

Battery:



Those locations circled in blue are at a lower elevation than the Coastal Inundation Landmark Reference Point circled in black. (Top of Walkway between Staten Island Ferry and Governors Island Ferry Terminals)

- A water level reading of 10.9 ft above MLLW at the Battery Gauge will have water touching the Coastal Inundation Landmark Reference Point
- A water level reading of 11.9 ft above MLLW at the Battery Gauge will result in a 1 foot inundation above the Coastal Inundation Reference Point.
- A water level reading of 14.0 ft above MLLW at the Battery Gauge will result in a 3.1 foot inundation above the Coastal Inundation Reference Point. This was the level the water reached during Hurricane Sandy

At 14.0 ft MLLW / 8.9 ft MHHW 10/29/2012 8-10pm

[USGS/FEMA Sandy Storm Tide Mapper](#)

Manhattan (East Side)

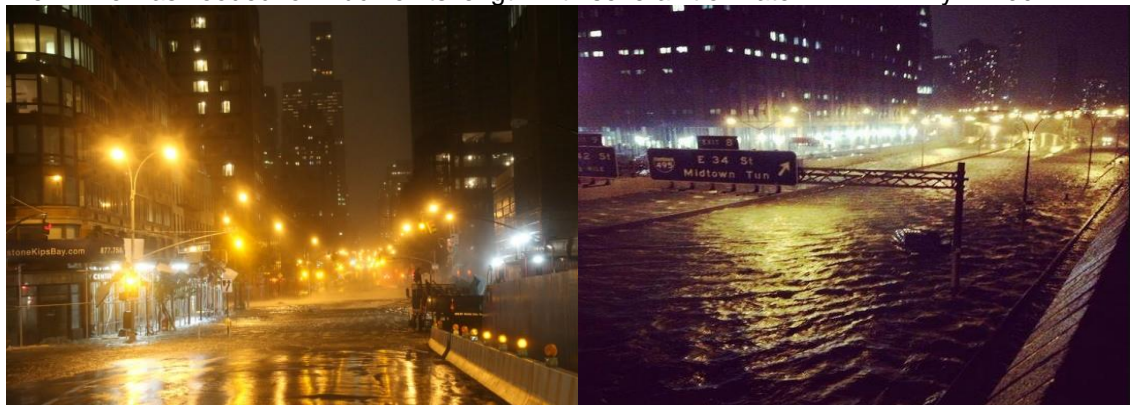
3 to 4 ft inundation at corner of [8th st and Avenue C](#) and [20th St and Avenue C](#).



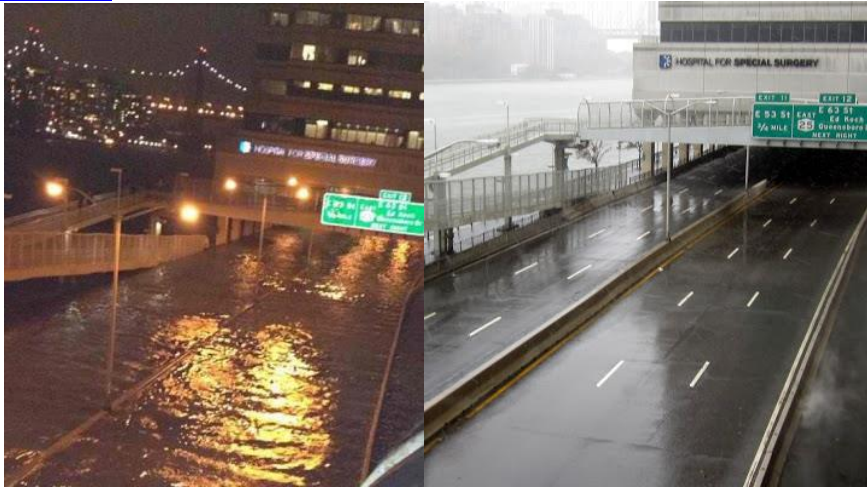
3 to 4 ft of inundation along [Con Ed plant at East 14th Street and Ave C](#) and [13th St and Ave C](#).



Several ft of inundation along points of [1st Avenue \(34th St\)](#) and [FDR Drive at 34th St](#). Fdr/Harlem River Drive was flooded for much of its length with several ft of water from Battery to 190's.



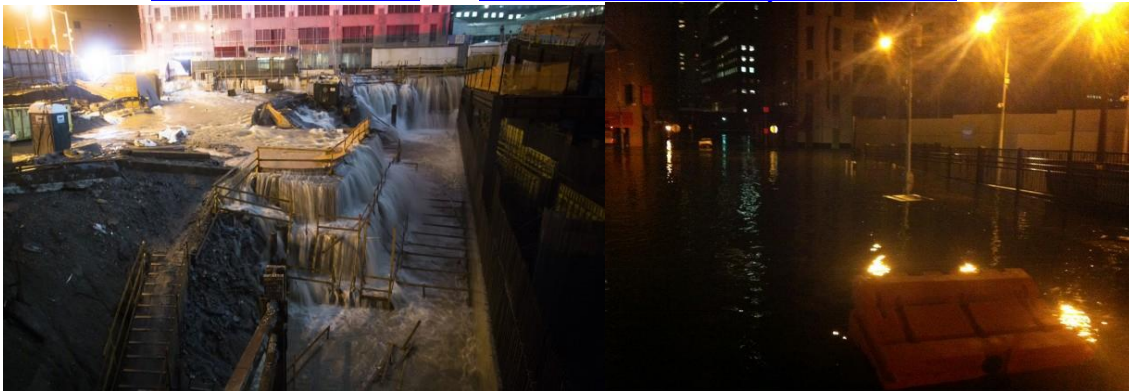
[FDR Drive at 53rd St](#)



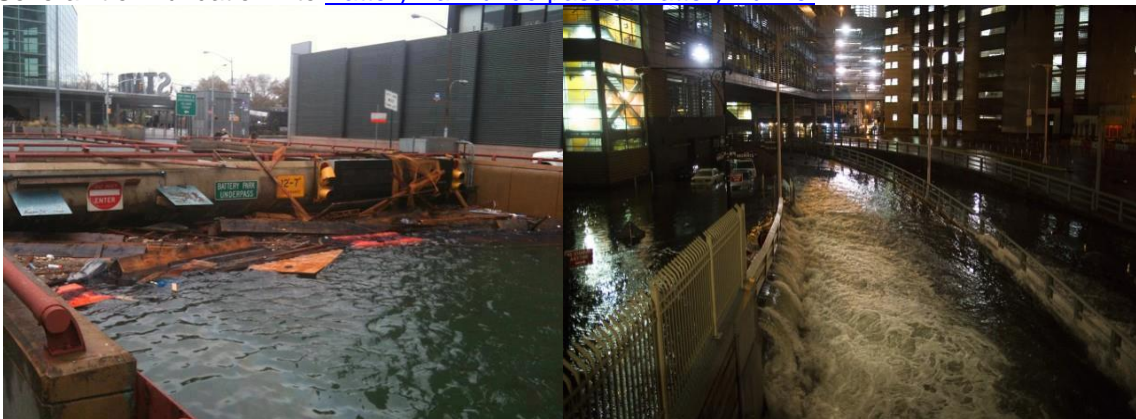
[Manhattan \(Financial District\)](#)

Up to 3 to 5 ft of inundation along the West Side Drive...Battery Park...and FDR Drive in lower Manhattan...with inundation extending several block inland.

Inundation of [Ground Zero Memorial](#) and [Greenwich St and Albany St intersection](#)



Several ft of inundation into [Battery Park underpass at Battery Tunnel](#)

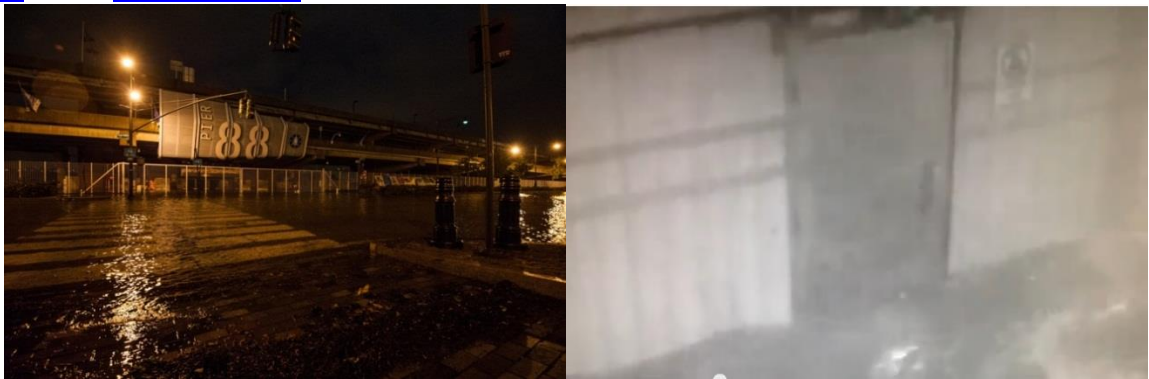


Several ft of inundation a few blocks inland of [South Street Seaport](#)



Manhattan (West Side)

Most of the Westside Highway south of 49th street..50's to 70s, and along Riverside Park were inundated with 1 to 3 ft of water. Inundation in front of the Intrepid on [West Side Hwy and 46th St](#) and of [Holland Tunnel](#).



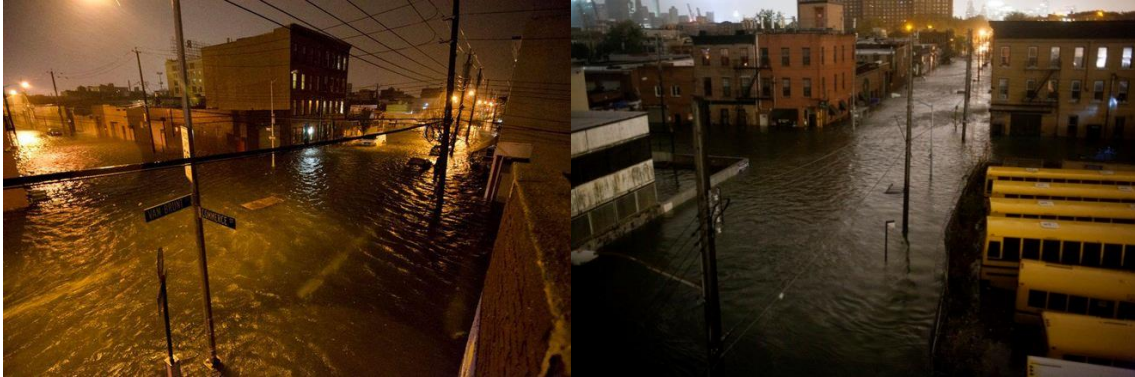
Queens

(Hunters Point/ LIC) was inundated with 3 to 6 ft of water several block inland from the East River and Newtown Creek. Picture below from [49th Ave and 5th St](#).

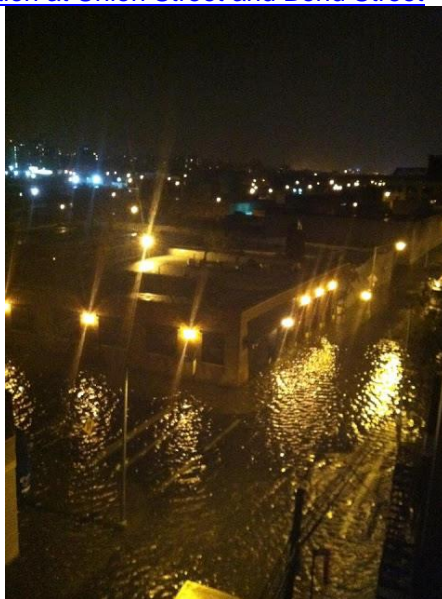


Brooklyn

(Red Hook) was inundated with up to 3 to 6 ft of water. [Van Brunt and Commerce St in Red Hook](#) and [Van Dyke and Dwight](#) inundated with 2 to 4 ft of water



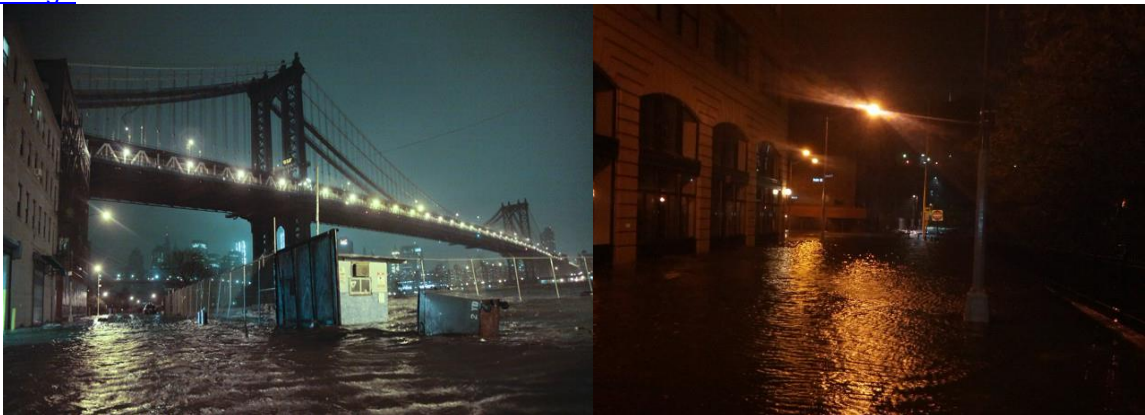
(Gowanus) [1 to 3 ft of inundation at Union Street and Bond Street](#)



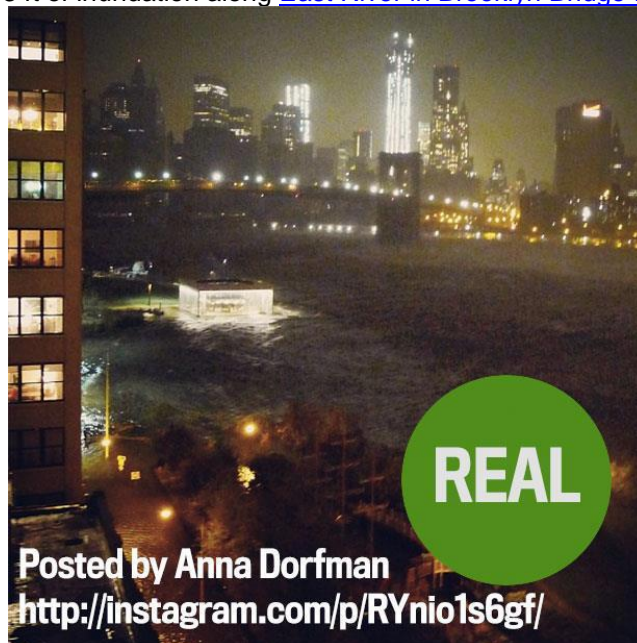
(Gravesend) [86street subway station in Gravesend](#) inundated with 1-3 ft of water.



(Dumbo) 1-3 ft of inundation along East River in [Dumbo neighborhood under the Manhattan Bridge](#)



(Brooklyn Heights) 1-3 ft of inundation along [East River in Brooklyn Bridge Park](#)



(Bay Ridge) – Several feet of inundation on [Belt Parkway](#) Eastbound by the Verrazanno



At 9.8 ft MLLW / 4.7 ft MHHW 9/12/1960

Lower Manhattan in 1960 with Hurricane Donna. [WTC site \(West and Cortland street\)](#)



At 9.5 ft MLLW / 4.4 ft MHHW (December 1992 Nor'Easter)

Manhattan

A Crippled City

Many of areas and roadways affected by the storm.

West Side Highway
Parts of highway were closed.

Riverside Park
Two of the docks at the 79th Street marina at Riverside Park washed away and three boats were under water.

City Island
Hundreds evacuated, many by boat. The bridge to the island was cut-off.

Edgewater Park
200 people were evacuated in Edgewater Park and Silver Beach in Throgs Neck from flooded areas, beach bungalows dragged off shore.

Throgs Neck Bridge
Closed.

Whitstone Bridge
Closed.

LaGuardia Airport
Closed at 10:22 a.m. after operating severely curtailed service most of the morning. USAir and Delta, the two most heavily used airlines at LaGuardia, suspended operations at 8:45 a.m. The National Weather Service said a hurricane-force gust, 77 mph, was recorded at the airport.

Queensboro Bridge
Closed.

Kennedy Airport
Open, but many flights canceled. JFK difficult to reach, since several major roads closed by flooding.

Broad Channel
Flooding was going up to 6 or 7 feet in sections. About 200 people were evacuated on Green Lines buses. Subway service shut down.

Rockaways
Heavy rains and high tides caused flooding that made most of the roads on the peninsula impassable. Subway service shut down.

Belt Parkway
Sections closed all along road, including near the Verrazano Bridge.

Coney Island
About 100 feet of Steeplechase Pier was washed away. Ocean Parkway and Neptune Avenue were closed due to flooding. About 500 students evacuated.

World Trade Center ; 33rd and Broadway
The PATH commuter rail system, which carries 200,000 riders daily between New Jersey and the city, was shut down by flooding shortly before 9 a.m.

Ellis Island-Statue of Liberty
Docks at both locations were under water. Both attractions were closed for the day.

Goethals Bridge
Closed by Port Authority.

Staten Island Ferry
The ferry went out of service at 7:50 a.m., but one of the boats, with 150 passengers, was stranded in the harbor, prevented by battering seas from docking. The boat finally docked at 11:20 a.m.

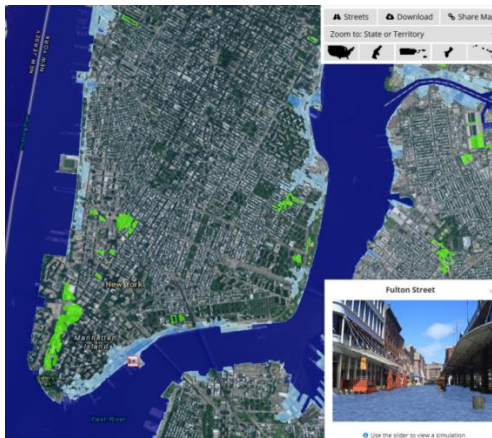
South Street Seaport
Shops closed as much of the area was flooded.

Outerbridge Crossing
Closed by Port Authority.

Sea Bright
Police evacuated residents of low-lying areas of Sea Bright. Streets were under several feet of water.

Ocean Grove
The century-old landmark fishing pier in Ocean Grove was destroyed.

South Street Seaport



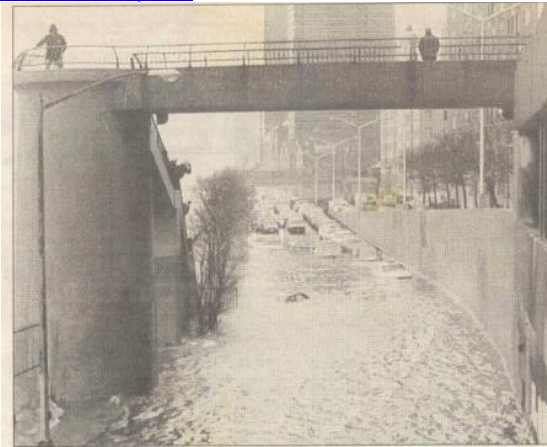
World Trade Center – Flooded Path Station



Flooded PATH Station - 1992 Nor'easter

Figure 1. Flooded PATH station in December, 1992. Source: NYC Office of Emergency Management.

FDR Drive – Flooding over car rooftops at 82nd St underpass



1992 - FDR Northbound / 80th St.



MEC: LDEO of Columbia, K. Jacob

Figure 11c: FDR Drive, East River, Manhattan

Major Flood threshold (ft above datum)

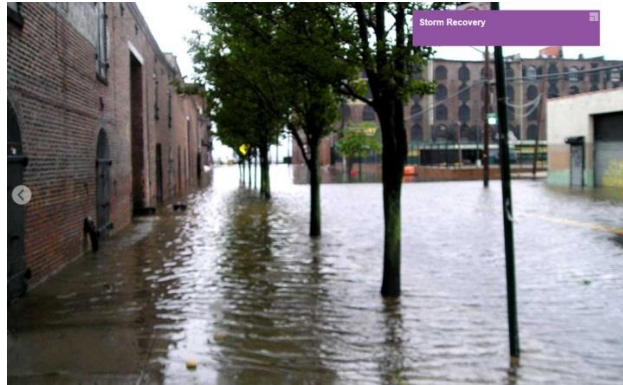
- MLLW / NGVD / MHHW / NAVD88
- 9.4' / 7.7' / 4.3' / 6.8'

At 9.3 ft MLLW / 4.2 ft MHHW

[USGS/FEMA Irene Storm Tide Mapper](#)

Brooklyn (Red Hook)

1 to 3 ft of water inundated streets about 100 yards inland along portions of [Gowanus Bay/Canal](#) in Red Hook. (830-900am 8/28/2011)



Manhattan (Battery)-

1-2 ft of inundation along the [promenade in Battery Park City.](#)

1 ft of water inundation over wall of [marina in front of Mercatile exchange](#) (830-900am 8/28/2011)

Manhattan (East Side)

[FDR closed in both directions at Houston Street](#) (830-930am 8/28/2011)

About 1 ft of water inundation on the streets in [South Street Seaport.](#)

Manhattan (West Side)

[Southbound Henry Hudson Drive closed in Harlem](#) due to 3 ft of water over the roadway. (Freshwater/Coastal Flood)(1010am 8/28/2011)

[North part of Holland Tunnel](#) closed due to (Freshwater/Coastal Flood)(846am 8/28/2011)

[West Village Houses](#) – Part of 10th Ave closed with 2 cars stuck in water.

(Freshwater/Coastal Flood)(850am 8/28/2011)

At 8.8 ft MLLW / 3.7 ft MHHW

Lower Manhattan – Fulton Fish Market (11/24/1950)



At 8.7 ft MLLW / 3.6 ft MHHW

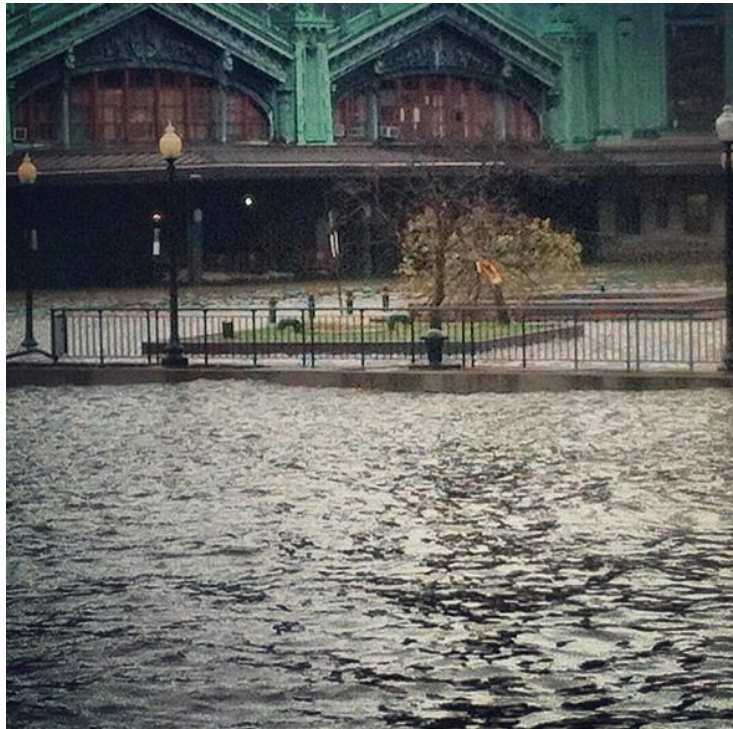
Brooklyn

1-2 ft of inundation on [Van Brunt Street in Red Hook, Brooklyn](#)



Hoboken

1-2 ft of inundation at [Hoboken Train Station](#)



At 8.6 ft MLLW / 3.5 ft MHHW

The [Path Train was closed at Hoboken](#).

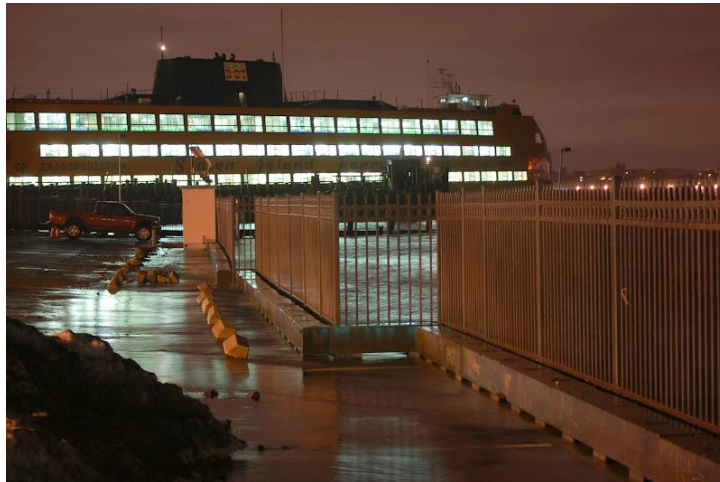
[Route 7 in Kearney](#) was closed at multiple locations due to coastal flooding.
(536 pm EST on 3/13/2010)

At 8.3 ft MLLW / 3.2 ft MHHW

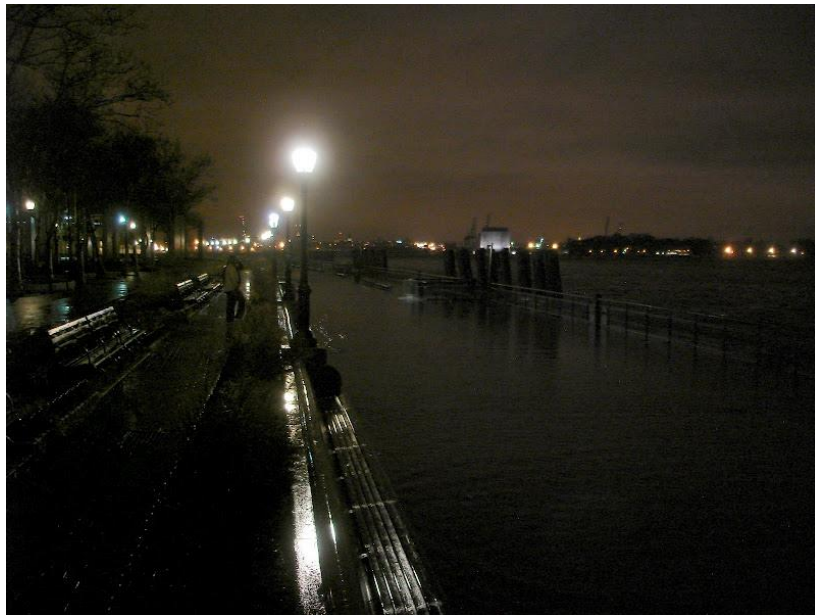
[Battery Park seawall](#) is covered by 818 pm.



Water reaching [Battery tide gauge house](#) at 822 pm.



Surge washing over the [seawall, looking toward Governor's Island, Staten Island, Jersey City and covering. Boardwalk](#) covered by around 1 ft of water 830 pm facing the Harbor. (3/13/2010)



Flooded security screening tent for [Liberty Island Ferry at Fort Clinton](#). (3/13/2010)



Moderate Flood threshold (ft above datum)

- MLLW / NGVD / MHHW / NAVD88
- 8.3' / 6.6' / 3.2' / 5.7'

At 8.1 ft MLLW / 3.0 ft MHHW - A storm surge of 3 ft, coinciding with an astronomically high tide (perigean spring tide) on the morning of Dec 23rd.

Red Hook – 1-2 ft inundation for street ends along NY Harbor

December 23, 2022: Coastal flooding is seen on the streets of Red Hook Brooklyn, on Friday, Dec. 23

December 23, 2022: Coastal flooding is seen on the streets of Red Hook, Brooklyn, on Friday, Dec. 23, 2022. ZUMAm67_20221223_zaf_m67_080 Copyright: xGardinerxAndersonx

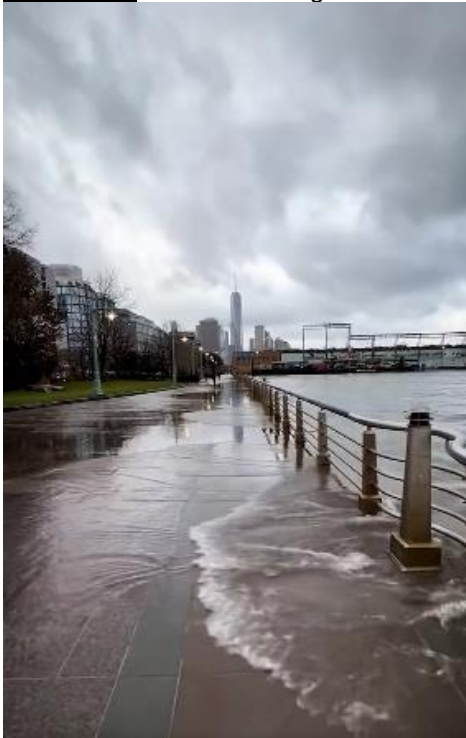


Coastal flooding in Red Hook, Brooklyn on Friday. (Gardiner Anderson/for New York Daily News)

Edgewater – 2+ ft of inundation along Hudson River in Comfort Inn parking lot.



Manhattan – Water starting to inundate West Side walkways along Hudson Riverfront



At 7.6 ft MLLW / 2.5 ft MHHW

Manhattan – Minor flooding on [FDR at 79th street](#). Water coming up through manhole. (2/8/2016)

At 7.5 ft MLLW / 2.4 ft MHHW

Manhattan

Inundation on the FDR Drive. Elevated East River waters backed up into the catch basins and storm sewers causing several manholes on the northbound FDR Drive to have their covers moved out of place with water bubbling and pouring out on to the roadway. We had partial road closures on the [FDR Drive in the upper 80's and lower 90's](#) until the waters receded. (6/4/12 900-1030pm)

Staten Island

East Shore- Inundation of [40 Hempstead Ave](#) a few blocks off New York Bay in the [Midland Beach section](#) (6/4/12 918pm)

At 7.4 ft MLLW / 2.3 ft MHHW

Manhattan - Inundation on the FDR Drive.



At 7.3 ft MLLW / 2.2 ft MHHW

Manhattan – Water begins to creep over [lower walkway at South Street near Maiden Lane](#) along East River...near South Street Seaport. (1/3/2014)



Minor Flood threshold (ft above datum)

- MLLW / NGVD / MHHW / NAVD88
- 7.0' / 5.3' / 1.9' / 4.4'

At 6.6 ft MLLW / 1.5 ft MHHW

Staten Island

West Shore- Inundation near [Travis Ave and Victory Blvd](#) in the [Fresh Kills](#) area.
(6/3/12 830pm)

At 6.5 ft MLLW / 1.4 ft MHHW

Manhattan – Major Flooding (1 to 3 feet) on the FDR Drive from about 700 to 1000 pm in several spots due to the combination of heavy rainfall occurring as minor coastal flooding benchmarks were being reached. Picture below adjacent to [125th St.](#)



At 6.3 ft MLLW / 1.2 ft MHHW + heavy rain at time. 4-6 inches 36 hr rain total

Brooklyn Heights - 2 ft of water in parking lot at [intersection of Jay Street and John Street](#).
(4/30/2014 7pm)

At 6.2 ft MLLW / 1.1 ft MHHW + SW winds of 40-45 g 60 mph

Brooklyn – Splashover of water from NY harbor onto [Belt Parkway in Brooklyn](#).

