



Hurricane Maria 9.20.17 Analysis

Risk Services Division

20 September 2017

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Hurricane Maria September 20, 2017 (10am EST)

- **Maria hit Dominica and caused widespread damage to Guadeloupe and Martinique.**
- **Maria made landfall Tuesday morning on Puerto Rico as a Category 4 hurricane with 140 mph winds.**
- **The National Weather Service in San Juan has issued a flash flood warning for municipalities along the Rio Grande De Loiza.**
- **A life-threatening storm surge raising water levels up to 6 to 9 feet above ground is possible in coastal regions of Puerto Rico.**
- **Electrical and telephone service on Puerto Rico has been severely disrupted in approximately 60% of households.**
- **More than 11,000 residents have taken shelter in the 500 shelters that have been opened.**

Summary

As of 8:00 a.m. EDT, Hurricane Maria was over eastern Puerto Rico having hit the town of Yabucoa in the southeast shortly after 06:00 AST as Category 4 hurricane with maximum sustained winds of 155mph (250kph). The eyewall of Maria is continuing across Puerto Rico, including the island of Vieques. The national Weather Service has issued “extreme wind warnings” for several eastern Puerto Rico municipalities. A storm surge of over 5 feet was recorded by NOAA at Yabucoa Harbor and intense south-southeast winds continue to pile water into the harbor on the east side of Maria’s circulation. Flash flood warnings have been issued in much of eastern Puerto Rico. Over a dozen river gauges have reported levels above flood stage already and more heavy rain is expected. A flash flood emergency was issued for the Rio de La Plata Basin in central Puerto Rico. Water levels have risen as much as 20 feet since midnight in some areas.

This morning, the National Weather Service office in San Juan warned of “catastrophic damage” from Maria’s winds, as well as “life-threatening rainfall flooding having possible devastating impacts”

The hurricane crossed the United States Virgin Islands as a Category 5 storm then weakened slightly pushing heavy rain and winds of up to 155mph (250kph).

Hurricane warnings have now been issued for the Turks and Caicos Islands and southeast Bahamas where hurricane conditions are expected within the next 36 hours.

Hurricane warnings remain in effect for the U.S. and British Virgin Islands, Puerto Rico, Culebra, Vieques and in the Dominican Republic

Maria’s eye will continue across Puerto Rico with destructive winds, storm surge flooding on the coast, and flooding rain Wednesday before pulling away from the island Wednesday evening.

Conditions in the Virgin Islands will slowly improve Wednesday though heavy rain and tropical storm-force winds may persist for some time.



Watches and Warnings

Hurricane Warning: Portions of the Dominican Republic, Bahamas, Turks and Caicos

Flash Flood Warning: Puerto Rico municipalities along the Rio Grande De Loiza

Hurricane Watch: U.S. and British Virgin Islands, Puerto Rico, Culebra, Vieques and in the Dominican Republic

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.*
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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.

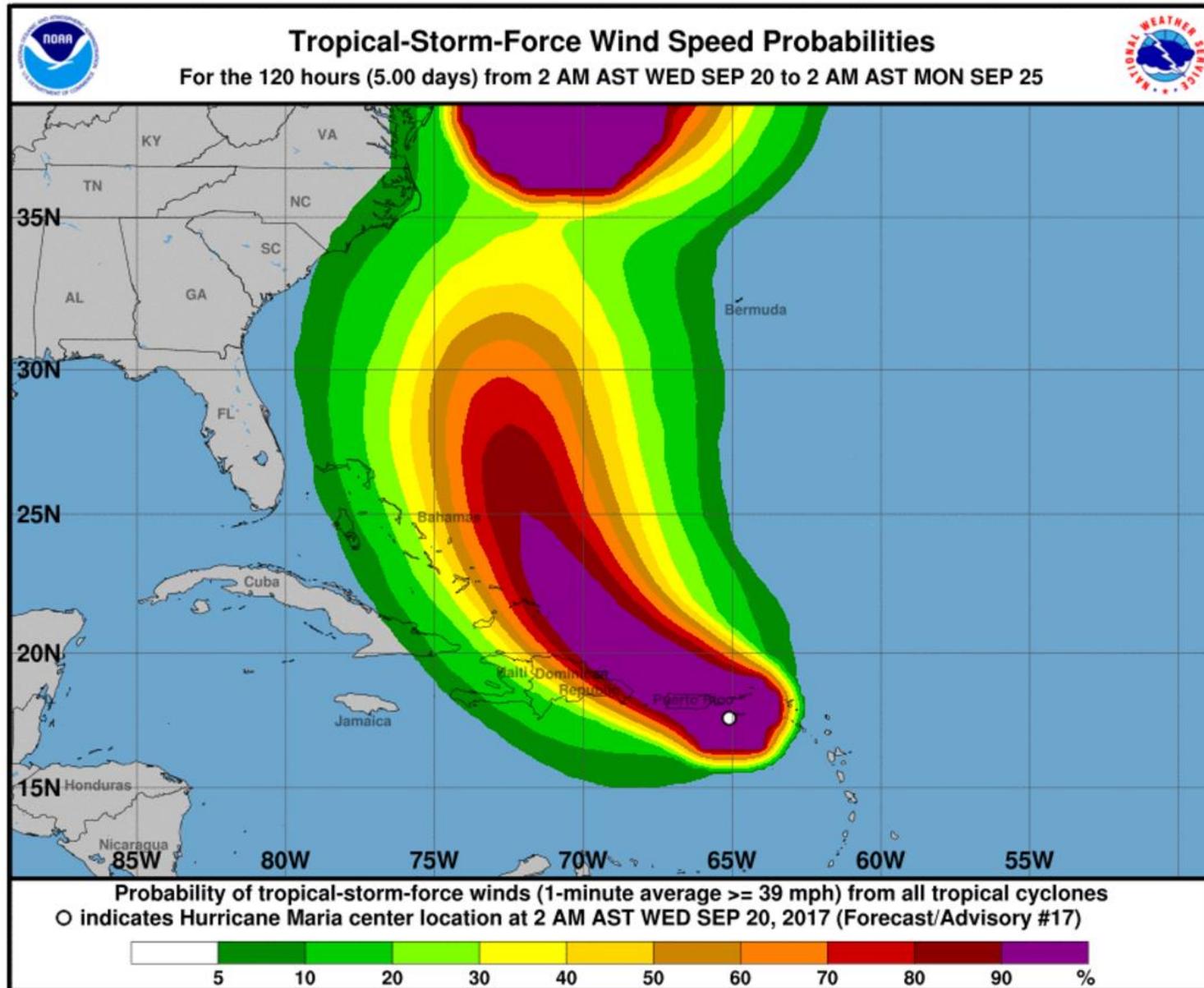
Current Condition

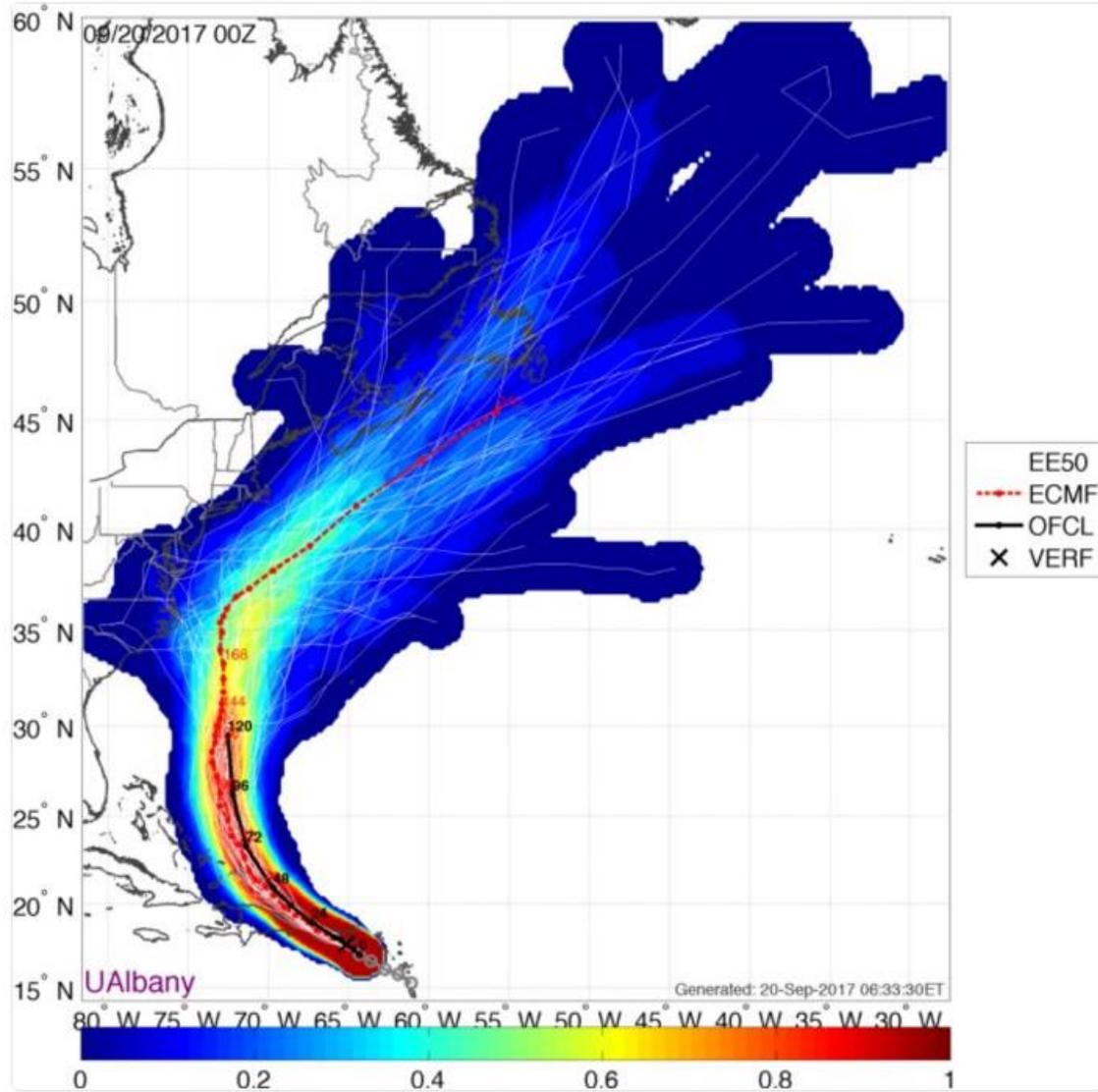


Current Storm Status

The highest cloud tops, corresponding to the most vigorous convection, are shown in the brightest red colors. Clustering, deep convection around the center is a sign of a healthy tropical cyclone.

Predicted Path





3:58 am - 20 Sep 2017

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.

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

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

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

Ready Gov
www.ready.gov

Listo Gov (Spanish)
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

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