Major Storm System Late Tonight into Wednesday

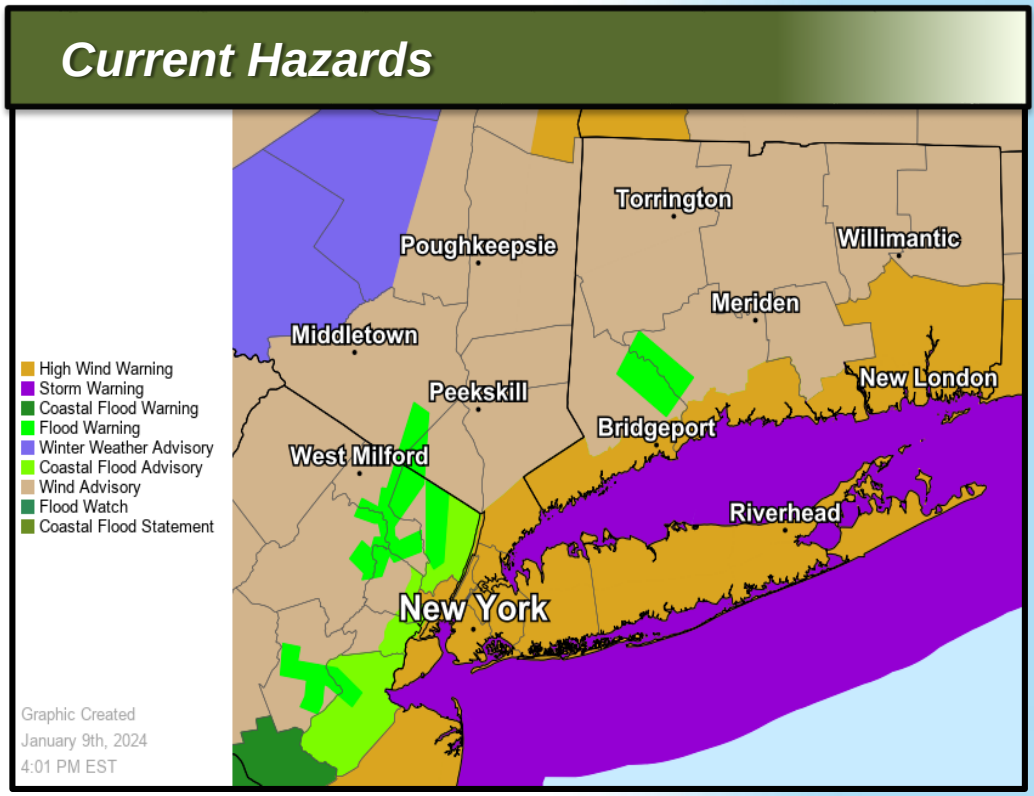
Decision Support Briefing #5
As of: 6:00 PM January 9, 2024

What Has Changed?

- No significant changes to forecast

Key Messages…

- ✓ Widespread moderate to major river flood threat late tonight thru Wednesday.
- ✓ Widespread minor to moderate urban and poor drainage flooding threat late tonight into Wednesday.
- ✓ Widespread moderate coastal flooding expected for much of Long Island and SE CT coast with the Wednesday morning high tide. Locally major flooding possible along Great South Bay.
- ✓ Widespread dune erosion and scattered overwashes expected along the ocean beachfront on Wednesday. Localized dune breaches possible.
- ✓ Strong to damaging winds for the coast late tonight into Wednesday.
- ✓ Storm conditions and high seas on all waters late tonight into Wednesday.



Main Points – Major Coastal Storm

Hazard	Impacts	Location	Timing
Flash/River Flooding 2-3 1/2" Likely Locally 4+" Possible 	• Scattered flash flooding of urban and poor drainage areas. • Moderate to Major flooding along small rivers and streams. • Significant rises and flooding on large stem rivers.	• Entire Tri-State Region • Highest rainfall amounts likely across western portions of the Tri-State	• This evening through Wednesday. • Rivers likely remain elevated into Thursday.
Damaging Winds 25-40 mph w/ gusts 55-65 mph Isolated 70mph gusts possible 	• Numerous downed tree branches. Scattered downed trees and power lines. • Power outages likely in warning area.	• All coastal communities including NYC • Highest winds across LI	• This evening into Wednesday
Coastal Impacts 2 to 2 ½ ft inundation AGL in vulnerable areas Locally 3ft possible. 	• Minor to moderate coastal flooding. • Locally major coastal flooding for south shore bays of LI. • Widespread dune erosion and scattered overwashes for ocean beachfront.	• Highest threat for oceanfront and vulnerable locales along S and E Bays of LI, and W LI Sound	• During times of high tide this evening and Wednesday AM
Marine Storm Conditions 	• Wind gusts of 45-60 kt. • Seas of 15-20 ft on the Ocean. • Seas of 4-9 ft on LI Sound.	• All waters	• This evening into Wednesday

Heavy Rain Will Bring Widespread Minor to Moderate Flooding Threat. Locally Major Flooding is Possible.

Current Convective and Flood Watches



- ✓ **Storm Total Rainfall:**
  - ✓ 2 1/2 to 3 1/2", locally 4+" for NE NJ, Lower Hud and interior Southern CT
  - ✓ 2 to 2 1/2", locally 3+" for NYC, LI, and most of SE CT
  - ✓ Much of this will fall between 7pm this evening and 5am Wednesday
- ✓ **Rainfall Rates:**
  - ✓ 1/4 to 1/2"/hr for a 6-9hr period between 7pm and 4am. Localized 3/4" to 1"/hr rates possible.

Timing:

- ✓ **Heaviest rainfall between 7pm this evening and 5am Wednesday morning, but significant river flood impacts likely continue through Thursday morning.**

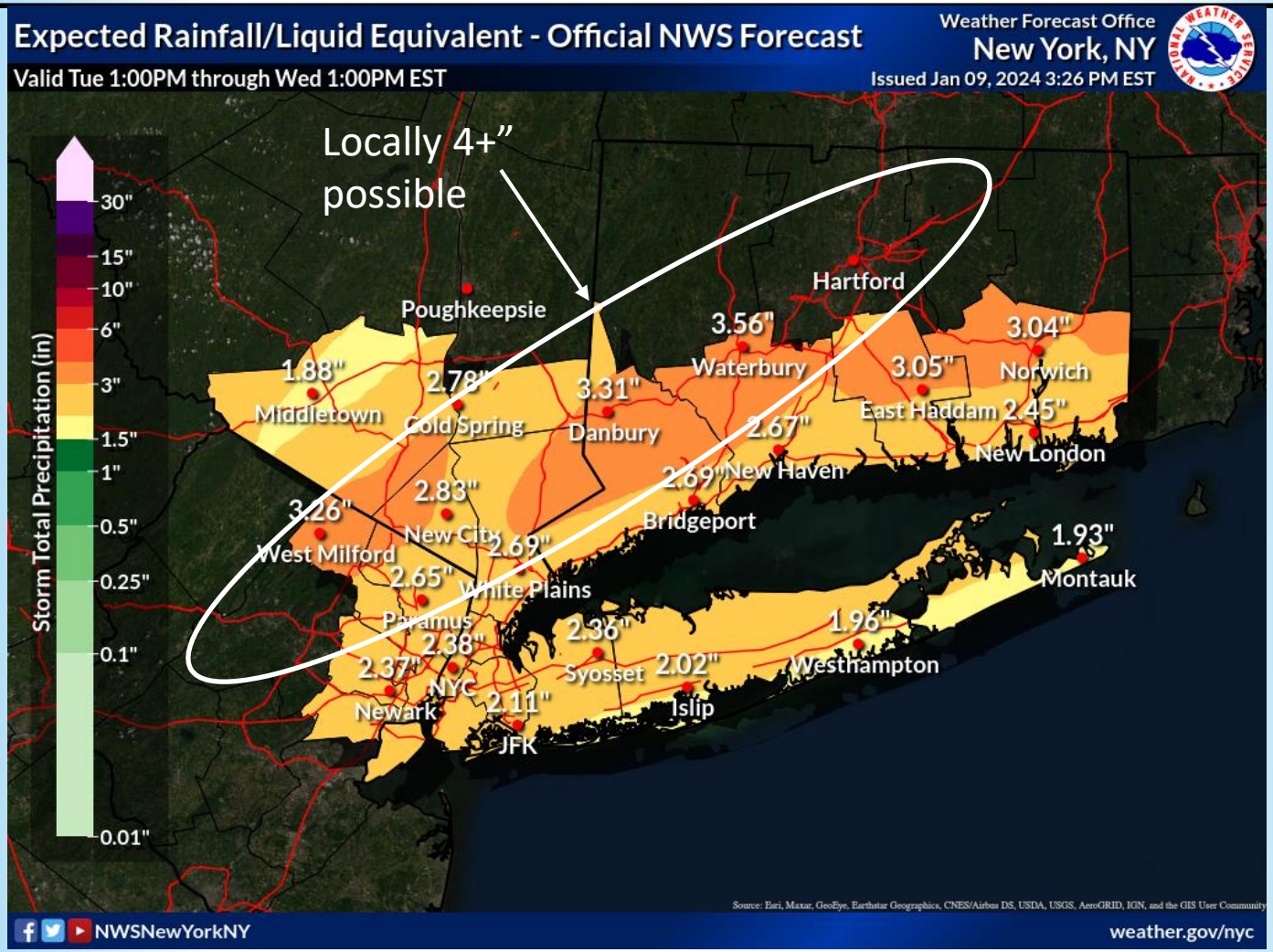
Compounding Factors:

- ✓ Melting snowpack will add between 0.5 and 1.0" of water to runoff.
- ✓ Streamflows are generally running high (around the 75-90th percentile), with above normal soil moisture (95th percentile) and recent snowmelt increase the threat for flood impacts.
- ✓ Urban and poor drainage flooding will be exacerbated during the time of high tide this evening along coastal areas and tidally affected rivers.

Impacts across Flood Watch Area:

- ✓ **Moderate to Major flooding River Flooding likely along numerous quick responding small rivers and streams of NE NJ, Lower Hud and SW CT. Inundation of structures and roads, evacuations of people and/or transfer of property to higher elevations is likely along several rivers.**
- ✓ **Widespread minor to moderate urban and poor drainage flooding likely late tonight through Wednesday morning. Some flash flooding possible.** This will likely cause scattered to numerous disruptions to transportation, and localized flooding of basements, first floors of residences and businesses, as well as some underground infrastructures.

Official Rainfall Forecast

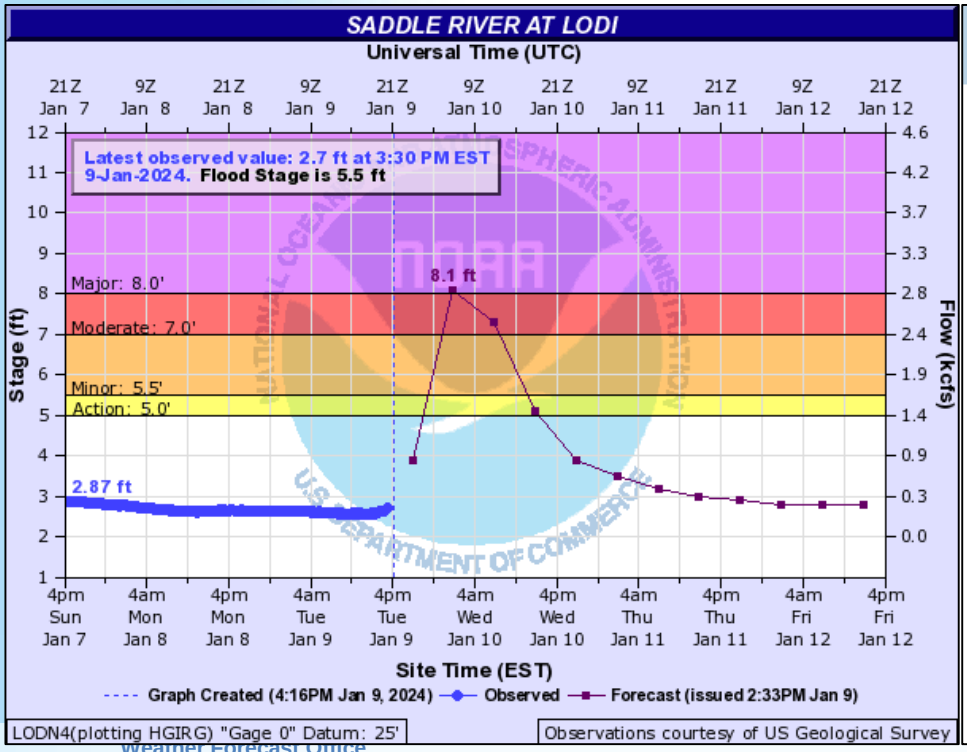


Bergen County: Northeastern NJ River Flooding Potential

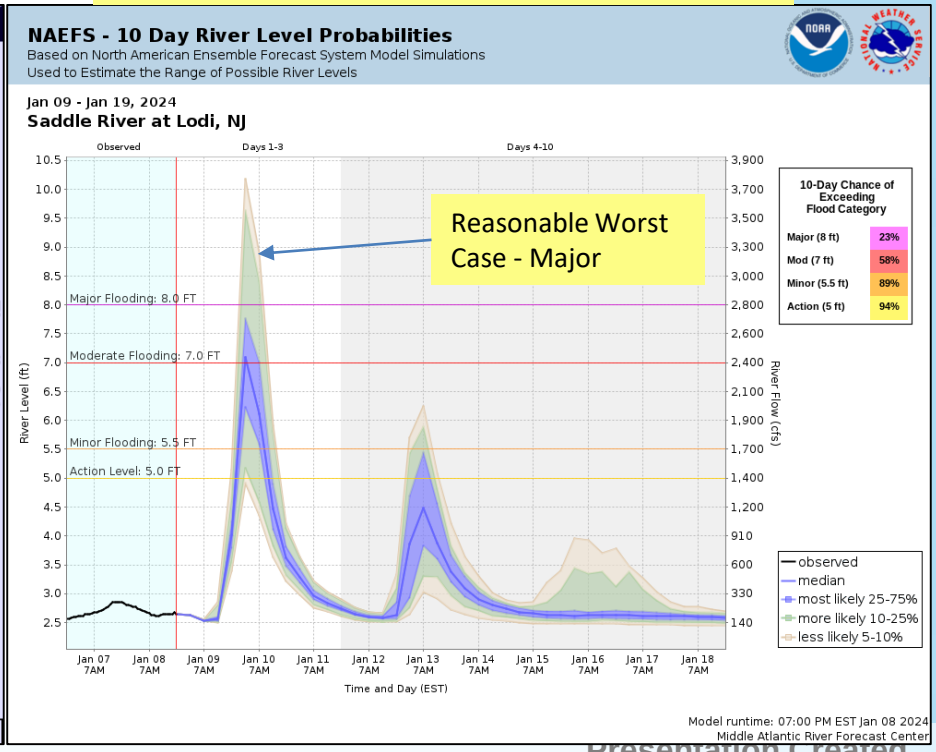
- ✓ Major flooding likely for a few quick responding rivers, including Saddle River.
- ✓ Major Flood Impacts: With major flooding forecast, extensive inundation of structures and roads, significant evacuations of people and/or transfer of property to higher elevations is likely.
  - ✓ Saddle River Impact - At 8ft+, businesses along Main St. will experience widespread flooding

For more details…See here for the latest river forecasts, impact catalogs, and inundation maps.

Official RFC Forecast – Saddle River at Lodi



Probabilistic Forecast – Saddle River at Lodi

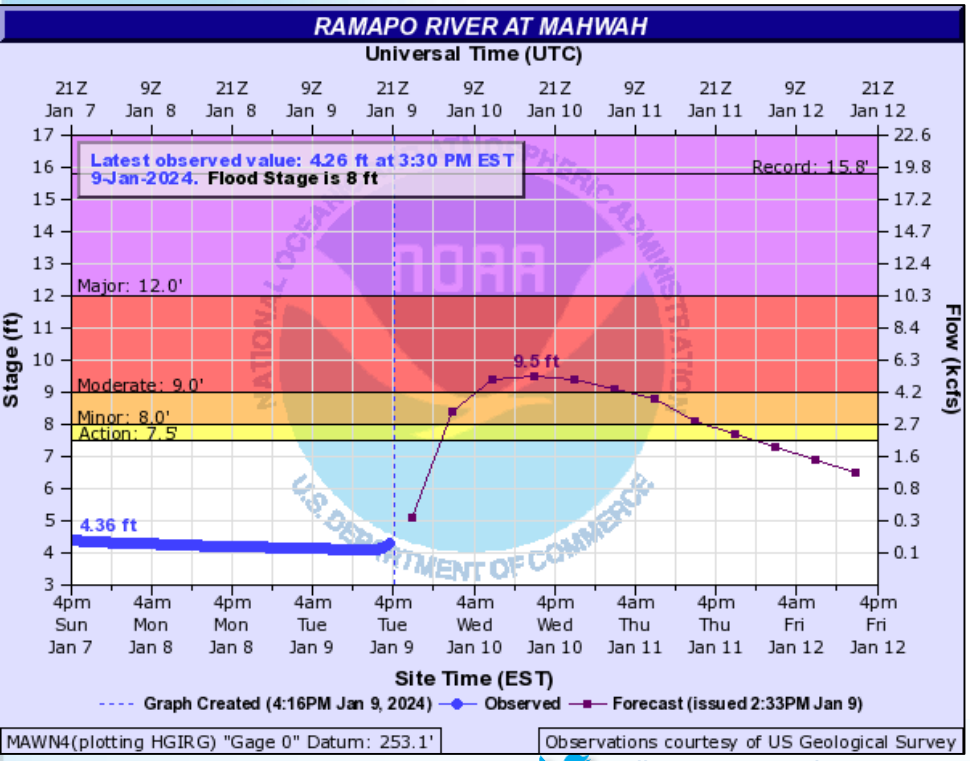


Bergen County: Northeastern NJ River Flooding Potential

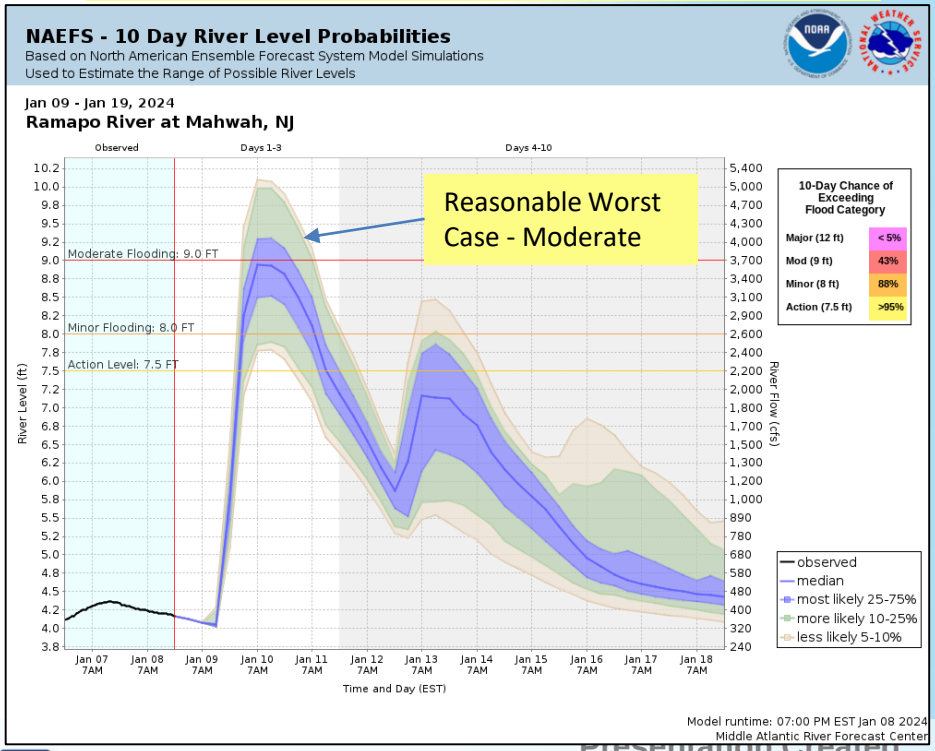
- ✓ **Moderate flooding expected along several quick responding small rivers and streams, including the Ramapo River. Moderate flooding likely along the Hackensack, Hohokus and Pascack as well.**
- ✓ **Moderate Flood Impacts: Some inundation of structures and roads near stream, evacuations of people and/or transfer of property to higher elevations.**

For more details…See here for the latest river forecasts, impact catalogs, and inundation maps.

Official RFC Forecast – Ramapo River at Mahwah NJ



Probabilistic Forecast – Ramapo River at Mahwah



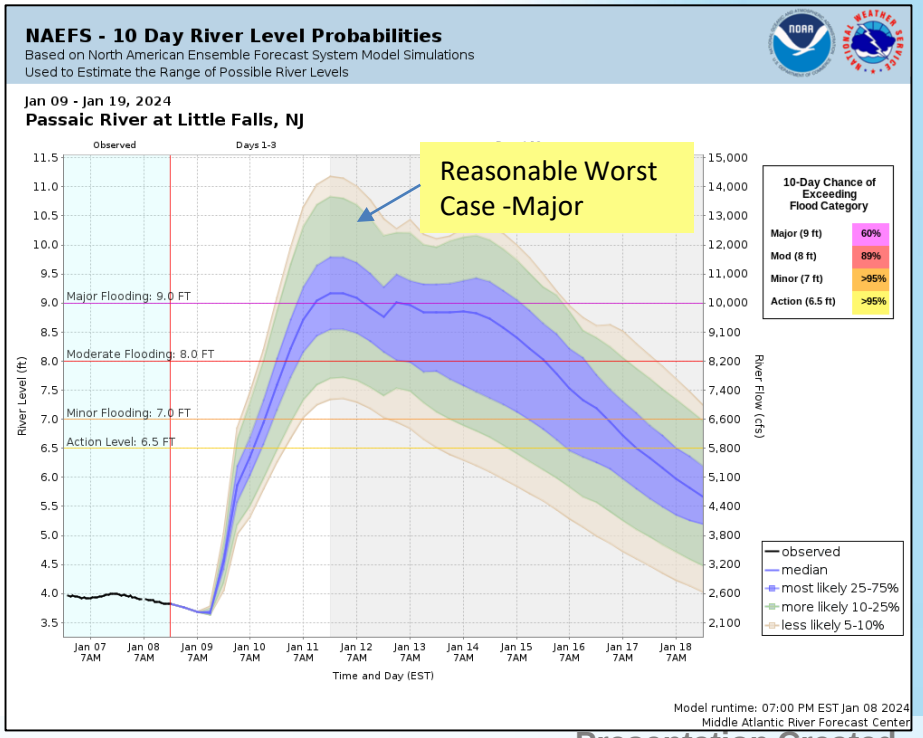
Passaic County: Northeastern NJ River Flooding Potential

- ✓ Moderate to Major flooding is forecast along the Passaic River
- ✓ Moderate to Major flooding likely at the Pequannock @ Riverdale.
- ✓ Major Flooding Impacts: **Extensive inundation of structures and roads, significant evacuations of people and/or transfer of property to higher elevations is likely.**
  - ✓ Passaic River Impacts: **At 9ft+, widespread flooding occurs in Fairfield, Wayne, and parts of Paterson.**

Official RFC Forecast – Passaic at Little Falls

For official forecast details…See the latest river forecasts from WFO PHI, impact catalogs, and inundation maps.

Probabilistic Forecast - Passaic at Little Falls



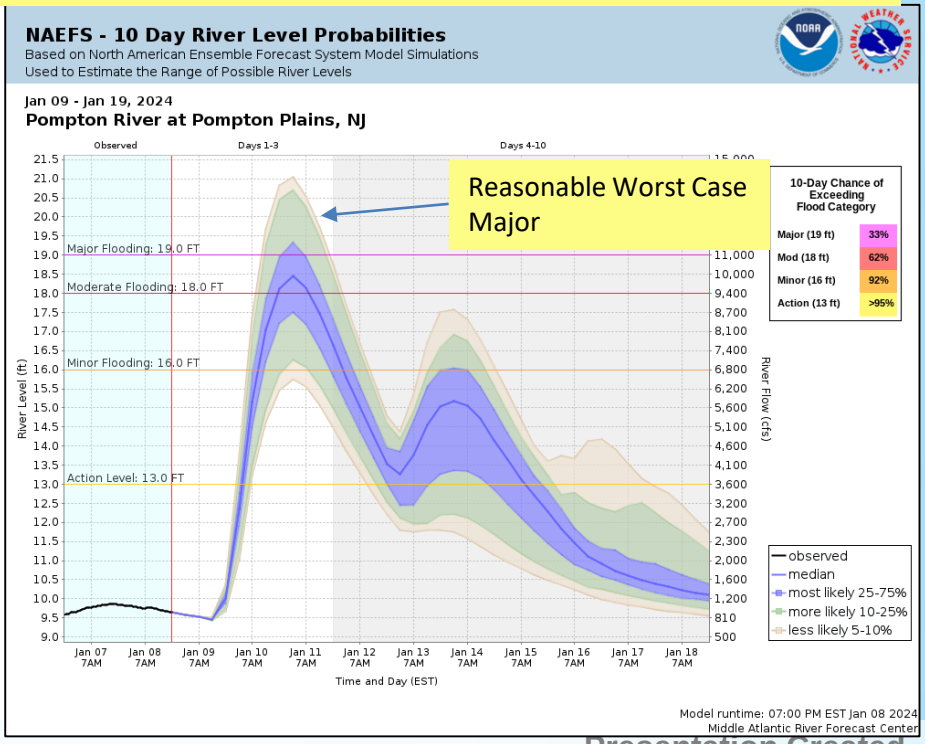
Passaic County: Northeastern NJ River Flooding Potential

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  - ✓ Passaic River Impacts: **At 9ft+, widespread flooding occurs in Fairfield, Wayne, and parts of Paterson.**

Official RFC Forecast – Pompton River at Pompton Plains

For official forecast details…See the latest river forecasts from WFO PHI, impact catalogs, and inundation maps.

Probabilistic Forecast - Pompton River at Pompton Plains



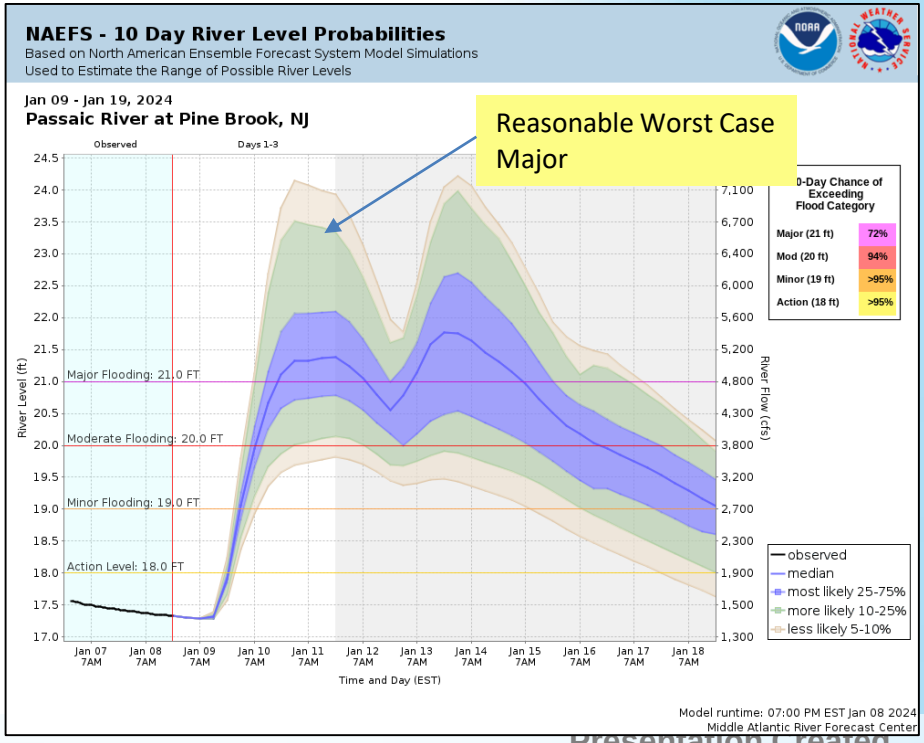
Essex County: Northeastern NJ River Flooding Potential

- ✓ Moderate to Major flooding is forecast along the Passaic River
- ✓ Major Flooding Impacts: **Extensive inundation of structures and roads, significant evacuations of people and/or transfer of property to higher elevations is likely.**
  - ✓ Passaic at Pine Brook Impacts: **At 21ft+, widespread flooding occurs in Fairfield and parts of Wayne and West Caldwell. Residences between Route 80 and Route 46 may flood in Fairfield.**

Official RFC Forecast – Passaic at Pine Brook

Probabilistic Forecast - Passaic at Pine Brook

For official forecast details…See here for the latest river forecasts from WFO PHI, impact catalogs, and inundation maps.

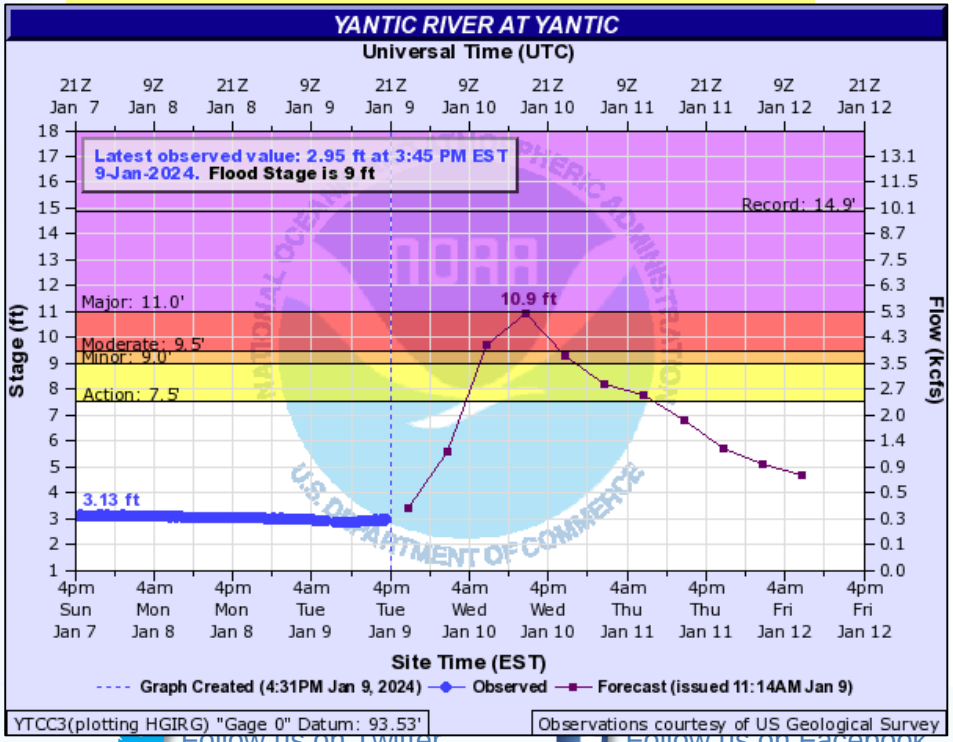


CT River Flooding Potential

- ✓ Moderate to Major flooding is forecast along the Yantic River.
- ✓ **Moderate flooding likely along several quick responding small rivers and streams, including the Yantic, Still, Rippowam, Pomperaug, and Quinnipiac Rivers.**
- ✓ **Moderate to Major Flooding Impacts: Extensive inundation of structures and roads, evacuations of people and/or transfer of property to higher elevations is likely.**

For more details…See here for the latest river forecasts and impact catalogs.

Official RFC Forecast – Yantic River at Yantic CT

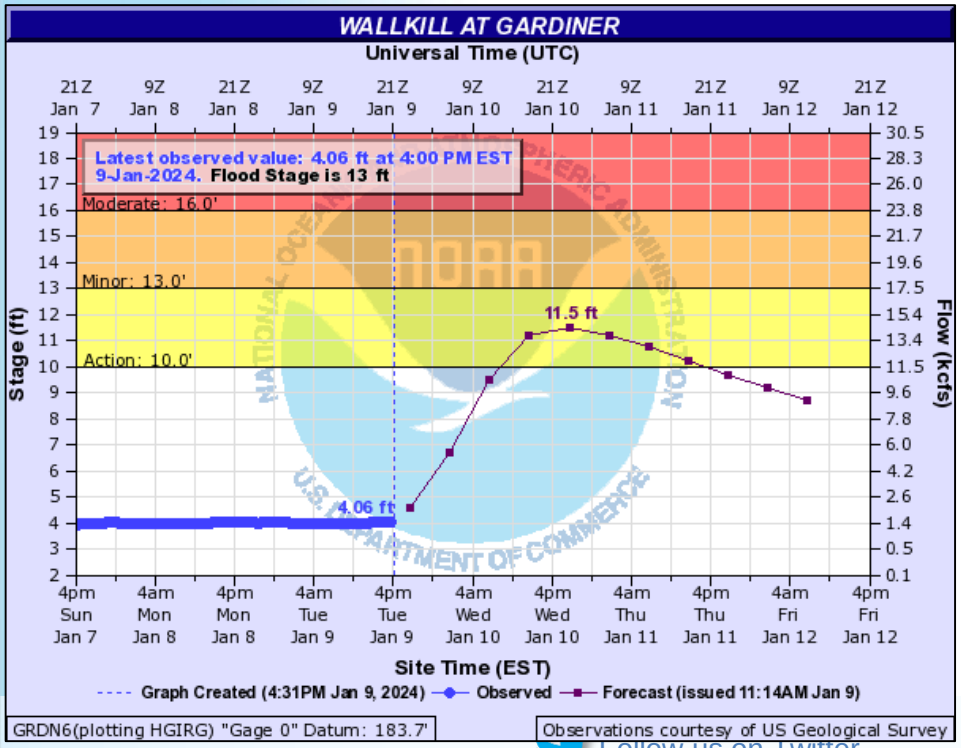


Lower Hudson Valley River Flooding Potential

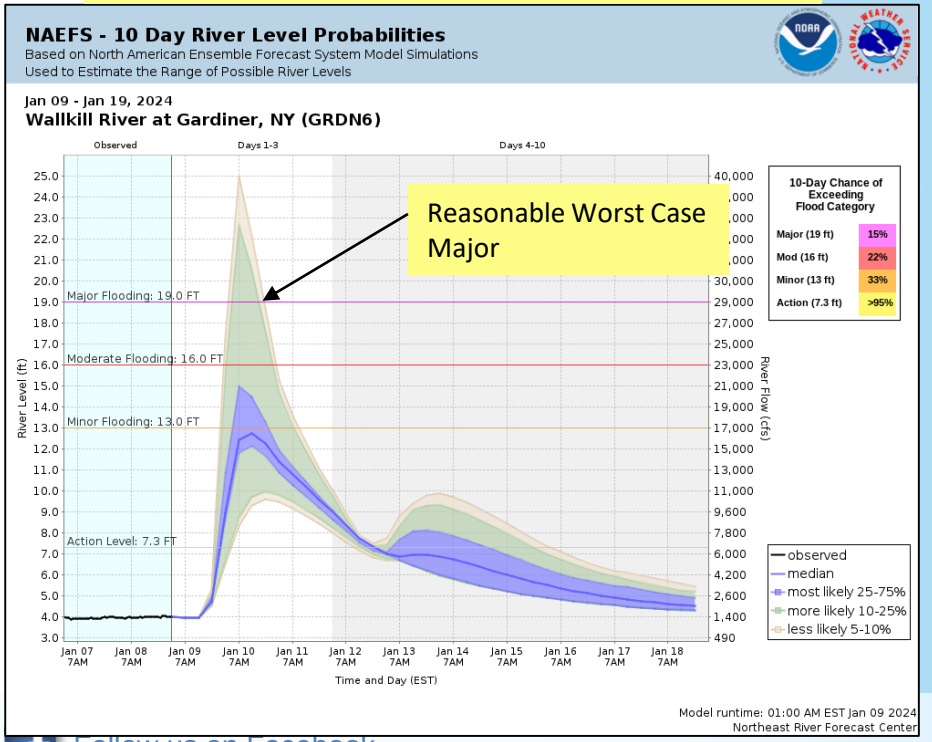
- ✓ **Moderate flooding likely along several quick responding small rivers and streams, particularly in Rockland and Westchester County, including Bronx River, Sprain Brook, Saw Mill River, and Hutchinson River. Moderate to Major Flooding possible for the Wallkill @ Gardiner.**
- ✓ **Moderate Flood Impacts: Some inundation of structures and roads near stream, evacuations of people and/or transfer of property to higher elevations.**

For more details…See here for the latest river forecasts and impact catalogs.

Official RFC Forecast – Wallkill at Gardiner NY

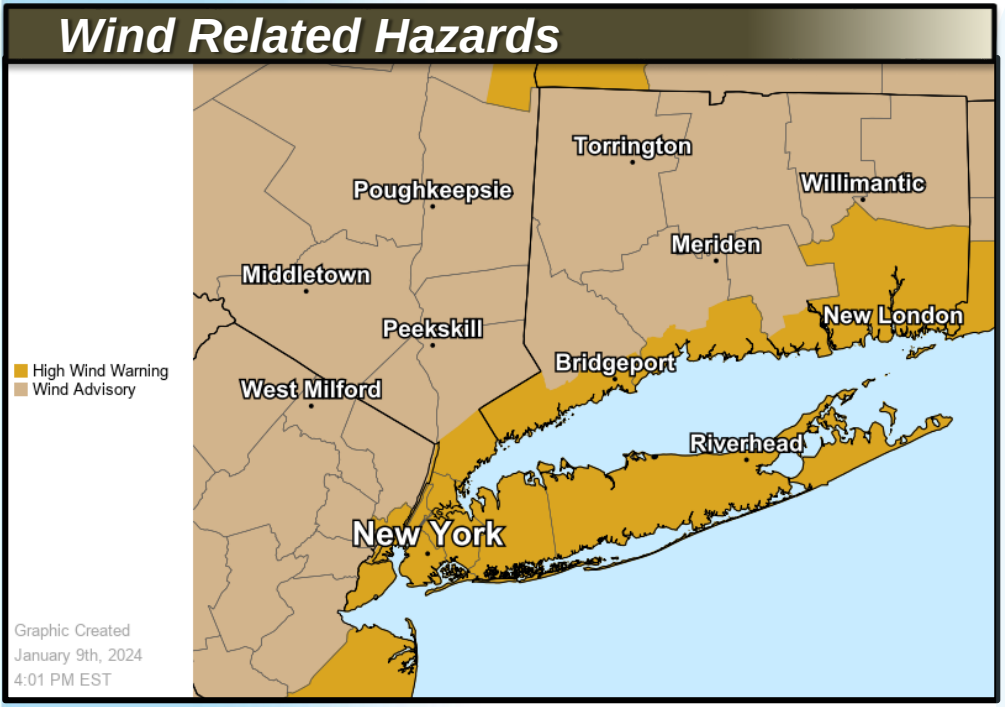


Probabilistic Forecast - Wallkill at Gardiner NY



Strong to Damaging Winds

Wind Related Hazards



Hazards and Impacts:

High Wind Warning Area – Long Island, NYC and coastal NJ/CT/NY

- ✓ **Peak Winds:** South to southeast winds of 30 to 40 mph with gusts 55 to 65 mph. Highest across Long Island and eastern parts NYC. Isolated gusts to 70 mph possible. These strongest winds will likely be for a 6 to 8 hour period between 10pm tonight and 6am Wednesday.
- ✓ **Impacts:** Numerous tree limbs will likely be downed, as well as scattered trees and power lines. Scattered power outages are likely. Poorly secured outdoor objects will be damaged or blown away.

Wind Advisory Area – Rest of local Tri-State

- ✓ **Peak Winds:** South to southeast winds of 20 to 30 mph with gusts up to 50 mph. Strongest winds between 10pm tonight and 5am Wed.
- ✓ **Impacts:** Scattered tree limbs will likely be downed, as well as isolated trees and power lines. A few power outages possible. Poorly secured outdoor objects will be damaged or blown away.

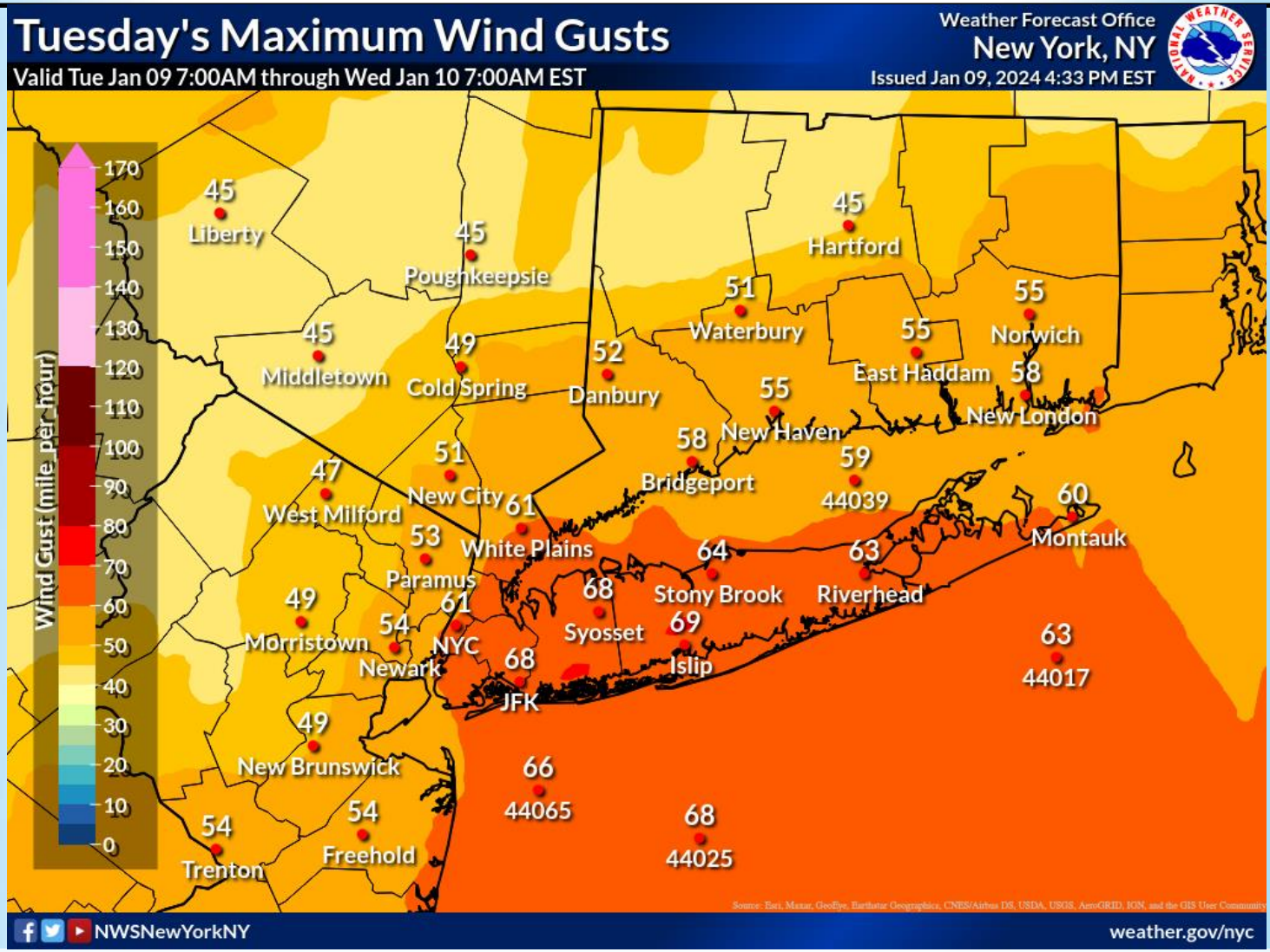
Wednesday: West to southwest winds of 20 to 30 mph with gusts 40 to 50 mph Wednesday morning through the afternoon. Highest for city and coast.

Forecast Challenges:

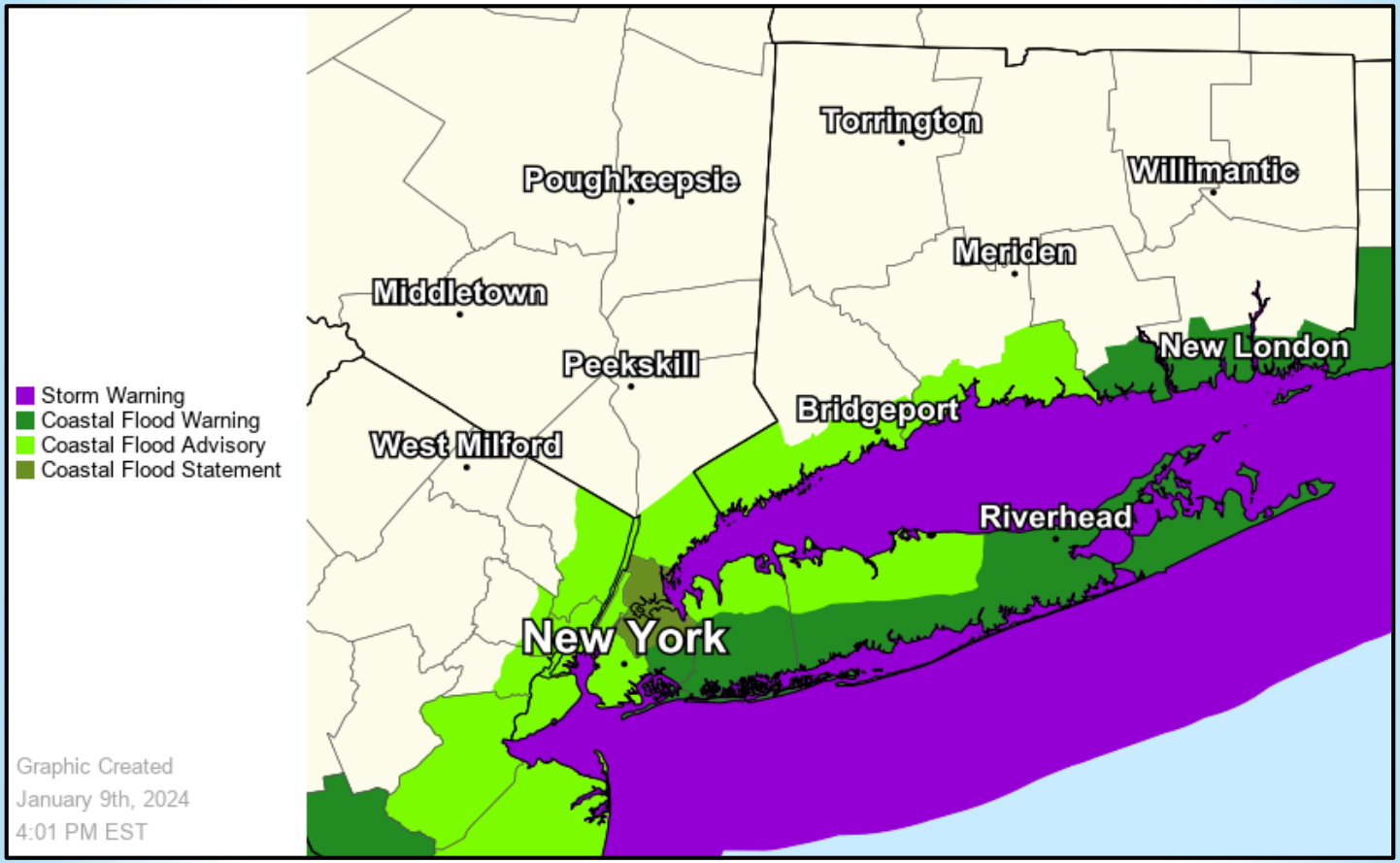
Southeast wind direction and saturated soils may increase the downed tree and powerline impacts.

Embedded thunderstorm activity could cause isolated 65 to 70 mph gusts late tonight into early Wednesday AM.

Strong/Damaging Winds Tonight into Wednesday



Marine / Coastal Hazards



Storm Warnings: All waters until 6am Wednesday
High Seas on the ocean 15 to 20 ft, 4 to 9 ft on LI Sound

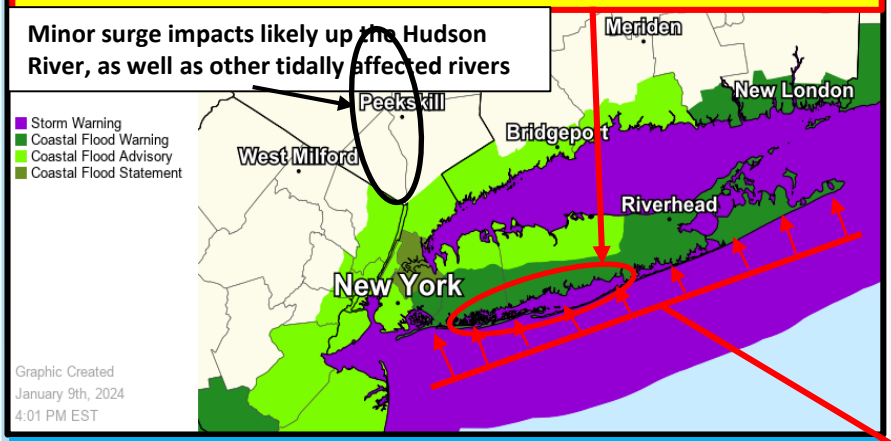
NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

WEATHER-READY NATION

Coastal Flooding Hazard and Impacts

Marine / Coastal Hazards

Greatest threat areas for widespread moderate coastal flooding during Wed morning high tide (inundation of 2 to 2 1/2 ft above ground level). Locally major coastal flooding (inundation of 3 ft above ground level) possible in these areas.



For the latest coastal flood forecasts (hydrographs and tables) and the tools to visualize the potential coastal impacts (zoomable potential inundation map, impact catalogs, climatology, etc.) in your area of concern please see to the NWS New York, NY Coastal Flooding Page

Forecast Challenges:

- ✓ Offshore winds will likely limit the major coastal flood threat with the Wed AM high tide, except along Great South Bay communities from Freeport eastward to Mastic, including Fire Island due to tidal piling and eastward sloshing of water. Peak surge of 4 to 5 ft is expected between times of high tide.
- ✓ Heavy rainfall and/or runoff coinciding with this evening and Wed morning's high tide will exacerbate street and property flooding along the coast and tidally affected rivers.

Coastal Flood Hazards and Impacts:

Wednesday morning high tide:

- ✓ **Coastal Flood Warning Areas: Widespread moderate coastal flooding (2 to 2 1/2 ft above ground) expected for vulnerable coastal areas, Locally major coastal flooding (3 ft above ground) possible for the red circled area due to tidal piling and wind shift from southeast to southwest.**
  - ✓ **Impacts** Numerous low-lying and shoreline roads are likely to be closed in the affected area, with adjacent properties taking on water. Scattered flooding of basements and first floors of low-lying residence possible. Cars will likely be damaged if not moved to higher ground.
- ✓ **Coastal Flood Advisory Areas: Minor to locally moderate coastal flooding (1 to locally 2 ft above ground) for vulnerable coastal areas**
  - ✓ **Impacts** Scattered low-lying and shoreline roads are likely to be closed in the affected area, with adjacent properties taking on water. Cars may be damaged if not moved to higher ground.

Shoreline Hazards and Impacts:

- ✓ **15-20' breaking waves along the oceanfront, resulting in widespread dune base erosion and scattered overwashes with Wed afternoon high tide. Isolated breaches or inundation is possible where dune structures have been severely compromised by previous storms.**
- ✓ **Breaking waves expected to decrease to 10 to 15' for the lower Wednesday evening tide. Scattered areas of dune erosion possible, with overwashes not likely.**
- ✓ **3 to 6' waves along southeast coastal CT and 4 to 9' along Orient Point shoreline resulting in beach erosion and wave splashover onto shoreline roads and properties.**

Timing:

- ✓ Widespread minor flooding for this evening high tide along southern bays of W LI and along W LI Sound.
- ✓ Widespread Minor to Moderate coastal flooding around and near the times of high tide Wednesday morning. Localized Major flooding in southern bays of LI.

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New York, NY

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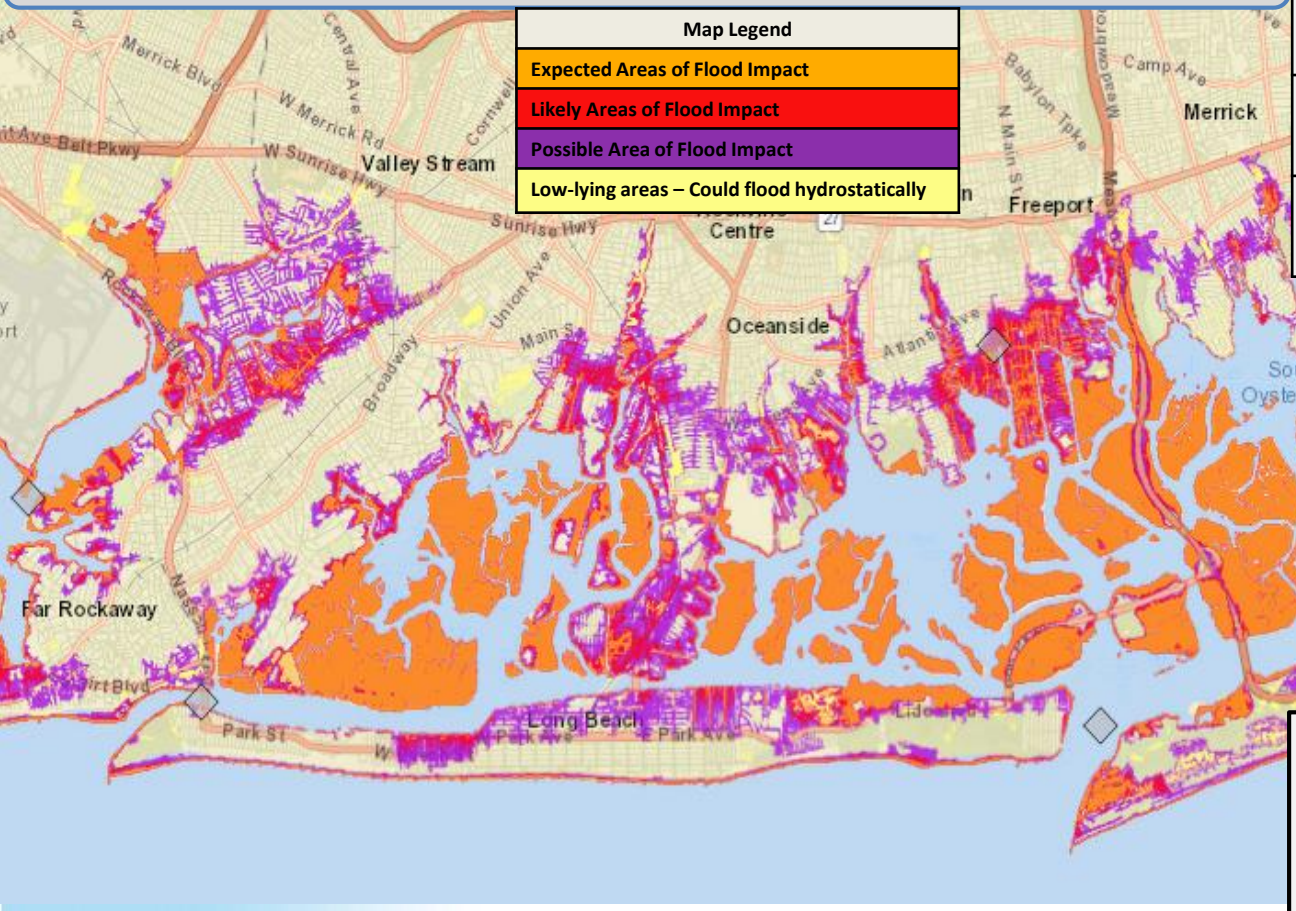
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Coastal Flooding Thresholds

	Minor (CF Advisory)	Moderate (CF Warning)	Major (Warning)
Picture	 Westport	 Lindenhurst	 New Haven
Hazard	• **Low threat of property damage**...and no direct threat to life. • **1 to 2 ft of inundation** in shoreline and vulnerable areas.	• **Elevated threat of property damage**...with a risk to life if one places themselves in unneccesary danger. • **2 to 3 ft of inundation** in shoreline and vulnerable areas. • Minor to no inundation of surrounding coastal communities.	• **Significant threat to life and property.** • **3-5+ ft of inundation** in shoreline and other vulnerable areas. • Minor to moderate inundation (1 to 3 ft) of surrounding coastal communities that rarely experience coastal flooding.
Impact	• A few shoreline and vulnerable roadways and adjacent properties will experience shallow flooding.	• Several shoreline and vulnerable area home and businesses will experience water inside. • Several low-lying coastal and shoreline roads will be closed. • A few cars may take on water or even be destroyed.	• Evacuations will be necessary for the most vulnerable shoreline and coastal areas. • Many coastal communities will experience damage...with some shoreline and flood prone homes and businesses being destroyed. • Many cars will likely be submerged or washed away. • Several sections of nearshore roads and escape routes will be impassable and a few could be washed out. • Flood waters may extend well inland in low lying areas.

Coastal Flooding – Potential Major Flood Impact Areas

The map below shows the potential extent of flood impact (water above ground) during the Wednesday morning high tides. Flooding may be as deep as 2 to 2 1/2, locally 3 ft in spots.



Forecast Location (High tide Time)	Peak Water Level (ft) (MLLW/MHHW)	Departure at high tide (ft)	Flood Impact
Freeport (7 AM)	6.7-7.2/2.2-2.7	+(3.2-3.7)	Mod-Maj
East Rockaway (6 AM)	7.0-7.5/2.1-2.6	+(1.9-2.3)	Moderate
Point Lookout (6 AM)	6.8-7.3/2.1-2.6	+(2.0-2.5)	Moderate

Impact Catalogs - Use the catalog below for the forecast point closest to your area of concern, and then use the total water level forecasts above to cross reference potential impacts in your area.

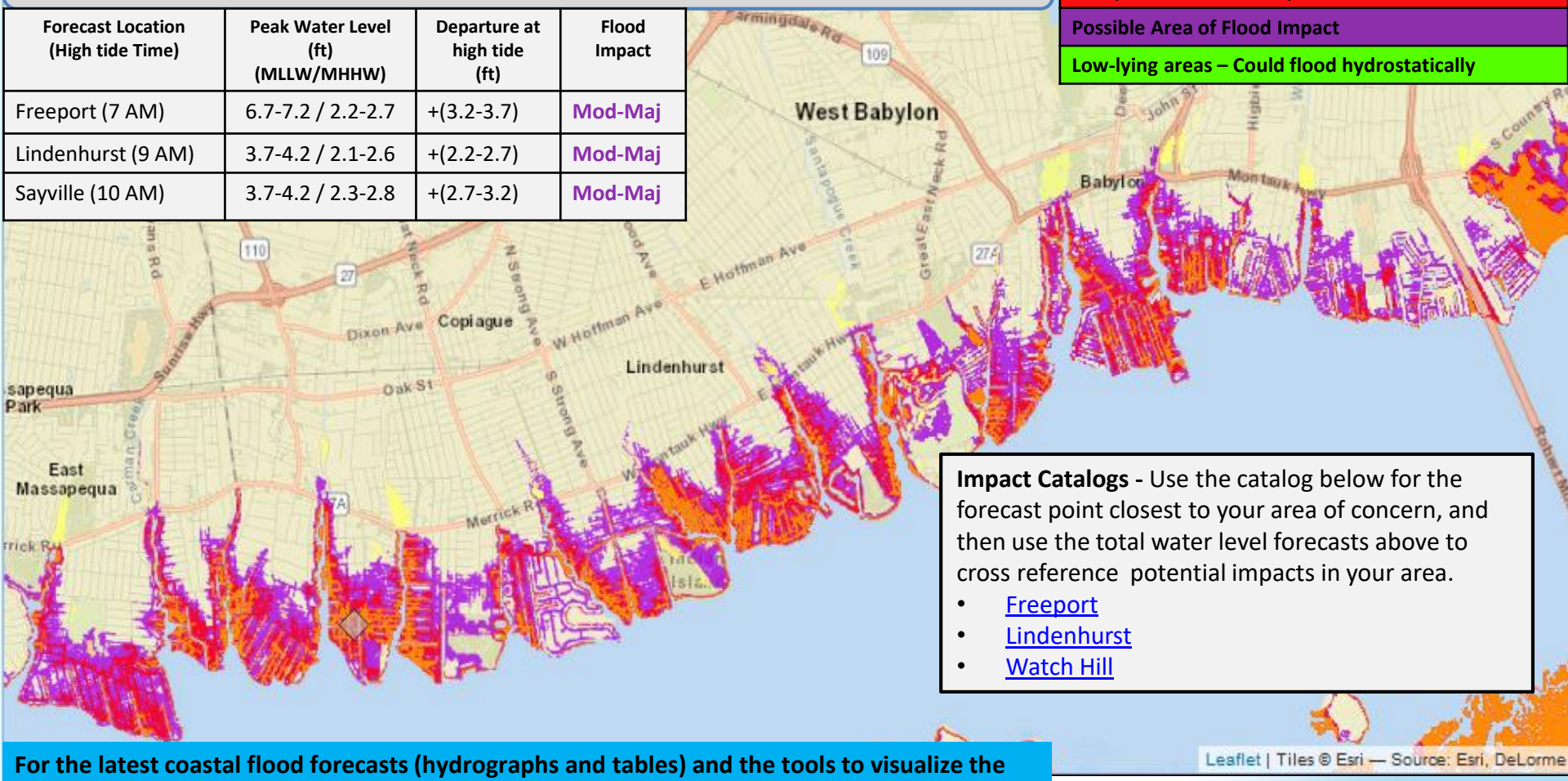
- Freeport
- East Rockaway
- Point Lookout

For the latest coastal flood forecasts (hydrographs and tables) and the tools to visualize the potential coastal impacts (zoomable potential flood impact map, impact catalogs, climatology, etc.) in your area of concern please go to the NWS New York, NY Coastal Flooding Page

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Freeport (7 AM)	6.7-7.2 / 2.2-2.7	+(3.2-3.7)	Mod-Maj
Lindenhurst (9 AM)	3.7-4.2 / 2.1-2.6	+(2.2-2.7)	Mod-Maj
Sayville (10 AM)	3.7-4.2 / 2.3-2.8	+(2.7-3.2)	Mod-Maj



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- Freeport
- Lindenhurst
- Watch Hill

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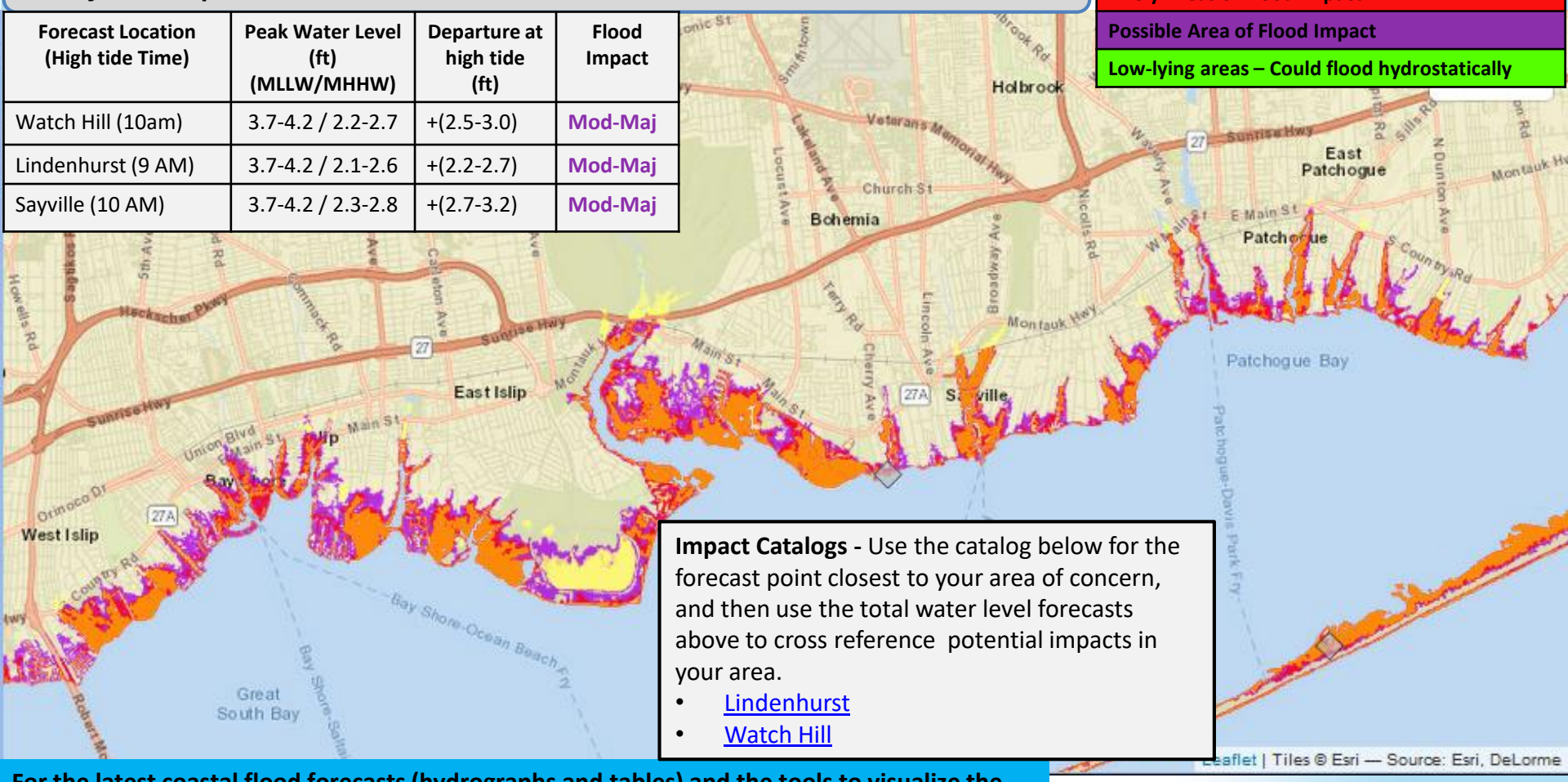
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Map Legend
Expected Areas of Flood Impact
Likely Areas of Flood Impact
Possible Area of Flood Impact
Low-lying areas – Could flood hydrostatically



Impact Catalogs - Use the catalog below for the forecast point closest to your area of concern, and then use the total water level forecasts above to cross reference potential impacts in your area.

- Lindenhurst
- Watch Hill

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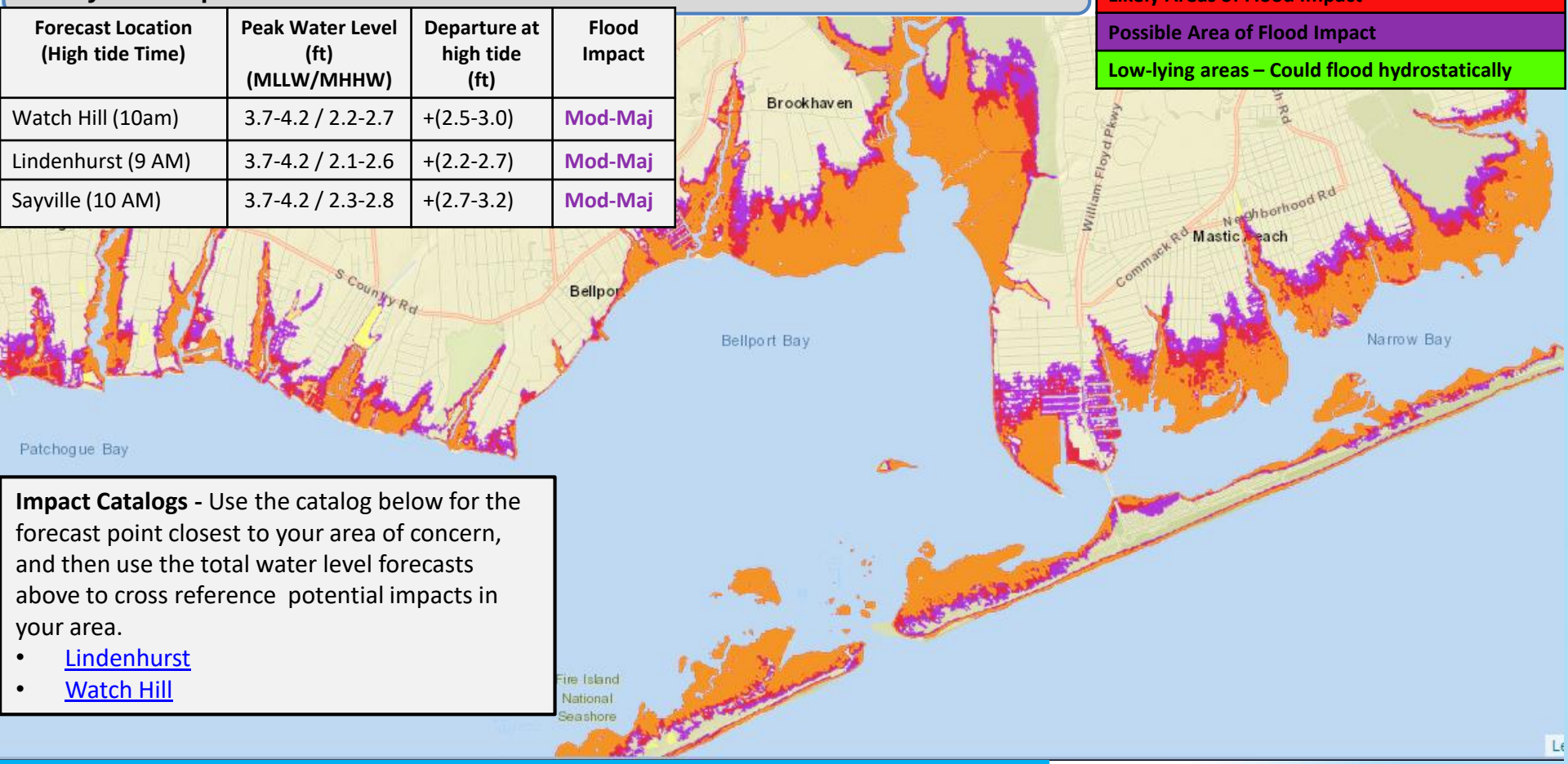
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Coastal Flooding – Potential Major Flood Impact Areas

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Event Summary

- ✓ Widespread 2 ½ to 3 ½ ", locally 4"+, of rain through Wednesday morning.
  - ✓ **Widespread moderate to major river flooding across NE NJ, Lower Hudson Valley and SW CT into Thursday.**
  - ✓ Widespread urban and poor drainage flood threat, with isolated to scattered flash flood threat.

- ✓ Southerly winds 30 to 40 mph with gusts 55 to 65 mph likely, with isolated 70 mph gusts possible for the coast tonight into early Wednesday morning , causing numerous tree impacts and scattered power impacts.

- ✓ Widespread minor to moderate coastal flooding (2 to 2 ½ ft inundation above ground) for vulnerable coastal communities during the Wednesday morning high tide. Isolated major (around 3 ft inundation above ground) is possible along the Great South Bay of LI. Minor surge flooding likely up tidally affected rivers as well.

- ✓ 15 to 20 ft breaking surf causing widespread dune erosion and scattered overwashes for the ocean beachfront. Isolated dune breaches are possible where duens are severly compromised.

- ✓ Storm conditions on all waters through early Wednesday morning.