

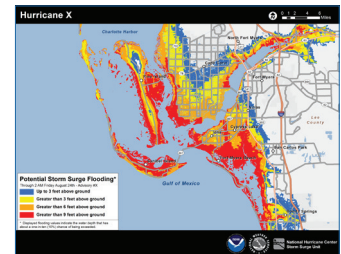


# Potential Storm Surge Flooding

## Tips for Emergency Managers

The Potential Storm Surge Flooding map is an experimental National Weather Service (NWS) product that provides valuable new information on the potential storm surge flooding associated with tropical cyclones. This fact sheet can help emergency managers understand and use the new map to communicate effectively with members of their community.

Although storm surge is often the greatest threat to life and property from a tropical storm or hurricane, many people do not understand this term and the threat it represents to them. Starting in 2014, the NWS's National Hurricane Center (NHC) will experimentally issue the Potential Storm Surge Flooding map to show the extent and depth of possible storm surge flooding for a given storm. The map represents a reasonable estimate of worst-case scenario flooding of normally dry land at particular locations due to storm surge. It will be updated **every six hours in association with each NHC full advisory package.**



## Overview

Developed over several years in consultation with emergency managers and others, the map shows:

- » **Land areas** where, based on the latest NHC forecast, storm surge could occur.
- » How **high above ground** the water could reach in those areas.

Major factors influence the amount of surge a storm produces at a given location, including the hurricane's landfall location; storm intensity, size, forward speed, and angle of approach to the coast; the shape of the coastline; the slope of the ocean bottom; and local features such as barrier islands, bays, and rivers.

### Timing and other variables:

- » The map will typically be issued when a hurricane or tropical storm watch is first issued for any portion of the Gulf or East Coast of the United States, or approximately **48 hours** before the anticipated onset of tropical storm force winds.
- » The map is subject to change every **six hours** in association with every new NHC full advisory package. Due to the processing time required to produce the map, **it will not be available until about 45 to 60 minutes following advisory release.**

### Factors the map takes into account:

- » Flooding due to storm surge from the ocean, including adjoining tidal rivers, sounds, and bays
- » Land elevation
- » Uncertainties in the track, landfall location, intensity, and size of the cyclone
- » Tides

### Factors the map does not take into account:

- » Wave action
- » Freshwater flooding from rainfall
- » Flooding inside levees and overtopping

- » The map is based on the forecast movement and intensity of the current tropical storm or hurricane, and it takes into account likely forecast errors.
- » The map represents a reasonable estimate of worst-case scenario flooding of normally dry land at particular locations due to storm surge. There is a 1-in-10 chance that the storm surge flooding at any particular location could be higher than the values shown on the map. The map is created from multiple runs of the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model.

# 6 Key Points to Communicate About the Map

When using this map, it will be helpful to explain the following key concepts.

**1. Scope:** This is a map of potential flooding due to storm surge from the current tropical storm or hurricane. It is not a FEMA flood insurance rate map (FIRM) or an evacuation zone map. Life-threatening storm surge can occur in areas that are not in a floodplain. Also, evacuation zones can consider other critical factors that affect public safety, and these zones can be different from the areas shown on this map. **Urge people to always follow your evacuation instructions.**

**2. Areas at risk:** This map shows the **locations that could be affected by storm surge.**

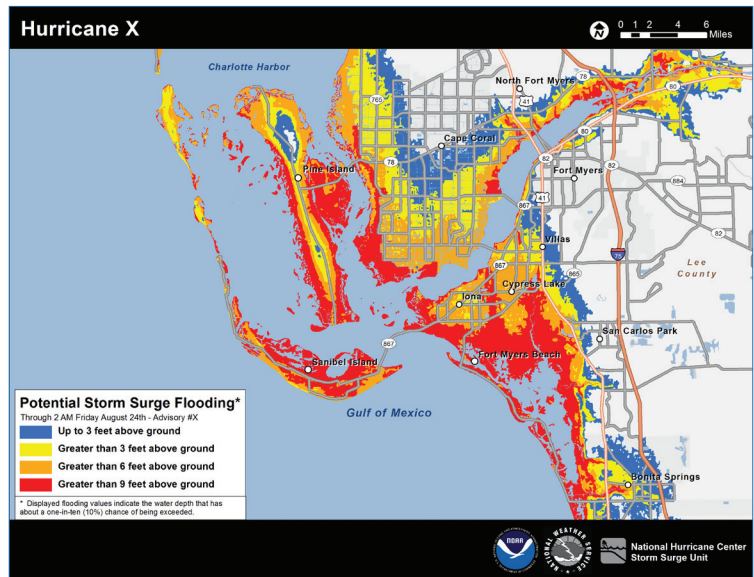
Areas are in different colors based on water level—red, orange, yellow, or blue, from highest to lowest. For someone living in these areas, conditions could become **life-threatening**. The levels on these maps are **potential ranges** for these areas, but this map cannot tell you exactly how high water will reach at any individual location or residence.

**3. Risk for other areas:** Weather conditions and the forecast can change. Even if your community is not in one of the colored areas shown on the map, that could change later, and your area could experience other hazards from the storm and face dangerous conditions such as **impassable roads, water and sewage problems, and power outages**. If power remains on, downed electrical wires can pose an **electrocution risk**. **Urge people to follow your instructions.**

**4. Potential water depths:** Note that the potential water depths are shown as **above ground**, not above mean sea level or normal tide levels. Local land elevations are taken into account, along with tides, when creating the map. However, the depicted water levels do not account for rainfall or waves.

**5. Coastal versus inland hazards:** While impacts at the coast could be more significant because of large and dangerous breaking waves, storm surge is often **not just a coastal threat**. Storm surge can cause dangerous flooding well inland from the coast, and the map will show this potential flooding. Although heavy rainfall is usually the primary cause of inland flooding, the *Potential Storm Surge Flooding* map **does not** include the rainfall contribution to inland flooding.

**6. Timing:** The map will usually be updated every **six hours**, and people should continue to monitor the storm and listen for your instructions.



## For More Information

The NWS looks forward to seeing how emergency managers use this experimental product as part of their planning, preparation, and decision-making efforts. For more information, contact Jamie Rhome at [Jamie.R.Rhyme@noaa.gov](mailto:Jamie.R.Rhyme@noaa.gov).