

# **TS7: Local NWS Office Tropical Cyclone Products**

## Larry Kelly NWS Miami/South Florida Larry.Kelly@noaa.gov









# **NHC & NWS Office Forecasts**

#### Working together to provide a clear, consistent, and effective tropical message

#### **National Hurricane Center**

- Large Scale
- Location of interest moves with storm
- Storm intensity, track, size
- Maximum Wind Values and Probabilities
- Broad wind, rainfall, and tornado information

#### Local Forecast Office

- Local scale
- Location of interest is the local area of responsibility
- Specific local wind, surge, rainfall, and tornado information
- Local threats and potential impacts



# **NHC/NWS Timeline of Products**



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# **Timeline of Products**

- 2-7 Days Before Direct Tropical Cyclone (TC) Impacts
  - × Probability Guidance Only
- Watch/Warning Phase
  - × 12-48 hours: Mix of Probabilistic/Determini stic Info
- Onset & Impact Phase
  - × Less Than 12 hrs: More weight given to deterministic as we get closer to impact if confidence is high





# **2-7 Days From Potential TC Impacts**

## **Available Products**

- Hazardous Weather Outlook
- Public Information Statements
- Outlook Graphics
- Zone/Point and Click Forecast Products
- Partner Emails and Briefings

weather.gov/youroffice





# **2-7 Days from Potential TC Impacts**

#### Where To Find Information

HOME FORECAST				HERIC ADMINIS					۲
Local foreast by "City, 8t" or ZIP code M Enter location Go Location Help J	HOME FORE	CAST 👻 PAST WE	EATHER - SAFETY	- INFORMATION	- EDUCATION	• NEWS • S	EARCH - ABOI	JT 👻	
MY FORECAST Mami FL Cur Fair	Go       News Headlines         View Location Examples       • Moderate to Severe Drought Conditions continue over most of South Florida         Your local forecast office is       • NWS Miami Social Media Feeds         Miami - South Florida       Additional Headlines								
67°F 19°C Get Datafied Info	Hazardous Weather Conditions								
Overnight	Hazardous Weather Outlook								
Mostly Clear Low: 68°F	En Español + Sh	<sub>are</sub>   f 🎔 🖶 🗹 9							
Sunny High: 83*#	Current conditions Fort Myers, So Lat: 26.53°N Lon: 81	outhwest Florida	International Airp	oort (KRSW)					
shanga kusabu		Fair 60°F 16°C	Humidity 96% Wind Speed Calm Barometer 29.93 in (1013.1 mb) Dewpoint 59°F (15°C) Visibility 10.00 mi Last update 26 Apr 3:53 am EDT			More Information: Local Forecast Office More Local Wx 3 Day. History Mobile Weather Hourly Weather Forecast			
	Extended Forecast 9 Miles E Labe								
	Today	Tonight	Labor Dav	Friday Night	Saturday	Saturday Night	Sunday	Sunday Night	Monday
	50% Chance	50% Chance	Trop. Storm	Hurricane	Hurricane	Hurricane	Trop. Storm	50%	50% Chance
	Tstms Hi 85°F	Tstms Lo 75°F	Conditions Expected Hi 85°F	Conditions Expected Lo 75°F	Conditions Possible Hi 85°F	Conditions Possible Lo 75°F	Conditions Possible Hi 85°F		Tstms Hi 85°F

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# 2-7 Days from Potential TC Impacts

#### Where To Find Information



## 2-7 Days from Potential TC Impacts

#### **Hazardous Weather Outlook**



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# Watch/Warning Phase: 12 - 48 Hours

#### Local Products Available

- Hurricane Local Statement (HLS)
- Tropical Cyclone VTEC Product (TCV) × The Watch/Warning product for land areas
- Hurricane Threats & Impacts Graphics (HTI)
- Marine Weather Warning (MWW)

× Includes any marine watches and warnings





## **Hurricane Local Statement - HLS**

## Land only product

#### Broadcasts on NOAA Weather Radio

Overview of tropical impacts across the WFO's Area of Responsibility Hurricane Michael Local Statement Advisory Number 14 National Weather Service Tallahassee FL AL142018 1257 AM EDT Wed Oct 10 2018 /1157 PM CDT Tue Oct 9 2018/

This product covers EASTERN FLORIDA PANHANDLE...FLORIDA BIG BEND...SOUTHEASTERN ALABAMA AND SOUTHWESTERN GEORGIA

\*\*UNPRECEDENTED EVENT EXPECTED FOR THE FLORIDA PANHANDLE AND BIG BEND\*\*

NEW INFORMATION

\* CHANGES TO WATCHES AND WARNINGS: - None

- \* CURRENT WATCHES AND WARNINGS:
  - A Tropical Storm Warning and Hurricane Watch are in effect for Clay, Coffee, Dale, Henry, Lee, Quitman, Randolph, and Terrell
  - A Storm Surge Warning and Hurricane Warning are in effect for Coastal Bay, Coastal Dixie, Coastal Franklin, Coastal Gulf
  - A Hurricane Warning is in effect for Baker, Brooks, Calhoun, Calhoun, Central Walton, Colquitt, Decatur, Dougherty, Early
  - A Tropical Storm Warning is in effect for Ben Hill, Berrien, Cook, Inland Dixie, Inland Taylor, Irwin, Lafayette, Lanier,
- \* STORM INFORMATION:
- About 210 miles south-southwest of PANAMA CITY or about 200 miles south-southwest of APALACHICOLA
- 27.1N 86.5W
- Storm Intensity 125 mph
- Movement North or 355 degrees at 12 mph

SITUATION OVERVIEW

Catastrophic storm surge and winds are expected from Michael. Hurricane Michael continues to strengthen and is currently a strong category 3. Michael is expected to intensify to category 4 before landfall. Michael will make landfall tomorrow along the Florida Panhandle Coast. This is an unprecedented event as there are no Category 4 storms on record to have made landfall along the Florida Panhandle coast. Michael is expected to bring life-threatening storm surge, widespread power outages that will last days to even more than a week in some areas, downed trees that will block access to roads and endanger individuals, structural damage to homes and businesses,



## **Hurricane Local Statement - HLS**

#### **Affected Area**

Headline/Primary Message

New Information since last storm update

**Overview of Situation** 

Generalized Threat Assessment

Generalized impacts for area

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## **Hurricane Local Statement - HLS**

 Potential Impact Sections:
 × Wind
 × Surge
 × Flooding Rain
 × Tornadoes

POTENTIAL	IMPACTS
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#### \* WIND:

Prepare for life-threatening wind having possible devastating impacts across West Central and Southwest Florida. Potential impacts include:
Structural damage to sturdy buildings, some with complete roof and wall failures. Complete destruction of mobile homes. Damage greatly accentuated by large airborne projectiles. Locations may be uninhabitable for weeks or months.

#### \* SURGE:

Prepare for life-threatening surge having possible devastating impacts across the Tampa Bay region and all of southwest Florida. Potential impacts in this area include: - Widespread deep inundation, with storm surge flooding greatly

accentuated by powerful battering waves. Structural damage to buildings, with many washing away. Damage greatly compounded from considerable floating debris. Locations may be uninhabitable for an extended period.

#### \* FLOODING RAIN:

Prepare for life-threatening rainfall flooding having possible

extensive impacts across west central and southwest Florida.

Potential impacts include:

- Major rainfall flooding may prompt many evacuations and rescues.

#### \* TORNADOES:

Prepare for a dangerous tornado event having possible significant impacts across West Central and Southwest Florida. Potential impacts

include:

- The occurrence of scattered tornadoes can hinder the execution
- of emergency plans during tropical events.

- Info by County Zone
- Contains Watch/Warning coding
- Forecast information by Hazard
  - × Where, What, When, How Long
- <u>NOT</u> made to READ in entirety

   parsed for web display and
   other apps
- Triggers Emergency Alert System (EAS) & TV Crawls

URGENT - IMMEDIATE BROADCAST REQUESTED Irma Local Watch/Warning Statement/Advisory Number 40 National Weather Service Key West FL AL112017 1133 PM EDT Fri Sep 8 2017

#### FLZ078-091145-

/O.CON.KKEY.SS.W.1011.000000T0000Z-000000T0000Z/ /O.CON.KKEY.HU.W.1011.000000T0000Z-000000T0000Z/ Monroe Lower Keys-1133 PM EDT Fri Sep 8 2017

...HURRICANE WARNING REMAINS IN EFFECT... ...STORM SURGE WARNING REMAINS IN EFFECT...

- \* LOCATIONS AFFECTED
  - Key West
  - Big Pine

#### \* WIND

- LATEST LOCAL FORECAST: Equivalent Cat 2 Hurricane force wind
  - Peak Wind Forecast: 80-100 mph with gusts to 110 mph
  - Window for Tropical Storm force winds: this evening until early Monday morning
  - Window for Hurricane force winds: this evening until Sunday afternoon
- CURRENT THREAT TO LIFE AND PROPERTY: Extreme
  - The wind threat has remained nearly steady from the previous assessment.
  - Emergency plans should include a reasonable threat for major hurricane force wind greater than 110 mph of equivalent Category 3 intensity or higher.
- POTENTIAL IMPACTS: Devastating to Catastrophic
  - Structural damage to sturdy buildings, some with complete roof and wall failures.
     Complete destruction of mobile homes. Damage greatly accentuated by large airborne projectiles. Locations may be uninhabitable for weeks or months.





- Storm Name/NHC Advisory Number
- Tropical Watches and Warnings - VTEC
- Tropical Watches and Warnings - Headline
- Locations in this segment
- Wind information including:
  - × Latest Peak Wind Forecast
  - × Deterministic
  - × Potential TS & Hurricane winds timing
  - Threats (Safety Margin) for which to plan
  - × Potential impacts to plan/prepare/for

URGENT - IMMEDIATE BROADCAST REQUESTED Irma Local Watch/Warning Statement/Advisory Number 40 National Weather Service Key West FL AL112017 1133 PM EDT Fri Sep 8 2017 FLZ078-091145-/O.CON.KKEY.SS.W.1011.000000T0000Z-000000T0000Z/ /O.CON.KKEY.HU.W.1011.000000T0000Z-000000T0000Z/ Monroe Lower Keys-1133 PM EDT Fri Sep 8 2017 HURRICANE WARNING REMAINS IN EFFECT .... STORM SURGE WARNING REMAINS IN EFFECT .... LOCATIONS AFFECTED - Key West - Big Pine \* WIND - LATEST LOCAL FORECAST: Equivalent Cat 2 Hurricane force wind - Peak Wind Forecast: 80-100 mph with gusts to 110 mph - Window for Tropical Storm force winds; this evening until early Monday morning Window for Hurricane force winds: this evening until Sunday afternoon CURRENT THREAT TO LIFE AND PROPERTY: Extreme The wind threat has remained nearly steady from the previous assessment. - Emergency plans should include a reasonable threat for major hurricane force wind greater than 110 mph of equivalent Category 3 intensity or higher. POTENTIAL IMPACTS: Devastating to Catastrophic

Structural damage to sturdy buildings, some with complete roof and wall failures.
 Complete destruction of mobile homes. Damage greatly accentuated by large airborne projectiles. Locations may be uninhabitable for weeks or months.



#### Surge Information

- × Potential values & timing
- Threats for which to plan
- × Potential impacts for which to prepare

#### • Important Notes:

- Forecast values and threats/impacts for surge based on probabilistic data during watch phase
- Information trends towards most likely/expected as we get close to impact (< 6-12 hours) if confidence increases

#### \* STORM SURGE

- LATEST LOCAL FORECAST: Life-threatening storm surge possible

Peak Storm Surge Inundation: The potential for 7-10 feet above ground somewhere
 Window of concern: Begins early this evening

#### - CURRENT THREAT TO LIFE AND PROPERTY: Extreme

- The storm surge threat has remained nearly steady from the previous assessment.
- Emergency plans should include a reasonable threat for extreme storm surge flooding greater than 9 feet above ground.
- To be safe, aggressively prepare for the potential of devastating to catastrophic storm surge flooding impacts.
- Life-threatening inundation is possible. Failure to heed evacuation orders may result in serious injury, significant loss of life, or immense human suffering. Leave if evacuation orders are given for your area. Consider voluntary evacuation if recommended. Poor decisions may result in being cut off or needlessly risk lives.

#### - POTENTIAL IMPACTS: Devastating to Catastrophic

- Widespread deep inundation, with storm surge flooding greatly accentuated by powerful battering waves. Structural damage to buildings, with many washing away. Damage greatly compounded from considerable floating debris. Locations may be uninhabitable
- Many large sections of highways, roads, and low-lying escape routes washed out or severely flooded. Some causeways washed out. Low elevation bridges damaged. flood control systems and barriers may become stressed.

#### \* FLOODING RAIN

- LATEST LOCAL FORECAST:

- Peak Rainfall Amounts: Additional 12-18 inches, with locally higher amounts

#### - CURRENT THREAT TO LIFE AND PROPERTY: High

- The flooding rain threat has remained nearly steady from the previous assessment.

- Emergency plans should include a reasonable threat for major flooding where peak rainfall totals well exceed amounts conducive for flash flooding and rapid inundation. Rescues and emergency evacuations are likely.

- Same format also provided for the following hazards:
  - × Flooding Rain
  - × Tornadoes
- Timing is not addressed in these sections
- These threats can be experienced well ahead of and trailing the storm itself

#### \* FLOODING RAIN

- LATEST LOCAL FORECAST:

- Peak Rainfall Amounts: Additional 12-18 inches, with locally higher amounts

- CURRENT THREAT TO LIFE AND PROPERTY: High
  - The flooding rain threat has remained nearly steady from the previous assessment.
- Emergency plans should include a reasonable threat for major flooding where peak rainfall totals well exceed amounts conducive for flash flooding and rapid inundation. Rescues and emergency evacuations are likely.

#### - POTENTIAL IMPACTS: Extensive

- Major rainfall flooding may prompt several evacuations and road closures. Rescues of special needs residents from ground floor homes and of motorists may be necessary.
- Several locations may experience major rainfall flooding. Widespread, rapid inundation covers both primary and secondary roads. Some damage to vehicles and ground floor homes and businesses.

#### \* TORNADO

- LATEST LOCAL FORECAST:
  - Situation is somewhat favorable for tornadoes
- CURRENT THREAT TO LIFE AND PROPERTY: Elevated
  - The tornado threat has remained nearly steady from the previous assessment.
- When implementing emergency plans, include a reasonable threat for isolated tornadoes.
- To be safe, prepare for the potential of limited tornado impacts.

#### - POTENTIAL IMPACTS: Limited

- The occurrence of isolated tornadoes can hinder the execution of emergency plans during tropical events.
- A few places may experience tornado damage, along with power and communications disruptions.
- Roofs may peel off buildings, chimneys toppled, mobile homes pushed off foundations or overturned, large tree tops and branches snapped off, shallow-rooted trees knocked over, moving vehicles blown off roads, and small boats pulled from moorings.



# **Where to Find Products**

## **Point-n-Click Forecast Interface**

HOME	6 Miles NE Ash	NC				-	
Change I ew Locatic	Today	Tonight	Sunday	Sunday Night	Monday	Monday Night	
ur local f /ilming Hazard					Constant	Contraction of the	
• Tr • Hi • Hi					60%	50%	
Españo Current c	Tropical Storm Conditions Expected	Tropical Storm Conditions Expected	Tropical Storm Conditions Expected	Tropical Storm Conditions Expected	Showers Likely	Chance Showers	
Lat: 34.27	High: 80 °F	Lw: 70 °F	High: 78 °F	Low: 68 °F	High: 83 °F	Low: 69 °F	
	Detailed Forec	ast					
tended Fo Miles N Tod	Today	Fropical storm conditions expected. Showers likely, with thunderstorms also possible after 2pm. Mostly cloudy, with a high near 80. Northeast wind 16 to 21 mph increasing to 25 to 30 mph. Winds could gust as high as 41 mph. Chance of precipitation is 60%. New rainfall amounts between a tenth and quarter of an inch, except higher amounts possible in thunderstorms.					
Tropical Condit Exper High: 1	Tonight	Tropical storm conditions expected. A chance of showers and thunderstorms. Mostly cloudy, with a low around 70. Northeast wind 28 to 33 mph, with gusts as high as 46 mph. Chance of precipitation is 50%. New rainfall amounts between a tenth and quarter of an inch, except higher amounts possible in thunderstorms.					
tailed	Sunday	Tropical storm conditions expected. Showers likely and possibly a thunderstorm. Cloudy, with a high near 78. East wind 29 to 34 mph, with gusts as high as 48 mph. Chance of precipitation is 70%. New rainfall amounts between a quarter and half of an inch possible.					
3	Sunday Night	Tropical storm conditions expected. Showers likely and possibly a thunderstorm before 2am, then a chance of showers and thunderstorms after 2am. Cloudy, with a low around 68. South wind 26 to 31 mph becoming west 10 to 15 mph. Winds could gust as high as 44 mph. Chance of precipitation is 60%. New rainfall amounts between a quarter and half of an inch precipitation.					
Sunda	Monday	quarter and half of an inch possible.         A chance of showers and thunderstorms, then showers likely and possibly a thunderstorm after 8am. Mostly cloudy, with a high near 83. West wind 10 to 13 mph, with gusts as high as 23 mph. Chance of precipitation is 60%. New rainfall amounts between a tenth and guarter of an inch, except higher amounts possible in					





# **Where to Find Products**

#### **Point-n-Click Forecast Interface**







- Graphical display of TCV information
- But powerful messaging tool on their own. Graphics available via WSI and other graphical packages. Downloadable as well from our websites
- What potential threats/impacts should I plan/prepare for?
- Not a forecast of expected conditions but rather a threat/risk graphic
- Colorized threat maps with potential impacts statements for each hazard
  - × Wind Threat
  - × Storm Surge Threat
  - × Flooding Rain Threat
  - × Tornado Threat

## Where to Find it: WFO Webpages



https://weather.gov/you roffice -> Click on Forecast -> Tropical drop down mane

or

Prominent link will become active in local office pages linked to an interactive page

Information taken from TCV for each zone

#### Interpreting the Readout







## Where to Find it: National Digital Forecast Database Display



## digital.weather.gov

# Select desired threat from the parameter list

# Marine Weather Warning - MWW

- All marine zone tropical wind hazards moved to the Marine Weather Warning
- Can issue for offshore storms when impacts are not anticipated on land

Hurricane Hermine (2016) No Significant Land Impacts for Florida East Coast



URGENT - MARINE WEATHER MESSAGE NATIONAL WEATHER SERVICE MELBOURNE FL 428 PM EDT THU SEP 1 2016

#### AMZ550-570-022000-

/O.NEW.KMLB.TR.W.1009.160901T2028Z-000000T0000Z/ /O.CAN.KMLB.SI.Y.0002.160902T0200Z-160902T2000Z/ FLAGLER BEACH TO VOLUSIA-BREVARD COUNTY LINE 0-20 NM-FLAGLER BEACH TO VOLUSIA-BREVARD COUNTY LINE 20-60 NM-428 PM EDT THU SEP 1 2016

... TROPICAL STORM WARNING IN EFFECT ...

THE NATIONAL WEATHER SERVICE IN MELBOURNE HAS ISSUED A TROPICAL STORM WARNING.

\* WINDS...HURRICANE HERMINE IS FORECAST TO MOVE ONSHORE THE FLORIDA BIG BEND LATE TONIGHT...THEN CROSS THE NORTH PENINSULA FRIDAY MORNING. AS THE STORM CONTINUES TO MOVES NORTH AND EAST ...SUSTAINED WINDS ARE EXPECTED TO INCREASE TO 25 TO 35 KNOTS WITH FREQUENT GUSTS TO TROPICAL STORM FORCE THROUGH EARLY FRIDAY AFTERNOON. STRONGER WINDS MAY OCCUR IN RAINBAND SQUALLS AS THEY MOVE OFFSHORE AND OVER THE ATLANTIC WATERS.

\* WAVES/SEAS...SEAS BUILDING TO 6 TO 8 FEET BEYOND THE IMMEDIATE COAST BY EARLY FRIDAY MORNING.

PRECAUTIONARY/PREPAREDNESS ACTIONS ...

A TROPICAL STORM WARNING MEANS SUSTAINED WINDS OF 34 TO 63 KT OR ARE EXPECTED DUE TO A TROPICAL SYSTEM WITHIN 36 HOURS. SMALL CRAFT SHOULD REMAIN IN PORT.





# **Onset & Impact Phase**

## **Local Products Available**

## Short Fuse Watches/Warnings

- × Tornado
- × Flash Flood
- × Extreme Wind Warning
- × Special Weather Statement (SPS)









# **Short-Fuse Watches & Warnings**

#### Watch



- Weather conditions are favorable for the development of severe weather
- Generally 6-8 hours (May be longer for tropical events)

## Warning



- Severe weather is imminent or occurring
- Typically 30 min (tornado) to 3 hours (flooding)





# **Extreme Wind Warning - EWW**

- Hurricane is a category 3 or greater AND
- Sustained surface winds of 100 knots (115 mph) or greater are occurring or are expected to occur within one hour
- Valid time 2 hours or less
- Alerted via NWR/EAS, Mobile devices, and accessible through NWS Point and Click Pages
- Warning issued when there is an imminent threat to life & property





# **Onset & Impact Phase**

## **Other WFO Products**

## Local Storm Report – LSR

- × Reports Preliminary Damage Reports Including:
  - Wind Gusts
  - Flooding Reports
  - Potential Tornado Activity

## Post-Storm Report – PSH

- × Used to record & document local TC impacts
- × First Issued within 5 days of last TCV
- × Updated thereafter as information becomes available



## **Tropical EAS/SAME Event Codes**

- FCC added three new "Event Codes" to the Emergency Alert System (EAS) in 2017:
  - × Extreme Wind Warning (EWW)
  - × Storm Surge Watch (SSA)
  - × Storm Surge Warning (SSW)
- No new equipment required by FCC
- Equipment manufacturers were required to make software upgrades and integrate into new equipment by March 2017





## Tropical EAS/SAME Event Codes

- The three new FCC approved tropical EAS event codes are equivalent to Specific Area Message Encoding (SAME) codes used to activate and tone NWR receivers
- Public Alert Certified, SAME equipped weather radio receivers, will alert and tone the new tropical EAS/SAME codes
- However, receivers (manufacturer dependent) may display new codes as:
  - × Unrecognized Warning
  - × Unrecognized Message
  - × Unknown Warning
  - × Unknown Message
  - × Tune TV (unknown watch/warning)





- Storm Surge Watch/Warning Dissemination and Display
- Wireless Emergency Alerts

#### **Emergency Alert**

National Weather Service: A STORM SURGE WARNING is in effect for this area for the danger of life-threatening flooding. This warning is issued up to 36 hours before hazardous conditions begin. Urgently complete efforts to protect life and property. Follow evacuation orders if given for this area to avoid drowning or being cut off from emergency services.

now

# <u>.</u>

Emergency Alert no National Weather Service: A HURRICANE WARNING is in effect for this area for dangerous and damaging winds. This warning is issued up to 36 hours before hazardous conditions begin. Urgently complete efforts to protect life and property. Have food, water, cash, fuel, and medications for 3+ days. FOLLOW INSTRUCTIONS FROM LOCAL OFFICIALS.





## Storm Surge Watch/Warning

• Not tied to counties or NWS zones







## Storm Surge Watch/Warning

## Available Via:

- × Official Graphic on NHC website, including downloadable KML file (Best Option)
- Approximate representation in terms of zones in National and WFO TCV products (Used for WEA and EAS activation) & point and click pages
- × Approximate representation in the Watch/Warning section of the NHC Public Advisory using coastal breakpoints
- × NWS WFO Hurricane Local Statements (HLS)

# The geographical area depicted via the TCV will be larger than the actual area of the watch or warning





## Storm Surge Watch/Warning





#### Wireless Emergency Alerts

- Wireless Emergency Alert (WEA) is an alerting network in the US designed to disseminate alerts to cell phones
- WEA triggered by the NWS for the following tropical warnings:
  - × Hurricane Warnings
  - × Extreme Wind Warnings
  - × Storm Surge Warnings

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now

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now



#### Wireless Emergency Alerts

While efforts are underway to make NWS triggered WEA activations more targeted, there is still the potential for the message to be spread outside the intended warning area

Carriers generally broadcast WEA from cell towers within the defined warning area





They may broadcast from towers where signal overlaps the defined warning area





# **WFO Tropical Product Summary**

## Be Aware of the Dissemination Caveats for Products

2-7 Days Out	Watch/Warning Phase	Onset & Impact Phase	
Hazardous Weather Outlook	Hurricane Local Statement (HLS)	Short Fuse Watches and Warnings	
Point N Click	Tropical Cyclone VTEC Product (TCV)		
Forecast Probability Information	Hurricane Threats & Impacts Graphics (HTI)	Observational Reports During and After	
Partner Briefings	Marine Weather Warning (MWW)	Partner Briefings	
	Partner Briefings		

# **NWS Tropical Website- Demo**

## How to get there? What has Changed?

- Outlook tab
  - 5 Day TWO is now 7 Day TWO graphic
- Active Storms tab
  - Options added to reorder active storm info for multiple storms
  - Storm Surge Section is now
     Storm Surge and Coastal Flood
     Hazards
  - Map format matches that of the Rainfall and Thunderstorm Forecast section
  - Map options for available peak storm surge inundation graphic









An option for the peak storm surge graphic will also be listed when the graphic is available

The Storm Surge Watch/Warning, Coastal Flood Hazards, and Potential Inundation map have all been placed onto one map interlace for easier user navigation. These map services are all located within the newly renamed "Storm Surge and Coastal Flood Hazards" section of the Active Storms Tab.

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# Changed the 5-day graphical TWO URL to the new 7-day graphical TWO URL.





Note, these two TWO graphics do not match time wise but are for demonstration purposes of this document.

