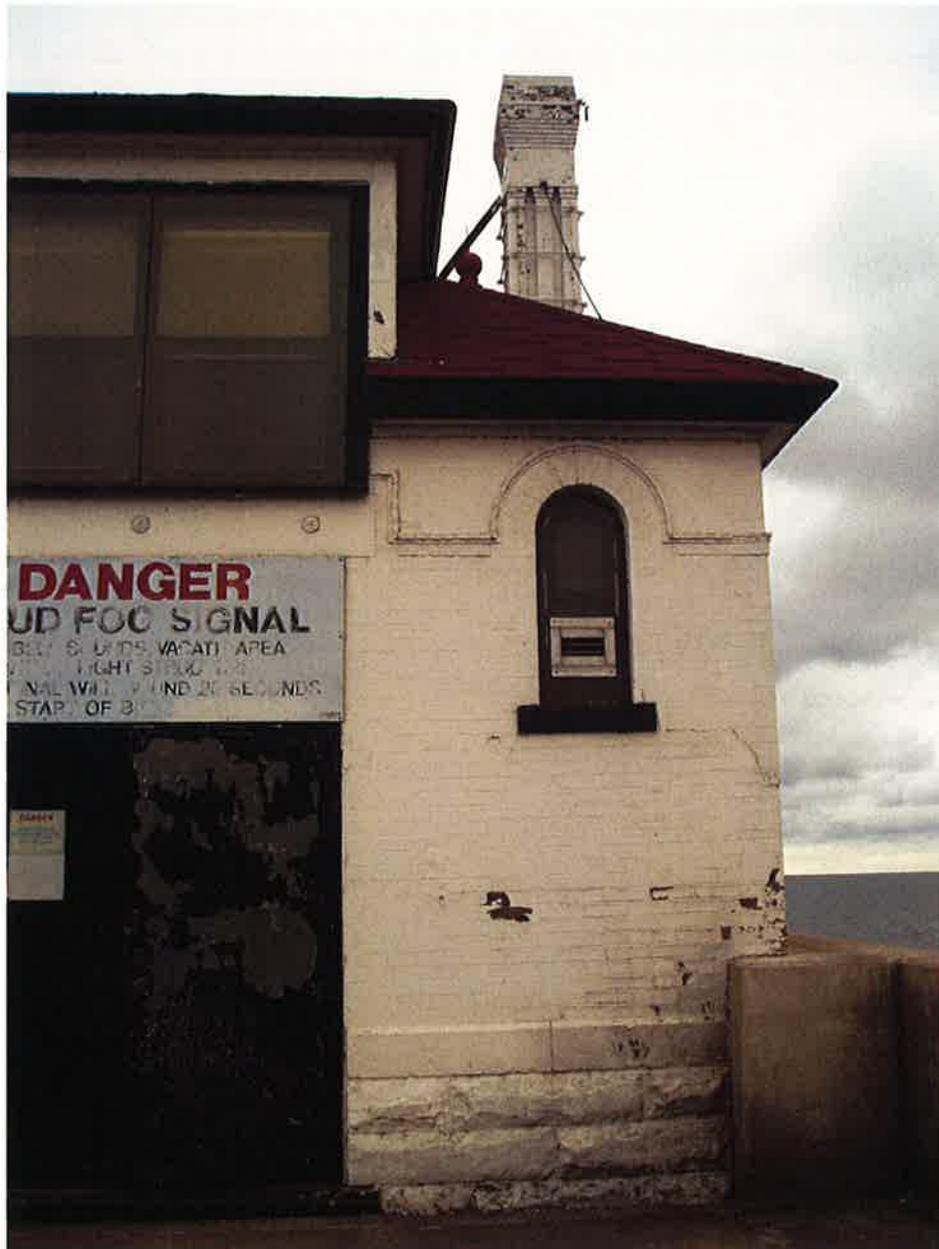
County and State

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Photo 4. Lighthouse west elevation, camera facing east.



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Photo 5. Light tower interior, second story port-light.



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Photo 6. Light tower stairway looking down from lantern room.



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Photo 7. Modern fog signal and standby light on the lantern gallery, with the Duluth Harbor North Pier Light in the background, camera facing north.









DANGER
LOUD FOG SIGNAL
BELL SOUNDS, VACATE AREA
WITH LIGHT STRUC BURE
SIGNAL WILL SOUND 20 SECONDS
START OF BELL

DANGER







