

STAMFORD HURRICANE BARRIER

PROJECT PURPOSE: Hurricane Flood Protection

LOCATION: Project extends from the West Branch eastward across the East Branch of Stamford Harbor, in the City of Stamford, Fairfield County, CT.

PROTECTED AREA: Approximately 460 acres consisting of principal manufacturing plants of the city, residential sections, and a portion of the main commercial district.

Design Summary: The Design Hurricane was established through cooperation with the U.S. Weather Bureau and the Beach Erosion Board affiliated with the Texas Research Foundation of Texas A&M University. The basis for the design storm was the transformation of the September 1944 hurricane. This storm, when it was off the Cape Hatteras, N.C. coast, had the greatest energy of any known hurricanes along the Atlantic coast. The 1944 storm was transposed so that it would be entirely over water between Cape Hatteras and the New England coast, resulting in a central pressure of 27.8 in. mercury near the mouth of Narragansett Bay, Buzzards Bay, and Long Island Sound. The transposed storm was moved northerly with a forward speed of about 40 knots along a track passing over New England 49 nautical miles west of Montauk Point, Long Island, creating sustained winds of 90 mph at the mouth of Long Island Sound and 55 mph from the southwest quadrant at the Stamford location in western Long Island Sound. Within Long Island Sound, at Stamford, a tide surge associated with this storm was computed to be 10.4 ft. This surge was added to the mean spring high water elevation of 4.4 Ft-NGVD, resulting in a 14.8 Ft-NGVD stillwater elevation. It was further determined that wave heights associated with this storm would be on the order of about 2.0 ft at time of peak surge resulting in a top of barrier elevation of 17.0 Ft-NGVD. A 14.8 Ft-NGVD design stillwater elevation is slightly greater than a 500-year tide level.

PROJECT FEATURES:

- Design Hurricane Tide = 14.8 Ft NGVD
- East Branch Barrier:
 1. 2,840 ft earth-filled dike with rock slope protection
 2. Top elevation = 17.0 Ft NGVD
 3. 90 ft wide navigation channel (flap gate invert= -18.0 ft NGVD)
 4. 100 cfs Interior runoff pump station (DA=1,200 acres)
 5. Bypass sluice gate 8ft x 8ft
- West Branch Barrier:
 1. 1,440-ft concrete wall; 160 ft sheet pile bulkhead wall; and 1,950-ft earth-filled dike
 2. Top elevation = 17.0 Ft NGVD
 3. 510 cfs Interior runoff pump station (DA=197 acres)
- Westcott Cove Barrier:
 1. 4,200 ft earth-filled dike
 2. Top elevation = 18.0 Ft NGVD
 3. 140 cfs & 50 cfs Interior runoff pump stations (DA=183 acres)

OWNERSHIP:

- All features (except navigation gate), Operated and Maintained by City of Stamford, CT - (203) 977-4681
- Navigation Gate at East Branch Barrier Operated and Maintained by NAE Corps of Engineers

TOTAL COST: \$14,470,000

PLACED IN OPERATION: January 1969

MEAN TIDE DATA

Mean High Water: 4.2 Ft-NGVD

Mean Low Water: -3.0 Ft-NGVD

Mean Tide Range: 7.2 ft

Mean Low Low Water (MLLW):-3.3 NGVD

HIGHEST OCEAN LEVELS OF RECORD SINCE PROJECT

10/12 - 11.1 - Hurricane Sandy

12/92 - 10.1 - Northeaster

02/78 - 9.8 - Northeaster

HIGHEST HISTORIC OCEAN LEVELS

Date - Elev - Event

09/38 - 11.0 - Hurricane

08/54 - 10.3 - Hurricane "Carol"

09/44 - 9.2 - Hurricane