



**US Army Corps  
of Engineers** ®  
Detroit District

## **HARBOR INFRASTRUCTURE INVENTORIES**

### **Milwaukee Harbor, Wisconsin**



**Harbor Location:** Milwaukee Harbor is on the west shore of Lake Michigan about 85 miles north of Chicago, Illinois.

**Authority:** River & Harbor Acts of 30 Aug 1935, 2 Mar 1945, 14 Jul 1960, 23 Oct 1962.

**Project Description:** Milwaukee Harbor is a deep draft commercial harbor. The harbor is protected by four separate breakwaters totaling over 21,000 feet of structures including breakwaters, piers and revetments. The breakwaters are of various designs, but mainly wooden cribs capped by concrete with rip-rap siding.

**Traffic:** 3,381,000 tons in 2009.

**Transportation Importance:** Bulk commodities that pass through the Port of Milwaukee generate nearly \$80M in revenue annually, directly support over 1,100 jobs, and indirectly support over 900 jobs.

**Congressional Interest:**

- Representative Gwen S. Moore D-WI-4
- Senator Ron Johnson R-WI
- Senator Herb Kohl D-WI

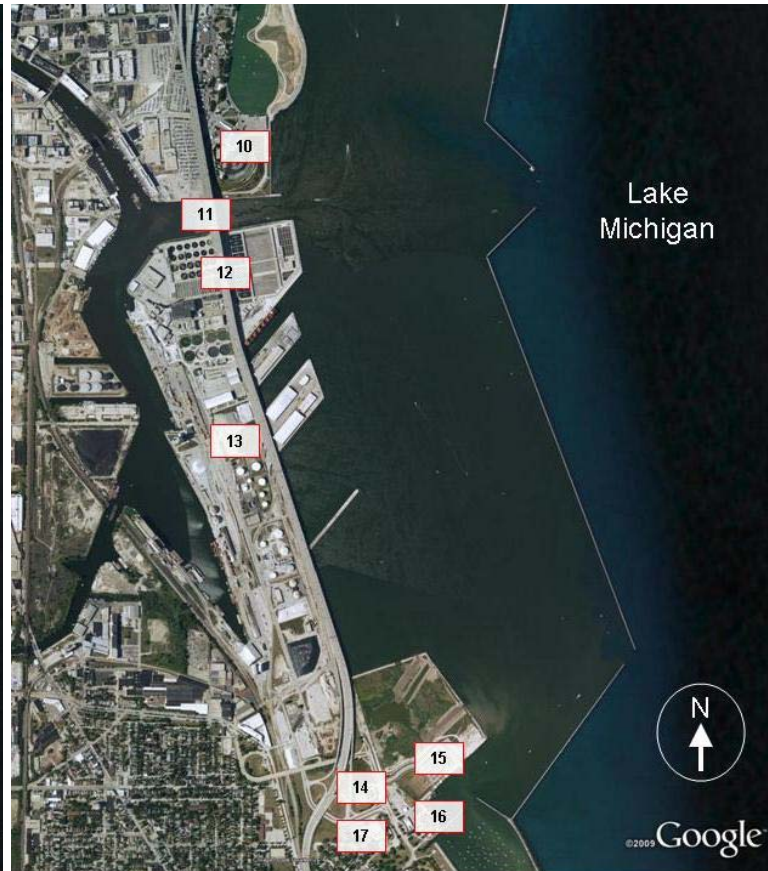
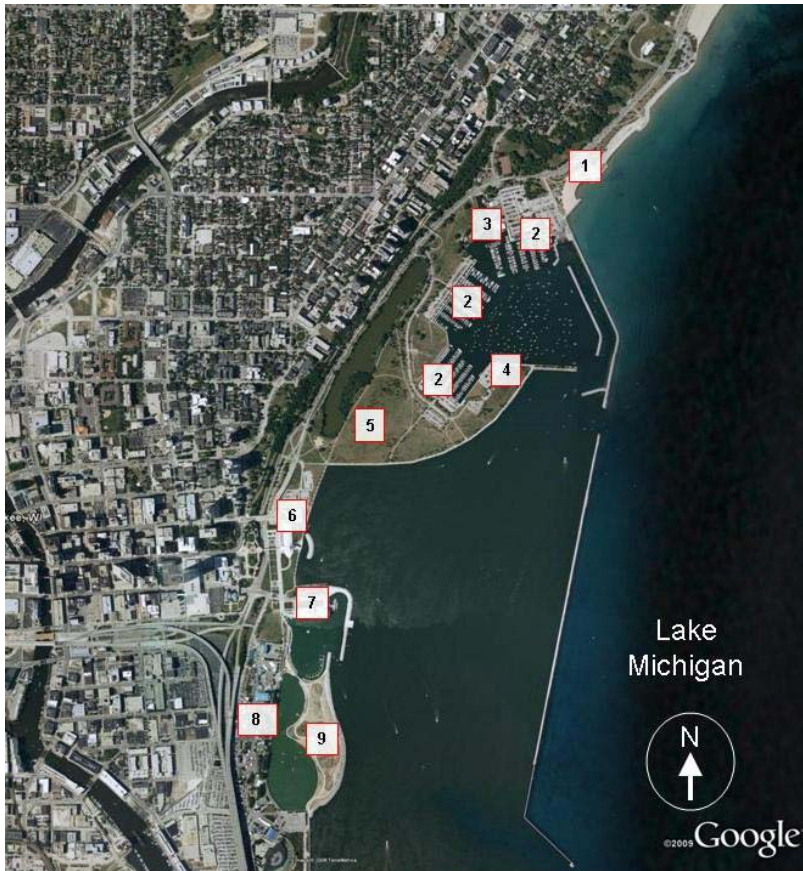
**Current Condition Assessment:** **D**



**Date of Site Visit:** 25 August 2009

**Summary of Impact:** Prevailing waves come from a northerly and a southerly direction. The harbor has a history of storm events large enough to overtop the federal breakwaters and inundate immediate shoreline. An event of this size typically occurs every 12-15 years. As a result, every major structure within the harbor has its own breakwater structures, which makes assessing the impact difficult. The major area of impact would be the Milwaukee Port Authority facilities. This area does not have any additional protection, and therefore is subject to dangerous wave action and inundation. In the past, this has shut down port operations and causes considerable damaged to dockage and moored vessels. This area is also bisected by I-794, which is a major highway into downtown Milwaukee. The highway is an elevated reinforced concrete pier structure, which could become unstable under flood conditions. The waste water treatment plant, the museum complex, and the county marina all have additional breakwater structures to protect them. These structures may be impacted, but to a much lesser degree. The major portion of the city of Milwaukee is located on a bluff roughly 40 feet about the mean water level, and therefore not in danger of inundation. However, the portions immediately adjacent to the river basin are at a low enough elevation that flooding is possible.

**Description of Infrastructure:**





**1. Beach Park:** County owned public beach park consisting of a crescent shaped beach front and bathroom facilities.



**2. McKinley Marina:** Is a county owned and operated marina facility consisting of 780 total seasonal and transient slips. Structures were originally built in the 1960's. Facilities include boat launch ramps, a fueling station, dry storage, and an administration building with bathroom and laundry facilities. Docks are of a floating dock design. Separate county owned breakwaters within the confines of the federal breakwaters protect all marina structures.



**3. Milwaukee Yacht Club:** Is a privately owned yacht club consisting of a pier with roughly 42 slips, a restaurant, dry storage, and an admin building. Docks are of a floating design.



**4. Milwaukee Sailing Center:** Is a wooden classroom structure dedicated to youth education. A \$500,000 new structure is being built immediately to the west of the old structure.



**5. Veteran Park:** Is a county owned park. The park consists mostly of open grass land, walkways, picnic tables, and a small concessions store.





**6. Art Museum and Memorial Complex:** Is a \$120 million museum complex constructed in 2001. Roughly 300,000 visitors come to the art museum per year. The War Memorial Building consists mostly of office and storage space for the art museum. The memorial portion is open to the public free of charge. The Art Museum does charges admission. The art museum is protected by a crescent shaped breakwater.



**7. Port Authority Pier:** Port Authority owned development with restaurants and Discovery World theme park.



**8. Milwaukee Festival Grounds:** City owned fair grounds consisting of various structures associated with amusement rides, vendors, and concert venues.



**9. State Park:** An open park with walkways and bathroom facilities.

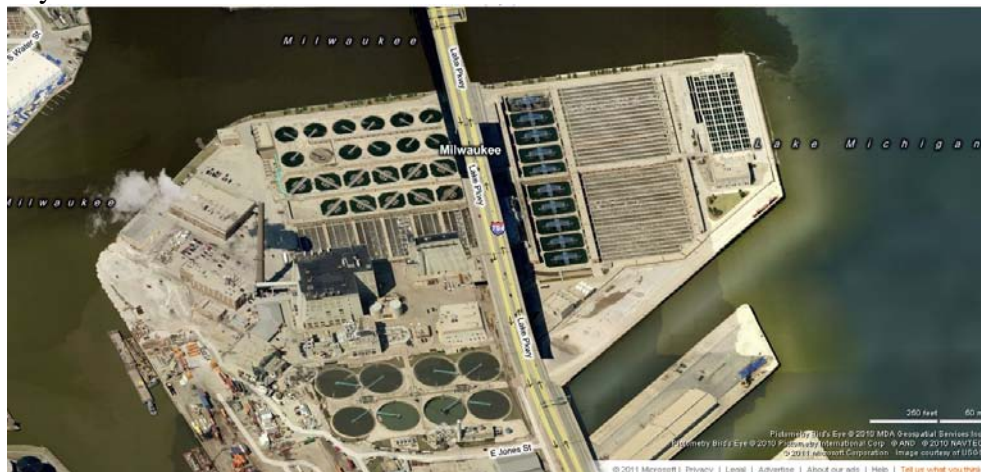
**10. Marcus Amphitheater:** Is a 23,000 capacity outdoor concert venue.



**11. I-794 Bridge and Causeway:** Major east/west highway route through downtown Milwaukee. Precast concrete and steel pier structure elevated roughly 30 feet above ground level.

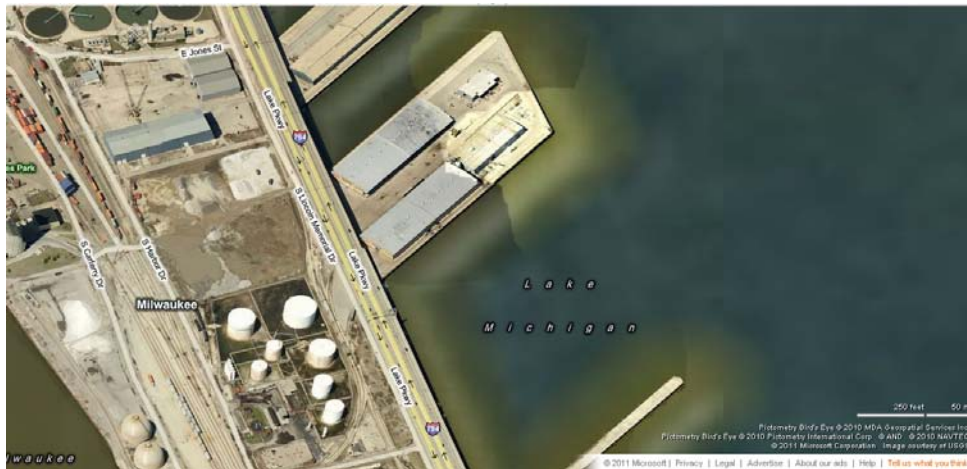


**12. Waste Water Treatment Plant:** Jones Island Sewage Treatment Plant is the major treatment facility which services the Milwaukee metro area. Milwaukee Metro Sewer District (MMSD) owns and operates about 300 miles of regional sewers that collect wastewater from 28 communities. MMSD utilizes both combined and separate collection systems.





**13. Milwaukee Port Authority Facilities:** The port of Milwaukee is serviced by two major railroads (Union Pacific and Canadian Pacific). The Port handles commodities that directly impact the long term economic success and growth of the State of Wisconsin including; coal, specialty products for fabricators and manufacturers, salt, cement, and grain. Milwaukee's port is the 90<sup>th</sup> leading U.S. port with just over 3.3M tons of material shipped or received in 2009.



#### 14. Milwaukee Port Authority Headquarters



#### 15. Car Ferry Terminal

Lake Express began service in 2004 linking the states of Wisconsin and Michigan with terminals in Milwaukee and Muskegon. Tourism has increased in both states as a result of the passenger/auto ferry terminal which carries over 100,000 passengers yearly.



**16. Coast Guard Station/Sector Headquarters:** Milwaukee's station responsibilities include maritime law enforcement, boating safety, and security for special marine events, as well as primary mission of Search and Rescue. The unit's area of responsibility covers the western half of Lake Michigan from Port Washington, WI to Wind Point, WI.



**17. Navy Reserve Center:** The mission of the Navy Operational Support Center Milwaukee is to train and maintain readiness of Reserve component personnel in both direct support of the active Navy component and potential mobilization. As of 2006 the Milwaukee center currently has 64 mobilized reservists in support of Operation Enduring Freedom.





**Potential Impact Area:** The following graphic displays property parcels that could be impacted within various zones defined by different setbacks from the shoreline behind existing Federal coastal structures. Values are based on real property tax assessments from these parcels, and don't reflect any detailed coastal zone damage assessments. Figures simply reflect property values at various setbacks.

