



US Army Corps
of Engineers®

HARBOR INFRASTRUCTURE INVENTORIES Dunkirk Harbor, New York



Harbor Location: Dunkirk Harbor is located on the southern shore of Lake Erie in the City of Dunkirk, NY about 50 miles southwest of Buffalo, NY.

Authority: River & Harbor Acts of 1827, 1867, 1896, 1910, 1948 and Section 201 of the Flood Control Act of 1965.

Project Description: Dunkirk Harbor is a deep draft commercial harbor. Protective structures consist of east, west and outer breakwaters and a west pier totaling over 1.3 miles in length. Breakwaters are laid up stone construction and the pier is a wooden crib with a concrete cap.

Transportation Importance: Supports 24 charter fishing boats generating approximately \$196,000 in net income annually, and is a harbor of refuge.

Congressional Interest:

- Representative Brian Higgins D-NY-27
- Senator Charles Schumer D-NY
- Senator Kirsten Gillibrand D-NY

Current Condition Assessment: D



Date of Site Visit: 27 May 2010

Summary of Impact: Prevailing waves come from the northwest to northeast, impacting all breakwaters. The NRG Energy coal power plant is protected from waves from the northwest by the West Pier. The plant already has issues with flooding of their parking lots and some buildings under high wind events, and a failure of this pier could curtail operations. Should the outer breakwater fail, the west and east breakwaters and the areas behind these breakwaters would be subject to increased wave action. Increased wave action in these areas would be damaging to all three marina facilities and the Municipal Pier. The water treatment plant and municipal park are set behind a protective seawall and would still maintain adequate protection. Additionally, the outer breakwater serves to protect the coal storage lots for the NRG plant. Failure of this section would result in flooding of these storage areas.

Examples of Protected Infrastructure:



1. NRG Dunkirk Operations Inc.: Privately owned 600 MW coal fired plant with 4 units - 2x100 MW in service since 1950, 2x200 MW in service since 1959 and 1960. All fuel is brought in by rail from Wyoming, via Chicago and Ashtabula. Presently waterborne delivery of coal is unlikely to resume in the near future due to a lack of adequate vessels and facilities. Generation requires 100 train cars every two days. Coal is stored in an open pile covering about 5 acres, enough for approximately 40 days of operation. The plant burns approximately 7,000 tons in 24 hours. Fly ash is stored in silos and removed daily to a landfill. The plant was constructed on landfill behind the West Pier. The pier now serves as a breakwater protecting the plant from high waves out of the northwest. The plant experiences periodic issues with waves overtopping breakwater and flooding parking lot. The plant is concerned with the continued degradation of breakwater. Failure of the breakwater could cause additional flooding and would likely curtail generation.



2. Bart's Cove Marina: Privately owned marina with 70 permanent wood slips able to accommodate up to 45' boats, 4 of the slips are transient. Rates are \$600/season or \$10/night with electric and water available. Amenities include a 5 ton travel lift, fuel sales (gas only), a restaurant and bar, indoor and outdoor storage. Main concern is with sedimentation behind breakwaters. Owner states that depth used to be 8'-10', presently is 2'-6'.



3. City of Dunkirk Water Filtration Plant: 8 million gallon per day water treatment plant built in 1920. Plant includes: 36" intake line extending 5,200' into the lake, 2-story main building, 2 external sedimentation basins and a chemical building. Serves a population of about 15,000 in the communities of Portland, Dunkirk and Fredonia. Presently undergoing repairs with a total cost estimated to be around \$17 million with \$3 million budgeted for this year. Proposed improvements include new roofs, foundation repair, and valve and storage tank repair/replacement. Superintendent states that the plant is well protected in the cove, and it would take immense waves to cause flooding.



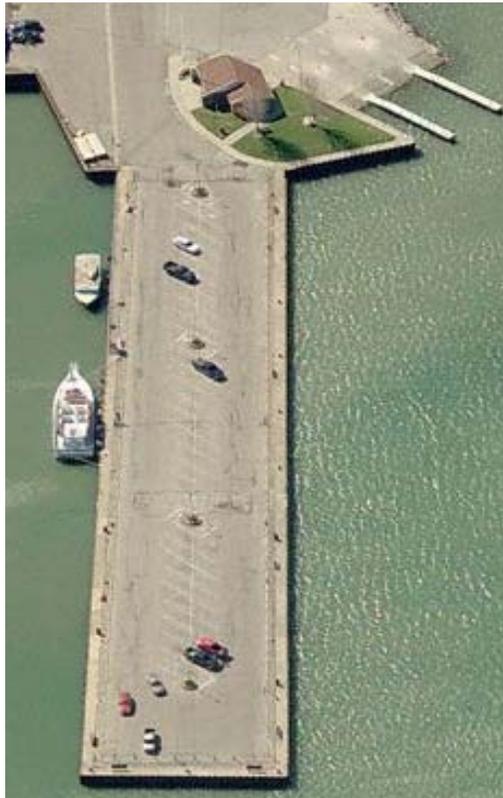
4. Dunkirk Yacht Club: Privately owned yacht club chartered in 1938 as a not for profit organization. 100 fixed wood slips with steel framing with an additional 3 transient slips able to accommodate up to 35' boats. Annual dues are \$150 per person with a \$260 per season dockage fee. Electric, water and pumpout available. 40' by 40' clubhouse on piers on the water. Concerns are with weed control and dredging. Breakwaters are performing well to create a calm harbor.



5. Memorial Park: Public park located along the waterfront.



6. City Pier: City owned pier and launching ramps. Amenities include a harbormasters office, restrooms, fish cleaning station and 60 public parking spaces on pier. The facility has 3 launch ramps with a fee of \$5 per launch; seasonal passes are available at \$30 for residents and \$50 for non-residents. 10-12 parking spaces for trailers and tow vehicles are also available. Municipal concerns lie with the filling of a sluice along the east basin, causing stagnant water in the east basin. Additionally, there has been increased sand filling on the east side of the east breakwater, causing issues with clearing roadway.



7. Clarion Hotel: 4 story hotel with 127 guest rooms, 9 meeting rooms and over 6,600 square feet of designed meeting space. Other amenities include indoor and outdoor pools, a restaurant and a workout room. The hotel is located behind a seawall, so breakwater impact is minimal. Overtopping of breakwaters could cause some minor flooding.



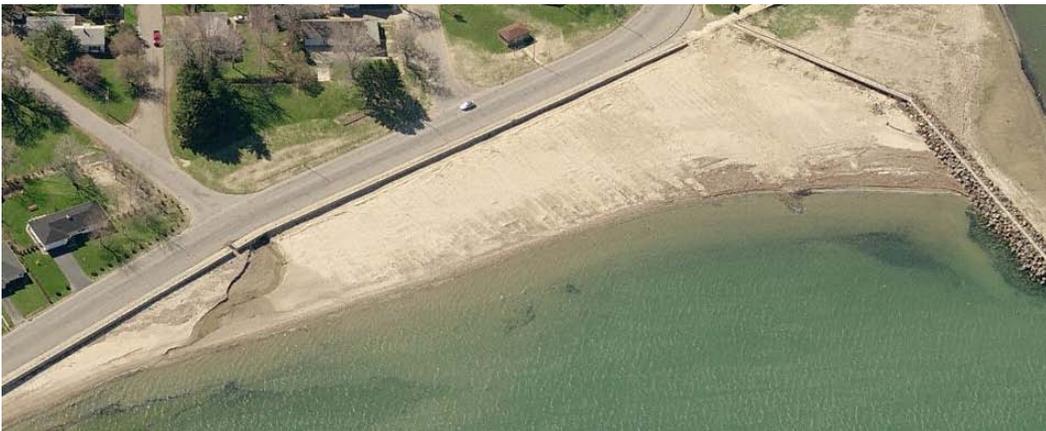
8. Chadwick Bay Marina: Privately owned marina built in 1987, at a cost of approximately \$3 million, with 279 floating aluminum slips, around 20 of which are available for transient dockage. Able to accommodate vessels up to 100'. Rates range up to \$1400 per season with electric and water available. Amenities include a 20 ton travel lift, fuel (gas and diesel), a pumpout, a mechanic on duty, live bait, showers, restrooms and a ships store. Breakwaters allow for a calm harbor for dockage, owners concerns lie with waves coming from northeast. Owner would like to see a groin built along the breakwater to block waves from Northwest reflecting off Municipal Pier and into harbor.



9. Abandoned Marina: Presently abandoned marina, city reports that they are attempting to acquire land.



10. Private homes and non-swimming beach: Series of private homes located behind Lake Front Boulevard. Filling of sand behind East Breakwater has formed a small non-swimming beach. City reports that beach causes problems in high wave events due to sand washing over Lake Front Boulevard.



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.

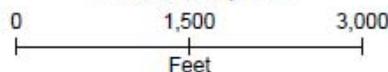
Buffer Feet	Land Value	Improvements Value	Total Value
1,000	\$4.9M	\$348.5M	\$353.4M
1,500	\$6.4M	\$362.8M	\$369.2M
2,000	\$7.9M	\$384.4M	\$392.3M



- Federal Structure
- Shoreline_1000_ft_buffer
- Shoreline_1500_ft_buffer
- Shoreline_2000_ft_buffer
- Parcels_1000_ft_buffer
- Parcels_1500_ft_buffer
- Parcels_2000_ft_buffer

DUNKIRK HARBOR

Dunkirk, NY



Imagery Source-NAIP 2011



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