

NATIONAL WEATHER SERVICE INSTRUCTION 10-601

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Operations and Services

Tropical Cyclone Weather Services Program, NWSPD 10-6

WEATHER FORECAST OFFICE TROPICAL CYCLONE PRODUCTS

NOTICE: This publication is available at: <http://www.nws.noaa.gov/directives/>.

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SUMMARY OF REVISIONS: This directive supersedes NWS Instruction 10-601 “*Tropical Cyclone Products*”, dated September 29, 2016. Changes made to reflect the NWS Headquarters reorganization effective April 1, 2015.

The following revisions were made to this directive:

CHANGE TO THE TROPICAL (10-6 Series) DIRECTIVE STRUCTURE:

- The former NWS Instruction 10-601 Tropical Cyclone Products has been split into two separate directives – 10-601 *Weather Forecast Office Tropical Cyclone Products* and 10-607 *Tropical Cyclone Forecast Center Products*
- All information specific to Weather Forecast Office (WFO) tropical cyclone forecast products has been retained in this directive
- All information specific to Tropical Cyclone Forecast Center products has been moved to NWSI 10-607

MAJOR REVISIONS: Revisions were made to Sections 1.1, 1.2, 1.3. and 4 of this directive to reflect the following significant policy changes for the 2017 hurricane season:

- The addition of tropical cyclone storm surge watches and warnings for WFOs on the Atlantic and Gulf coasts of the conterminous United States
- The capability of issuing tropical cyclone watches/warnings for wind and/or storm surge conditions prior to the formation of a tropical cyclone
- The tropical product suite issued from Atlantic basin offices will be adopted by WFO Honolulu

OTHER SIGNIFICANT REVISIONS:

- Section 1.3.1 - VTEC is only included in HLS products from WFO Guam when there are tropical cyclone warnings for Guam or the Northern Mariana Islands
- Section 1.5.1 - Pacific basin WFOs do not issue Extreme Wind Warnings (EWWs)
- Section 1.5.9 - Clarification was provided for correction procedures for EWWs
- Section 1.5.10 - The EWW format was altered to match the operational text formatter output

- Section 1.6.2.2 - Clarification is provided to identify the WFOs required to gather information after a tropical cyclone watch/warning and write Post Tropical Cyclone Reports (PSH)
- Section 1.6.2.3 - WFOs have 5 days after the final HLS to issue a preliminary PSH and 15 days to issue a final PSH
- Section 1.6.3.3 - Storm surge and storm tide (section e) data required for PSHs is defined
- Section 2 - Two subsections were created to define the correction procedures for non-VTEC and VTEC products, respectively
- Product Format Sections 1.1.3.4, 1.2.3.4, 1.3.1, 1.5.10, and 1.6.3.4 were adjusted for consistency and to match the appropriate mixed/all capital text case
- Appendix A - Updated examples to reflect product additions / changes
- Appendix B - Addition of EWW products

Signed (Elliott Jacks for A. Stern) 5/9/2017
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Weather Forecast Office (WFO) Tropical Cyclone Products

Table of Contents	Page
1 Weather Forecast Office (WFO) Tropical Cyclone Products.....	4
1.1 WFO Tropical Cyclone Local Watch/Warning Product (WFO TCV)	4
1.2 Hurricane Local Statement (HLS) – Atlantic basin and WFO Honolulu	14
1.3 Tropical Cyclone Local Statement (HLS) – Pacific basin except WFO Honolulu	19
1.4 Non-precipitation Weather Products (NPW).....	29
1.5 Extreme Wind Warning (EWW)	29
1.6 Post Tropical Cyclone Report (PSH).....	31
1.7 Information for Service Assessments	34
1.8 Local Storm Reports (LSR).....	34
1.9 Storm Reports	34
2 Correction Procedures.....	35
2.1 Non-VTEC Product Corrections	35
2.2 VTEC Product Corrections.....	35
3 Procedures for Populating WFO-Generated Wind Forecast Grids for Tropical Cyclone Events	35
3.1 Wind Speed Values Within the 34 knot Wind Radii	35
3.2 Wind Speed Values Outside the 34 knot Wind Radii.....	36
3.3 Wind Direction Values Inside or Outside the 34 knot Wind Radii	36
3.4 Wind Gust Values Inside or Outside the 34 knot Wind Radii.....	36
3.5 Caveat.....	36
4 Procedures for Tropical Cyclone Storm Surge Watch/Warning Collaboration with NHC ..	36
4.1 Collaboration Initiation.....	36
4.2 Collaborative Process	36
4.3 Finalization of Storm Surge Watches/Warnings	37
APPENDIX A - Examples of WFO Tropical Cyclone Products.....	A-1
APPENDIX B - Tropical Cyclone Assessment and Warning Product Identifiers	B-1

1 Weather Forecast Office (WFO) Tropical Cyclone Products

WFOs will issue tropical cyclone products designed to inform media, local decision makers, and the public on present and anticipated tropical cyclone conditions in their Area of Responsibility (AOR). WFOs are also responsible for determining if tropical cyclone watches and warnings will be issued for their inland AOR. In addition, coastal Atlantic WFOs in the continental U.S. collaborate with the National Hurricane Center (NHC) to determine storm surge watches and warnings for their AOR. Each WFO will ensure products are consistent with the latest products issued by their respective tropical cyclone forecast center and with surrounding offices.

NOTE: Weather Service Office (WSO) Pago Pago, American Samoa, is provided guidelines via this directive, but is ultimately exempt from the policies of this directive. This is due to international agreements with the country of Samoa. These agreements allow for the exchange of forecasts, watches, and warnings in format and language suitable to both countries. Also, WSO Pago Pago does not have an Automated Tropical Cyclone Forecast (ATCF) system or the Advanced Weather Interactive Processing System (AWIPS).

Refer to Appendix A for tropical cyclone product examples.

1.1 WFO Tropical Cyclone Local Watch/Warning Product (WFO TCV). Atlantic basin offices with tropical cyclone wind watch/warning responsibility will issue the WFO TCV. In the Pacific basin, only WFO Honolulu will issue the WFO TCV product.

The WFO TCV text product is a segmented Valid Time Event Code (VTEC) product with each segment being a discrete forecast zone. Each segment contains land-based tropical cyclone wind and storm surge watches/warnings in effect, meteorological information, threats (wind, storm surge, flooding rain, tornadoes), and their potential impacts. The product is generated from local gridded forecast information and national guidance and is, therefore, not intended to be manually edited by the forecaster.

This text product is intended for parsing by the weather enterprise, and is paired with the WFO HLS to provide a complete, localized tropical forecast. It can also be useful to decision makers as it provides detailed information on timing, threats, and impacts on a zone level.

1.1.1 Mission Connection. The TCV is the primary WFO product for providing their users with critical information for the protection of life and property and to minimize the economic and environmental losses associated with tropical cyclones and their impacts. The TCV is the WFO product for disseminating land-based tropical cyclone watches and warnings. Specifically, the TCV conveys tropical cyclone watches and warnings issued by NHC or N, and the TCV is used to disseminate tropical cyclone watches and warnings issued by WFOs for land zones. In addition to the watch/warning information, the TCV details forecasts, potential threats, and impacts for each of the four primary hazards associated with tropical cyclones on a zone by zone basis. The TCV product format is intended to facilitate the parsing of the information by the weather enterprise and other users for integration into their products and automated display systems.

Marine-based tropical cyclone watches and warnings will be issued using the Marine Weather Message (MWW) product. See NWSI 10-315, *Marine Weather Message*, for the latest information on the use of the Marine Weather Message during tropical events.

1.1.2 Issuance Guidelines

1.1.2.1 Creation Software. AWIPS Graphical Forecast Editor (GFE).

1.1.2.2 Issuance Criteria. The national center issuance of a TCP precedes the issuance of a TCV for consistency of formatting. WFO TCVs cannot be issued for systems that have yet to be formally recognized by NHC or the Central Pacific Hurricane Center (CPHC) through formal advisories since the ETN for the WFO watches and warnings is derived from the national products.

Offices that issue TCVs are listed below.

Coastal WFOs are defined as those having at least one county with significant tidal influences. They are:

Eastern Region

Caribou, ME
 Portland, ME
 Boston, MA
 New York City, NY
 Philadelphia, PA
 Baltimore, MD / Washington, DC
 Wakefield, VA
 Newport / Morehead City, NC
 Wilmington, NC
 Charleston, SC

Southern Region

Brownsville, TX
 Corpus Christi, TX
 Houston / Galveston, TX
 Lake Charles, LA
 New Orleans, LA
 Mobile, AL
 Tallahassee, FL
 Tampa Bay, FL
 Miami, FL
 Key West, FL
 Melbourne, FL
 Jacksonville, FL
 San Juan, PR

Pacific Region

Honolulu, HI

The inland WFOs listed below will issue tropical cyclone watches and warnings via the TCV when hurricane or tropical storm force winds are expected to impact their area of responsibility.

Albany, NY (selected counties)

Atlanta, GA	Little Rock, AR	San Angelo, TX
Austin / San Antonio, TX	Memphis, TN	Shreveport, LA
Birmingham, AL	Midland, TX	Tulsa, OK
Fort Worth, TX	Morristown, TN	
Huntsville, AL	Nashville, TN	
Jackson, MS	Norman, OK	

Inland WFOs not listed above will not issue the TCV and will instead use the Non-Precipitation Warning (NPW) products when hurricane or tropical storm force winds from a tropical cyclone are expected to impact their area of responsibility.

1.1.2.3 Issuance Times

a. Initial Issuances

Initial Issuance by coastal WFOs: The initial TCV should be issued as closely as possible to the first issuance of a tropical storm/hurricane watch/warning for the coastal WFO's AOR by NHC or CPHC.

Initial Issuance by inland WFOs: The initial TCV, with associated tropical storm watches or warnings, for the inland WFOs listed in Section 1.2.2.2, should be issued when tropical storm or hurricane force winds are expected to impact their area of responsibility within 48 hours (watches) to 36 hours (warnings). The initial TCV should be issued as closely as possible to the initial NHC advisory package issuance.

b. Subsequent updates: TCVs should be updated upon release of a regularly scheduled advisory from the pertinent tropical cyclone forecast center or after the tropical cyclone forecast center issues an intermediate advisory that contains changes in the watches/warnings for the WFO's county warning area. TCVs can also be updated for other operationally significant changes (e.g., changes to rainfall or tornado information). However, do not release a TCV that includes the latest NHC/CPHC forecast information prior to the official release of a NHC or CPHC advisory unless information is coordinated ahead of time.

c. Final: TCVs may cease when the tropical cyclone is no longer a threat to an office's County Warning Area (CWA) and/or when all local tropical cyclone watches/warnings are no longer in effect for the CWA.

1.1.2.4 Valid Time. TCVs are valid at the time of issuance and until a subsequent TCV is issued, or when tropical cyclone watches and/or warnings are no longer in effect for the local area. During an event, TCVs are issued at least once every 6 hours.

1.1.2.5 Event Beginning Time. The event's VTEC contains a start time.

1.1.2.6 Event Ending Time. Given the inherent uncertainties with forecasting tropical cyclones, an event ending time is not explicitly provided.

1.1.2.7 Product Expiration Time. The product expiration time is generally 6 hours after the issuance time and should coincide with the next expected update or when the event is forecast to end. Note that the product expiration time is set to 8 hours to allow for possible issues.

1.1.3 Technical Description. This text TCV product will follow the format and content described in this section.

1.1.3.1 Universal Geographic Code (UGC) Type. TCVs will use the zone (Z) form of the UGC.

1.1.3.2 Mass News Disseminator (MND) Header. The TCV MND header product type line is: “(Name or Number) Local Watch/Warning Statement/Advisory Number ##.”

The “##” is the sequential number of the advisory in the series for the particular tropical cyclone and corresponds to the NHC/CPHC TCP advisory number.

As part of the header, a coded string will be appended at the end of the “Issuing Office City State” line (Example: National Weather Service Wilmington NC BBCCYYYY).

Format:

Where: (BB) is the basin (AL - North Atlantic; CP - Central Pacific; EP – East Pacific)

Where: (CC) is the cyclone number (01, 02, 03...49)

Where: (YYYY) is the 4 digit year

1.1.3.3 Content. The TCV content consists of one or more formatted segments. The number of segments will vary depending on the tropical cyclone watches and warnings in effect. Each segment contains formatted content for one UGC zone consisting of:

UGC/VTEC encoding for the zone and watch/warning

Watch/warning headline(s)

Plain language locations affected

Hazard sections consisting of:

 Meteorological forecast information

 Threat information

 Potential Impacts

Sources of additional information

1.1.3.4 Format. Each UGC/VTEC segment will contain a mandatory headline(s) and section headers. The section headers within each UGC/VTEC segment should provide detailed and specific tropical cyclone hazard/impact information for the geographical zone grouping.

The TCV will contain tropical cyclone watches and warnings for all land zones. The VTEC phenomena codes used are:

<u>EVENT NAME</u>	<u>PHENOMENA CODE</u>
TROPICAL STORM	TR
HURRICANE	HU
STORM SURGE	SS*

The VTEC Significance codes for the TCV are:

Warning W

Watch A

- * WFO Honolulu and WFO San Juan do not issue storm surge watches or warnings

The ETN for tropical cyclone watches and warnings in all land zones (inland, coastal) is assigned through the basin's storm number in the coded string found in the "Issuing Office" line of the respective tropical cyclone forecast center's TCP product. Thus, the ETN in the center's TCV product is the same as the ETNs in the TCV.

...HEADLINE(s)... (mandatory)

Each segment headline begins and ends with ellipses (three dots). The headlines will be based on the corresponding VTEC code values in each segment. At least one headline is provided in each VTEC segment.

Segment Subsections

* **LOCATIONS AFFECTED** (mandatory)

A listing of significant locations within the zone.

* **WIND** (mandatory)

Description of wind forecast, threats and potential impacts.

* **STORM SURGE** (mandatory for surge-prone zones)

Description of storm surge forecast, threats and potential impacts.

* **FLOODING RAIN** (mandatory)

Description of flooding rain forecast, threats and potential impacts.

* **TORNADO** (mandatory)

Description of tornado forecast, threats and potential impacts.

* **FOR MORE INFORMATION** (mandatory)

Preparedness information including World Wide Web links.

The overall format of the WFO TCV follows.

WTxx8i Kxxx ddhhmm
TCVxxx

Product header – includes advisory # from NHC/CPHC

URGENT – IMMEDIATE BROADCAST REQUESTED
(Name or Number) Local Watch/Warning Statement/Advisory Number ##
National Weather Service (City) (STATE) (BCCYYYY)
(time) (AM/PM) (TIME_ZONE) (Day_of_week) (Mon) DD YYYY

Segment information including tropical

STZxxx-xxx-xxx-...-DDHHMM-
/O.AAA.Kxxx.PP.S.####.YYMMDDTHHNNZb-000000T0000Z/
TIME AM/PM TIME_ZONE DAY MMM DD YYYY

HEADLINE

Tropical headlines

* LOCATIONS AFFECTED

Locations in this segment

* WIND

- Latest Local Forecast:
- Threat to Life and Property:
- Potential Impacts:

* STORM SURGE

- Latest Local Forecast:
- Threat to Life and Property:
- Potential Impacts:

* FLOODING RAIN

- Latest Local Forecast:
- Threat to Life and Property:
- Potential Impacts:

* TORNADO

- Latest Local Forecast:
- Threat to Life and Property:
- Potential Impacts:

* FOR MORE INFORMATION:

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Wind information including:
- Forecast with potential windows for TS and Hurricane force winds.
- Threat for which preparations need to be made. Includes general trend of this particular threat, with statements geared toward time to

Surge information including:
- Forecast and potential window for storm surge flooding
- Threat for which preparations need to be made
- Includes general trend of this particular threat.
Statements are geared toward time to impact
- Potential impacts for surge-prone

Flooding rain forecast (including watches), threats and potential impacts.

Tornado watch information, threats and potential impacts.

General and zone-specific websites.

Figure 1 WFO Hurricane Local Watch/Warning Product

See complete example in Appendix A. For VTEC details, see <http://www.weather.gov/os/vtec>.

1.1.3.5 Relationship of the TCV to the Short Term Forecast (NOW). The NOW is a stand-alone product focused on conditions affecting the office’s CWA during the next 0 to 6 hours. It may be used to complement the TCV by providing more specific information valid over the next six hours.

1.1.3.6 Relationship of the TCV to the Zone Forecast Product (ZFP). The appropriate zone forecast products will highlight tropical cyclone watches and warnings issued in the TCV.

1.1.3.7 Relationship of the TCV to other WFO-issued advisory/watch/warning products.

Four tables follow to clarify WFO product issuance actions once a TCV, carrying tropical cyclone watches and/or warnings, has been issued for their CWA.

Table 1A – Defines the products issued and those discontinued for individual forecast zones at coastal WFOs when tropical cyclone watches and/or warnings, issued via the TCV, are in effect.

Table 1B – Defines the products issued and those discontinued for individual forecast zones at inland WFOs listed in Section 1.1.2.2 when tropical cyclone watches and/or warnings, issued via the TCV, are in effect.

Table 2A – Defines recommended WFO actions to take when a tropical cyclone forecast center begins issuance of tropical cyclone advisories that affect forecast zone(s) within their CWA where Coastal/Lakeshore Flood Watch, Warning, Advisory, and Statement (CFW) products are currently in effect. These actions apply when there are no storm surge watches or warnings in effect for the area.

Table 2B - Defines recommended WFO actions to take when a tropical cyclone forecast center begins issuance of tropical cyclone advisories that affect forecast zone(s) within their CWA where CFW products are currently in effect. These actions apply when there are storm surge watches or warnings in effect for the area.

Table 1A. Coastal WFO Product Table

Tropical Cyclone Wind and/or Storm Surge Watch/Warning in Effect – Coastal WFOs	
Product	Product Issuance – Yes / No
Local Watch/Warning Statement / Advisory (WFO TCV)	Yes
Marine Weather Message (MWW)	Yes
Hurricane Local Statement (HLS)	Yes
Tornado Warning (TOR / SVS)	Yes (see condition 1)
Extreme Wind Warning (EWW / SVS)	Yes (see condition 1)
Severe Thunderstorm Warning (SVR / SVS)	Yes (See conditions 1, 2)
Special Marine Warning (SMW / MWS)	Yes (See conditions 1, 3)
Special Weather Statement (SPS)	No
Non-follow-up Marine Weather Statement (MWS)	No (See condition 3)
Non-precipitation Weather (NPW)	No (See condition 4)
Flash Flood Watches / Warnings (FFA / FFW)	Yes
Coastal Hazard Message (CFW)	Yes (See Table 2)
Surf Zone Forecast / Surf Forecast (SRF)	No (See condition 5)

Table 1B. Inland WFO Product Table

Tropical Cyclone Wind Watch/Warning in Effect – Inland WFOs in Section 1.1.2.2	
Product	Product Issuance – Yes / No
Tropical Cyclone Local Watch/Warning Product (WFO TCV)	Yes
Hurricane Local Statement (HLS)	Yes
Tornado Warning (TOR)	Yes
Extreme Wind Warning (EWW)	Yes
Severe Thunderstorm Warning (SVR)	Yes (See condition 2)
Severe Weather Statement (SVS)	Yes
Special Weather Statement (SPS)	No
Non-precipitation Weather (NPW)	No (See condition 4)

Conditions for Tables 1A and 1B:

1 A Severe Weather Statement (SVS) product should be issued as a follow-up to a Severe Thunderstorm Warning (SVR), Tornado Warning (TOR), or Extreme Wind Warning (EWW) as instructed in NWSI 10-511. A Marine Weather Statement (MWS) product should be used to provide follow-up to a Special Marine Warning (SMW) as instructed in NWSI 10-314.

2 Severe Thunderstorm Warnings (SVR) and follow up statements may be issued as stand-alone products at the discretion of the WFO. However, their use should be confined to peripheral events, such as outer rain bands, prior to the onset of sustained tropical storm or hurricane force winds. If multiple SVR issuances are anticipated, the issuing WFO should contact the Storm Prediction Center, adjacent WFOs, and affected Regional Operations Centers (ROCs) to collaborate on the potential need for convective watch products.

3 WFOs have the option to issue stand-alone Special Marine Warnings (SMWs) and follow-up MWSs on an as-needed basis. This will primarily occur during watch situations prior to the onset of tropical storm winds impacting a marine zone. In cases of waterspouts, SMWs may be issued anytime during tropical cyclone watch/warning situations.

4 The Atlantic WFOs listed in Section 1.1.2.2 that issue TCVs will not issue NPW High Wind Watch/Warning products when tropical cyclone watch or warning conditions are expected. Any WFO that does not issue TCV products will issue NPW products in lieu of tropical cyclone watches or warnings in the event their AOR is impacted by an Atlantic tropical cyclone event.

5 WFO Honolulu will continue to issue SRFs during a tropical cyclone event.

Table 2A. CFW VTEC Actions When Tropical Cyclone Wind Watches/Warnings Are Subsequently Issued and There Are No Tropical Cyclone Storm Surge Watches/Warnings

VTEC Event and Significance Level	Tropical Cyclone (TC) Watch/Warning Subsequently Issued via the TCV	Continue VTEC Event	Cancel VTEC Event
Coastal Flood Watch /CF.A/	TC Watch		X
Coastal Flood Watch /CF.A/	TC Warning		X
Coastal Flood Advisory /CF.Y/	TC Watch	X	
Coastal Flood Advisory /CF.Y/	TC Warning		X
Coastal Flood Warning /CF.W/	TC Watch	X	
Coastal Flood Warning /CF.W/	TC Warning		X
High Surf Advisory /SU.Y/	TC Watch	X	
High Surf Advisory /SU.Y/	TC Warning		X
High Surf Warning /SU.W/	TC Watch	X	
High Surf Warning /SU.W/	TC Warning		X
Beach Hazards Statement /BH.S/	TC Watch / TC Warning		X
Rip Current Statement /RP.S/	TC Watch / TC Warning		X

Table 2B. CFW VTEC actions when Tropical Cyclone Storm Surge Watches/Warnings are subsequently issued.

VTEC Event and Significance Level	Tropical Cyclone (TC) Storm Surge (SS) Watch/Warning Subsequently Issued via the TCV	Continue VTEC Event	Cancel VTEC Event
Coastal Flood Watch /CF.A/	Storm Surge Watch		X
Coastal Flood Watch /CF.A/	Storm Surge Warning		X
Coastal Flood Advisory /CF.Y/	Storm Surge Watch		X
Coastal Flood Advisory /CF.Y/	Storm Surge Warning		X
Coastal Flood Warning /CF.W/	Storm Surge Watch		X
Coastal Flood Warning /CF.W/	Storm Surge Warning		X
High Surf Advisory /SU.Y/	Storm Surge Watch	X	
High Surf Advisory /SU.Y/	Storm Surge Warning		X
High Surf Warning /SU.W/ (Pacific, Western Regions only)	Storm Surge Watch	N/A	
High Surf Warning /SU.W/ (Pacific, Western Regions only)	Storm Surge Warning	N/A	
Beach Hazards Statement /BH.S/	Storm Surge Watch / TC Warning		X
Rip Current Statement /RP.S/	Storm Surge Watch / TC Warning		X

Conditions for Tables 2A and 2B:

1 If no CFW products were issued by the WFO prior to the issuance of a tropical cyclone watch or warning, then no CFW products will be issued once the tropical cyclone watches or warnings are in effect.

2 If a storm surge watch/warning has been issued for any part of a zone, CFW products will be discontinued for the entire zone.

3 If the threat level of a tropical cyclone wind product equals or exceeds the threat level of an existing CFW, then the CFW will be discontinued.

4 In cases where the threat level of the CFW product exceeds that of the tropical cyclone wind watch, but a storm surge watch/warning has not been issued, the CFW product will continue to be issued as a stand-alone product along with the TCV.

5 WFO HFO does not issue a storm surge watch/warning. Hazardous storm surge and surf information can be found in the WFO HFO High Surf Warnings and WFO HFO TCV products.

6 If a Rip Current or Beach Hazards Statement is in effect (via RP.S/BH.S in the CFW) to heighten awareness for a Moderate or High Risk of Rip Currents and tropical cyclone watches / warnings are subsequently issued for any zone in the CWA, then the RP.S/BH.S will be cancelled and rip current information will be provided within the HLS.

7 If tropical cyclone advisories are discontinued and coastal hazards are expected behind the departing tropical cyclone, then CFW products will be issued as appropriate.

1.2 Hurricane Local Statement (HLS) – Atlantic basin and WFO Honolulu. The HLS for the Atlantic basin and WFO Honolulu is designed to be a discussion preparedness product which conveys a succinct message on land-based local impacts from a tropical cyclone. This product does not contain VTEC information and is not segmented. In addition, for ALL areas, tropical hazards for marine zones are contained in the Marine Weather Message (MWW) product. For information on the MWW and how it relates to tropical VTEC, refer to NWSI 10-315, Marine Weather Message.

The HLS contains an overview of the storm from a local perspective along with a succinct message on local impacts. The HLS is a common source of information to simultaneously communicate information to diverse users (media, key decision makers, and the public).

1.2.1 Mission Connection. Along with the WFO TCV, the HLS provides critical information for the protection of life and property and to minimize the economic and environmental losses associated with tropical cyclones and their impacts. The WFOs detailed in Section 1.1.2.2 will issue the Atlantic basin/WFO Honolulu version of the HLS. The HLS is a non-segmented product intended to communicate important tropical cyclone watch/warning, hazard, and impact information to users interested in a bigger picture. The HLS contains a succinct overview of the tropical event and a generalized summary of potential impacts and preparedness information for land areas only. Potential impact information is ordered based upon the greatest expected impact from the tropical cyclone within the CWA. Possible sections are wind, surge, flooding rain, tornadoes, and other coastal hazards.

1.2.2 Issuance Guidelines

1.2.2.1 Creation Software. AWIPS GFE.

1.2.2.2 Issuance Criteria. The issuance of the tropical cyclone forecast center TCP and the WFO TCV precedes the creation of an HLS. The HLS formatter cannot be run prior to the issuance of the WFO TCV when there are active tropical cyclone watches/warnings. The HLS can be used to dispel rumors when a storm or disturbance is not expected to impact an area. In this case, neither a WFO TCV nor a CPHC or NHC TCP are required to issue an HLS.

Before the first HLS, the use of Public Information Statements (PNSs) is encouraged to inform the public on routine hurricane preparedness information.

Special Weather Statements (SPSs) may also be used to address rumors associated with systems for which the tropical cyclone forecast center is not yet issuing advisories. Hazardous Weather Outlooks (HWOs) may be used to address peripheral weather of concern until the tropical cyclone forecast center issues the first advisory or (if necessary) before the initial issuance of local tropical cyclone watches/warnings from active systems.

1.2.2.3 Issuance Times

a. Initial issuances

b. **Subsequent updates:** All HLS issuances should follow closely after the WFO TCV issuance for each advisory.

c. **Final:** The final HLS should be issued soon after all tropical cyclone watches/warnings have been cancelled through the WFO TCV.

After the final HLS issuance, a PNS may be used to relay critical post-storm information.

1.2.2.4 Valid Time. HLSs are valid at the time of issuance and until a subsequent HLS is issued during an event, HLSs are issued at least once every 6 hours. The approximate time of the next update is to be indicated within the body of the product text.

1.2.2.5 Product Expiration Time. Generally 6 hours after the issuance time and should coincide with the next expected update or when the event is forecast to end. Note that the product expiration time is set to 8 hours to allow for possible issues.

1.2.3 Technical Description. Atlantic basin/WFO Honolulu HLS products will follow the prescribed format and content described in this section.

1.2.3.1 UGC Type. HLSs will use the zone (Z) form of the UGC.

1.2.3.2 MND Header. The HLS MND header block product type line is: “(System Type) (Name or Number) Local Statement Advisory Number ##”. Appropriate system type line options are:

Hurricane (Name) Local Statement
Tropical Storm (Name) Local Statement
Tropical Depression (Number) Local Statement
Subtropical Storm (Name) Local Statement
Subtropical Depression (Number) Local Statement
Potential Tropical Cyclone (Number) Local Statement
Post-Tropical Cyclone (Name) Local Statement
Remnants of (Name) Local Statement

The “##” is the sequential number of the advisory in the series for the particular tropical cyclone and corresponds to the NHC/CPHC TCP advisory number.

As part of the header, a coded string will be appended at the end of the “Issuing Office City State” line (Example: National Weather Service Wilmington NC BBCCYYYY).

Format:

Where: (BB) is the basin (AL - North Atlantic; CP - Central Pacific; EP - East Pacific)

Where: (CC) is the cyclone number (01, 02, 03...49)

Where: (YYYY) is the 4 digit year

1.2.3.3 Content. Content should always focus on the most severe hazards, describing the most threatened areas.

HLSs will use tropical cyclone position information according to the latest advisory, or according to position estimates provided by the tropical cyclone forecast center between advisories (when appropriate). Distance/bearing information should be provided relative to one or two well-known local locations or landmarks.

1.2.3.4 Format. The HLS is available in industry standard encoding and languages that may include, but are not limited to, ASCII, XML, WML and HTML.

The HLS content is organized into the following sections: Affected Area, Headline/Primary Message, New Information, Situation Overview, Precautionary/Preparedness Actions, and Next Update.

THIS PRODUCT COVERS < Affected Area> (mandatory)

The general area covered by the HLS is described in a line that begins with “THIS PRODUCT COVERS” followed by a generic geographic description.

**** <Headline or Primary Message > **** (mandatory)

The plain text headline is located between doubles asterisks (“**”) and may be more than one line.

NEW INFORMATION (mandatory)

This section includes: “Changes to Watches and Warnings”, “Current Watches and Warnings”, and “Storm Information.” This is pre-populated with information primarily pulled from the TCP and the hazard history. This section should concisely list what is new and, if applicable, state “None”.

SITUATION OVERVIEW (mandatory)

The mandatory Situation Overview section of the HLS concisely describes aspects of the tropical cyclone which are of the greatest importance to users in the WFO’s CWA. This can include thresholds for threats and impacts which assist in making decisions related to personal protective action.

POTENTIAL IMPACTS (mandatory)

Potential impact information is ordered based upon the greatest expected impact from the tropical cyclone within the CWA. The five possible sections are wind, surge, flooding rain, tornadoes, and other coastal hazards.

Not every section must be present. Only those with a legitimate threat will be included, and specific potential impacts are only given for the highest threat across the area. If there are a range of threats across the area, those will also be highlighted.

PRECAUTIONARY / PREPAREDNESS ACTIONS (mandatory)

This section may contain general protective action information as well as an overview of significant protective actions underway within the CWA. Significant protective actions may include recommendations, announcements, or evacuation information for the general public provided by local or state officials. Listing these actions is particularly important once tropical cyclone wind and/or storm surge watches and/or warnings are announced.

Much of the protective action information contained in this section can be coordinated with local and state officials both before an event (general protective action statements) and during an event (significant protective actions).

Sub-bullets include:

- Evacuations: Contains generic evacuation information.
- Other Preparedness Information: Contains generic preparedness information.
- Additional Sources of Information: Contains links to area-wide sources for additional information, such as links to local, state, and federal emergency management sites and other disaster relief entities (American Red Cross, The Salvation Army, etc.).

NEXT UPDATE (mandatory)

This section provides a sentence stating the approximate time when the next HLS will be issued.

The overall format of the HLS follows.

Wtaaai cccc ddhhmm
 HLSxxx
 STZxxx-xxx>xxx-ddhhmm-

WMO Header is the same as the corresponding TCV from the WFO

(System Type) (Name or Number) Local Statement Advisory Number ##
 National Weather Service (City) (STATE) (BCCYYY)
 (time) (AM/PM) (TIME_ZONE) (Day_of_week) (Mon) DD YYYY

THIS PRODUCT COVERS general description of area

****<Overview headline statement>****(mandatory)

NEW INFORMATION (mandatory)
 ----- (mandatory)

* CHANGES TO WATCHES AND WARNINGS: (mandatory)
 - <Description>

* CURRENT WATCHES AND WARNINGS: (mandatory)
 - <Description>

* STORM INFORMATION: (mandatory)
 - <Description>

SITUATION OVERVIEW (mandatory)
 ----- (mandatory)

POTENTIAL IMPACTS (mandatory)
 ----- (mandatory)
 * <Hazard section header (Surge, Wind, etc.)>:
 <Content about that hazard>

PRECAUTIONARY/PREPAREDNESS ACTIONS (mandatory)
 ----- (mandatory)

* Evacuations: (mandatory)
 - <Description>

* Other Preparedness Information: (mandatory)
 - <Description>

* Additional Sources of Information: (mandatory)
 - <Description>

NEXT UPDATE (mandatory)
 ----- (mandatory)

<Description>
 \$\$

Figure 2 Hurricane Local Statement Format – Atlantic Basin and WFO Honolulu
 See complete examples in Appendix A.

1.2.3.5 Relationship of HLSs to the Short Term Forecast (NOW). The NOW is a stand-alone product focused on conditions affecting the office’s CWA during the next 0 to 6 hours. It may be used to complement the HLS by providing additional specific information on conditions expected over the next six hours.

1.3 Tropical Cyclone Local Statement (HLS) – Pacific basin except WFO Honolulu

This HLS product is a discussion preparedness product which contains information on land-based local impacts. This HLS is a common source of information to simultaneously communicate information to diverse users (media, key decision makers, and the public). It provides decision-making support for local authorities with generalized and specific tropical cyclone information from a CWA perspective, as well as from a local zone perspective. Information contained in the HLS should be expressed in a concise and succinct manner with limited redundancy.

Tropical hazards for marine zones can be found in the MWW product, except for WSO American Samoa and WFO Guam who can continue to put marine hazards in their HLS product. For more information on the MWW, please see NWS Instruction 10-315.

1.3.1 HLS Format for the Pacific tropical cyclone basin except WFO Honolulu. The HLS for Guam and the Northern Mariana Islands consists of two components: Overview Block and UGC/VTEC formatted segments when the threat will impact Guam or the Northern Marianas. The HLSs issued by Guam for areas outside of that area will not contain UGC/VTEC segments. American Samoa does not issue VTEC in its products.

- Overview Block – The Overview Block provides users generalized tropical cyclone information that is relative to the entire CWA.
- UGC/VTEC formatted segments – The segment headers build on the Overview Block to provide users detailed tropical cyclone information for specific zones within a CWA.

```
Wtaaii cccc ddhhmm
HLSxxx
```

```
URGENT - IMMEDIATE BROADCAST REQUESTED
(SYSTEM TYPE)(NAME OR NUMBER) LOCAL STATEMENT
NATIONAL WEATHER SERVICE (CITY) (STATE/TERRITORY)
(TIME) (AM/PM) (TIME_ZONE) (DAY_OF_WEEK) (MON) DD YYYY
```

```
...<Overview headline statement>...(optional)
```

```
.NEW INFORMATION (mandatory)
```

```
.AREAS AFFECTED(mandatory)
```

```
.WATCHES/WARNINGS(mandatory)
```

```
.STORM INFORMATION (mandatory)
```

```
.SITUATION OVERVIEW (mandatory)
```

```
.PRECAUTIONARY/PREPAREDNESS ACTIONS (mandatory)
```

```
&&
```

```
.NEXT UPDATE (mandatory)
```

```

stZ001-005>015 ddhhmm-
/k.aaa.cccc.pp.ss####.yymmddThhnnZ-000000T0000Z/
Zone-zone-zone-
Time am/pm time zone day mon dd yyyy

...HEADLINE... (mandatory)

...NEW INFORMATION...(optional)

...PRECAUTIONARY/PREPAREDNESS ACTIONS...(optional)
PRECAUTIONARY/PREPAREDNESS ACTIONS...

...PROBABILITY TROPICAL STORM/HURRICANE CONDITIONS...(optional)

...WINDS... (optional)

...TORNADOES... (optional)

$$

stZ001-005>015 -ddhhmm-
/k.aaa.cccc.pp.ss####.yymmddThhnnZ-000000T0000Z/
Zone-zone-zone-
Time am/pm time zone day mon dd yyyy

...HEADLINE... (mandatory)

...NEW INFORMATION...(optional)

...PROBABILITY TROPICAL STORM/HURRICANE CONDITIONS... (optional)

...WINDS... (optional)

...INLAND FLOODING...(optional)

...TORNADOES... (optional)

...PRECAUTIONARY/PREPAREDNESS ACTIONS... (optional)
PRECAUTIONARY/PREPAREDNESS ACTIONS...

...OTHER...(optional non-specific as included by forecaster)

$$

```

Figure 3 HLS Format – Pacific Basin except WFO Honolulu. See complete examples in Appendix A.

1.3.2 Mission Connection. The HLS is the primary Pacific basin WFO product for providing critical information for the protection of life and property and to minimize the economic and environmental losses associated with tropical cyclones and their impacts. For the Pacific basin, the WFOs detailed in Section 1.3.3.2 will issue the Pacific basin HLS. This HLS is a segmented product intended to communicate important information to diverse users – media, emergency managers, and the public. It contains a succinct meteorological discussion for the tropical event

and a generalized summary of potential impacts and preparedness information for land areas only. Potential impact information is ordered based upon the greatest expected impact within the entire CWA.

1.3.3 Issuance Guidelines

1.3.3.1 Creation Software. AWIPS GFE.

1.3.3.2 Issuance Criteria. The tropical cyclone forecast center issuance of a Tropical Cyclone Public Advisory (TCP) precedes the issuance of an HLS. HLSs should not be issued for systems that have yet to be formally recognized by the respective tropical cyclone center through formal advisories.

The following coastal Pacific basin WFOs/WSOs will issue Pacific basin HLSs when their area of responsibility is subject to a tropical cyclone watch/warning or evacuation orders. In addition, HLSs may also be issued as needed to dispel rumors or to clarify tropical cyclone-related information for their CWA. WFOs have the option to additionally include coastal or inland zones in the HLS not affected by a tropical cyclone watch or warning.

For the Pacific basin HLS, coastal WFOs/WSOs are defined as those having at least one county with significant tidal influences. They are:

Western Region

San Diego, CA

Los Angeles / Oxnard, CA

Pacific Region

Guam

WSO Pago Pago, American Samoa

Before the first HLS, the use of PNSs is encouraged to inform the public on routine hurricane preparedness information. SPSs may also be used to address rumors associated with systems for which the national center is not yet issuing advisories. HWOs may be used to address peripheral weather of concern until the respective tropical cyclone forecast center issues the first advisory (if necessary), or before the initial issuance of local tropical cyclone watches/warnings for active systems.

1.3.3.3 Issuance Times

a. Initial issuances. The initial HLS for the Pacific basin WFOs (excluding WFO Honolulu) should be issued as soon as possible following the first issuance of a tropical storm/hurricane watch/warning for the WFO's area of responsibility by the respective tropical cyclone forecast center. WFO Guam will issue each HLS within one hour after TCP is issued.

Note: An HLS cannot be issued prior to the release of the initial tropical cyclone forecast center's advisory for a given system.

When a new tropical cyclone watch or warning is issued for one or more land zones in a coastal WFO's AOR, an "abbreviated HLS" will be issued to expedite the release of time-sensitive alerting information for the newly added zones. This shortened version will contain all mandatory components and sections of the HLS and headline the issuance of all new tropical cyclone watches and warnings within corresponding segments. The "abbreviated HLS" should state "a more detailed statement will follow shortly." The issuance of an "abbreviated HLS" will minimize the delay between issuance of the tropical cyclone forecast center's TCV product and the coastal WFO's issuance of tropical cyclone watches and warnings via the HLS. Note that only the information contained within newly added zone segments will be abbreviated. See the example in the Appendix for an "abbreviated HLS." Following the issuance of the "abbreviated HLS," coastal WFOs will initiate and issue a comprehensive HLS (see example in Appendix A).

b. Subsequent updates: HLSs should be updated upon release of an advisory from the respective tropical cyclone forecast center or may be updated for operationally significant changes.

c. Final: Routine HLSs may cease when the tropical cyclone is no longer a threat to a WFO's CWA and/or when all local tropical cyclone watches/warnings are no longer in effect for the CWA. However, Pacific basin WFOs have the option to continue to issue HLS products for sub-warning tropical cyclone impacts utilizing the Hurricane Local Statement (HU.S) VTEC in the segment headers, as long as the tropical cyclone forecast center continues to issue active tropical cyclone advisories on the particular storm.

After the final HLS issuance, a PNS may be used to relay critical post-storm information.

1.3.3.4 Valid Time. HLSs are valid at the time of issuance and until a subsequent HLS is issued, or when tropical cyclone watches and/or warnings are no longer in effect for the local area. During an event, HLSs are issued at least once every 6 hours. The approximate time of the next update is to be indicated within the body of the product text.

1.3.3.5 Event Beginning Time. The event's VTEC contains a start time, which is the time when the NEW hazard is issued. (WFO Guam does not issue Pacific Region (P-VTEC) outside of the AWIPS graphics domain which includes Guam and the Northern Mariana Islands).

1.3.3.6 Event Ending Time. Given the inherent uncertainties with forecasting tropical cyclones, an event ending time is not explicitly provided.

1.3.3.7 Product Expiration Time. Generally 6 hours after the issuance time and should coincide with the next expected update or when the event is forecast to end.

1.3.3.8 Technical Description. HLSs will follow the prescribed format and content described in this section.

1.3.3.9 UGC Type. HLSs will use the zone (Z) form of the UGC.

1.3.3.10 MND Header. The HLS MND header block product type line is: “(System Type) (Name or Number) Local Statement.” Appropriate product type line options are:

Hurricane (Name) or Typhoon (Name) Local Statement
Tropical Storm (Name) Local Statement
Tropical Depression (Number) Local Statement
Subtropical Storm (Name) Local Statement
Subtropical Depression (Number) Local Statement
Potential Tropical Cyclone (Number) Local Statement
Post-Tropical Cyclone (Name) Local Statement
Remnants of (Name) Local Statement

WFO Guam will include the Joint Typhoon Warning Center (JTWC) tropical cyclone number in parentheses once a name is provided by Regional Specialized Meteorological Center (RSMC) Tokyo.

1.3.3.11 Content. For the Pacific basin (except WFO Honolulu), HLS content is organized in two separate parts. The first part is known as the Overview Block and contains generalized tropical cyclone information relative to a WFO’s AOR. The second part contains UGC/VTEC formatted segments which expand on the information presented in the Overview Block and provides users detailed tropical cyclone information for specific zones within a CWA.

Content should always focus on the most severe hazards, describing the most threatened areas, along with the associated peak magnitude, timing, and duration of each hazard.

HLSs will use tropical cyclone position information according to the latest advisory, or according to position estimates provided by the tropical cyclone forecast center between advisories (when appropriate). Distance/bearing information should be provided relative to well-known locations or landmarks, with at least one located within the WFO’s AOR.

When tropical cyclones threaten the Samoas (American Samoa and Samoa), the two local offices will coordinate with RSMC Nadi, CPHC, and with each other to determine the best integrated and internally consistent forecast of conditions expected in the area.

Wording may be added to the end of the HLS describing where additional storm information can be found within the supporting tropical cyclone forecast center’s TCP and Tropical Cyclone Marine Advisory (TCM) products, as well as PNSs and NOWs issued by the local office.

1.3.3.12 Format. The HLS is available in industry standard encoding and languages that may include, but are not limited to, ASCII, XML, WML and HTML.

OVERVIEW BLOCK OF THE HLS

The intent of the Overview Block is to describe the expected evolution for the event relative to a WFO’s CWA and to describe expected meteorological hazards, impacts and conditions across the affected areas. The Overview block and associated sections is mandatory. Effective use of the Overview Block will help decrease the overall length of the HLS (so common information is

not repeated in each VTEC segment) and promotes increased product compatibility with NOAA Weather Radio and other automated systems.

After the headline(s), the Overview Block begins with a mandatory New Information section. The other section headers in the Overview Block are also mandatory and occur in a standardized order. The section headers will automatically be generated by GFE via the HLS Formatter. Each section header is preceded by one dot and followed by three dots. In the Overview Block, the section headers and their associated content will always be listed in the same order and always present within each HLS issuance. WFOs will not add any additional section headers to those listed below.

.NEW INFORMATION... (mandatory)

Concisely list what is new. If applicable, state “NO SIGNIFICANT CHANGES.”

.AREAS AFFECTED... (mandatory)

Details of which counties or cities are included in the HLS. At the WFO’s discretion, this may simply be described in general terms or with the degree of specificity needed for the event.

.WATCHES / WARNINGS... (mandatory)

Watches and warnings in effect and counties to which they apply.

The watches and warnings will be ordered, primarily by warning type and secondarily by location, as follows:

HURRICANE / TYPHOON WARNING...FOR COASTAL AND/OR INLAND ZONES

TROPICAL STORM WARNING AND HURRICANE WATCH...FOR COASTAL AND/OR INLAND ZONES

TROPICAL STORM WARNING...FOR COASTAL AND/OR INLAND ZONES

TROPICAL STORM WATCH...FOR COASTAL AND/OR INLAND ZONES

.STORM INFORMATION... (mandatory)

Present location, movement, and winds. Use the tropical cyclone forecast/advisory as guidance. Forecast trend information may also be provided.

.SITUATION OVERVIEW... (mandatory)

The mandatory Situation Overview section of the HLS concisely describes, in general terms, the tropical cyclone’s meteorological hazards (peak values, generalized onset/duration times, and locations) and projected forecast track in relation to the WFO’s CWA.

.PRECAUTIONARY / PREPAREDNESS ACTIONS... (mandatory)

This section may contain general protective action information as well as an overview of significant protective actions underway within the CWA. Significant protective actions may include recommendations, announcements, or evacuation information for the general public provided by local or state officials. Listing these actions is particularly important once a tropical cyclone watch or warning is announced.

Much of the protective action information contained in this section can be coordinated with local and state officials both before an event (general protective action statements), and during an event (significant protective actions).

...PROBABILITY OF TROPICAL STORM / HURRICANE CONDITIONS... (optional)
Information on the probability of hurricane/typhoon/tropical storm conditions.

...WINDS... (optional)
WFOs should provide information about the potential impacts of forecast winds. Supporting information should include the anticipated time of onset of tropical storm/hurricane/typhoon force winds, peak winds and gusts, as well as the approximate duration and cessation. Wind speed values should be expressed in appropriate ranges relative to the magnitude of the storm (40 to 50 mph instead of 45 mph). Timing of winds and their impacts should be in ranges or general terms such as “afternoon” or “evening”. Ensure the information is consistent with national guidance.

...STORM SURGE AND STORM TIDE... (optional)
WFOs should provide information about the potential impacts of forecast storm surge and storm tide. Supporting information should include the anticipated time of onset of the storm surge and storm tide, as well as peak heights. Heights should be expressed in appropriate ranges relative to the magnitude of the surge and tide (8 to 12 feet above ground level). Timing of values and their impacts should be in ranges or general terms such as “afternoon” or “evening.” Ensure the information is consistent with national guidance. WFOs will reference storm surge and storm tide relative to height above ground level (inundation). Additionally, WFOs may use other vertical datum references such as Mean Sea Level (MSL) and/or Mean Lower Low Water (MLLW).

...INLAND FLOODING... (optional)
Highlight the threat of flash flooding and rapid inundation relative to the zone or zone group as a result of heavy rain.

...TORNADOES... (optional)
Highlight the threat of tornadoes or waterspouts relative to the zone or zone group.

...OTHER... (Non-specific section header, substitute appropriate header)
The section is optional. WFOs may address other hazards specific to their area for the event (e.g., rip currents, mudslides).

...NEXT UPDATE... (mandatory)
This section provides a quick sentence stating the approximate time when the next HLS will be issued.

IMPACT STATEMENTS IN THE HLS

Generic tropical cyclone Impact Statements have been baselined into the AWIPS GFE application. The impact statements have been organized to describe the expected or potential impacts, given the expected wind speed and/or storm surge, from a given magnitude tropical storm/hurricane/typhoon. Localization of the impact statements is recommended in areas where effects to certain native vegetation (e.g., palm trees), local building characteristics (e.g., lanai screens, skyscrapers), bathymetry, etc. will enhance impacts.

In addition, the relative infrequency of extreme magnitude winds/surge may require some local impact statement re-wording. Impact statements for extreme events (e.g., Category 3, 4, or 5 hurricanes) should be used only for these events. Use of phrases such as “certain death” have not been included in the baseline impact statements, but may be inserted if the extreme nature of the event warrants. However, forecasters should carefully consider the potential benefits before including such deterministic wording.

UGC/VTEC SEGMENTS OF THE HLS

After the Overview Block, the HLS contains UGC / VTEC formatted segments. The information conveyed in the UGC/VTEC segments is more detailed and unique, relative to a specific zone or group of zones, and expands on the information contained in the Overview.

The number of segments will vary depending on the geographic area potentially impacted and the tropical cyclone watches and warnings in effect.

Each UGC/VTEC segment will contain a mandatory headline(s) and optional section headers. The optional section headers within each UGC/VTEC segment should provide detailed and specific tropical tropical cyclone hazard/impact information for the geographical zone grouping.

The HLS will contain tropical cyclone watches and warnings for land areas only. The VTEC phenomena codes used in the HLS (Pacific hurricane/typhoon basin except WFO Honolulu) are:

<u>EVENT NAME</u>	<u>PHENOMENA CODE</u>
TROPICAL STORM	TR
HURRICANE	HU
TYPHOON	TY

The VTEC Significance codes for the HLS (Pacific hurricane basin) are:

Warning	W
Watch	A
Statement	S

The /S/ significance code may be issued, as deemed necessary by a WFO, to address rumors or other storm-related issues, for those zones not currently under a tropical cyclone watch or warning.

The ETN for tropical cyclone watches and warnings in all zones (inland, coastal, marine) is assigned through the basin’s storm number in the coded string found in the Issuing Office Line

of NHC’s/CPHC’s/WFO Guam’s (GUM) TCP product. The storm number will be used to provide the ETN. For additional information on the connection between the Marine Weather Message and tropical products, consult NWSI 10-315, *Marine Weather Message*.

Note for WFO Guam, an SPS will be used to notify regional users of hazards associated with tropical systems, until such time as the JTWC issues a tropical cyclone bulletin. Once this occurs, WFO Guam will issue an appropriate TCP and set watches and warnings as needed.

1.3.3.13 Relationship of HLS to other WFO-issued advisory/watch/warning products. Two tables follow to clarify WFO product issuance actions once an HLS, carrying tropical cyclone watches and/or warnings, has been issued for their CWA.

Table 3 – Defines the products issued and those discontinued at WFOs when tropical cyclone watches and warnings, issued via the HLS, are in effect for their CWA.

Table 4 - Defines recommended WFO actions to take when a tropical cyclone forecast center or WFO Guam begins issuance of tropical cyclone advisories for the CWA when CFW products are currently in effect.

Table 3. Pacific Basin (except WFO Honolulu) Product Table

Tropical Cyclone Watch/Warning in Effect – Coastal WFOs	
Product	Product Issuance – Yes / No
Hurricane/Typhoon Local Statement (HLS)	Yes
Tornado Warning (TOR / SVS)	Yes (see condition 1)
Severe Thunderstorm Warning (SVR / SVS)	Yes (see conditions 1, 2)
Marine Weather Message (MWW)	Yes
Special Marine Warning (SMW / MWS)	Yes (See conditions 1, 3)
Special Weather Statement (SPS)	No
Non-precipitation Weather (NPW)	No (See condition 4)
Flash Flood Watches/Warnings (FFA / FFW)	Yes
Coastal Hazard Message (CFW)	Yes (See condition 5)
Surf Zone Forecast/Surf Forecast (SRF)	No

Conditions for Table 3:

1 A Severe Weather Statement (SVS) product should be issued as a follow-up to a Severe Thunderstorm Warning (SVR), Tornado Warning (TOR), or Extreme Wind Warning (EWW) as instructed in NWSI 10-511. A Marine Weather Statement (MWS) product should be used to provide follow-up to a Special Marine Warning (SMW) as instructed in NWSI 10-314.

2 Severe Thunderstorm Warnings (SVR) and follow up statements may be issued as stand-alone products at the discretion of the WFO. However, their use should be confined to peripheral events, such as outer rain bands, prior to the onset of sustained tropical storm or hurricane force winds. If multiple SVR issuances are anticipated, the issuing WFO should contact adjacent WFOs, and affected Regional Operations Centers (ROCs) to collaborate on the potential need for convective watch products.

3 WFOs have the option to issue stand-alone Special Marine Warnings (SMWs) and follow up Marine Weather Statements (MWSs) on an as-needed basis. This will primarily occur during watch situations prior to the onset of tropical storm force winds impacting a marine zone. In cases of waterspouts, SMWs may be issued anytime during tropical cyclone watch/warning situations.

4 The Pacific WFOs listed in Section 1.3.3.2 that issue the HLS will not issue NPW High Wind Watch/Warning products when tropical cyclone watch or warning conditions are expected. Any WFO that does not issue HLS products will issue NPW products in lieu of tropical cyclone watches or warnings in the event their AOR is impacted by a Pacific tropical cyclone event.

5 If no CFW products were issued by the WFO prior to the issuance of a tropical cyclone watch or warning, then no CFW products will be issued once the tropical cyclone watches or warnings are in effect.

Complications occur when a CFW product is in effect and tropical cyclone watches and/or warnings are issued via the HLS. See Table 4 for guidance. In general, if the threat level of a tropical cyclone product equals or exceeds the threat level of an existing CFW, then the CFW will be discontinued. However, in cases where the threat level of the CFW product exceeds that of the tropical cyclone watch, then the CFW product will continue to be issued as a stand-alone product along with the HLS.

If a Rip Current or Beach Hazards Statement is in effect (via RP.S/BH.S in the CFW) to heighten awareness for a Moderate or High Risk of Rip Currents and tropical cyclone watches/warnings are subsequently issued for any zone in the CWA, then the RP.S/BH.S will be cancelled and rip current information will be provided within the HLS.

Finally, if tropical cyclone advisories are discontinued and coastal hazards are expected behind the departing tropical cyclone, then CFW products will be issued as appropriate.

Table 4. CFW VTEC Actions When Tropical Cyclone Watches/Warnings Are Subsequently Issued

VTEC Event and Significance Level	Tropical Cyclone (TC) Watch/Warning Subsequently Issued via the HLS	Continue VTEC Event	Cancel VTEC Event
Coastal Flood Watch /CF.A/	TC Watch		X
Coastal Flood Watch /CF.A/	TC Warning		X
Coastal Flood Advisory /CF.Y/	TC Watch	X	
Coastal Flood Advisory /CF.Y/	TC Warning		X
Coastal Flood Warning /CF.W/	TC Watch	X	
Coastal Flood Warning /CF.W/	TC Warning		X
High Surf Advisory /SU.Y/	TC Watch	X	

High Surf Advisory /SU.Y/	TC Warning		X
High Surf Warning (Pacific, Western Regions only) /SU.W/	TC Watch	X	
High Surf Warning (Pacific, Western Regions only) /SU.W/	TC Warning		X
Beach Hazards Statement /BH.S/	TC Watch/TC Warning		X
Rip Current Statement /RP.S/	TC Watch/TC Warning		X

1.3.3.14 Relationship of HLSs to the Short Term Forecast (NOW). The NOW is a stand-alone product focused on conditions impacting the office’s CWA for the next 0 to 6 hours. It may be used to complement the HLS by providing critical storm information.

1.3.3.15 Relationship of HLSs to the Zone Forecast Product (ZFP). The appropriate zone forecast products will highlight tropical cyclone watches and warnings.

1.4 Non-precipitation Weather Products (NPW).

Any inland WFO that does not issue the TCV or HLS will issue the NPW for high wind watches and/or warnings if hurricane, tropical storm, subtropical storm, or post-tropical cyclone winds are forecast for their AOR.

1.4.1 Mission Connection. Long duration warnings are issued by WFOs to protect lives and property. Watches and warnings provide our users and partners advance notice of hazardous weather events which have the potential to threaten life and property.

1.4.2 Issuance Guidelines

1.4.2.1 Creation Software. AWIPS GFE.

1.4.2.2 Issuance Criteria. High Wind Watches and Warnings will be issued following the guidance in NWSI 10-515, *WFO Non-Precipitation Weather Products Specification* and Region-specific supplements, if applicable.

- a. Watch - WFOs will issue High Wind Watches for their inland areas when tropical storm/hurricane force winds are possible within the watch area within 48 hours.
- b. Warning - WFOs will issue High Wind Warnings for their areas when tropical storm/hurricane force winds are expected within the warning area within 36 hours.

1.5 Extreme Wind Warning (EWW)

1.5.1 Mission Connection. Short duration warnings are issued by WFOs to protect lives and property. Atlantic basin WFO forecasters issue short duration EWW products to provide the

public with advance notice of the onset of extreme sustained winds of a major hurricane (category 3 or higher), usually associated with the eyewall of a hurricane. EWWs inform the public of the need to take immediate shelter in an interior portion of a well-built structure due to the onset of extreme tropical cyclone winds. Pacific basin WFOs will not issue EWW products.

1.5.2 Issuance Guidelines

1.5.2.1 Creation Software. AWIPS WarnGen.

1.5.2.2 Issuance Criteria. An EWW for extreme tropical cyclone winds should be issued when both of the following criteria are met:

- Tropical cyclone is a category 3 or greater on the Saffir Simpson Hurricane Wind Scale as designated by NHC.
- Sustained tropical cyclone surface winds of 100 knots (115 mph) or greater are occurring or are expected to occur in a WFO's CWA within one hour.

1.5.2.3 Issuance Time. Short duration warnings are non-scheduled, event driven products.

1.5.2.4 Valid Time. The warning valid time should be two hours or less. In rare situations, the valid time may be for a three hour period. Forecasters should use good judgment to ensure the valid time of the short duration warning takes into account the geographic size of area warned versus the forward speed of the tropical cyclone. Once the EWW for an area has expired, WFOs should use the TCV and HLS products to provide additional information about the status of tropical cyclone winds for a previously warned area.

1.5.2.5 Product Expiration Time. The product expiration time is the end of the warning valid time.

1.5.3 Technical Description. The EWW will follow the format and content described in this section. WFOs should not use a call to action statement advising the public to go to the lowest floor if the warning area is susceptible to flooding.

1.5.4 UGC Type. County.

1.5.5 MND Broadcast Line. EWWs will include the broadcast line, "BULLETIN – EAS ACTIVATION REQUESTED." The term "BULLETIN" is used when information is sufficiently urgent to warrant breaking into a normal broadcast.

1.5.6 MND Header. The EWW MND header is: "EXTREME WIND WARNING."

1.5.7 Updates and Amendments. Updated EWWs and amendments are not applicable. WFOs should issue SVSs to update the status of specific EWWs. Updated information should include wind observations and/or reports of damage when available.

1.5.8 Cancellations and Expirations. WFOs may issue SVSs to inform the public when all or portions of a EWW have been canceled or have expired.

1.5.9 Corrections. WFOs will correct EWWs for significant grammatical or content errors. Corrected warnings will have the same time in the MND Header and the same ETN in the VTEC line as the original warning. Mistakes in area (UGC), valid time, etc. cannot be changed in a corrected warning (COR). Please see the following website for more information:
<http://www.nws.noaa.gov/os/vtec/COR.html>

1.5.10 Format

```

WFUS5i cccc ddhhmm
EWWccc
STC001-002-ddhhmm-
/k.aaa.cccc.pp.s.####.yymmddThhnnZB-yymmddThhnnZE/

BULLETIN - EAS ACTIVATION REQUESTED
EXTREME WIND WARNING
NATIONAL WEATHER SERVICE (CITY) (STATE)
(TIME) (AM/PM) (TIME_ZONE) (DAY_OF_WEEK) (MON) DD YYYY

THE NATIONAL WEATHER SERVICE IN city HAS ISSUED AN

* EXTREME WIND WARNING FOR...
  county one in section state (List warned counties)
  county two in section state (# Counties will match # counties in UGC
Line)

* UNTIL hhmm AM/PM TIME_ZONE (Expiration time of warning)

* AT hhmm AM/PM TIME_ZONE...(Warning basis statement and forecast
impacts)

PRECAUTIONARY/PREPAREDNESS ACTIONS...(List applicable actions)

&&

LAT...LON (Mandatory list of latitude/longitude points outlining the
forecaster-drawn area of greatest impact)
TIME...MOT...LOC

$$

FORECASTER NAME/NUMBER (OPTIONAL)

```

Figure 4 Extreme Wind Warning Format

See complete example in Appendix A.

1.6 Post Tropical Cyclone Report (PSH). The PSH is the primary WFO tropical cyclone product issued to the public to report and document local tropical cyclone impacts.

1.6.1 Mission Connection. The PSH product is intended to provide the NHC, CPHC, NWS Headquarters, media, public and emergency management officials with a record of peak tropical cyclone conditions. This data is then used to formulate other post-event reports, news articles and historical records. A standardized format has been introduced for easier post-processing of the data by end users. An example of this format can be found in Appendix A.

1.6.2 Issuance Guidelines

1.6.2.1 Creation Software. AWIPS Post Tropical Cyclone Storm Report software or text editor.

1.6.2.2 Issuance Criteria. All WFOs that issued tropical cyclone watches and/or warnings and HLSs will prepare post storm reports. WFO Guam will contact the appropriate WSOs to obtain information concerning impacts within their state or national area of responsibility after a tropical storm or typhoon.

1.6.2.3 Issuance Times. Transmit the preliminary reports within 5 days following the transmission of the last HLS. Amend reports as needed, with the final reports issued no later than 15 days after the last HLS. WFO Guam will release a PSH as soon as practical after the last advisory on each tropical cyclone that an HLS was also issued.

1.6.2.4 Valid Times. Not applicable.

1.6.2.5 Product Expiration Time. Not applicable.

1.6.3 Technical Description.

1.6.3.1 UGC Type. Not applicable.

1.6.3.2 MND Header. The PSH header block product type line is: "POST TROPICAL CYCLONE REPORT... (TROPICAL CYCLONE TYPE) (NAME)."

The tropical cyclone type in the MND header is the intensity at the time it affected the WFO. If the intensity varies during the period of impact, use peak intensity during the period of impact.

1.6.3.3 Content. Include the following items in the initial report and in any subsequent updated reports:

Note: WFO Guam may adapt the contents and format of this report to meet their observational network; to summarize the timing of their special weather statements, watches, and warnings; and to provide any changes required from the JTWC and/or RJTD Tokyo guidance. A short synopsis of events during the history of the tropical cyclone while in their AOR may also be provided (or included).

Sections a and b - Wind data: If the observed peak gusts are greater than 33 knots, report highest sustained surface wind speed (knots) and duration (1-, 2-, 8-, or 10-minute average whichever applies), peak gust (knots), and date/times of occurrence in UTC. Specify anemometer height

(meters) if other than 10 meters. Report all land-based NOAA, Department of Defense (DoD), and Federal Aviation Administration official observing sites (Automated Surface Observation Sites (ASOS) / Automated Weather Observation Sites (AWOS)) in the OFFICIAL OBSERVATIONS portion of section A. Report other reliable land-based data collected by government sources or other institutions in the UNOFFICIAL OBSERVATIONS portion of section A. These include: reports from stations maintained by the U. S. Coast Guard; state, county, and local governments; universities; private companies; and experimental networks. Report NOAA buoy/Coastal Marine Automated Network (C-MAN) stations, National Ocean Service (NOS) stations, and trusted private or university observations in, or near, a WFO's marine warning area, in section b. Also list adjusted speeds corrected for instrument type and speed range if known. NWS offices may include these data in the PSH only when deemed reliable based on the particular facts and circumstances.

Pressure data: Report lowest sea level pressure (millibars (mb)) and date/time of occurrence (UTC). Report data from all sources given in the wind data section and other stations where significant pressure observations are available. Report pressures less than 1005 mb, with pressure greater than 1005 mb reported as needed or as requested.

Section c - Storm total rainfall: Report amount (inches) and duration (dates). Report data from all sources given in Section a, and other stations where significant rainfall observations are available. Report storm total rainfalls of 3 inches or more, with amounts less than 3 inches reported as needed or as requested.

Section d - Inland flooding: Report to include date/times (UTC) and counties / parishes / independent cities of occurrence, along with a brief worded summary, as appropriate.

Section e - Maximum storm surge and storm tide: The preferred reference levels for reporting storm tide (total water level) are the North American Vertical Datum of 1988 (NAVD-88) vertical datum and Above Ground Level (AGL). For NOS tide stations or other tide reporting systems, Mean Higher High Water (MHHW) should be used to approximate inundation along the immediate coast. For USGS high water marks (HWMs), AGL measurements are typically provided, and no conversion is required. For U.S. Geological Survey (USGS) pressure sensors and HWMs, report only NAVD-88 if AGL values are missing. Do not include HMWs based on debris lines found on the ground in a PSH, as debris lines are often influenced by waves and may not accurately represent the surge. As such, they may not accurately represent the surge. Report storm surge in feet above the normal predicted (astronomical) tide level. Identify location and date / time (UTC) of peak occurrence where possible. Report storm surge / tide greater than 1 foot, with tides of less than 1 foot reported as needed or as requested. Report extent of beach erosion as appropriate.

The NOS Center for Operational Oceanographic Products and Services (NOS CO-OPS) will provide a final report of storm surge and storm tide information from NOS tide gauges to NWS Regional offices within 4 days following the issuance of the final HLS. The PSH will reflect the data and appropriate reference datums provided in the NOS report.

Section f - Tornadoes: Report times (UTC) and locations, along with a brief description of

damage, as appropriate. The reports may be taken from Local Storm Reports (LSR) issued for the event.

Section g - Storm impacts: Including deaths, injuries, dollar damages, number of people evacuated, etc., per county/parish/independent city as reported by emergency management, trusted media sources, etc.

Please note: For data in sections (A, land observations), (B, marine observations), (C, storm total rainfall), and (F, tornadoes), latitude and longitude should be included. The AWIPS software will output the values, in the form xx.m (-)byy.n, where:

- xx = degrees north latitude
- m = rounded decimal value for latitude, in tenths of a degree
- (-) = negative, or west, longitude, as necessary
- b = 100s place, if needed
- yy = degrees longitude, zero to 99
- n = rounded decimal value for longitude, in tenths of a degree

1.6.3.4 Format

```
ACUS72 Kccc ddhhmm
PSHxxx

POST TROPICAL CYCLONE REPORT...(SYSTEM TYPE) (NAME)
NATIONAL WEATHER SERVICE (CITY) (STATE)
(TIME) (AM/PM) (TIME_ZONE) (DAY_OF_WEEK) (MON) DD YYYY

TEXT (see Appendix A for specific details)

$$
```

Figure 5 Post Tropical Cyclone Report Format

See complete example in Appendix A.

1.7 Information for Service Assessments. Conterminous U.S. WFOs will forward a copy of media reports, especially newspaper clippings (online and printed) representative of the event and its impacts. Send reports to the appropriate regional headquarters and NHC within 7 days following the issuance of the last product concerning the storm. Reports do not have to include all interviews or radio or television spots concerning the landfall event in each local office's CWA.

1.8 Local Storm Reports (LSR). WFOs will prepare these reports in accordance with LSR instructions (Reference NWSI 10-517).

1.9 Storm Reports. WFOs will prepare these reports in accordance with Storm Data Preparation instruction (Reference NWSI 10-1605).

2 Correction Procedures.

2.1 Non-VTEC Product Corrections. WFOs should correct products using the following format:

WTUS82 KILM 290301 CCA
HLSILM
NCZ087-096-099-105>110-SCZ017-023-024-032-033-039-053>056-291115-

Tropical Storm Bonnie Local Statement Advisory Number 6...Corrected
National Weather Service Wilmington NC AL 022016
1101 PM EDT Sat May 28 2016

Corrected for (give reason)

Text Follows...

CCA - If a second correction is necessary, the "A" becomes a "B" (CCB). "CORRECTED FOR" is optional but encouraged.

2.2 VTEC Product Corrections. WFOs should correct products that contain VTEC using the procedures in NWSI 10-1703. For further information, please reference the GFE correction job sheet found at: http://www.nws.noaa.gov/os/vtec/GHG_COR.html.

3 Procedures for Populating WFO-Generated Wind Forecast Grids for Tropical Cyclone Events. Updates to this directive will take place as better methods for populating WFO-generated wind forecasts are integrated into the National Digital Forecast Database.

3.1 Wind Speed Values Within the 34 knot Wind Radii

0 to 120 hours

WFOs will use the TCMWindTool to populate wind grids using the latest NHC/CPHC/JTWC advisory package. The AWIPS GFE Procedure uses the official tropical cyclone forecast center's TCM forecast advisory wind radii. For storm size, WFOs are not to exceed the wind radii specified in an official NWS forecast advisory. However, WFO Guam may alter wind radii guidance provided by JTWC as they deem appropriate. For periods when the wind radii are not available from the official forecast advisory, WFOs will be provided output from a climatology-persistence model, but may also coordinate as needed with the tropical cyclone forecast center and with adjacent WFOs.

For storm intensity, the TCMWindTool uses the full continuum of values, up to the maximum sustained wind speed value provided by the tropical cyclone forecast center, through the forecast advisory. WFOs are not to exceed this maximum wind speed forecast.

Within the stated constraints, WFOs will apply local knowledge and mesoscale expertise to produce the final set of explicit/deterministic wind speed forecasts for the CWA/Marine Area Of Responsibility (MAOR).

121 to 168 hours

Use Weather Prediction Center (WPC) guidance on the location of tropical low pressure systems and associated wind fields and WFO discretion to produce explicit/deterministic wind speed forecasts for all CWA/MAOR grids using a full continuum of wind speeds up to 30 knots. The choice for 30 knots avoids potential confusion which can result from the automated rounding of 33 knots to 35 knots when generating graphical wind barbs and with associated text formatters which convert knots to miles per hour (then round to the nearest 5 mph).

3.2 Wind Speed Values Outside the 34 knot Wind Radii

0 to 168 hours

Use deterministic wind speed values.

3.3 Wind Direction Values Inside or Outside the 34 knot Wind Radii

0 to 168 hours

Use deterministic wind direction values.

3.4 Wind Gust Values Inside or Outside the 34 knot Wind Radii. Wind gust grids are required and can be created through local GFE procedures. The methodology and values should be collaborated with all neighboring WFOs.

3.5 Caveat. It is recommended the following caveat be emphasized for all text and graphical products: “Winds in and near tropical cyclones should be used with caution due to uncertainty in forecast track, size, and intensity.”

4 Procedures for Tropical Cyclone Storm Surge Watch/Warning Collaboration with NHC. Updates to this directive will take place as better methods for populating storm surge forecasts are integrated into the National Digital Forecast Database. These instructions are intended for Atlantic basin coastal WFOs (excluding WFO San Juan), as storm surge watches/warnings may only be issued at these offices.

4.1 Collaboration Initiation. NHC will inform affected WFOs when storm surge inundation values are expected to approach storm surge watch/warning criteria.

4.2 Collaborative Process. Using AWIPS GFE, NHC will send the affected WFOs proposed storm surge grids (Proposed SS grids) that the WFOs can edit as appropriate for their local area and send back to NHC. If necessary, a second round of collaboration may occur. In the event of a disagreement between NHC and a WFO(s) on the areas placed under a storm surge watch or warning, NHC will make the final determination.

NHC will strive to ensure that storm surge watches and warnings begin and end at zone boundaries. WFOs should also be aware of zone boundaries during the collaborative process. In the event that only part of a zone is impacted by a storm surge watch/warning, that zone cannot have any other coastal flood hazard in effect at the same time since the coastal flood hazard is issued for the entire zone and would overlap the storm surge watch/warning.

4.3 Finalization of Storm Surge Watches/Warnings. WFOs will finalize the storm surge hazards prior to the advisory time. These surge hazards will be added to the local WFO Hazards grid and used in the WFO TCV product using an AWIPS GFE text formatter

APPENDIX A - Examples of WFO Tropical Cyclone Products

Table of Contents	Page
1 WFO Tropical Cyclone Local Watch/Warning Product (WFO TCV)	A-2
2 Hurricane Local Statement (HLS) – Atlantic basin and WFO Honolulu	A-5
3 Tropical Cyclone Local Statement - Pacific Basin WFOs (except WFO Honolulu and Guam immediate AOR)	A-8
4 Tropical Cyclone Local Statement (HLS) – WFO Guam including VTEC for immediate AOR (Guam and Northern Mariana Islands).....	A-10
5 Tropical Cyclone Local Statement (HLS) – WSO Pago Pago	A-12
6 Extreme Wind Warning (EWW)	A-15
7 Severe Weather Statement (SVS) follow-up for EWW	A-16
8 Short Term Forecast (NOW)	A-17
9 Post Tropical Cyclone Report (PSH).....	A-18

WFO Tropical Cyclone Local Watch/Warning Product (WFO TCV)

NOTE: While this format is applicable to all Atlantic basin WFOs and WFO Honolulu, storm surge watches/warnings are not issued by WFO San Juan and WFO Honolulu

WTUS82 KMHX 111342
TCVMHX

URGENT - IMMEDIATE BROADCAST REQUESTED
Irene Local Watch/Warning Statement/Advisory Number 22
National Weather Service Newport/Morehead City NC AL092017
926 AM EST Wed Jan 11 2017

NCZ104-112145-
/O.NEW.KMHX.SS.W.1009.170111T1426Z-000000T0000Z/
/O.NEW.KMHX.HU.W.1009.170111T1426Z-000000T0000Z/
/O.UPG.KMHX.HU.A.1009.000000T0000Z-000000T0000Z/
/O.UPG.KMHX.SS.A.1009.000000T0000Z-000000T0000Z/
Outer Banks Hyde-
926 AM EST Wed Jan 11 2017

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

A Hurricane Warning means Hurricane wind conditions are expected somewhere within this area and within the next 36 hours

A Storm Surge Warning means life-threatening inundation levels are expected somewhere within this area and within the next 36 hours

* LOCATIONS AFFECTED
- Ocracoke

- * WIND
- LATEST LOCAL FORECAST: Equivalent Cat 1 Hurricane force wind
 - Peak Wind Forecast: 75-95 mph with gusts to 115 mph
 - Window for Tropical Storm force winds: Thursday morning until Friday afternoon
 - Window for Hurricane force winds: Thursday evening until Friday 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.
 - To be safe, aggressively prepare for the potential of devastating to catastrophic wind impacts. Remaining efforts to secure properties should now be brought to completion.
 - Extremely dangerous and life-threatening wind is possible. Failure to adequately shelter may result in serious injury, loss of life, or immense human suffering. Move to safe shelter before the wind becomes hazardous.
 - 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.

- Numerous large trees snapped or uprooted along with fences and roadway signs blown over.
- Many roads impassable from large debris, and more within urban or heavily wooded places. Many bridges, causeways, and access routes impassable.
- Widespread power and communications outages.

* STORM SURGE

- LATEST LOCAL FORECAST: Life-threatening storm surge possible
 - Peak Storm Surge Inundation: The potential for 2-4 feet above ground somewhere within surge prone areas
 - Window of concern: Begins early Thursday afternoon

- CURRENT THREAT TO LIFE AND PROPERTY: Moderate
 - The storm surge threat has remained nearly steady from the previous assessment.
 - Emergency plans should include a reasonable threat for dangerous storm surge flooding of greater than 3 feet above ground.
 - To be safe, earnestly prepare for the potential of significant storm surge flooding impacts. Evacuation efforts should now be brought to completion. Evacuations must be complete before driving conditions become unsafe.
 - Life-threatening inundation is possible. Failure to heed evacuation orders may result in serious injury or loss of life. Leave if evacuation orders are given for your area. Consider voluntary evacuation if recommended. Poor decisions may needlessly risk lives.

- POTENTIAL IMPACTS: Significant
 - Areas of inundation with storm surge flooding accentuated by waves. Damage to several buildings, mainly near the coast.
 - Sections of near-shore escape routes and secondary roads become weakened or washed out, especially in usually vulnerable low spots.
 - Major beach erosion with heavy surf breaching dunes. Strong and numerous rip currents.
 - Moderate damage to marinas, docks, boardwalks, and piers. Several small craft broken away from moorings, especially in unprotected anchorages.

* FLOODING RAIN

- LATEST LOCAL FORECAST:
 - Peak Rainfall Amounts: 4-8 inches, with locally higher amounts

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

- To be safe, earnestly prepare for the potential of significant flooding rain impacts.
- Dangerous flooding is possible. Failure to take action may result in serious injury or loss of life. If flood related watches and warnings are issued, heed recommended actions.

- POTENTIAL IMPACTS: Significant
 - Moderate rainfall flooding may prompt several evacuations and rescues.
 - Rivers and tributaries may quickly become swollen with swifter currents and overspill their banks in a few places, especially in usually vulnerable spots. Small streams, creeks, canals, arroyos, and ditches overflow.
 - Flood waters can enter some structures or weaken foundations. Several places may experience expanded areas of rapid inundation at underpasses, low-lying spots, and poor drainage areas. Some streets and parking lots take on moving water as storm drains and retention ponds overflow. Driving conditions become hazardous. Some road and bridge closures.

* TORNADO

- LATEST LOCAL FORECAST:
 - Situation is favorable for tornadoes

- CURRENT THREAT TO LIFE AND PROPERTY: Moderate
 - The tornado threat has remained nearly steady from the previous assessment.
 - When implementing emergency plans, include should include a reasonable threat for scattered tornadoes.
 - To be safe, earnestly prepare for the potential of significant tornado impacts.
 - Listen for tornado watches and warnings. Be ready to shelter quickly if a tornado approaches.

- POTENTIAL IMPACTS: Significant
 - The occurrence of scattered tornadoes can hinder the execution of emergency plans during tropical events.
 - Several places may experience tornado damage with a few spots of considerable damage, power loss, and communications failures.
 - Locations could realize roofs torn off frame houses, mobile homes demolished, boxcars overturned, large trees snapped or uprooted, vehicles tumbled, and small boats tossed about. Dangerous projectiles can add to the toll.

* FOR MORE INFORMATION:

- <http://ready.gov/hurricanes>
- <http://www.weather.gov/mhx/Tropical>

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Hurricane Local Statement (HLS) – Atlantic basin and WFO Honolulu

NOTE: While this format is applicable to all Atlantic basin WFOs and WFO Honolulu, storm surge watches/warnings are not issued by WFO San Juan and WFO Honolulu

WTUS82 KMHX 111443
HLSMHX
NCZ029-044>047-079>081-090>095-098-103-104-112245-

Hurricane Irene Local Statement Advisory Number 22
National Weather Service Newport/Morehead City NC AL092017
943 AM EST Wed Jan 11 2017

This product covers Eastern North Carolina

****DANGEROUS HURRICANE IRENE FORECAST TO APPROACH EASTERN NORTH CAROLINA COAST ON THURSDAY****

NEW INFORMATION

* CHANGES TO WATCHES AND WARNINGS:

- A Hurricane Watch has been upgraded to a Hurricane Warning for Pitt, Duplin, Lenoir, Jones, and Martin
- A Hurricane Watch has been upgraded to a Hurricane Warning and A Storm Surge Watch has been upgraded to a Storm Surge Warning for Washington, Tyrrell, Mainland Dare, Beaufort, Mainland Hyde, Craven, Pamlico, Carteret, Onslow, Outer Banks Dare, and Outer Banks Hyde
- A Tropical Storm Watch has been upgraded to a Tropical Storm Warning for Greene

* CURRENT WATCHES AND WARNINGS:

- A Hurricane Warning is in effect for Pitt, Duplin, Lenoir, Jones, and Martin
- A Hurricane Warning and Storm Surge Warning are in effect for Washington, Tyrrell, Mainland Dare, Beaufort, Mainland Hyde, Craven, Pamlico, Carteret, Onslow, Outer Banks Dare, and Outer Banks Hyde
- A Tropical Storm Warning is in effect for Greene

* STORM INFORMATION:

- About 580 miles south of Buxton NC or About 530 miles south of Morehead City NC
- 27.0N 77.3W
- Storm Intensity 115 mph
- Movement North-northwest or 335 degrees at 14 mph

SITUATION OVERVIEW

When making decisions...do not focus on the exact forecast track. Due to the size and the strength of the storm...there is a potential for major to devastating impacts from wind across eastern North Carolina as well as significant to extensive impacts from storm surge along portions of the coast Thursday into Friday. Residents of eastern North Carolina need to heed the advice of their local

emergency officials and complete their preparedness actions today.

POTENTIAL IMPACTS

* WIND:

Protect against life-threatening wind having possible devastating impacts across portions of eastern North Carolina. Potential impacts in this area 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.
- Numerous large trees snapped or uprooted along with fences and roadway signs blown over.
- Many roads impassable from large debris, and more within urban or heavily wooded places. Many bridges, causeways, and access routes impassable.
- Widespread power and communications outages.

* SURGE:

Protect against life-threatening surge having possible extensive impacts across areas along the Neuse and Pamlico rivers as well as coastal sections of Onslow county. Potential impacts in these areas include:

- Large areas of deep inundation with storm surge flooding accentuated by battering waves. Structural damage to buildings, with several washing away. Damage compounded by floating debris. Locations may be uninhabitable for an extended period.
- Large sections of near-shore escape routes and secondary roads washed out or severely flooded. Flood control systems and barriers may become stressed.
- Severe beach erosion with significant dune loss.
- Major damage to marinas, docks, boardwalks, and piers. Many small craft broken away from moorings, especially in unprotected anchorages with some lifted onshore and stranded.

Also, protect against life-threatening surge having possible significant impacts across portions of the Outer Banks and Pamlico Sound facing areas.

* FLOODING RAIN:

Protect against life-threatening rainfall flooding having possible devastating impacts across portions of eastern North Carolina. Potential impacts include:

- Extreme rainfall flooding may prompt numerous evacuations and rescues.
- Rivers and tributaries may overwhelmingly overflow their banks in many places with deep moving water. Small streams, creeks, canals, arroyos, and ditches may become raging rivers. In mountain areas, deadly runoff may rage down valleys while increasing susceptibility to rockslides and mudslides. Flood control systems and barriers may become stressed.
- Flood waters can enter numerous structures within multiple communities, some structures becoming uninhabitable or washed away. Flood waters may cover escape routes. Streets and parking lots become rivers of raging water with underpasses submerged. Driving conditions become very dangerous. Numerous road and bridge closures with some

weakened or washed out.

* TORNADOES:

Protect against a dangerous tornado event having possible significant impacts across eastern North Carolina. Potential impacts include:

- The occurrence of scattered tornadoes can hinder the execution of emergency plans during tropical events.
- Several places may experience tornado damage with a few spots of considerable damage, power loss, and communications failures.
- Locations could realize roofs torn off frame houses, mobile homes demolished, boxcars overturned, large trees snapped or uprooted, vehicles tumbled, and small boats tossed about. Dangerous projectiles can add to the toll.

PRECAUTIONARY/PREPAREDNESS ACTIONS

* EVACUATIONS:

For those under evacuation orders, leave as soon as practical with a destination in mind. Gas up your vehicle well ahead of time. Be sure that you take all essential materials from your emergency supplies kit. Let others know where you are going and when you intend to arrive.

For those not under evacuation orders, understand that there are inherent risks to evacuation (such as traffic congestion, accidents, and driving in bad weather), so evacuate only if necessary. Help keep roadways open for those that are under evacuation orders.

If you are exceptionally vulnerable to wind or water hazards from tropical systems, consider voluntary evacuation, especially if being officially recommended. Relocate to a predetermined shelter or safe destination.

* OTHER PREPAREDNESS INFORMATION:

Now is the time to bring to completion all preparations to protect life and property in accordance with your emergency plan.

If you are a visitor and still in the area, listen for the name of the city or town in which you are staying within local news updates. Be sure you know the name of the county or parish in which it resides. Pay attention for instructions from local authorities.

Closely monitor NOAA Weather radio or other local news outlets for official storm information. Be ready to adapt to possible changes to the forecast.

* ADDITIONAL SOURCES OF INFORMATION:

- For information on appropriate preparations see ready.gov
- For information on creating an emergency plan see getagameplan.org
- For additional disaster preparedness information see redcross.org

NEXT UPDATE

The next local statement will be issued by the National Weather Service in Newport/Morehead City NC around NOON, or sooner if conditions warrant.

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Tropical Cyclone Local Statement - Pacific Basin WFOs (except WFO Honolulu and Guam immediate AOR)

WTPQ83 PGUM 091620
HLSPQ3

URGENT - IMMEDIATE BROADCAST REQUESTED
SUPER TYPHOON NANGKA (11W) LOCAL STATEMENT
NATIONAL WEATHER SERVICE TIYAN GU
300 AM CHST FRI JUL 10 2015

...NANGKA NOW A SUPER TYPHOON WEST OF THE NORTHERN MARIANAS...

.NEW INFORMATION...
NONE.

.AREAS AFFECTED...
THIS LOCAL STATEMENT PROVIDES INFORMATION AND RECOMMENDED ACTIONS
FOR PEOPLE ON AGRIHAN...PAGAN AND ALAMAGAN ISLANDS IN THE NORTHERN
MARIANA ISLANDS.

.WATCHES/WARNINGS...
A TYPHOON WARNING REMAINS IN EFFECT FOR AGRIHAN...PAGAN AND ALAMAGAN
ISLANDS AS DAMAGING WINDS ARE STILL OCCURRING OVER THESE ISLANDS.

.STORM INFORMATION...
AT 100 AM CHST...THE CENTER OF SUPER TYPHOON NANGKA WAS LOCATED NEAR
LATITUDE 18.1N...LONGITUDE 144.1E.

THIS IS
ABOUT 115 MILES WEST-SOUTHWEST OF AGRIHAN
ABOUT 110 MILES WEST OF PAGAN
ABOUT 120 MILES WEST-NORTHWEST ALAMAGAN

NANGKA WAS MOVING TOWARD THE WEST-NORTHWEST AT 15 MPH WITH MAXIMUM
SUSTAINED WINDS OF 155 MPH.

.SITUATION OVERVIEW...
SUPER TYPHOON NANGKA IS EXPECTED TO MAINTAIN A WEST-NORTHWEST
HEADING TODAY...THEN BEGIN TURNING TO THE NORTH WHILE SLOWING IN
FORWARD SPEED OVER THE WEEKEND. NANGKA IS EXPECTED TO BEGIN A SLOW
WEAKENING TREND LATER TODAY THAT WILL CONTINUE THROUGH THE WEEKEND.

.PRECAUTIONARY/PREPAREDNESS ACTIONS...
PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMAIN IN A STURDY SHELTER UNTIL DAMAGING WINDS SUBSIDE. TROPICAL
STORM CONDITIONS WILL CONTINUE INTO THE MORNING HOURS. DO NOT
ATTEMPT INTER-ISLAND TRAVEL UNTIL WINDS AND SEAS HAVE SUBSIDED.

...WIND INFORMATION...
TROPICAL STORM FORCE SOUTHEAST TO SOUTH WINDS ARE EXPECTED TO
CONTINUE OVER THE NEXT SEVERAL HOURS BEFORE DROPPING BELOW TROPICAL
STORM FORCE LATER THIS MORNING.

...STORM SURGE AND SURF INFORMATION...

SEAS OF AROUND 20 TO 25 FEET WILL PERSIST THROUGH THE EARLY MORNING HOURS BEFORE BEGINNING TO SLOWLY SUBSIDE LATER THIS MORNING. SURF OF AROUND 20 TO 25 FEET WILL DECREASE SLIGHTLY THIS AFTERNOON.

COASTAL INUNDATION OF 2 TO 4 FEET IS POSSIBLE UNTIL WINDS AND SURF DECREASE. SURF MAY BE SLOW TO DECREASE AS NANGKA IS EXPECTED TO SLOW DOWN TO THE NORTHWEST OF THE NORTHERN MARIANAS AS IT CURVES TO THE NORTH THIS WEEKEND. THIS WILL KEEP LARGE SWELL MOVING TOWARD THE NORTHERN MARIANAS INTO EARLY NEXT WEEK.

...OTHER STORM EFFECTS...

ADDITIONAL RAINFALL TOTALS OF 2 TO 4 INCHES ARE POSSIBLE THROUGH THIS AFTERNOON.

&&

.NEXT UPDATE...

THE NEXT LOCAL STATEMENT WILL BE ISSUED BY THE NATIONAL WEATHER SERVICE IN TIYAN AROUND 900 AM CHST...OR SOONER IF CONDITIONS WARRANT.

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W. AYDLETT

Tropical Cyclone Local Statement (HLS) – WFO Guam including VTEC for immediate AOR (Guam and Northern Mariana Islands)

WTPQ81 PGUM 192201
HLSPQ1

URGENT - IMMEDIATE BROADCAST REQUESTED
TROPICAL CYCLONE LOCAL STATEMENT
NATIONAL WEATHER SERVICE TIYAN GU
801 AM CHST FRI NOV 20 2015

...TYPHOON IN-FA MOVING OUT OF CHUUK STATE...

.NEW INFORMATION...

THE TYPHOON WARNING HAS BEEN CANCELED FOR ULUL IN CHUUK STATE.
TYPHOON CONDITIONS ARE NO LONGER EXPECTED.

.AREAS AFFECTED...

THIS LOCAL STATEMENT PROVIDES INFORMATION AND RECOMMENDED ACTIONS
FOR PEOPLE IN GUAM AND THE SURROUNDING WATERS OUT TO 40 NM...AND
ON ULUL IN CHUUK STATE.

.WATCHES/WARNINGS...

THE TYPHOON WARNING HAS BEEN CANCELED FOR ULUL IN CHUUK STATE.
TYPHOON CONDITIONS ARE NO LONGER EXPECTED.

A TROPICAL STORM WATCH REMAINS IN EFFECT FOR GUAM. TROPICAL STORM
CONDITIONS...INCLUDING DAMAGING WINDS OF 39 MPH OR MORE...ARE
POSSIBLE WITHIN 36 HOURS.

.STORM INFORMATION...

AT 700 AM CHST...2100 UTC...THE CENTER OF TYPHOON IN-FA WAS
LOCATED BY SATELLITE NEAR LATITUDE 10.0 DEGREES NORTH AND
LONGITUDE 148.9 DEGREES EAST. THIS IS ABOUT 110 MILES NORTH-
NORTHWEST OF ULUL...270 MILES NORTHWEST OF CHUUK...370 MILES
SOUTHEAST OF GUAM AND 415 MILES SOUTH-SOUTHEAST OF SAIPAN. IN-FA
WAS MOVING NORTHWEST AT 13 MPH WITH MAXIMUM SUSTAINED WINDS OF 85
MPH.

.SITUATION OVERVIEW...

TYPHOON IN-FA IS MOVING OUT OF CHUUK STATE INTO THE OPEN WATERS
SOUTHEAST OF THE MARIANAS. THE CURRENT FORECAST TRACK BRINGS IN-FA
ABOUT 140 MILES SOUTH-SOUTHWEST OF GUAM EARLY SATURDAY MORNING.

&&

...ULUL...

.PRECAUTIONARY/PREPAREDNESS ACTIONS...

THE TYPHOON WARNING HAS BEEN CANCELLED FOR ULUL IN CHUUK STATE.
DO NOT ATTEMPT ANY INTER-ISLAND TRAVEL UNTIL WINDS AND SEAS
SUBSIDE. LISTEN TO INSTRUCTIONS AND UPDATES FROM YOUR LOCAL
LEADERS.

...WIND INFORMATION...

THE HIGHEST WINDS ASSOCIATED WITH TROPICAL STORM IN-FA HAVE
PASSED TO THE NORTHWEST OF ULUL. SOUTHWEST WINDS OF 25 TO 35 MPH
THIS MORNING WILL STEADILY SUBSIDE TO BETWEEN 10 AND 20 MPH AND

SHIFT TO THE SOUTHEAST BY TONIGHT.

...STORM SURGE AND SURF INFORMATION...

COMBINED SEAS OF 10 TO 12 FEET AND HAZARDOUS SURF OF 11 TO 14 FEET ALONG SOUTH AND WEST FACING SHORES THIS MORNING WILL GRADUALLY SUBSIDE TODAY. HOWEVER...SURF WILL REMAIN HAZARDOUS THROUGH SATURDAY. MINOR COASTAL INUNDATION IS POSSIBLE BEFORE NOON.

...OTHER STORM EFFECTS...

RAINFALL OF 1 TO 2 INCHES IS POSSIBLE THROUGH TONIGHT.

&&

GUZ001-PMZ151-200615-
/O.CON.PGUM.TR.A.0005.000000T0000Z-000000T0000Z/
GUAM-GUAM COASTAL WATERS-
801 AM CHST FRI NOV 20 2015

...TROPICAL STORM WATCH REMAINS IN EFFECT...

...PRECAUTIONARY/PREPAREDNESS ACTIONS...

STAY INFORMED AND LISTEN FOR POSSIBLE CHANGES TO THE FORECAST. REVIEW YOUR DISASTER PREPAREDNESS PLAN...AS PREPARATIONS FOR THE POSSIBILITY OF DAMAGING WINDS FROM TYPHOON IN-FA SHOULD BE MADE TODAY.

&&

...WINDS AND SEAS...

TROPICAL STORM FORCE WINDS ARE POSSIBLE FOR SOUTHERN COASTAL WATERS AS TYPHOON IN-FA PASSES SOUTH OF GUAM SATURDAY...AND THERE IS STILL A THREAT FOR TROPICAL STORM FORCE WINDS OVER THE ISLAND OF GUAM IF IN-FA DEVIATES TO THE NORTH AS IT APPROACHES. CLOSELY MONITOR THE FORECAST FOR ANY SIGNIFICANT CHANGES.

SEAS OF 8 TO 10 FEET THIS MORNING WILL BUILD TO BETWEEN 12 AND 16 FEET BY SATURDAY AS TROPICAL STORM IN-FA PASSES TO THE SOUTH. SEAS MAY REACH 20 FEET IN SOUTHERN GUAM WATERS.

...OTHER STORM EFFECTS...

RAINFALL OF 2 TO 4 INCHES IS POSSIBLE THROUGH SATURDAY EVENING.

&&

.NEXT UPDATE...

THE NEXT LOCAL STATEMENT WILL BE ISSUED BY THE NATIONAL WEATHER SERVICE AROUND 3 PM CHST...OR SOONER IF CONDITIONS WARRANT.

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WILLIAMS

Tropical Cyclone Local Statement (HLS) – WSO Pago Pago

WTZS81 NSTU 231153
HLSZS1

URGENT - IMMEDIATE BROADCAST REQUESTED
TROPICAL CYCLONE AMOS - LOCAL STATEMENT
NATIONAL WEATHER SERVICE PAGO PAGO AS
1253 AM SST SAT APR 23 2016

UPDATE HURRICANE FORCE WINDS ON HLS.

...HURRICANE AMOS HEADING TOWARDS TUTUILA AND AUNUU...

...NEW INFORMATION...
HURRICANE WARNING IS NOW IN EFFECT FOR TUTUILA AND AUNUU.

...AREAS AFFECTED...
THIS LOCAL STATEMENT PROVIDES IMPORTANT INFORMATION AND RECOMMENDED
ACTIONS FOR PEOPLE AND MARINE INTERESTS IN ALL ISLANDS OF AMERICAN
SAMOA AND COASTAL WATERS.

...WATCHES/WARNINGS...

HURRICANE WARNING IS IN EFFECT FOR TUTUILA AND AUNUU.

A HIGH SURF WARNING REMAINS IN EFFECT FOR ALL AMERICAN SAMOA.

A FLASH FLOOD WARNING REMAINS IN EFFECT FOR TUTUILA AND AUNUU.

...STORM INFORMATION...

AT 10 PM SST FRIDAY...THE CENTER OF HURRICANE AMOS WAS LOCATED
NEAR LATITUDE 13.4S...LONGITUDE 172.3W...OR ABOUT 120 MILES
NORTHWEST OF TUTUILA...AND 190 MILES NORTHWEST OF MANU`A.
HURRICANE AMOS WAS MOVING EAST SOUTHEAST AT 10 MPH. ON THIS
TRACK...THE CORE OF HURRICANE AMOS WILL MOVE OVER TUTUILA AND
AUNUU ON SATURDAY EVENING.

.PRECAUTIONARY/PREPAREDNESS ACTIONS...
PRECAUTIONARY/PREPAREDNESS ACTIONS...

COASTAL INUNDATION OF PRONE COMMUNITIES IS POSSIBLE.

ALL RESIDENTS LIVING ON PRONE SHORELINES CAN EXPECT WATER
INCURSION INTO THEIR HOMES. THOSE IN TYPICALLY FLOOD PRONE AREAS
MAY HAVE A FOOT OR TWO OF WATER IN THEIR HOMES...CAUSING MINOR
DAMAGE. SHORELINE ROADS MAY BRIEFLY CLOSE WITH UP TO TWO FEET OF
WATER ACROSS...EXCEPT THOSE IN FLOOD PRONE AREAS WHICH COULD HAVE
UPWARDS OF 4 TO 5 FEET OF WATER ACROSS THEM. MODERATE BEACH
EROSION IS POSSIBLE...BECOMING LIKELY IF CONDITIONS EXTEND THROUGH
MULTIPLE HIGH TIDE CYCLES.

CONDITIONS WILL BE WORSENERD BY BATTERING WAVES. SUCH WAVES WILL
INCREASE THE LIKELIHOOD OF PROPERTY DAMAGE...ESPECIALLY TO
STRUCTURES ON OR VERY NEAR THE SHORELINE.

&&

.NEXT UPDATE...THE NEXT LOCAL STATEMENT WILL BE ISSUED AROUND 6 AM SST SATURDAY...OR SOONER IF CONDITIONS WARRANT.

ASZ001>003-240000-
TUTUILA-AUNUU-MANUA-SWAINS-
1253 AM SST SAT APR 23 2016

...HURRICANE WARNING IS IN EFFECT FOR TUTUILA AND AUNUU...
...HIGH SURF WARNING REMAINS IN EFFECT FOR ALL OF AMERICAN SAMOA...
...FLASH FLOOD WARNINGS REMAINS IN EFFECT FOR TUTUILA AND AUNUU...

...WINDS...

AS HURRICANE AMOS MOVES CLOSER...THE THREAT FOR SUSTAINED HIGH WINDS IS LIKELY TO INCREASE. STORM FORCE WINDS OF 45 TO 65 MPH WITH HIGHER GUSTS WILL INCREASE TO HURRICANE FORCE WINDS OF 70 TO 85 MPH WITH GUSTS TO 100 MPH IN THE AFTERNOON THROUGH SUNDAY MORNING. HURRICANE WINDS WILL GRADUALLY DIMINISH TO TROPICAL STORM WINDS 45 TO 65 MPH WITH HIGHER GUSTS ON SUNDAY AFTERNOON.

...STORM SURGE AND STORM TIDES...

HAZARDOUS SURFS GENERATED FROM HURRICANE AMOS WILL IMPACT SOUTHWEST THROUGH NORTH FACING SHORES OF ALL ISLANDS OF AMERICAN SAMOA...PEAKING SATURDAY AFTERNOON THROUGH SUNDAY AFTERNOON TO NEAR 26 FEET. STORM SURGE OF 4 TO 5 FEET ARE EXPECTED TO IMPACT THE SOUTHWEST TO NORTH FACING COASTAL COMMUNITIES...ESPECIALLY DURING HIGH TIDES.

&&

LAPATAIGA MO MATAGI MALOLOS
OFISA O LE TAU PAGO PAGO AS
1253 VAVEAO ASO TOANA'I APERILA 23 2016

...O LOO AGAI MAI I TUTUILA MA AUNUU LE AFA O AMOS...

...FAAMATALAGA FOU...
UA IAI NEI LE LAPATAIGA O AFA MO TUTUILA MA AUNUU.

...NOFOAGA UA AAFIA...
O LENEI FAASALALAUAGA E AAFIA AI MOTU MA GATAIFALE UMA O AMERIKA SAMOA.

...NOFO VAAVAIA/LAPATAIGA...

UA IAI NEI LAPATAIGA O AFA MO TUTUILA MA AUNUU.

O LOO FAAUAU LAPATAIGA MO GALU MAUALULUGA.

O LOO FAAUAU LAPATAIGA MO LOLOGA MA TAFEGA.

...FAAMATALAGA E FAATATAU I TULAGA LOULOUA O LE TAU...

I LE 10 PO O LE ASO FARAILE...SA TAOTO LE AFA O AMOS E TUSA MA LE 120 MAILA LE MAMAO I MATU I SISIFO O TUTUILA MA O LOO AGA`I I SASA'E SAUTE I SASA`E I LONA SAOASAOA E 10 MPH. O LOO AGA`I MAI

PEA LE AFA O AMOS I TUTUIILA MA AUNUU...MA O LE A MAFAI ONA
LATALATA MAI LE OGATOTONU O LE AFA O AMOS I LE AFIAFI O LE ASO
TOONA'I.

FAUTUAGA/TAPENAGA...

E MAFAI ONA LOLO-VAIA NOFOAGA TU-LATA I MATAFAGA.

ONA O LE SIISII O AUMA MA GALU E MAFUA MAI I LE AFA O AMOS...O LE
A MAFAI ONA OO ATU LE MAUALULUGA O LE SAMI E LATA I LE 1 I LE 2
FUTU I UTA O MAOTA MA LAOA O LOO TULATA I MATAFAGA. O LE A MAFAI
ONA FAALEAGAINA MEA-TOTINO MA NOFOAGA LAUTELE.

...MATAGI...

A O AGA`I LEMU MAI PEA LE AFA O AMOS I LE ATUSAMOA...MATAGI
MALOLOS I E 45 I LE 65 MPH MA E AGI FAATAUTAU O LE A SIISII I AFA E
70 I LE 85 MPH MA E AGI FAATAUTAU E OO ATU I LE 100 MPH I LE
AOAULI E OO ATU I LE TAEAO O LE ASO SA. O LE A TOE FAAITIITIA AFA
I MATAGI MALOLOS I 45 I LE 65 MPH MA E FAATAUTAU I LE AOAULI O LE
ASO SA.

...GALU MAUALULUGA MA TULAGA O LE TAI...

O LE A MAFAI ONA AAFIA GATAIFALE I SAUTE I SISIFO...SISIFO...MATU
I SISIFO MA MATU O AMERIKA SAMOA SE`IA OO INA SIISII LE MAUALULUGA
O GALU E LATA I LE 26 FUTU I LE AOAULI O LE ASO TOONA`I E OO ATU I
LE AOAULI O LE ASO SA. O LE A MAFAI FO`I ONA OO MAI GALU E LATA I
LE 4 I LE 5 FUTU LE MAUALULUGA I UTA O AUALA MA O LE A AAFIA AI
NOFOAGA TU-LATA I MATAFAGA MAI I SAUTE I SISIFO E OO ATU I MATU O
LE ATUNUU...AE MAISE LAVA TAIMI E SUA TUTU`I AI LE TAI.

...MO NISI RIPOTI FOU...

O LE A TOE AUINA ATU SE RIPOTI FOU I LE 6 I LE VAVEAO O LE ASO
TOONA`I...PO O SE TAIMI LATA MAI PE A IAI NI ISI SUIGA FOU.

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Extreme Wind Warning (EWW)

WFUS52 KMLB 070926
EWWMLB
FLC009-071115-
/O.NEW.KMLB.EW.W.0001.161007T0926Z-161007T1115Z/

BULLETIN - EAS ACTIVATION REQUESTED
EXTREME WIND WARNING
NATIONAL WEATHER SERVICE MELBOURNE FL
526 AM EDT FRI OCT 7 2016

THE NATIONAL WEATHER SERVICE IN MELBOURNE HAS ISSUED A

* EXTREME WIND WARNING FOR...
NORTHEASTERN BREVARD COUNTY IN FLORIDA...

* UNTIL 715 AM EDT

* AT 521 AM EDT...SURFACE OBSERVATIONS AND DOPPLER RADAR INDICATED
EXTREME WINDS... ASSOCIATED WITH THE EYEWALL OF HURRICANE MATTHEW
WERE ABOUT TO MOVE ONSHORE CAPE CANAVERAL INCLUDING PORT CANAVERAL
AND MOVING NORTH-NORTHWEST AT 15 MPH. THIS IS AN EXTREMELY
DANGEROUS AND LIFE-THREATENING SITUATION!

PRECAUTIONARY/PREPAREDNESS ACTIONS...

FREQUENT DESTRUCTIVE WIND GUSTS TO AROUND 115 MPH WILL SPREAD ACROSS
THE CAPE CANAVERAL AREA...PRODUCING SWATHS OF TORNADO-LIKE DAMAGE.
A WIND GUST OF 100 MPH WAS RECENTLY RECORDED AT THE TIP OF CAPE
CANAVERAL.

&&

LAT...LON 2839 8056 2837 8063 2879 8072 2878 8068
2864 8057 2860 8055 2846 8049
TIME...MOT...LOC 0921Z 255DEG 12KT 2849 8049 2819 8045

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CRISTALDI

Severe Weather Statement (SVS) follow-up for EWW

WWUS52 KTBW 132015
SVSTBW

SEVERE WEATHER STATEMENT
NATIONAL WEATHER SERVICE TAMPA BAY - RUSKIN FL
415 PM EDT FRI AUG 13 2004

FLC071-132030-
/O.CAN.KTBW.EW.W.0013.000000T0000Z-040813T2100Z
LEE-
415 PM CDT FRI AUG 13 2004

...EXTREME WIND WARNING CANCELLED FOR LEE COUNTY...

EXTREME WINDS...ASSOCIATED WITH THE EYEWALL OF HURRICANE CHARLEY...HAVE MOVED
NORTHEAST OF LEE COUNTY. THUS THE EXTREME WIND WARNING HAS BEEN CANCELLED
FOR LEE COUNTY.

LAT...LON 2672 8226 2644 8213 2702 8174 2702 8207

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Short Term Forecast (NOW)

FPUS72 KMLB 072112
NOWMLB

SHORT TERM FORECAST
NATIONAL WEATHER SERVICE MELBOURNE FL
512 PM EDT FRI OCT 7 2016

AMZ550-552-555-570-572-575-FLZ041-044>047-053-054-058-059-064-141-
144-147-072315-
COASTAL VOLUSIA-FLAGLER BEACH TO VOLUSIA-
BREVARD COUNTY LINE 20 NM TO 60 NM OFFSHORE-FLAGLER BEACH TO VOLUSIA-
BREVARD COUNTY LINE OUT TO 20 NM-INDIAN RIVER-INLAND VOLUSIA-MARTIN-
NORTHERN BREVARD-NORTHERN LAKE-OKEECHOBEE-ORANGE-OSCEOLA-
SEBASTIAN INLET TO JUPITER INLET 20 NM TO 60 NM OFFSHORE-
SEBASTIAN INLET TO JUPITER INLET OUT TO 20 NM-SEMINOLE-
SOUTHERN BREVARD-SOUTHERN LAKE-ST. LUCIE-VOLUSIA-
BREVARD COUNTY LINE TO SEBASTIAN INLET 20 NM TO 60 NM OFFSHORE-
VOLUSIA-BREVARD COUNTY LINE TO SEBASTIAN INLET OUT TO 20 NM-
512 PM EDT FRI OCT 7 2016

.NOW...
EVEN THOUGH HURRICANE MATTHEW HAD PULLED AWAY AND WAS OFFSHORE
NORTHEAST FLORIDA...THERE WERE LINGERING EFFECTS LEFT BEHIND IN EAST
CENTRAL FLORIDA. GUSTY WINDS WERE IMPACTING THE COASTAL WATERS...
ESPECIALLY FROM CAPE CANAVERAL NORTHWARD...INCLUDING THE ADJACENT
VOLUSIA COUNTY COAST.

STORM SURGE FLOODING SHOULD GRADUALLY RECEDE...BUT SOME INUNDATION
WILL LINGER ESPECIALLY FROM CANAVERAL NORTHWARD.

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Additional details...including graphics are available online at:
<http://www.weather.gov/mlb/blog>

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Post Tropical Cyclone Report (PSH)

ACUS72 KTBW 140058
PSHTBW

POST TROPICAL CYCLONE REPORT...TROPICAL STORM ALBERTO
NATIONAL WEATHER SERVICE TAMPA BAY AREA - RUSKIN FL
900 PM EDT TUE JUN 13 2006

COUNTIES INCLUDED: LEVY...CITRUS...HERNANDO...PASCO...HILLSBOROUGH...
POLK...PINELLAS...MANATEE...SARASOTA...

A. LOWEST SEA LEVEL PRESSURE/MAXIMUM SUSTAINED WINDS AND PEAK GUSTS

OFFICIAL OBSERVATIONS...

NOTE: ANEMOMETER HEIGHT IS 10 METERS AND WIND AVERAGING IS 2 MINUTES

LOCATION ID	MIN	DATE/	MAX	DATE/	PEAK	DATE/
LAT LON	PRES	TIME	SUST	TIME	GUST	TIME
DEG DECIMAL	(MB)	(UTC)	(KT)	(UTC)	(KT)	(UTC)

KVVG-THE VILLAGES						
28.9 -81.9	1008.1	13/0745	210/024	13/1805	210/036	13/1805
KBKV-BROOKSVILLE						
28.5 -82.5	1006.8	13/0859	210/024	13/1928	210/037	13/1656
KPIE-SAINT PETERSBURG						
27.9 -82.7	1007.1	13/0836	200/035	13/0540	200/044	13/0547
KGIF-WINTER HAVEN						
28.0 -81.7	1009.1	13/0640	220/023	13/1706	220/030	13/1705
KTPA-TAMPA INTERNATIONAL						
28.0 -82.5	1007.8	13/0931	200/029	13/0509 I	220/039	13/0707 I

REMARKS: TAMPA ANEMOMETER STOPPED WORKING AT 13/0800.

UNOFFICIAL OBSERVATIONS...

NOTE: ANEMOMETER HEIGHT IN METERS AND WIND AVERAGING PERIOD IN MINUTES
INDICATED UNDER MAXIMUM SUSTAINED WIND IF KNOWN

LOCATION ID	MIN	DATE/	MAX	DATE/	PEAK	DATE/
LAT LON	PRES	TIME	SUST	TIME	GUST	TIME
DEG DECIMAL	(MB)	(UTC)	(KT)	(UTC)	(KT)	(UTC)

CDRF1 CEDAR KEY						
29.1 -83.0	1004.1	13/1100	185/036	13/0830	180/048	13/0900
			02/10			
PTRF1 PORT RICHEY						
28.3 82.7	1005.4	13/1205 I	210/029	13/1154	220/035	13/1200
			01/05			
VENF1 VENICE						
27.1 -82.6	1005.6	13/0705	209/036	13/0610	210/046	13/0637

REMARKS: PRESSURE SENSOR AT PORT RICHEY STOPPED WORKING AT 13/1245.

NWSI 10-601 MAY 23, 2017

B. MARINE OBSERVATIONS...

NOTE: ANEMOMETER HEIGHT IN METERS AND WIND AVERAGING PERIOD IN MINUTES INDICATED UNDER MAXIMUM SUSTAINED WIND IF KNOWN.

LOCATION ID	MIN	DATE/	MAX	DATE/	PEAK	DATE/
LAT LON	PRES	TIME	SUST	TIME	GUST	TIME
DEG DECIMAL	(MB)	(UTC)	(KT)	(UTC)	(KT)	(UTC)

42036	100	NM WEST OF BAYPORT				
28.5 -84.5	1008.5	13/0905	280/035	13/1040	080/045	12/1050
			05/08			
42013	30	NM WEST OF VENICE				
25.9 -85.9	1003.7	13/1040	170/029	12/2210	200/035	13/0310 I
			03/10			
42003	210	NM W OF CAPTIVA ISLAND				
25.9 -85.9	1005.6	13/1350	196/038	12/1350	160/049	12/0516

REMARKS: WIND SENSOR AT USF COMPS BUOY 42013 STOPPED WORKING AT 13/0311.

C. STORM TOTAL RAINFALL FROM 0000 UTC JUNE 12 UNTIL 2359 UTC JUNE 13 2006

CITY/TOWN	COUNTY	ID	RAINFALL
LAT LON			(IN)
DEG DECIMAL			

SUWANNEE	LEVY	SUWF1	4.23
29.2 -83.1			
CHIEFLAND	LEVY	CHIF1	3.67
29.5 -82.9			
WILLISTON	LEVY	WLSF1	4.53
29.4 -82.5			
THE VILLAGES	SUMTER	KVVG	0.87
28.9 -81.9			
DADE CITY	PASCO	STLF1	2.62
28.3 -82.3			
PINELLAS PARK	PINELLAS	PINPK4.10	
27.9 -82.7			

REMARKS: NONE.

D. INLAND FLOODING...

LEVY...NUMEROUS REPORTS OF LOCALIZED FRESH WATER FLOODING IN URBAN AREAS.

CITRUS...LOCALIZED FRESH WATER FLOODING REPORTED IN SEVERAL AREAS.

HILLSBOROUGH...LOCALIZED FRESH WATER FLOODING WAS OBSERVED.

REMARKS: NONE.

E. MAXIMUM STORM SURGE AND STORM TIDE...
 OFFICIAL TIDE GAUGES NOTED WITH LEADING "G"

COUNTY	CITY/TOWN OR LOCATION	SURGE (FT)	TIDE (FT)	DATE TIME	BEACH EROSION
LEVY	G CEDAR KEY	4.09	6.74	13/0800	MINOR
PINELLAS	G CLEARWATER	2.42	4.02	13/0900	MINOR
MANATEE	COQUINA BEACH	4.33	6.78	13/0700	MAJOR

MAJOR BEACH EROSION AT COQUINA BEACH WHERE THE SAND WAS DUG OUT 2 FEET DEEP AND HALF THE BEACH DISAPPEARED.

PINELLAS	INDIAN SHORES	3.56	6.45	13/0800	MODERATE
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MODERATE BEACH EROSION REPORTED AT INDIAN SHORES.

CITRUS	NORTHERN COAST	4.00	N/A	13/1000	UNKNOWN
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COUNTY EMERGENCY MANAGEMENT REPORTED A 3 TO 4 FOOT SURGE FROM HOMOSASSA TO JUST SOUTH OF INGLIS.

REMARKS: DATE AND TIME ESTIMATED FOR MANATEE PINELLAS AND CITRUS COUNTIES.

F. TORNADES...

(DIST)CITY/TOWN LAT LON (DEG DECIMAL) DESCRIPTION	COUNTY	DATE/ TIME(UGC)	EF SCALE (IF KNOWN)
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3 NE WAUCHULA 27.6 -81.8	HARDEE	12/0650	EF0
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COUNTY ROAD CREW OBSERVED THE TORNADO NEAR HIGHWAY 62.

2 E BARTOW 27.9 -81.8	POLK	12/0809	EF0
--------------------------	------	---------	-----

TORNADO OBSERVED 1 MILE EAST OF BARTOW AIRPORT.

1 S ARCADIA 27.2 -81.9	DESOTO	12/0658	EF0
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TORNADO OBSERVED 1 MILE SOUTH OF ARCADIA.

REMARKS: NONE.

G. STORM IMPACTS BY COUNTY...

COUNTY DESCRIPTION	DEATHS	INJURIES	EVACUATIONS
LEVY	0	0	100

NWSI 10-601 MAY 23, 2017

20 HOMES IN YANKEETOWN RECEIVED FLOOD DAMAGE AS TWO FEET OF WATER COVERED THE ROAD DOWNTOWN. WATER ALSO CLOSED NEAR SHORE AREAS OF HIGHWAY 40 AND 24.

CITRUS 0 0 25
SURGE FLOODING NEAR HOMOSSASSA PUT 3 FEET OF WATER INTO ONE RESTAURANT AND DAMAGED 20 HOMES. TWO PEOPLE WHO DID NOT EVACUATE HAD TO BE RESCUED...ONE IN HOMOSASSA AND THE OTHER IN CRYSTAL RIVER. FORT ISLAND TRAIL WAS COVERED WITH 4 FEET OF WATER.

PASCO 0 0 0
4 FOOT SURGE UP AND DOWN THE COUNTY COASTLINE. WAS NOT HIGH ENOUGH TO FLOOD PROPERTY...EVEN AT HIGH TIDE.

HILLSBOROUGH 0 0 0
A COUPLE OF TREES ON HOUSES. FRESH WATER FLOODING AND BAY OVERSPRAY CLOSED PARTS OF BAY SHORE BOULEVARD FOR A TIME.

MANATEE 0 0 0
NO PROBLEMS.

SARASOTA 0 0 0
NO PROBLEMS.

&&

Legend:
I-Incomplete Data
E-Estimated

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APPENDIX B - Tropical Cyclone Assessment and Warning Product Identifiers

<u>PRODUCT TITLE</u>	<u>WMO HEADER</u>	<u>AWIPS PRODUCT IDENTIFIER (NNNXXX)</u>
<u>Hurricane Local Statement (HLS)</u>		
Atlantic	WTUS/81-84/ KCCC**	HLSNNN**
Brownsville, TX	WTUS84 KBRO	HLSBRO
San Juan, PR	WTCA82 TJSJ	HLSSJU
San Juan (Spanish)	WTCA82 TJSJ	HLSSPN
Eastern Pacific	WTUS86 KCCC**	HLSNNN**
Central Pacific	WTHW80 PHFO	HLSHFO
(All Hawaiian Islands)		
Western North Pacific		
(Guam and Micronesia)	WTPQ/81-85/ PGUM	HLSPQ/1-5/
South Pacific		
(Pago Pago, American Samoa)	WTZS/81-85/ NSTU	HLSZS/1-5/

**Where “CCC” and “NNN” are the valid WFO 4-letter and 3-letter station identifiers respectively.

<u>PRODUCT TITLE</u>	<u>WMO HEADER</u>	<u>AWIPS PRODUCT IDENTIFIER (NNNXXX)</u>
<u>Tropical Cyclone Local Watch/Warning (TCV)</u>		
Atlantic	WTUS/81-84/ KCCC**	TCVNNN**
Brownsville, TX	WTUS84 KBRO	TCVBRO
Central Pacific	WTHW80 PHFO	TCVHFO
(All Hawaiian Islands)		

**Where “CCC” and “NNN” are the valid WFO 4-letter and 3-letter station identifiers respectively.

<u>PRODUCT TITLE</u>	<u>WMO HEADER</u>	<u>AWIPS PRODUCT IDENTIFIER (NNNXXX)</u>
<u>Extreme Wind Warning (EWW)</u>		
Atlantic	WFUS/51-55/ KCCC**	EWVNNN**
Brownsville, TX	WFUS54 KBRO	EWVBRO
San Juan, PR	WFCA52 TJSJ	EWWSJU

**Where “CCC” and “NNN” are the valid WFO 4-letter and 3-letter station identifiers respectively.