



## Hurricane Maria 9.19.17 Analysis

Risk Services Division

19 September 2017

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## Hurricane Maria September 19, 2017 (10am EST)

- **Maria made landfall Monday evening on the Caribbean island of Dominica with 160 mph winds.**
- **Reports indicate significant damage to structures has occurred in Dominica.**
- **U.S. disaster officials have promised brigades of energy workers to help Puerto Rico reinstate power on the island after Maria.**
- **The 450 shelters opened for Irma will remain in place and accept thousands of residents fleeing flood-prone areas.**
- **An emergency declaration for Puerto Rico for federal assistance to augment the territory's storm-response initiatives.**

### Summary

As of 8:00 a.m. EDT, Hurricane Maria was located 170 miles southeast of St. Croix with maximum sustained winds of 160 mph and a minimum central pressure of 930 mb. Hurricane-force winds extend outward up to 30 miles (45 km) from the center and tropical-storm-force winds extend outward up to 125 miles (205 km). Maria is moving toward the west-northwest near 9 mph. On the forecast track, the eye of Maria will move over the northeastern Caribbean Sea on Tuesday and approach the Virgin Islands and Puerto Rico Tuesday night and Wednesday. Some fluctuations in intensity are likely during the next day or two, but Maria is forecast to remain an extremely dangerous hurricane while it approaches the Virgin Islands and Puerto Rico.

Additional showers and thunderstorms are anticipated behind Maria into next weekend leading to additional flooding and mudslide issues. Rain, flooding, and wind generated by Hurricane Maria can be expected to produce medium to high local impacts to critical infrastructure within U.S. Virgin Islands and Puerto Rico. Based on current projections, rainfall amounts of 6 to 12 inches with isolated maximum amounts of 25 inches are expected across Puerto Rico, and 6 to 12 inches with maximum amounts of 20 inches in the U.S. Virgin Islands. Storm surge is expected to reach 6 to 9 feet if peak surge occurs at high tide.



### Watches and Warnings

**Hurricane Warning:** Guadeloupe; Dominica; St. Kitts, Nevis, and Montserrat; U.S. Virgin Islands; British Virgin Islands; Puerto Rico, Culebra, and Vieques

**Tropical Storm Warning:** Antigua and Barbuda; Saba and St. Eustatius; St. Maarten; Anguilla; Martinique

**Hurricane Watch:** Saba and St. Eustatius; St. Maarten; St. Martin and St. Barthelemy; Anguilla; Isla Saona to Puerto Plata

**Tropical Storm Watch:** West of Puerto Plata to the northern Dominican Republic-Haiti border

## Declaration Watch – Territory of the US Virgin Islands

- Governor requested an Emergency Declaration on September 17, 2017
- As a result of Hurricane Maria beginning on September 16, 2017 and continuing
- Requesting Public Assistance for the islands of St. Croix, St. John, and St. Thomas
  - Debris removal and Emergency Protective Measures (Categories A & B)
  - Direct federal assistance

## Impact Summary

| Territory          | Confirmed Fatalities | Shelters/Population                | Customer Power Outages                                    | Hospitals   | Evacuations                                  | Other  |
|--------------------|----------------------|------------------------------------|---|---|--|--|
| <b>USVI</b>        | 5                    | Shelters: 6 (+2)<br>Pop: 248 (+86) | St. Thomas: 19,574<br>St. John: 2,893<br>St. Croix: 6,905 | Hospitals: 1 closed<br>Dialysis centers: 1 closed                 | No orders                                    | Territory wide curfew will go into effect September 19; Public schools remain closed |
| <b>Puerto Rico</b> | 3                    | Shelters: 2 (-1)<br>Pop: 58 (-131) | 63,503<br>(-1,550)  | Hospitals: All open<br>Dialysis centers: All open; 1 on generator | Mandatory evacuation for four municipalities | 38 Schools (2%) remain closed due to lack of power, water, etc.                      |

## Safety Procedures & Readiness

Now is the time to prepare for these hurricanes; all residents and visitors in the paths of Hurricanes Jose and Maria should review these tips:

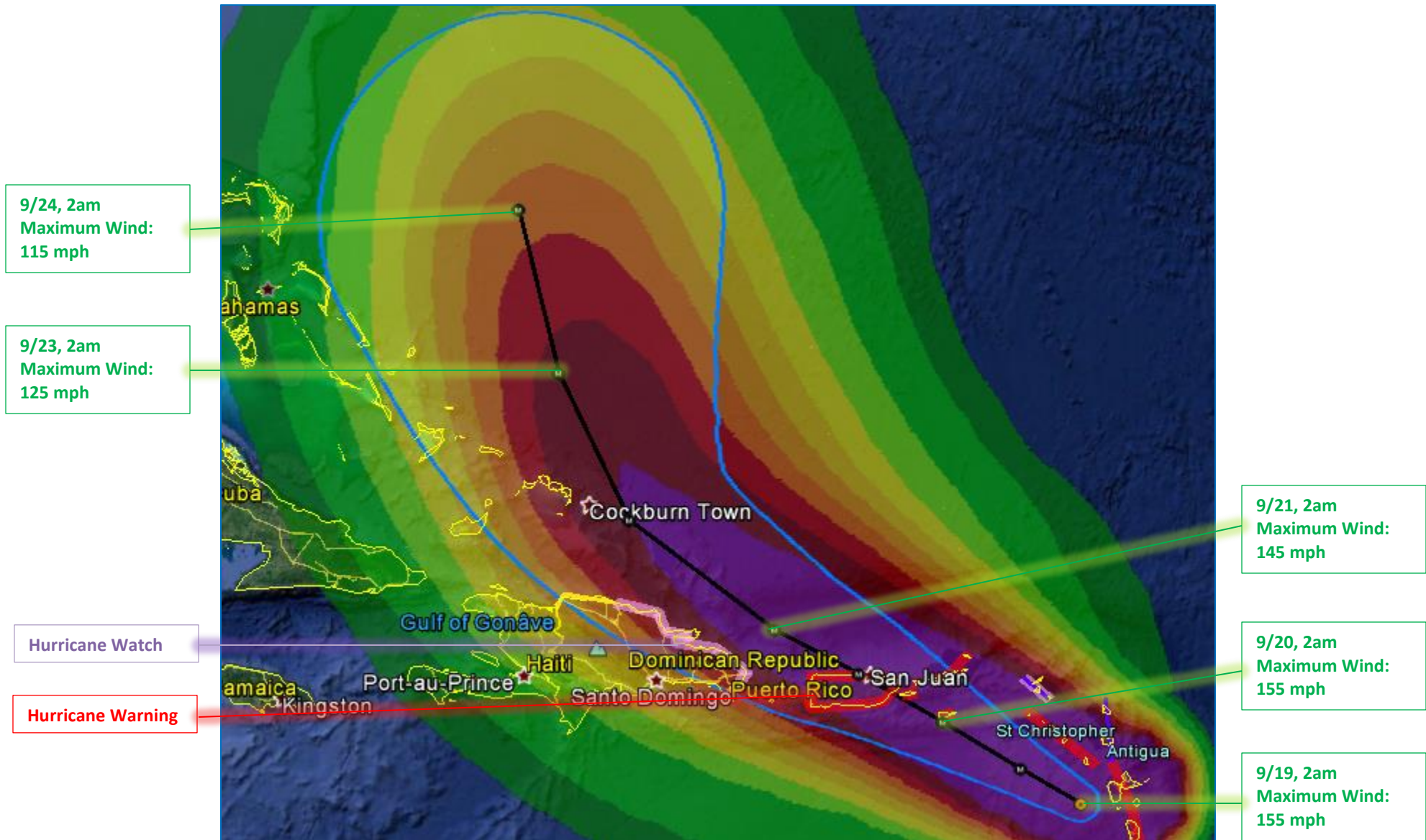
- Check to make sure your [emergency kit](#) is stocked and test your [family communications plan](#).
- Know your evacuation routes and how to find higher ground. Determine where you would go, and how you would get there if instructed to evacuate. *If directed to evacuate by local officials, evacuate.*

Stay vigilant and continue to monitor local radio or TV stations, and local emergency management officials, for updated weather and emergency information.

- The [FEMA App](#) (available in English and Spanish) provides National Weather Service alerts (for up to 5 areas), emergency kit checklists, directions to open shelters, safety preparation tips and more.
- Make plans to secure your property:
  - Cover all of your home's windows. Permanent storm shutters offer the best protection for windows. A second option is to board up windows with 5/8" marine plywood, cut to fit and ready to install. Tape does not prevent windows from breaking.

- Reinforce your garage doors; if wind enters a garage it can cause dangerous and expensive structural damage.
- Plan to bring in all outdoor furniture, decorations, garbage cans, and anything else that is not tied down.
- Determine how and where to secure boats and other marine craft.
- You can safely install a generator for emergencies. Remember, never run a generator inside and keep it away from windows, doors, and vents.
- If using candles, please use caution. If possible, use flashlights instead. If you must use candles, do not burn them on or near anything that can catch fire.
- Your phone is an important tool to ensure your family's safety. Make sure to charge your phone and other electronic devices.
- Businesses of all sizes are encouraged to follow local public safety authority direction and to share safety messaging with employees in order to reduce risk.
- If you have a National Flood Insurance Program (NFIP) flood insurance policy, you may be eligible for reimbursement for actions taken to protect your property. Call your insurance agent to find out more.

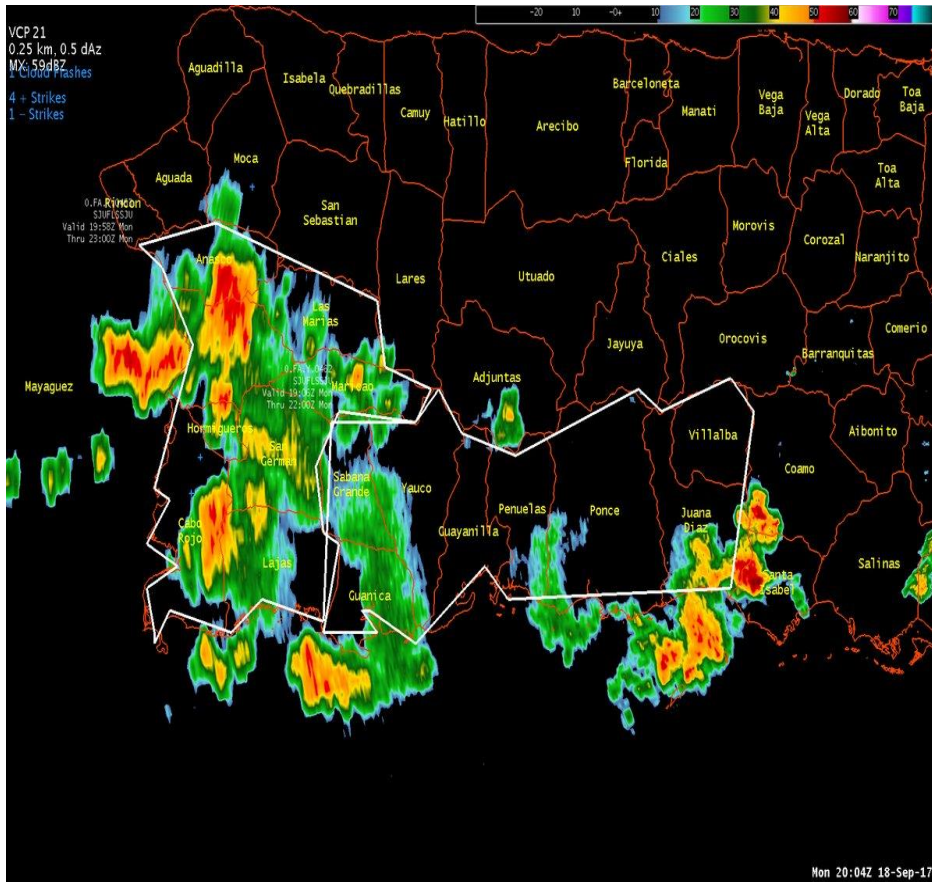
Predicted Path



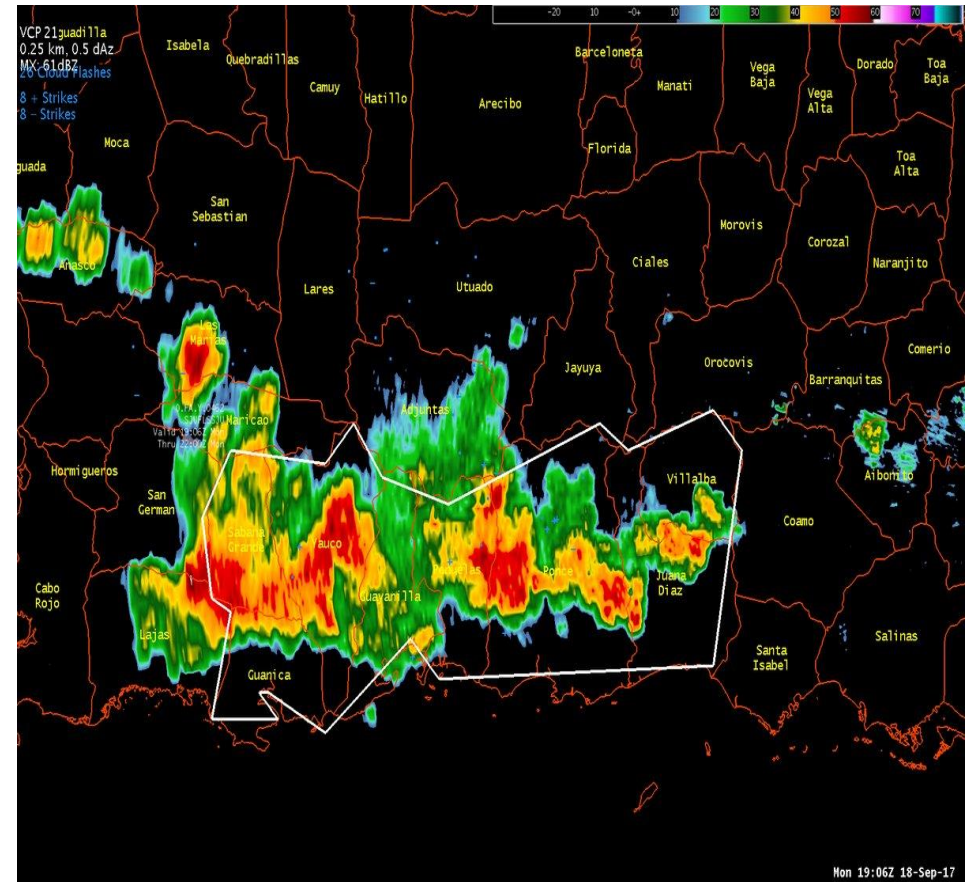
**Hurricane Maria Probable Impacts to Infrastructure Sectors**

| Infrastructure        | Local/Regional Impact Level | National Impact Level | Impact: Low ● Medium ● High ●  |
|-----------------------|-----------------------------|-----------------------|--|
| Dams                  | ●                           | ●                     | Low to medium local impacts are anticipated for high-hazard dams located in Puerto Rico based on current rainfall forecasts and reservoir levels. There are no high-hazard dams of concern in the U.S. Virgin Islands.   |
| Financial Services    | ●                           | ●                     | Local banking and ATM access may be disrupted in affected areas due to power outages, resulting in disruptions to consumer banking services and the ability to access cash.  |
| Commercial Facilities | ●                           | ●                     | Facilities within impacted areas could experience physical damage from wind and rainfall-runoff flooding.  |
| Emergency Services    | ●                           | ●                     | Facilities may suffer low to medium impacts due to power outages and wind and water damage. Operations will likely to be able to continue due to backup protocols.   |
| Government Facilities | ●                           | ●                     | Local governments will continue to provide essential services. Facilities requiring evacuations will relocate to backup sites to maintain continuity of operations.  |
| Energy                | ●                           | ●                     | Electric power outages and duration of outages cannot be estimated with precision at this time. Infrastructure that may have been damaged from Hurricane Irma may have not yet been repaired, adding additional complexity in estimating impacts to the electric power sector. |
| Communications        | ●                           | ●                     | Medium to high impacts are expected to wireless communications primarily because of tower and antenna damage and loss of electric power.   |
| Roads                 | ●                           | ●                     | Highways and local roads will experience flooding and debris that will hinder evacuations and emergency response.  |
| Airports              | ●                           | ●                     | Flights will be cancelled until Hurricane Maria has passed. Medium physical damage is anticipated due to wind damage, storm surge, and debris.   |
| Maritime              | ●                           | ●                     | Vessel traffic will shut down at ports in Puerto Rico and U.S. Virgin Islands until Hurricane Maria has passed. Low to medium physical damage to port facilities is anticipated.   |
| Water                 | ●                           | ●                     | Water treatment plants in Puerto Rico may be affected by power outages. Many plants likely have some backup power capability, although backup fuel supplies may be depleted following previous hurricane.  |
| Hospitals             | ●                           | ●                     | Hospitals may lose power, but will use backup generators to provide power until it is restored. Low to medium physical damage is anticipated.  |

**Flood Advisories – Puerto Rico**



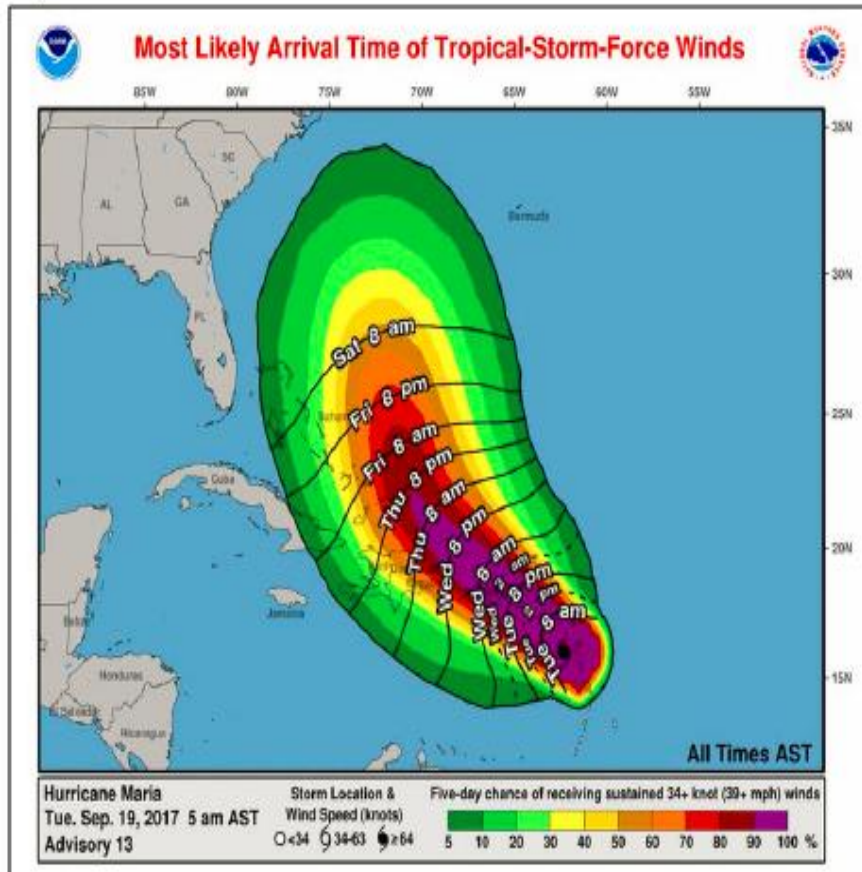
*Flood Advisory for 7pm for western Puerto Rico*



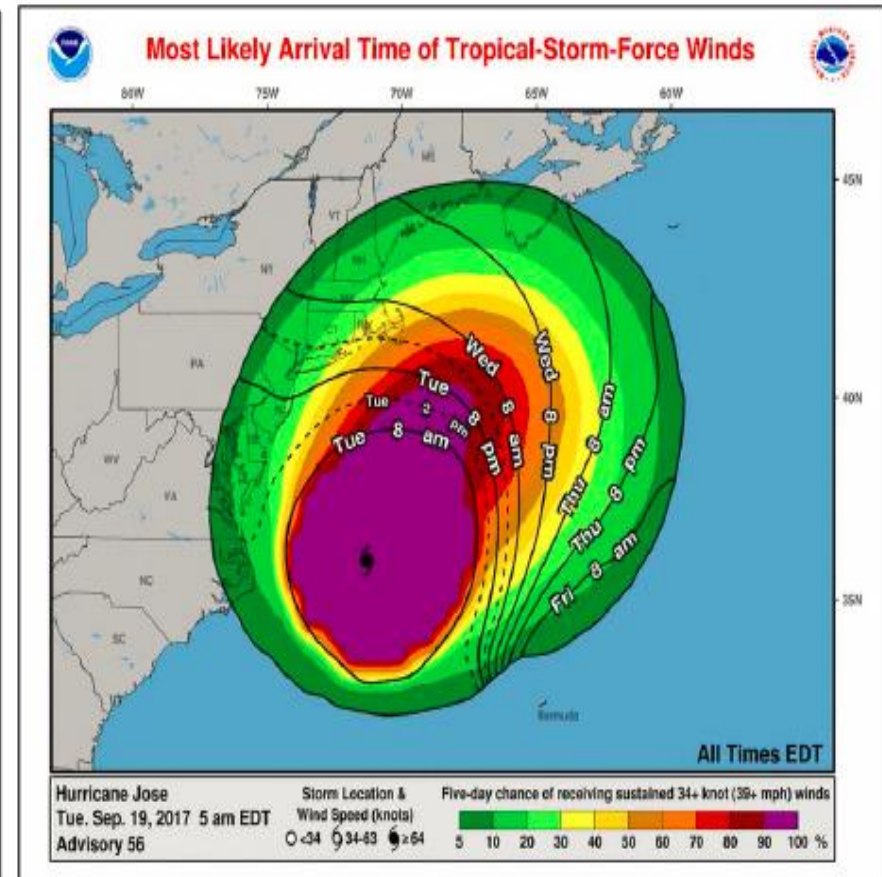
*Flood Advisory for southwest municipalities of Puerto Rico until 6pm*

Tropical Outlook – Atlantic

*Hurricane Maria*



*Hurricane Jose*





**For Additional Information:**

American Red Cross  
<http://www.redcross.org/>

US Coast Guard Storm Center  
<https://www.uscg.mil/news/stormcenter/>

US National Hurricane Center  
[www.nhc.noaa.gov](http://www.nhc.noaa.gov)

US Federal Emergency Management Agency  
<http://www.ready.gov/hurricanes>

FEMA – Mobile App  
<https://www.fema.gov/mobile-app>

Ready Gov  
[www.ready.gov](http://www.ready.gov)

Listo Gov (Spanish)  
[www.listo.gov](http://www.listo.gov)

Emergency Management Agencies  
<https://www.fema.gov/emergency-management-agencies>

Caribbean Disaster Emergency Management Agency  
[http://www.cdema.org/index.php?option=com\\_wrapper&view=wrapper&Itemid=417](http://www.cdema.org/index.php?option=com_wrapper&view=wrapper&Itemid=417)

Smart Traveler Enrollment Program  
<https://step.state.gov/>