NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Tropical Program Update

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Changes to the Tropical Warning Program

- Start Transformation by the 2015 Hurricane Season
  - New Storm Surge Watch and Storm Surge Warning product
  - Disseminated through a Tropical Cyclone Valid Time Event Code (VTEC) (TCV)-like product from National Hurricane Center (NHC) **and** Weather Forecast Offices (**WFOs)**
- New WFO TCV
  - Largely automated and include all local watches and warnings and meteorological information in a one zone-one segment basis
  - Replaces the Hurricane Local Statement (HLS) as the WFO tropical cyclone watch/warning product
  - Provides detailed meteorological information in an easy to read and computer readable format
- Updated HLS – No VTEC, Non-Segmented Product
  - Discussion preparedness product conveying a succinct message on local impacts
  - Reformatted based on social science research

Possible WFO-issued TCV product

Version 1 - Waiting for Social Science Report

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 * STORM SURGE AND STORM TIDE:

  - POTENTIAL IMPACT: HIGH. LIFE THREATENING CONDITIONS INCLUDING:
    - STRUCTURAL DAMAGE FROM SEA WATER.
    - SEVERE BEACH EROSION.
    - SECTIONS OF NEAR-SHORE ROADS WASHED OUT.
    - LOW-LYING ESCAPE ROUTES SEVERELY FLOODED.
    - STRUCTURAL DAMAGE TO SHORELINE BUILDINGS, A FEW WASHING INTO THE SEA.
    - DAMAGE COMPOUNDED BY FLOATING DEBRIS.
    - DAMAGE TO MARINAS, DOCKS, AND PIERS.
    - MANY SMALL CRAFT BROKEN AWAY FROM MOORINGS, ESPECIALLY IN
      UNPROTECTED ANCHORAGES, LIFTED ONSHORE AND STRANDED.

  - MAX STORM SURGE:    5 - 7 FT ABOVE GROUND.

  - TIMING:
    - SURGE GREATER THAN 2 FT: BETWEEN SATURDAY NIGHT AND SUNDAY AFTERNOON.

* RAINFALL:

  - POTENTIAL IMPACT:   HIGH.
    - AREAS OF WATER ENTERING HOMES AND BUSINESSES.
    - FLOODING OF PRIMARY/SECONDARY ROADS AND OVERFLOW CANALS.

    - AMOUNTS:          4 - 8 INCHES.

* TORNADO:

  - POTENTIAL IMPACT:   LOW.
    - POSSIBLE TORNADOES IN RAIN BANDS AHEAD OF THE HIGHER WINDS
      DURING EVACUATION AND PREPAREDNESS ACTIVITIES.

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Possible WFO-issued TCV product

Version 2 - Waiting for Social Science Report

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* STORM SURGE AND STORM TIDE:

  - MAX STORM SURGE:      5-7 FT ABOVE GROUND.
  - ONSET > 2 FT:         SATURDAY NIGHT THROUGH SUNDAY MORNING.
  - DURATION:             6-12 HOURS.
  - POTENTIAL IMPACT:     HIGH.

    +     LIFE THREATENING CONDITIONS.
    +     STRUCTURAL DAMAGE FROM SEA WATER.
    +     LOW-LYING ESCAPE ROUTES SEVERELY FLOODED OR WASHED OUT.
    +     SEVERE BEACH EROSION.

* RAINFALL:

  - AMOUNTS:              4-8 INCHES.
  - POTENTIAL IMPACT:     HIGH.

    +      AREAS OF WATER ENTERING HOMES AND BUSINESSES.
    +      FLOODING OF PRIMARY/SECONDARY ROADS AND OVERFLOW CANALS.

* TORNADO:

  - POTENTIAL IMPACT:     LOW.

    +     POSSIBLE TORNADOES IN RAIN BANDS AHEAD OF THE HIGHER WINDS
          DURING EVACUATION AND PREPAREDNESS ACTIVITIES.

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Possible WFO HLS product

Waiting for Social Science Report

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* PRECAUTIONARY/PREPAREDNESS ACTIONS
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* EVACUATIONS:
GO TO XXX.ORG FOR THE LATEST EVACUATION INFORMATION.

FOR THOSE NOT UNDER EVACUATION ORDERS, UNDERSTAND THAT THERE ARE INHERENT RISKS TO
EVACUATION (TRAFFIC ACCIDENTS, CONGESTION, AND GETTING CAUGHT ON THE ROAD DURING
BAD WEATHER), SO EVACUATE ONLY IF YOU NEED TO. THAT WOULD ALSO HELP KEEP ROADWAYS
OPEN FOR THOSE THAT ARE UNDER EVACUATION ORDERS.

* OTHER PREPAREDNESS INFORMATION:
FOR THOSE UNDER A WARNING, NOW IS THE TIME TO RUSH TO COMPLETION PREPARATIONS FOR
THE PROTECTION OF LIFE AND PROPERTY.

PEOPLE NEAR THE COAST IN THE WARNING AREA SHOULD FINISH PREPARATIONS NOW. IF YOU
LIVE ON A BOAT, SECURE IT BEFORE LEAVING.

FOR THOSE UNDER A WATCH, REVIEW YOUR PREPAREDNESS PLANS AND BE READY TO IMPLEMENT
THEM SHOULD A WARNING BE ISSUED FOR YOUR AREA.

FOR COASTAL INTERESTS UNDER A WATCH, RETURN TO PORT OR SEEK SAFE HARBOR.

* NEXT UPDATE
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THE NEXT LOCAL STATEMENT WILL BE ISSUED BY THE NATIONAL WEATHER SERVICE IN MIAMI
AROUND 6 PM EDT, OR SOONER IF CONDITIONS WARRANT.

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Proposed Changes to MWW

- Preparation for 2015 Tropical Changes
- MWW product to carry Tropical Wind Watches & Warnings for marine zones
  - Tropical Storm Watch and Warning (TS.A, TS.W)
  - Hurricane Watch and Warning (HU.A, HU.W)
- New WFO TCV carry Tropical Wind Watches & Warnings for land zones

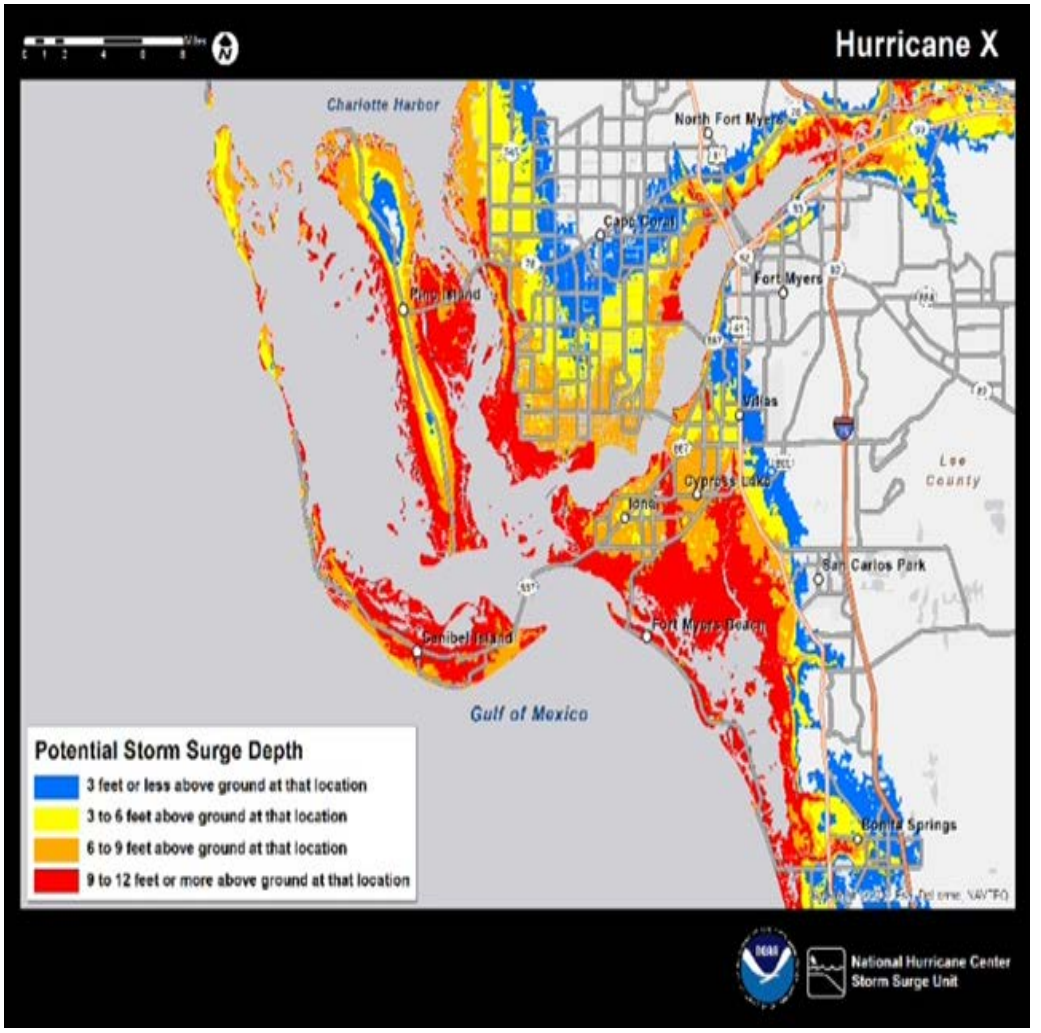
Storm Surge Improvements

NOAA Storm Surge Roadmap commenced in 2005, following Hurricane Isabel (2003) and was energized by Hurricanes Katrina (2005), Ike (2008) and Sandy (2012)

- Comprehensive social science research has been completed and documents the public's understanding, or lack thereof, of storm surge
- NWS needs to provide (text) storm surge information in terms of "total water level/inundation" (height above ground)
- NWS needs to provide a forecast inundation graphic
- World Meteorological Organization (WMO) and Hurricane Sandy Assessment recommend a storm surge warning, a "missing link" for our nation's hurricane program

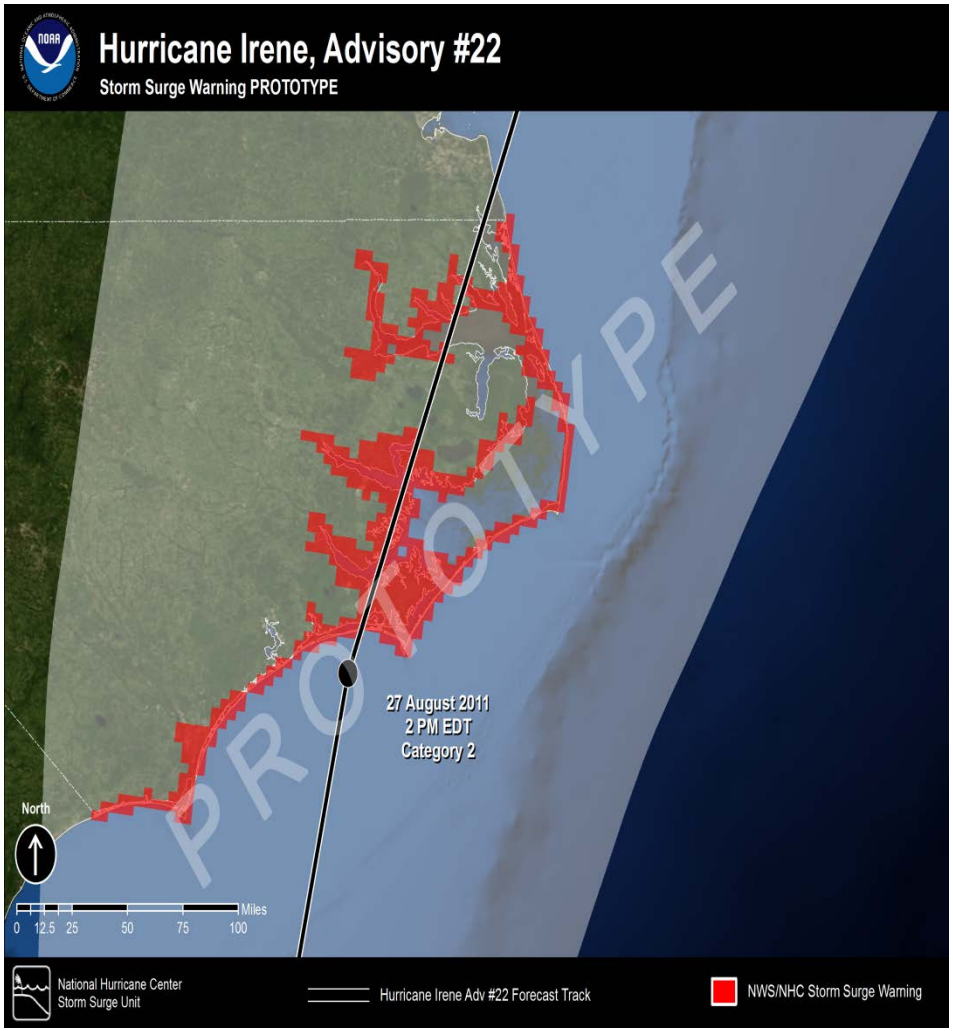
Storm Surge Inundation Graphic

- The entire graphic including colors, labels, thresholds, wording – was tested extensively by social scientists with focus groups
- Implementation of experimental tropical cyclone inundation graphic in 2014
- Lays the foundation for extra-tropical inundation graphic (beyond 2015)



Storm Surge Watch/Warning

- NWS is developing a collaborative process between the NHC and WFOs to issue tropical cyclone storm surge watches and warnings
- Implementation of experimental tropical cyclone storm surge watches and warnings in 2015
- Future work: Expand to include extra-tropical storms

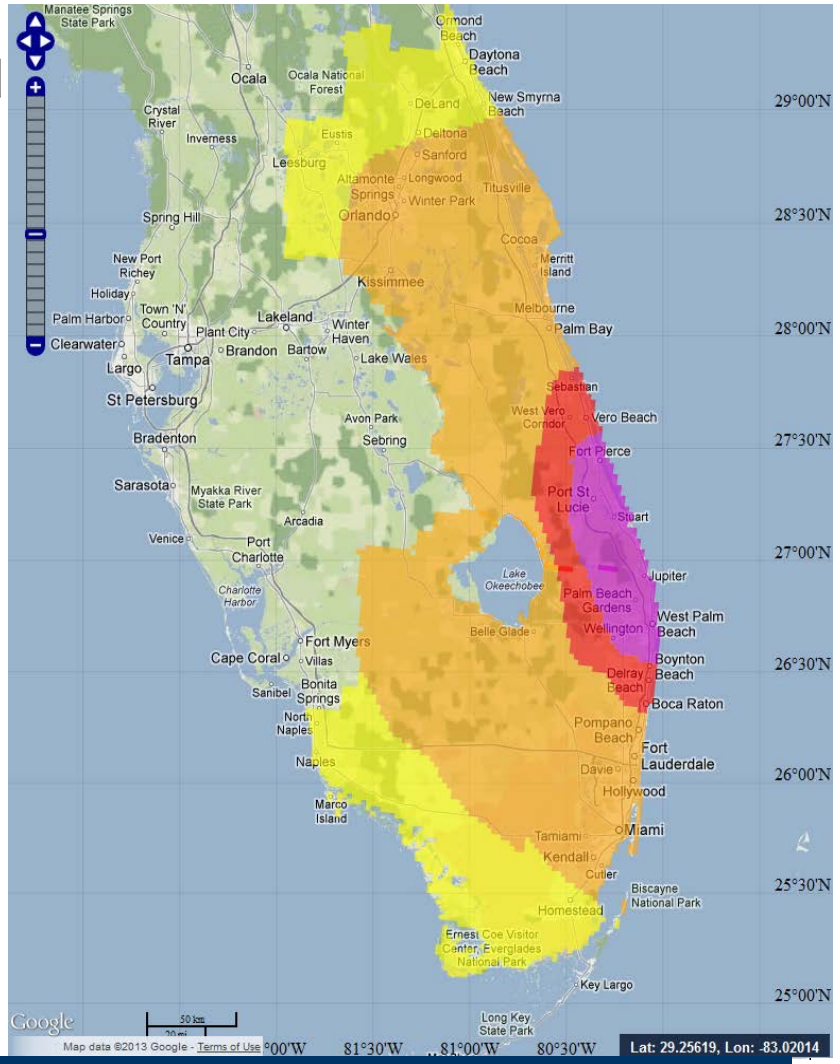


Experimental Tropical Cyclone Impact Graphics (TCIG)

- Provides threat and potential impact based information from tropical cyclones:
  - Wind
  - Coastal flooding
  - Inland flooding
  - Tornadoes

  Some offices also issue a marine hazards and combined impact graphic
- Working with social scientists on how to more effectively communicate the impacts
- Mosaic of multiple WFOs
- Operational in 2015

http://w1.weather.gov/tcig



National Oceanic and Atmospheric Administration's
National Weather Service

http://weather.gov/tcig

weather.gov

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When tropical cyclone watches or warnings are issued for my area, what measure of preparation should I take when implementing my emergency action plan?

The answer to this question is critical toward minimizing the loss of life and property during hurricane and tropical storm situations. Under-preparation can place you at greater risk, while over-preparation can exhaust precious resources and strain livelihoods. So, having prior knowledge of the potential impacts that can occur, hazard by hazard, is useful for answering the stated question. The purpose of **Tropical Cyclone Impacts (TCI) Graphics** is to facilitate the proportionate implementation of your emergency action plan based on descriptions of potential impact unique to your area. The intent is to invoke a measured response that is reasonable and responsible by considering the composite of plausible outcomes in context of the event at hand.

On this page you will find a point and click map of Weather Forecast Offices (WFOs) who provide TCI Graphics for their respective areas of responsibility whenever tropical cyclone watches or warnings are in effect.

Potential Tropical Cyclone Impacts (TCI) -- Experimental

About Tropical Cyclone Impacts (TCI) Graphics

- Overview and Product Description
- Examples of Products
- Call for Public Feedback

A Product Description document for the Experimental Tropical Cyclone Hazards Graphics is provided at: http://products.weather.gov/PDD/TCHazardsGraphicexp2011.pdf

For your convenience, here is an alphabetized listing of those WFOs:

- Baltimore/Washington, Maryland/Washington, DC
- Boston, Massachusetts
- Brownsville, Texas
- Caribou, Maine
- Charleston, South Carolina
- Corpus Christi, Texas
- Gray/Portland, Maine
- Houston/Galveston, Texas
- Jacksonville, Florida
- Key West, Florida
- Lake Charles, Louisiana
- Melbourne, Florida
- Miami-South Florida, Florida
- Mobile/Pensacola, Alabama/Florida
- New Orleans/Baton Rouge, Louisiana
- New York City/Upton, New York
- Newport/Morehead City, North Carolina
- Philadelphia/Mount Holly, Pennsylvania/New Jersey
- San Juan, Puerto Rico
- Tallahassee, Florida
- Tampa Bay, Florida
- Wakefield, Virginia
- Wilmington, North Carolina

- National Hurricane Center (NHC) **Preparedness Brochure** ENG/SPA

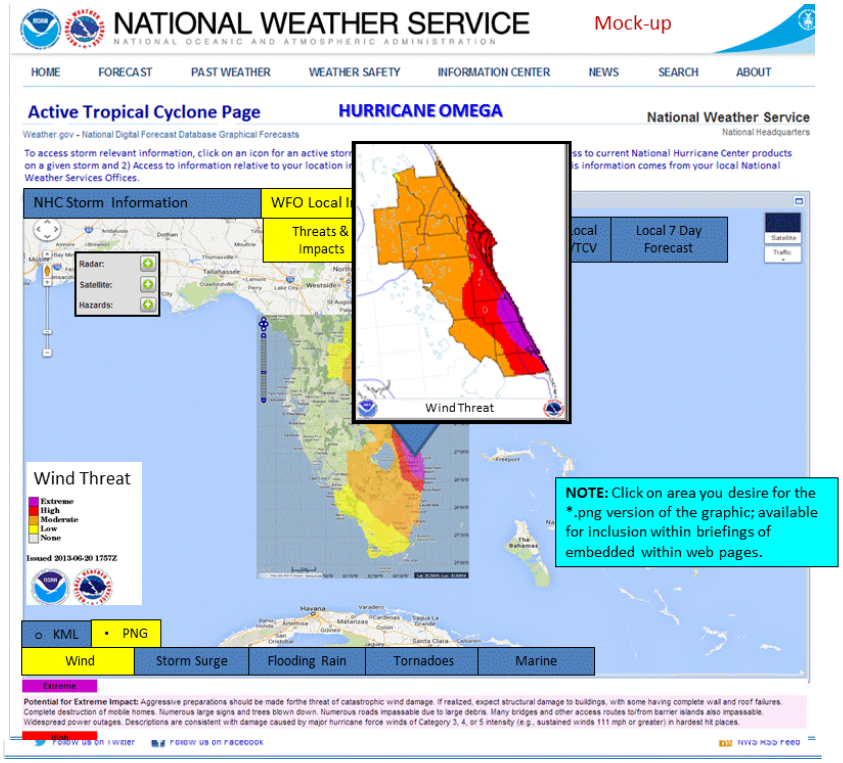
- NHC Active Cyclones

Official implementation planned for the 2015 season

DS/PS/SW

New Interactive Tropical Cyclone Page

- Provides all tropical information from the National Centers and WFOs on one interactive web site
- Contains the hazard information from the new TCV and TCIG products
- Enables user access to all the info derived from these new products to be easily accessible through a new web interface



HLS/TCV/Storm Surge Key Milestones

Date	Action	Status
Apr 2013	Storm Surge Inundation Graphic approved by Social Scientists	Complete
Feb 2014	New HLS/TCV examples approved by social scientists	In Progress
May 2014	Develop HLS/TCV requirements	On Track
Jun 2014	Develop HLS/TCV formatter	On Track
Jun 2014	Implement experimental tropical inundation graphic	On Track
Jul 2014	Issue Public Information Statement (PNS) announcing experimental test of new TCV	On Track
Aug - Nov 2014	OT&E of experimental TCV at Operations Proving Ground	On Track
Jun 2015	Implement experimental tropical Storm Surge Watch & Warning	On Track
Jun 2015	Implement operational WFO TCV & updated HLS	On Track
Jun 2015	Implement operational TCIG – *approved by social scientists*	On Track
Jun 2016	Implement interactive tropical cyclone web portal	On Track
Jun 2016	Implement operational tropical Storm Surge Watch/Warning and inundation graphic	On Track

Questions

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