

# FINAL REPORT

## Summary of Hurricane Local Statement Social Science Projects

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## EXECUTIVE SUMMARY

### Final Report:

### Summary of Hurricane Local Statement Social Science Projects

The goal of the social science research reported here was to provide recommendations to the National Weather Service (NWS) to improve the timing, readability, and usefulness of the Hurricane Local Statement (HLS) issued by NWS Weather Forecast Offices (WFOs) when an area is under tropical cyclone (TC) threat. The HLS contains watch/warning information, protective action information from local officials, meteorological hazard and impact information, and meteorological conditions. The HLS content currently includes:

- 1) The Coordinated Universal Time/Valid Time Event Code (UTC/VTEC) formatted segments with detailed meteorological information for specific zones (e.g., counties, parishes, marine areas).
- 2) A localized general overview of TC information for the region covered by each WFO.

The segmented VTEC, referred to as TCV, is largely automated from information provided in the National Digital Forecast Database, while the overview section requires additional WFO input, including potential local impacts. Each WFO has waited to release the automated TCV portion until forecasters have been able to add local information. The WFO then issued the information as one product (the HLS). The automated portion was thus “delayed” while the forecaster added value to the HLS product.

To improve the ability of WFOs to provide TC information in a more timely fashion, the NWS has proposed that the HLS be split into two products:

- 1) A new product containing only the automated TCV information that includes NHC-issued and WFO-issued watches/warnings and other forecast information for each county/parish (referred to as “segments”).
- 2) An updated and reformatted version of the HLS without the TCV.

This exploratory social science project involved the collection of qualitative data from three important stakeholder groups (broadcast meteorologists, emergency management personnel, and HLS-savvy community leaders) between August 2013 and February 2014. Stakeholders reviewed prototypes of an updated and reformatted HLS and a new TCV product.

Key recommendations are as follows:

- *Issue the TCV as soon as it becomes available, mentioning that it will be followed by the HLS.*
- *Explore ways to provide available storm information and/or a new alert product before the issuance of watches.*

- *Expand the use of email to distribute the TCV and HLS to a wider audience.*
- *Localize the forecast within reasonable levels of uncertainty to highlight differences in impact areas.*
- *Highlight the geographical areas covered.*
- *Provide the best possible forecast, but also convey “what could happen” as the basis for protective actions.*
- *Explore ways to communicate uncertainty more effectively while emphasizing the importance of preparing for what could happen.*
- *Adopt common terminology for hazards across all TC products.*
- *Use the same names for hazards (e.g., wind, surge, rain, tornadoes) across all TC products.*
- *Develop high-quality graphics to accompany the HLS.*
- *Coordinate graphics with media and commercial vendors.*
- *Number each TCV and HLS.*
- *Cross-reference all TC products.*
- *Add the Public Advisory number from which the products are derived.*
- *Include page numbers on the TCV and HLS.*

Based on the enthusiasm expressed by these stakeholders, the NWS is moving in the right direction related to these WFO forecast products. Results from this research can guide the development of the next version of the products for further testing and/or operational use on an experimental basis.

## Final Report: Summary of Hurricane Local Statement Social Science Projects

### INTRODUCTION

National Oceanic and Atmospheric Administration (NOAA) agencies involved in the production and dissemination of tropical cyclone (TC) forecasts are engaged in long-term efforts, such as the 10-year Hurricane Forecast Improvement Program, to advance both forecast accuracy and forecast communication. The goal of the work reported here was to provide recommendations to improve the timing, readability, and usefulness of the Hurricane Local Statement (HLS) issued by National Weather Service (NWS) Weather Forecast Offices (WFOs) when an area is under TC threat. A NOAA HLS/TCV team guided the research.

The HLS issued by each NWS WFO contains watch/warning information, protective action information from local officials, meteorological hazard and impact information, and meteorological conditions. The HLS content currently includes two parts:

- 3) The Coordinated Universal Time/Valid Time Event Code (UTC/VTEC) formatted segments with detailed meteorological information for specific zones (e.g., counties, parishes, marine areas).
- 4) A localized general overview of TC information for the region covered by each WFO.

The segmented VTEC, referred to as TCV, is largely automated from information provided in the National Digital Forecast Database, while the overview section requires additional WFO input, including potential local impacts. Each WFO has waited to release the automated TCV portion until forecasters have been able to add local information. The WFO then issued the information as one product, referred to as the HLS. The automated portion was thus “delayed” while the forecaster adds value to the HLS product.

To improve the ability of WFOs to provide TC information in a more timely fashion, the NWS has proposed that the HLS be split into two products:

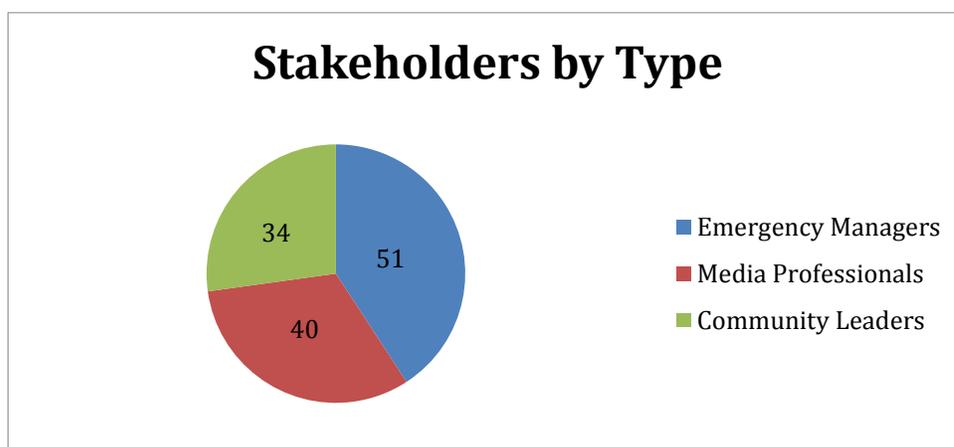
- 3) A new product containing only the automated TCV information that includes NHC-issued and WFO-issued watches/warnings and other forecast information for each county/parish (referred to as “segments”).
- 4) An updated and reformatted version of the HLS without the TCV.

The plan is to issue the automated TCV product as soon as it becomes available, followed by the HLS after WFO input. Research activities reported here resulted in recommendations for both the TCV and stand-alone HLS.

## METHODOLOGY

This exploratory social science project involved the collection of qualitative data from three important stakeholder groups (broadcast meteorologists, emergency management personnel, and HLS-savvy community leaders) between August 2013 and February 2014. Participants were recommended by NOAA staff, local forecasters, and nationally known broadcast media. The qualitative findings reported here result from three separate but related information-gathering efforts (projects):

- NOAA conducted one-on-one interviews in five locations: Boston, Massachusetts; Charleston, South Carolina; Miami, Florida; New Orleans, Louisiana; and Brownsville, Texas (n = 47).<sup>1</sup>
- A total of eight focus groups were held in Miami, Florida, New Orleans/Slidell, Louisiana, and Boston/Taunton, Massachusetts (n = 68).<sup>2</sup>
- One-on-one webinar Interviews were conducted with key informants from coastal areas (n = 10).



**Figure 1 - In total, the research involved 125 NWS stakeholders: 51 emergency management personnel, 40 media professionals (broadcast meteorologists and reporters), and 34 HLS-savvy community leaders.**

Two versions of the HLS and two versions of the TCV were tested in the first round of interviews (see Appendix A). The findings were conclusive enough that only one revised HLS version received further testing; two revised versions of the TCV were further explored in the focus groups and a last set of interviews (see Appendix A).

<sup>1</sup> n is the number of cases in the sample.

<sup>2</sup> The focus groups were originally intended to only examine the proposed Tropical Cyclone Impacts Graphic, but were expanded to include the TCV and HLS. Similarly the final set of interviews queried stakeholder opinions on all three products.

## KEY FINDINGS AND RECOMMENDATIONS

Nearly all stakeholders participating in this project considered the HLS a valuable, often primary, source of TC forecast information. In addition to accessing it from the WFO websites, many reported receiving it via email from the WFOs or that local emergency management agencies relayed it to them. As a result of opinions expressed during the first set of interviews, two revised versions of the TCV and one version of the HLS were developed under the guidance of the NOAA TCV/HLS team for further testing. There was consensus in the focus groups and final set of interviews that the new formats represented major improvements, but stakeholders also suggested further revisions.

### 3.1 Timing and Dissemination

Hurricane response is a time-dependent process. Individuals, households, government agencies, businesses, and other organizations must determine their level of risk, decide on the appropriate response, and then respond. In some cases, such as the evacuation of large metropolitan areas, this can take days. Emergency managers, in particular, have complained that by the time they receive the first HLS and an official watch occurs, they have already had to make many vital decisions. Broadcast meteorologists stated that they often do not have enough time to digest the information before going on the air.

These stakeholders applauded efforts to get storm information to them sooner, such as issuing the TCV earlier as a separate product. They also noted that they would appreciate any information about potential hazards and impacts that could be issued earlier than watches. As far as dissemination was concerned, some suggested expanding the WFO email lists to include community leaders and nonprofit organizations that are engaged in hurricane response operations.

- ***RECOMMENDATION: Issue the TCV as soon as it becomes available, mentioning that it will be followed by the HLS.***
- ***RECOMMENDATION: Explore ways to provide available storm information and/or a new alert product before the issuance of watches.***
- ***RECOMMENDATION: Expand the use of email to distribute the TCV and HLS to a wider audience.***

### 3.2 Localized Information

Stakeholders rely on the HLS, particularly the TCV portion, as their most important source of localized TC forecast information. They seek local forecasts in enough detail to highlight

differences within impact areas. In the HLS and TCV examples (see Appendix A) that stakeholders reviewed, they did not think the name of the geographical area each HLS or TCV covered was highlighted sufficiently.

- ***RECOMMENDATION: Localize the forecast within reasonable levels of uncertainty to highlight differences in impact areas.***
- ***RECOMMENDATION: Highlight the geographical areas covered.***

### 3.3 Forecast and Impacts

Stakeholders supported the WFOs providing information on potential local impacts based on the forecast or threat. They believed this was part of the job of the NWS: if the NWS does not provide impact information, they have to provide it themselves, which causes confusion and inconsistent messaging.

While most thought potential impacts should be determined locally, there was some agreement (at least in the focus groups and follow-up interviews) that national thresholds should be established for hazard levels. In other words, while winds at XX miles per hour might be labeled as “moderate” across the NWS, the potential impacts could vary according to local conditions such as building codes. So, “moderate” winds could potentially result in “high” impacts in one area and “moderate” impacts in another.

Stakeholders also suggested that specific impact statements for each hazard (wind, surge, rainfall, and tornado) be developed locally in consultation with appropriate local authorities. When asked whether the meteorological threat (i.e., the forecast) or the impacts should be provided first on the TCV and HLS, most thought the meteorological threat for each hazard should be given first, followed by the potential impacts. As one said, “cause before effect.” There was no clear consensus about how to order the hazards on the HLS and TCV: many preferred that the hazards always be presented in the same order, but others thought they should be prioritized according to severity of potential impacts. Special consideration needs to be given as to how to describe threats and potential impacts inside levees from either overtopping or breaches. There was considerable discussion in all three projects about whether the Saffir-Simpson Wind Scale should be included in the wind forecast. If so, there were suggestions to refer to the categories as “Wind Category One,” “Wind Category Two,” etc., to help convey that these numbers refer only to wind.

- ***RECOMMENDATION: Provide local Potential Impact Statements with the forecast to help users understand what could happen, including timing and duration.***
- ***RECOMMENDATION: Provide the forecast for each hazard first, followed by its Potential Impact Statement.***

### 3.4 Uncertainty

Level of confidence in the forecast was often mentioned as an issue. Many stakeholders wanted more information about uncertainty. There were calls for two forecasts: 1) what is most likely to occur and 2) what could happen. Broadcast meteorologists and emergency managers wanted the best estimates to aid in their work, but also wanted to know what should guide citizen preparation and evacuation decisions, especially when potential impacts could be life-threatening.

Stakeholders noted that conference calls with the WFO were helpful in helping them understand the NWS forecasters' level of confidence in specific forecasts. Some felt there should be more emphasis on probability estimates, such as XX% probability of XX storm surge. There were several complaints that the NWS PSurge and Wind Speed Probabilities products are not easy for the public to access, understand, and use in their decision-making.

- **RECOMMENDATION: Provide the best possible forecast, but also convey “what could happen” as the basis for protective actions.**
- **RECOMMENDATION: Explore ways to communicate uncertainty more effectively while emphasizing the importance of preparing for what could happen.**

### 3.5 Readability

While finding the HLS product an essential source of localized information, stakeholders complained about its length, format, and readability. Most preferred a shortened product with key information highlighted. The general public should be able to read and understand it. It was suggested that the HLS read like a press release—short and to the point. Most thought the revised versions of the TCV and HLS represented a vast improvement in readability over the current HLS. They also recommended further changes in content, structure, and formatting.

- **RECOMMENDATION: Shorten the TCV and HLS without losing valuable Information.**  
Use formatting and restructuring techniques to shorten the HLS. Use hyperlinks to sources of related information, such as evacuation and preparedness actions, rather than including the information in the HLS. Leave advice on these issues to the proper authorities.
- **RECOMMENDATION: Simplify the language.**  
Use plain, nontechnical language. Make the text more concise and eliminate redundant information. Complete sentences are not necessary. Avoid terms like tropical cyclone. Change the name of the TCV product to one more easily understood by stakeholders, including the public.

- ***RECOMMENDATION: Use formatting to separate sections, to highlight priorities, and to improve readability.***  
Use bullet points to make the product easier to skim and to allow important information to stand out more clearly. Highlight critical information by using asterisks, bullet points, italics, bold, and/or color. Move to mixed case font as soon as possible. Provide more clearly defined headings for the various sections.
- ***RECOMMENDATION: Prioritize the order of sections to highlight most important.***  
There was strong approval of the HLS example that included a short summary statement at the top, followed by new information, followed by a “Situation Overview” section.
- ***RECOMMENDATION: Adopt common terminology for hazards across all TC products. Use the same names for hazards (e.g., wind, surge, rain, tornadoes) across all TC products.***

### 3.6 Graphics

A consistent request was to have graphics, such as the Tropical Cyclone Impact Graphics (TCIG), accompany the HLS/TCV. (TCIG findings from the three projects are presented in a separate report.) Broadcast meteorologists asked for graphics of sufficient quality to use on the air. One advantage is that this would likely lead to a more unified message across media. There were also calls for coordination of products with the media and commercial vendors. Many emergency managers mentioned the need for graphics to help them brief local officials.

- ***RECOMMENDATION: Develop high-quality graphics to accompany the HLS.***
- ***RECOMMENDATION: Coordinate graphics with media and commercial vendors.***

### 3.7 Miscellaneous

Other recommendations from the research included:

- ***Number each TCV and HLS.***
- ***Cross-reference all TC products.***
- ***Add the Public Advisory number from which the products are derived.***
- ***Include page numbers on the TCV and HLS.***

There was no consensus as to whether the marine forecast should be included; if it is, though, it should be directed at recreational interests.

### 3.8 Next Steps

Results from these stakeholder interviews and focus groups can guide the development of the next version of the products for further testing and/or operational use on an experimental basis. Based on the enthusiasm expressed by these stakeholders, the NWS is moving in the right direction related to these WFO forecast products.

## Appendix A

This appendix includes two versions of the HLS and two versions of the TCV that tested in the first round of interviews. The prototype included in this appendix is for Brownsville, Texas. Similar products were developed for the other test geographies (Taunton, Massachusetts; New Orleans, Louisiana; Charleston, South Carolina, and Miami, Florida). The findings from these interviews were conclusive enough that only one revised HLS version received further testing; two revised versions of the TCV were further explored in the focus groups and a last set of interviews. This appendix includes the prototypes used in New Orleans, Louisiana. Again, similar prototypes were developed for Miami, Florida, and Taunton, Massachusetts.

### 4.1 Sample of a Current HLS, Brownsville, Texas

#### Current HLS

WTUS84 KBRO 231513  
HLSBRO

URGENT - IMMEDIATE BROADCAST REQUESTED  
TROPICAL CYCLONE LOCAL STATEMENT  
NATIONAL WEATHER SERVICE BROWNSVILLE TX  
530 PM CDT SUN AUG 27 2000

...HURRICANE XENA MENACING THE RIO GRANDE VALLEY...

.NEW INFORMATION...

HURRICANE WARNINGS HAVE BEEN ISSUED FOR MUCH OF THE RIO GRANDE VALLEY AND DEEP SOUTH TEXAS. A STORM SURGE WARNING HAS BEEN ISSUED FOR THE LOWER TEXAS COAST.

.AREAS AFFECTED...

THIS LOCAL STATEMENT PROVIDES IMPORTANT INFORMATION AND RECOMMENDED ACTIONS FOR PEOPLE IN SELECT LOCATIONS WITHIN THE RIO GRANDE VALLEY AND DEEP SOUTH TEXAS.

.WATCHES/WARNINGS...

A HURRICANE WARNING CONTINUES FOR THE FOLLOWING LOCATIONS...COASTAL CAMERON.

.STORM INFORMATION...

AT 5 PM CDT...THE CENTER OF HURRICANE XENA WAS LOCATED NEAR LATITUDE 24.8 N AND LONGITUDE 94.3 W. THIS WAS ABOUT 550 MILES SOUTHEAST OF BROWNSVILLE TEXAS...OR ABOUT 520 MILES SOUTH SOUTHEAST OF SOUTH PADRE ISLAND TEXAS. STORM MOTION WAS NORTHWEST AT 15 MPH. MAXIMUM SUSTAINED WINDS WERE 120 MPH.

.SITUATION OVERVIEW...

HURRICANE XENA IS EXPECTED TO SLOWLY STRENGTHEN AS IT APPROACHES THE LOWER TEXAS COAST EARLY TUESDAY AFTERNOON AS A MAJOR HURRICANE. PERSONS IN THE WARNED AREA NEED TO PREPARE FOR DESTRUCTIVE WINDS...LIFE THREATENING STORM SURGE...FLOODING RAINS...AND ISOLATED TORNADOES.

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

FOR THOSE UNDER A WARNING...NOW IS THE TIME TO RUSH TO COMPLETION PREPARATIONS FOR THE PROTECTION OF LIFE AND PROPERTY. EVACUATE IF DIRECTED TO DO SO BY LOCAL OFFICIALS...OR IF YOUR HOME IS VULNERABLE TO HIGH WINDS OR FLOODING.

FOR INTERESTS AT PORTS...DOCKS...AND MARINAS...URGENTLY COMPLETE PREPARATIONS TO PREPARE CRAFTS AND FACILITIES. IF YOU LIVE ON A BOAT...MAKE FINAL PREPARATIONS FOR SECURING YOUR CRAFT BEFORE LEAVING IT. BE SURE TO ACCOUNT FOR THE POSSIBLE CLOSURE OF BRIDGES AND CAUSEWAYS.

REGARDING ANY COASTAL WATERS UNDER A WARNING...SMALL CRAFT SHOULD REMAIN IN PORT AND WELL SECURED.

FOR ADDITIONAL PRECAUTIONARY AND PREPAREDNESS INFORMATION... PLEASE REFER TO THE DETAILED RECOMMENDATIONS RELATIVE TO YOUR LOCATION AS FURTHER DESCRIBED BY YOUR LOCAL NATIONAL WEATHER SERVICE OFFICE AND LOCAL EMERGENCY MANAGEMENT.

&&

.NEXT UPDATE...  
THE NEXT LOCAL STATEMENT WILL BE ISSUED BY THE NATIONAL WEATHER SERVICE IN BROWNSVILLE AROUND 8 PM CDT...OR SOONER IF CONDITIONS WARRANT.

TXZ257-232315-  
/O.CON.KBRO.HU.W.9999.000000T0000Z-000000T0000Z/  
COASTAL CAMERON-  
530 PM CDT SUN AUG 27 2000

...HURRICANE WARNING REMAINS IN EFFECT...

...WINDS...  
AS HURRICANE XENA APPROACHES...SUSTAINED TROPICAL STORM FORCE WINDS ARE EXPECTED TO BEGIN TUESDAY MORNING AND HURRICANE FORCE WINDS LATE TUESDAY AFTERNOON. HURRICANE FORCE WINDS ARE FORECAST TO LAST FOR MANY HOURS. MAXIMUM WINDS ARE FORECAST TO BE IN THE 110 TO 130 MPH RANGE WITH GUSTS TO 140 MPH.

MANY HOMES NOT BUILT TO WINDSTORM STANDARDS WILL BE SERIOUSLY DAMAGED WITH THEIR ROOFS COMING OFF AND WALLS POSSIBLY BEING KNOCKED DOWN. NEARLY ALL MOBILE HOMES WILL BE DESTROYED. CONSIDERABLE DAMAGE TO WELL CONSTRUCTED HOMES IS POSSIBLE...INCLUDING ROOF FAILURE AND DAMAGE FROM AIRBORNE DEBRIS. SIGNIFICANT DAMAGE IS POSSIBLE TO COMMERCIAL BUILDINGS WITH TOTAL ROOF FAILURE AND SOME EXTERIOR WALL FAILURE POSSIBLE. UNPROTECTED WINDOWS WILL BE SHATTERED BY HIGH WINDS OR DEBRIS...ESPECIALLY IN HIGH RISES ON SOUTH PADRE ISLAND. FALLEN TREES AND POWER LINES WILL BLOCK AREA ROADWAYS AND MAY FALL ON HOMES CAUSING CONSIDERABLE DAMAGE. EXTENSIVE FLYING DEBRIS IS EXPECTED. NEAR TOTAL POWER FAILURE IS EXPECTED...LIKELY LASTING FOR SEVERAL DAYS OR WEEKS.

THOSE IN MOBILE HOMES WITHOUT A WINDSTORM CERTIFICATE ARE URGED TO FIND STURDIER SHELTER TO PREVENT INJURY OR DEATH DUE TO STRUCTURAL FAILURE OR FLYING DEBRIS. THOSE IN STRONGLY CONSTRUCTED HOMES AND BUILDINGS ARE ADVISED TO CONSIDER SHELTERING IN A SAFER LOCATION. BEFORE THE STORM...REMOVE OUTDOOR ITEMS THAT MAY BECOME PROJECTILES TO PREVENT DAMAGE OR INJURY TO YOU AND YOUR

NEIGHBORS. DIFFICULT CONDITIONS WILL PERSIST WELL AFTER THE STORM HAS PASSED.

...STORM SURGE AND STORM TIDE...

AS HURRICANE XENA APPROACHES THE COAST...THERE IS AN INCREASING CHANCE FOR COMBINED STORM SURGE AND ASTRONOMICAL TIDE WATERS UP TO 8 FEET ABOVE MEAN SEA LEVEL WITHIN AREAS CLOSER TO THE COAST...RESULTING IN THE HARDEST HIT AREAS EXPERIENCING WATER LEVELS OF OF 6 TO 9 FEET ABOVE GROUND LEVEL SOMEWHERE WITHIN THE SURGE ZONE. STORM SURGE WILL BEGIN MOVING IN EARLY TUESDAY MORNING WITH ELEVATED WATER LEVELS EXPECTED THROUGH WEDNESDAY.

SOUTH PADRE ISLAND...LAGUNA VISTA...LAGUNA HEIGHTS...PORT ISABEL...PORT MANSFIELD AND NEARBY AREAS WILL BE INUNDATED...PERHAPS ENTIRELY. WATER WILL BE WELL OVER HEAD HEIGHT WITH WATER MORE THAN 7 FEET HIGH IN SOME PLACES. BREAKING WAVES WILL SEND WATER MUCH HIGHER. STORM SURGE IS EXPECTED TO COMPLETELY WASH OVER SOUTH PADRE ISLAND. HUNDREDS OF STRUCTURES WILL BE SIGNIFICANTLY FLOODED OR WASHED AWAY. CONDOMINIUMS AND HOTELS WILL SUFFER EXTENSIVE DAMAGE...SOME TO THE POINT OF COLLAPSE. DAMAGE WILL BE INCREASED BY FLOATING DEBRIS. EXTENSIVE DAMAGE IS EXPECTED TO MARINAS...DOCKS AND PIERS. MANY BOATS WILL BREAK AWAY FROM THEIR MOORINGS. HIGHWAYS 100...48 AND 186 WILL LIKELY BE COVERED IN WATER AND WASHED OUT IN SEVERAL PLACES. WATER IS EXPECTED TO BE SEVERAL FEET DEEP MORE THAN A MILE INLAND. MANY COASTAL STREETS AND ROADWAYS WILL BE INUNDATED AND POSSIBLY DESTROYED. BRIDGES MAY BE DESTROYED OR SEVERELY DAMAGED. COMPLETE FAILURE OF MOST INFRASTRUCTURE IS LIKELY...MAKING MANY AREAS INACCESSIBLE AND UNINHABITABLE FOR WEEKS OR MONTHS. DAMAGE FROM BEACH EROSION WILL TAKE YEARS TO RESTORE WITH NEW INLAND CUTS AND BEACH DAMAGE EXPECTED.

THOSE IN THE AREA ARE URGED TO HEED EVACUATION ORDERS TO AVOID DROWNING IN SURGE FLOODING OR BEING KILLED BY FLYING DEBRIS. EMERGENCY RESCUED IN THE AREA WILL BE IMPOSSIBLE DURING AND FOR WEEKS TO A MONTH AFTER THE STORM. THOSE LEFT BEHIND WILL LIKELY REMAIN STRANDED FOR WEEKS TO A MONTH WITH NO POWER...WATER OR SHELTER.

...INLAND FLOODING...

WIDESPREAD FLOODING IS EXPECTED. IN POOR DRAINAGE AREAS...MINOR TO MODERATE PROPERTY DAMAGE IS EXPECTED...AND SEVERAL MAIN THROUGHFARES MAY BE CLOSED. KNOWN INTERSECTIONS WITH VERY POOR DRAINAGE MAY HAVE WATER LEVELS UP TO 5 FEET. OTHER POOR DRAINAGE AREAS WILL HAVE WATER RISES UP TO 3 FEET. WATER WILL RISE AS HIGH AS ONE FOOT ELSEWHERE.

...TORNADOES...

ISOLATED TORNADOES ARE POSSIBLE AS XENA APPROACHES THE AREA ON TUESDAY. THESE TORNADOES MAY CAUSE DAMAGE TO CHIMNEYS...SCREENED PORCHES...OUTHUSES...AND LIGHTER WEIGHT OUTBUILDINGS. TREES...POWERLINES...AND LARGE SIGNS MAY BE BLOWN OVER. TORNADOES CAN STRIKE AS FAR AS 200 MILES AWAY FROM WHERE XENA MAKES LANDFALL.

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## 4.2 Samples of the HLS/TCV Prototypes Tested in the Initial Interviews, Brownsville, Texas

### HLS Example #1

WTUS82 KBRO 272130  
HLSBRO

URGENT - IMMEDIATE BROADCAST REQUESTED  
HURRICANE XENA LOCAL STATEMENT  
NATIONAL WEATHER SERVICE BROWNSVILLE TX AL012000  
530 PM CDT SUN AUGUST 27 2000

...HURRICANE XENA MENACING THE LOWER RIO GRANDE VALLEY...  
\* NEW INFORMATION

A HURRICANE WARNING IS NOW IN EFFECT FOR MUCH OF THE RIO GRANDE VALLEY AND DEEP SOUTH TEXAS. HURRICANE XENA HAS STRENGTHENED TO A CATEGORY 3 ON THE SAFFIR SIMPSON WIND SCALE WITH MAXIMUM SUSTAINED WINDS OF 120 MPH AND GUSTS TO 145 MPH.

\* WATCHES/WARNINGS

A HURRICANE WARNING IS IN EFFECT FOR THE FOLLOWING COUNTIES IN TEXAS...COASTAL CAMERON...CAMERON...COASTAL...WILLACY...WILLACY...KENEDY...HIDALGO...BROOKS. AND THE ADJACENT COASTAL WATERS FROM THE MOUTH OF THE RIO GRANDE RIVER TO BAFFIN BAY TX

A STORM SURGE WARNING IS IN EFFECT FOR THE FOLLOWING COUNTIES IN TEXAS...COASTAL CAMERON...COASTAL WILLACY...KENEDY.

A TROPICAL STORM WARNING IS NOW IN EFFECT FOR THE FOLLOWING COUNTIES IN TEXAS...JIM HOGG...STARR...ZAPATA.

A FLOOD WATCH IS IN EFFECT FOR ALL OF THE RIO GRANDE VALLEY AND DEEP SOUTH TEXAS.

\* STORM INFORMATION

AT 5 PM CDT...THE CENTER OF HURRICANE XENA WAS LOCATED NEAR LATITUDE 24.8 N AND LONGITUDE 94.3W. THIS WAS ABOUT 550 MILES SOUTHEAST OF BROWNSVILLE TEXAS...OR ABOUT 520 MILES SOUTH SOUTHEAST OF SOUTH PADRE ISLAND TEXAS. STORM MOTION WAS NW AT 15 MPH. STORM MAXIMUM WIND SPEED WAS 120 MPH.

\* POTENTIAL IMPACTS

HURRICANE XENA IS EXPECTED TO MAKE LANDFALL ON THE LOWER TEXAS COAST EARLY TUESDAY AFTERNOON AS A MAJOR HURRICANE. RESIDENTS IN THE WARNING AREA NEED TO PREPARE FOR THE FOLLOWING THREATS (FOR MORE SPECIFIC INFORMATION ON EXPECTED INUNDATION HEIGHTS...WIND SPEEDS...AND RAINFALL AMOUNTS FOR YOUR COUNTY...AS WELL AS LONG-FUSED WATCHES AND WARNINGS IN EFFECT...SEE THE BROTCVAT1 PRODUCT).

\* STORM SURGE AND INUNDATION

...EXTREME COASTAL FLOOD IMPACT POTENTIAL IN AREAS UNDER A STORM SURGE WARNING ON THE LOWER TEXAS COAST... SOUTH PADRE ISLAND...LAGUNA VISTA...LAGUNA HEIGHTS...PORT ISABEL...PORT MANSFIELD AND NEARBY AREAS WILL BE INUNDATED...PERHAPS ENTIRELY. WATER WILL BE WELL OVER ANY PERSONS HEAD PILING MORE THAN 7 FEET HIGH IN SOME PLACES WITH WAVES SENDING WATER MUCH HIGHER. STORM SURGE IS EXPECTED TO COMPLETELY WASH OVER SOUTH PADRE ISLAND. HUNDREDS OF STRUCTURES WILL BE SIGNIFICANTLY

FLOODED OR WASHED AWAY. CONDOMINIUMS AND HOTELS WILL SUFFER EXTENSIVE DAMAGE...SOME TO THE POINT OF COLLAPSE. DAMAGE WILL BE INCREASED BY FLOATING DEBRIS. EXTENSIVE DAMAGE IS EXPECTED TO MARINAS...DOCKS...AND PIERS. MANY BOATS WILL BREAK AWAY FROM THEIR MOORINGS. HIGHWAYS 100...48 AND 186 WILL LIKELY BE COVERED IN WATER AND WASHED OUT IN SEVERAL PLACES. WATER IS EXPECTED TO BE SEVERAL FEET DEEP MORE THAN A MILE INLAND. MANY COASTAL STREETS AND ROADWAYS WILL BE INUNDATED AND POSSIBLY DESTROYED. BRIDGES MAY BE DESTROYED OR SEVERELY DAMAGED. COMPLETE FAILURE OF MOST INFRASTRUCTURE IS LIKELY...MAKING MANY AREAS INACCESSIBLE AND UNINHABITABLE FOR WEEKS OR MONTHS. DAMAGE FROM BEACH EROSION WILL TAKE YEARS TO RESTORE WITH NEW INLAND CUTS AND BEACH DAMAGE EXPECTED. THOSE IN THE AREA ARE URGED TO HEED EVACUATION ORDERS TO AVOID DROWNING IN SURGE FLOODING OR BEING KILLED BY FLYING DEBRIS. EMERGENCY RESCUE IN THE AREA WILL BE IMPOSSIBLE DURING AND FOR A GREAT DEAL OF TIME AFTER THE STORM WITH THOSE LEFT BEHIND LIKELY REMAINING STRANDED FOR WEEKS WITH NO POWER...WATER OR SHELTER.

\* WIND

...HIGH WIND IMPACT POTENTIAL IN AREAS UNDER A HURRICANE WARNING... MANY HOMES THAT ARE NOT BUILT TO WINDSTORM STANDARDS WILL BE SERIOUSLY DAMAGED WITH THEIR ROOFS COMING OFF AND WALLS POSSIBLY BEING KNOCKED DOWN. NEARLY ALL MOBILE HOMES WILL BE DESTROYED. CONSIDERABLE DAMAGE TO WELL CONSTRUCTED HOMES IS POSSIBLE...INCLUDING ROOF FAILURE AND DAMAGE FROM AIRBORNE DEBRIS. SIGNIFICANT DAMAGE IS POSSIBLE TO COMMERCIAL BUILDINGS WITH TOTAL ROOF FAILURE POSSIBLE SOME EXTERIOR WALL FAILURE IS POSSIBLE. UNPROTECTED WINDOWS WILL BE SHATTERED BY HIGH WINDS OR DEBRIS...ESPECIALLY IN HIGH RISES ON SOUTH PADRE ISLAND. FALLEN TREES AND POWER LINES WILL BLOCK AREA ROADWAYS AND MAY FALL ON HOMES CAUSING CONSIDERABLE DAMAGE. EXTENSIVE FLYING DEBRIS IS EXPECTED. NEAR TOTAL POWER FAILURE IS EXPECTED LIKELY LASTING FOR SEVERAL DAYS OR WEEKS. THOSE IN MOBILE HOMES OR HOMES WITHOUT A WINDSTORM CERTIFICATE ARE URGED TO FIND STRONGER SHELTER TO PREVENT INJURY OR DEATH DUE TO STRUCTURAL FAILURE OR FALLING DEBRIS. THOSE IN STRONGLY CONSTRUCTED HOMES AND BUILDINGS ARE ADVISED TO CONSIDER SHELTERING IN A SAFER LOCATION. BEFORE THE STORM...REMOVE OUTDOOR ITEMS THAT MAY BECOME PROJECTILES TO PREVENT DAMAGE OR INJURY TO YOU AND YOUR NEIGHBORS. DIFFICULT CONDITIONS WILL PERSIST WELL AFTER THE STORM HAS PASSED.

\* FLASH FLOODING

...MODERATE TO HIGH FLASH FLOODING POTENTIAL IN AREAS UNDER A FLOOD WATCH... RESIDENTS CAN EXPECT WIDESPREAD FLOODING. IN POOR DRAINAGE AREAS...MINOR TO MODERATE PROPERTY DAMAGE IS EXPECTED...AND SEVERAL MAIN THOROUGHFARES MAY BE CLOSED. KNOWN INTERSECTIONS WITH VERY POOR DRAINAGE MAY HAVE WATER LEVELS UP TO 5 FEET. OTHER POOR DRAINAGE AREAS WILL HAVE WATER RISES UP TO 3 FEET. LEVELS WILL RISE 1 FOOT ELSEWHERE.

\* TORNADOES

...A FEW TORNADOES ARE POSSIBLE... ISOLATED TORNADOES ARE POSSIBLE AS XENA APPROACHES THE AREA ON TUESDAY. THESE TORNADOES MAY CAUSE DAMAGE TO SCREENED PORCHES...OUTHOUSES, AND LIGHTER-WEIGHT OUTBUILDINGS. TREES...POWERLINES AND LARGE SIGNS MAY BE BLOWN OVER. TORNADOES CAN STRIKE AS FAR AS 200 MILES AWAY FROM WHERE XENA MAKES LANDFALL.

\* PRECAUTIONARY/PREPAREDNESS ACTIONS

FOR THOSE UNDER A WARNING...NOW IS THE TIME TO RUSH TO COMPLETION PREPARATIONS FOR THE PROTECTION OF LIFE AND PROPERTY. EVACUATE IF DIRECTED TO DO SO BY LOCAL OFFICIALS...OR IF YOUR HOME IS VULNERABLE TO HIGH WINDS OR FLOODING.

FOR INTERESTS AT PORTS...DOCKS...AND MARINAS...URGENTLY COMPLETE PREPARATIONS TO PREPARE CRAFTS AND FACILITIES. IF YOU LIVE ON A BOAT...MAKE FINAL PREPARATIONS FOR SECURING YOUR CRAFT BEFORE LEAVING IT. BE SURE TO ACCOUNT FOR POSSIBLE CLOSURE OF BRIDGES AND CAUSEWAYS.

&&

\* NEXT UPDATE

THE NEXT LOCAL STATEMENT WILL BE ISSUED BY THE NATIONAL WEATHER SERVICE IN BROWNSVILLE BY 9 PM...OR SOONER IF CONDITIONS WARRANT.

## TCV Example #1

XXXX## KBRO 272130

TCVBRO

URGENT - IMMEDIATE BROADCAST REQUESTED

HURRICANE XENA LOCAL WATCH/WARNING VTEC STATEMENT AL012000

NATIONAL WEATHER SERVICE BROWNSVILLE TX

530 PM CDT SUN AUG 27 2000

TXZ050-300200-

/O.CON.KBRO.HU.W.1001.000000T0000Z-000000T0000Z/

/O.CON.KBRO.SS.W.1001.000000T0000Z-000000T0000Z/

/O.CON.KBRO.FF.A.0010.000000T0000Z-083100T0000Z/

COASTAL CAMERON-

530 PM CDT SUN AUG 27 2000

...HURRICANE WARNING IN EFFECT...

...STORM SURGE WARNING IN EFFECT...

...FLOOD WATCH IN EFFECT...

\* WIND POTENTIAL

MAX SUST WIND	DURATION	ONSET	DAY
100 - 120 MPH	3 - 5 HRS	AFTERNOON	TUE

\* STORM SURGE AND STORM TIDE POTENTIAL /ABOVE GROUND LEVEL/

MAX SURGE	MAX STORM TIDE	ONSET	DAY
8 - 10 FT	13 - 15 FT	EVENING	TUE

\* RAINFALL POTENTIAL

AMOUNTS	ONSET	DAY
6 - 8 IN	MORNING	TUE

\* TORNADO POTENTIAL

RISK	PEAK	DAY
MODERATE	EVENING	TUE

&&

## HLS Example #2

WTUS82 KBRO 272130  
HLSBRO  
TXZ063-066>075-300845-

URGENT - IMMEDIATE BROADCAST REQUESTED  
HURRICANE XENA LOCAL STATEMENT  
NATIONAL WEATHER SERVICE BROWNSVILLE TX AL012000  
530 PM CDT SUN AUGUST 27 2000

THIS PRODUCT COVERS THE RIO GRANDE VALLEY AND DEEP SOUTH TEXAS AND ADJACENT  
COASTAL WATERS  
...HURRICANE WARNINGS ARE IN EFFECT FOR PORTIONS OF THE RIO GRANDE VALLEY AND  
DEEP SOUTH TEXAS...  
...STORM SURGE WARNINGS ARE IN EFFECT FOR THE LOWER TEXAS COASTLINE...

### STORM INFORMATION

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LOCATION...24.8N 94.3W  
ABOUT 520 MI SE OF BROWNSVILLE TX  
ABOUT 550 MI SE OF SOUTH PADRE ISLAND TX  
MAXIMUM SUSTAINED WINDS...120 MPH...195 KM/H  
PRESENT MOVEMENT...NW OR 320 DEGREES AT 15 MPH...23 KM/H  
MINIMUM CENTRAL PRESSURE...945 MB...28.05 INCHES

WATCHES AND WARNINGS FOR THE RIO GRANDE VALLEY AND DEEP SOUTH TEXAS

-----

CHANGES WITH THIS ADVISORY...

A HURRICANE WARNING HAS BEEN ISSUED FOR THE ENTIRE LOWER TEXAS COAST AND THE  
ADJACENT INLAND COUNTIES.

A HURRICANE WARNING CONTINUES FOR THE FOLLOWING COUNTIES...

IN TEXAS

\* CAMERON...COASTAL CAMERON...WILLACY...COASTAL  
WILLACY...KENEDY...HIDALGO...BROOKS

AS WELL AS THE ADJACENT COASTAL WATERS FROM BAFFIN BAY TO THE MOUTH OF THE  
RIO GRANDE RIVER.

A STORM SURGE WARNING CONTINUES FOR THE FOLLOWING COUNTIES...

IN TEXAS

\* COASTAL WILLACY...COASTAL CAMERON...KENEDY

A TROPICAL STORM WARNING CONTINUES FOR THE FOLLOWING COUNTIES...

IN TEXAS

\* ZAPATA...JIM HOGG...STARR

A FLOOD WATCH IS IN EFFECT FOR ALL OF THE RIO GRANDE VALLEY AND DEEP SOUTH TEXAS.

SITUATION OVERVIEW

IT IS VITAL THAT YOU DO NOT FOCUS ON THE EXACT FORECAST TRACK. TO DO SO COULD RESULT IN BAD DECISIONS AND PLACE YOU OR THOSE YOU ARE RESPONSIBLE FOR AT GREATER RISK. IT IS TOO EARLY TO PROVIDE OVERLY SPECIFIC WIND AND SURGE FORECAST VALUES.

AS HURRICANE XENA APPROACHES THE AREA TUESDAY AND TUESDAY NIGHT, THE MOST LIKELY IMPACT IS MAJOR COASTAL FLOODING ALONG THE LOWER TEXAS COAST AS WELL AS MAJOR HURRICANE FORCE WINDS NEAR THE PATH OF THE STORM.

CATASTROPHIC STORM SURGE IS POSSIBLE WITH XENA. THE LARGEST THREAT WILL BE ALONG THE THE LOWER TEXAS COAST COAST NEAR AND TO THE NORTH OF WHERE XENA MAKES LANDFALL...WITH STORM SURGE PRODUCING WATER LEVELS AS MUCH AS 15 FEET ABOVE GROUND LEVEL.

HURRICANE FORCE WINDS ARE POSSIBLE ANYWHERE IN THE HURRICANE WARNING AREA, WITH THE STRONGEST WINDS EXPECTED ALONG THE COAST NEAR AND JUST TO THE NORTH OF XENA'S PATH. THE MOST LIKELY TIME FRAME WOULD BE TUESDAY AFTERNOON INTO TUESDAY NIGHT.

THERE IS ALSO THE POTENTIAL FOR SIGNIFICANT TO EXTENSIVE FLOODING ACROSS PORTIONS OF THE REGION TUESDAY AND TUESDAY NIGHT AS TORRENTIAL RAIN BANDS ASSOCIATED WITH THE CIRCULATION OF XENA MOVE OVER THE AREA. BECAUSE XENA IS A LARGE HURRICANE, SOME AREAS COULD RECEIVE RAINFALL AMOUNTS OF UP TO 15 INCHES.

HAZARDS AND POTENTIAL IMPACTS FOR PORTIONS OF THE RIO GRANDE VALLEY AND DEEP SOUTH TEXAS.

.WINDS...

\* INTENSITY AND TIMING:

MAXIMUM WINDS OF 80 TO 110 MPH WITH GUSTS TO 125 MPH ARE POSSIBLE NEAR THE COAST ALONG THE TRACK OF XENA. FURTHER WEST OVER THE INTERIOR PORTIONS OF DEEP SOUTH TEXAS...MAXIMUM WINDS OF 45 TO 60 MPH WITH GUSTS TO 70 MPH ARE EXPECTED.

SUSTAINED TROPICAL STORM FORCE WINDS ARE EXPECTED TO BEGIN BY EARLY TUESDAY MORNING ALONG THE LOWER TEXAS COAST AND SPREAD INLAND ACROSS THE RIO GRANDE VALLEY AND DEEP SOUTH TEXAS BY TUESDAY AFTERNOON.

\* POTENTIAL IMPACT:

EXTREME: POSSIBLE ALONG THE COAST WHERE HURRICANE XENA MAKES LANDFALL. PREPARATIONS SHOULD BE MADE FOR POTENTIALLY DEVASTATING DAMAGE.

HIGH: ELSEWHERE OVER THE HURRICANE WARNING AREA MAINLY EAST OF HIGHWAY 281. PREPARATIONS SHOULD BE MADE FOR MAJOR TO POTENTIALLY EXTENSIVE DAMAGE.

MODERATE: OVER INTERIOR PORTIONS OF DEEP SOUTH TEXAS AND RIO GRANDE VALLEY WEST OF HIGHWAY 281.

.STORM SURGE AND STORM TIDE...

\* DEPTH: THE COMBINATION OF A STORM SURGE AND THE TIDE WILL CAUSE NORMALLY DRY AREAS NEAR THE COAST TO BE FLOODED BY RISING WATERS. THE WATER COULD REACH THE FOLLOWING DEPTHS ABOVE GROUND IF THE PEAK SURGE OCCURS AT THE TIME OF HIGH TIDE:

- UP TO 8 FEET ON SOUTH PADRE ISLAND

- BETWEEN 8 AND 12 FEET IN PORT ISABEL...LAGUNA HEIGHTS...AND LAGUNA VISTA...AS WELL AS 12 FEET IN THE BROWNSVILLE SHIP CHANNEL BETWEEN PORT ISABEL AND THE PORT OF BROWNSVILLE.

- UP TO 4 FT AT ARROYO CITY AND PORT MANSFIELD

\* TIMING:

INUNDATION IS EXPECTED TO BEGIN TUESDAY AFTERNOON AND LAST THROUGH TUESDAY NIGHT.

\* POTENTIAL IMPACT:

EXTREME - SOUTH PADRE ISLAND...LAGUNA VISTA...LAGUNA HEIGHTS...PORT ISABEL...PORT MANSFIELD...AND NEARBY AREAS WILL BE INUNDATED...PERHAPS ENTIRELY. THE SURGE WILL LIKELY TRAVEL SEVERAL MILES INLAND BUT WATER LEVELS ABOVE GROUND WILL DECREASE.

.INLAND FLOODING...

\* RAINFALL AMOUNTS:

TOTAL RAINFALL AMOUNTS OF 10 TO 15 INCHES ARE FORECAST ACROSS DEEP SOUTH TEXAS AND THE RIO GRANDE VALLEY. HOWEVER, LOCALLY HIGHER AMOUNTS MAY OCCUR IN ANY TORRENTIAL RAIN BANDS WHICH TRAIN REPEATEDLY OVER THE SAME AREA.

\* TIMING:

MAIN CONCERN FOR HEAVY RAINS TUESDAY MORNING THROUGH TUESDAY NIGHT.

\* POTENTIAL IMPACT: MODERATE TO HIGH.

MODERATE PROPERTY DAMAGE IS EXPECTED IN POOR DRAINAGE AREAS...WITH HIGH DAMAGE LIKELY IN VERY POOR DRAINAGE AREAS WHERE WATER DEPTHS MAY REACH 4 TO 5 FEET. SUSCEPTIBLE LOCATIONS INCLUDE FRONTAGE ROADS AND LOCATIONS NEAR DITCHES NOT CLEARED OF DEBRIS. NUMEROUS SMALL TO MEDIUM SIZED ROADS AND SEVERAL MAJOR ROADWAYS MAY BE CLOSED.

...TORNADOES...

\* TIMING:

THE GREATEST RISK WILL BE TUESDAY AFTERNOON AND TUESDAY NIGHT.

\* POTENTIAL IMPACT LEVEL:

LOW - ISOLATED TORNADOES MAY CAUSE DAMAGE TO SCREENED PORCHES...OUTHUSES...AND LIGHTER-WEIGHT OUTBUILDINGS. TREES, POWERLINES AND LARGE SIGNS MAY BE BLOWN OVER.

PRECAUTIONARY/PREPAREDNESS ACTIONS

-----  
FOR THOSE UNDER A WARNING...NOW IS THE TIME TO RUSH TO COMPLETION PREPARATIONS FOR THE PROTECTION OF LIFE AND PROPERTY. EVACUATE IF DIRECTED TO DO SO BY LOCAL OFFICIALS...OR IF YOUR HOME IS VULNERABLE TO HIGH WINDS OR FLOODING.

FOR INTERESTS AT PORTS...DOCKS...AND MARINAS...URGENTLY COMPLETE PREPARATIONS TO PREPARE CRAFTS AND FACILITIES. IF YOU LIVE ON A BOAT...MAKE FINAL PREPARATIONS FOR SECURING YOUR CRAFT BEFORE LEAVING IT. BE SURE TO ACCOUNT FOR POSSIBLE CLOSURE OF BRIDGES AND CAUSEWAYS.

NEXT UPDATE

-----  
THE NEXT LOCAL STATEMENT WILL BE ISSUED BY THE NATIONAL WEATHER SERVICE IN BROWNSVILLE AROUND 9 PM CDT, OR SOONER IF CONDITIONS WARRANT.

\$\$

## TCV Example #2

XXXX## KBRO 272130  
TCVBRO

URGENT - IMMEDIATE BROADCAST REQUESTED  
HURRICANE XENA LOCAL WATCH/WARNING VTEC STATEMENT AL012000  
NATIONAL WEATHER SERVICE BROWNSVILLE TX  
530 PM CDT SUN AUG 27 2000

SCZ050-272115-  
/O.CON.KBRO.HU.W.1001.000000T0000Z-000000T0000Z/  
/O.CON.KBRO.SS.W.1001.000000T0000Z-000000T0000Z/  
/O.CON.KBRO.FF.A.0010.000000T0000Z-083100T0000Z/  
COASTAL CAMERON-  
530 PM CDT SUN AUG 27 2000

...HURRICANE WARNING IN EFFECT...  
...STORM SURGE WARNING IN EFFECT...  
...FLOOD WATCH IN EFFECT...

.WINDS...

MAXIMUM SUSTAINED WINDS -----	POTENTIAL IMPACT -----	BEGIN/END TROPICAL STORM WIND POTENTIAL -----	BEGIN/END HURRICANE WIND POTENTIAL -----
110-130 MPH	MANY HOMES THAT ARE NOT BUILT TO WINDSTORM STANDARDS WILL BE SERIOUSLY DAMAGED WITH THEIR ROOFS COMING OFF AND WALLS POSSIBLY BEING KNOCKED DOWN. NEARLY ALL MOBILE HOMES WILL BE DESTROYED. CONSIDERABLE DAMAGE TO WELL CONSTRUCTED HOMES IS POSSIBLE...INCLUDING ROOF FAILURE AND DAMAGE FROM AIRBORNE DEBRIS. SIGNIFICANT DAMAGE IS POSSIBLE TO COMMERCIAL BUILDINGS WITH TOTAL ROOF FAILURE POSSIBLE SOME EXTERIOR WALL FAILURE IS POSSIBLE. UNPROTECTED WINDOWS WILL BE SHATTERED BY HIGH WINDS OR DEBRIS...ESPECIALLY IN HIGH RISES ON SOUTH PADRE ISLAND. FALLEN TREES AND POWER LINES WILL BLOCK AREA ROADWAYS AND MAY FALL ON HOMES CAUSING CONSIDERABLE DAMAGE. EXTENSIVE FLYING DEBRIS IS EXPECTED. NEAR TOTAL POWER FAILURE IS EXPECTED LIKELY LASTING FOR SEVERAL DAYS OR WEEKS. THOSE IN MOBILE HOMES OR HOMES	TUESDAY MORNING  WEDNESDAY AFTERNOON	TUESDAY AFTERNOON  WEDNESDAY MORNING

WITHOUT A WINDSTORM CERTIFICATE  
 ARE URGED TO FIND STRONGER  
 SHELTER TO PREVENT INJURY OR  
 DEATH DUE TO STRUCTURAL FAILURE  
 OR FALLING DEBRIS. THOSE IN  
 STRONGLY CONSTRUCTED HOMES AND  
 BUILDINGS ARE ADVISED TO CONSIDER  
 SHELTERING IN A SAFER LOCATION.  
 BEFORE THE STORM...REMOVE OUTDOOR  
 ITEMS THAT MAY BECOME PROJECTILES  
 TO PREVENT DAMAGE OR INJURY TO  
 YOU AND YOUR NEIGHBORS. DIFFICULT  
 CONDITIONS WILL PERSIST WELL  
 AFTER THE STORM HAS PASSED.

.STORM SURGE...

POTENTIAL  
 INUNDATION

POTENTIAL IMPACT

-----  
 8 TO 10 FEET

-----  
 EXTREME: SOUTH PADRE ISLAND...LAGUNA VISTA...LAGUNA  
 HEIGHTS...PORT ISABEL...PORT MANSFIELD AND NEARBY  
 AREAS WILL BE INUNDATED...PERHAPS ENTIRELY. WATER  
 WILL BE WELL OVER ANY PERSONS HEAD...PILING MORE  
 THAN 7 FEET HIGH IN SOME PLACES WITH WAVES SENDING  
 WATER MUCH HIGHER. STORM SURGE IS EXPECTED TO  
 COMPLETELY WASH OVER SOUTH PADRE ISLAND. HUNDREDS OF  
 STRUCTURES WILL BE SIGNIFICANTLY FLOODED OR WASHED  
 AWAY. CONDOMINIUMS AND HOTELS WILL SUFFER EXTENSIVE  
 DAMAGE...SOME TO THE POINT OF COLLAPSE. DAMAGE WILL BE  
 INCREASED BY FLOATING DEBRIS. EXTENSIVE DAMAGE IS  
 EXPECTED TO MARINAS...DOCKS...AND PIERS. MANY BOATS  
 WILL BREAK AWAY FROM THEIR MOORINGS. HIGHWAYS  
 100...48 AND 186 WILL LIKELY BE COVERED IN WATER AND  
 WASHED OUT IN SEVERAL PLACES. WATER IS EXPECTED TO  
 BE SEVERAL FEET DEEP MORE THAN A MILE INLAND. MANY  
 COASTAL STREETS AND ROADWAYS WILL BE INUNDATED AND  
 POSSIBLY DESTROYED. BRIDGES MAY BE DESTROYED OR  
 SEVERELY DAMAGED. COMPLETE FAILURE OF MOST  
 INFRASTRUCTURE IS LIKELY...MAKING MANY AREAS  
 INACCESSIBLE AND UNINHABITABLE FOR WEEKS OR MONTHS.  
 DAMAGE FORM BEACH EROSION WILL TAKE YEARS TO RESTORE  
 WITH NEW INLAND CUTS AND BEACH DAMAGE EXPECTED.  
 THOSE IN THE AREA ARE URGED TO HEED EVACUATION  
 ORDERS TO AVOID DROWNING IN SURGE FLOODING OR BEING  
 KILLED BY FLYING DEBRIS. EMERGENCY RESCUE IN THE  
 AREA WILL BE IMPOSSIBLE DURING AND FOR A GREAT DEAL  
 OF TIME AFTER THE STORM WITH THOSE LEFT BEHIND  
 LIKELY REMAINING STRANDED FOR WEEKS WITH NO  
 POWER...WATER OR SHELTER.

.RAINFALL...

STORM  
 TOTAL  
 RAINFALL

POTENTIAL IMPACT

-----  
10-15  
INCHES

-----  
HIGH: EXPECT SEVERAL INLAND LOCATIONS TO EXPERIENCE  
MAJOR FRESH WATER FLOODING WITH HIGHEST FLOOD WATERS  
CAPABLE OF LEAVING UP TO 5 FEET OF WATER DEPTH IN POOR  
DRAINAGE URBAN AREAS OF SOUTH PADRE ISLAND...PORT  
ISABEL...LAGUNA VISTA...LAGUNA HEIGHTS...AND BAYVIEW.  
RAINFALL MAY ADD AN ADDITIONAL FOOT OR TWO TO INUNDATION  
ON SOUTH PADRE ISLAND AND PORT ISABEL. KNOWN  
INTERSECTIONS...AREAS NEAR CLOGGED OR POOR DRAINING  
CANALS AND DITCHES...ARE MOST AT RISK. MANY SECONDARY  
AND RURAL ROADS MAY CLOSE AND SEVERAL MAIN HIGHWAYS MAY  
BE BLOCKED BY HIGH STANDING WATER. ACROSS RURAL AND  
RANCHLANDS...FIELDS WILL SEE UP TO 3 FEET OF STANDING  
WATER WHICH COULD THREATEN LIVESTOCK AND DROWN CROPS.  
STORM DRAINS...RETENTION PONDS...AND SOME RESACAS MAY  
OVERFLOW. FLOOD WATERS 3 FEET OR HIGHER MAY AFFECT  
BUILDINGS AND HOMES AWAY FROM THE COAST COULD MAKE  
RESCUES NECESSARY.

.TORNADOES...

POTENTIAL IMPACT

BEGIN/END TIME  
FOR GREATEST  
POTENTIAL  
-----

-----  
LOW: A FEW LOCATIONS MAY EXPERIENCE TORNADO  
DAMAGE MANY HOURS AHEAD OF THE ARRIVAL OF THE  
EYEWALL. DAMAGE WILL INCLUDE TREE LIMBS...POWER  
WIRES AND A FEW POWER POLES...LIGHTWEIGHT OBJECTS  
SUCH AS BASKETBALL POLES AND OUTBUILDINGS...AND  
ROOF AND CARPORT DAMAGE AT POORLY BUILT  
STRUCTURES. TORNADOES WILL HAVE SHORT DAMAGE  
TRACKS.

TUESDAY  
MORNING  
TUESDAY  
OVERNIGHT

### 4.3 Samples of the HLS/TCV Prototypes Tested in the Focus Groups and Second Set of Interviews, New Orleans, Louisiana

#### HLS Example

WTUS82 KLIX DDHHMM  
HLSLIX

URGENT - IMMEDIATE BROADCAST REQUESTED  
HURRICANE OMEGA LOCAL STATEMENT  
NATIONAL WEATHER SERVICE NEW ORLEANS LA AL012009  
1130 AM EDT FRI AUG 15 2014

THIS PRODUCT COVERS SOUTHEAST LOUISIANA AND SOUTHERN MISSISSIPPI

\*\*DEVASTATING DAMAGE AND LIFE THREATENING CONDITIONS EXPECTED  
THIS WEEKEND AS HURRICANE OMEGA MOVES TOWARD SOUTHEAST LOUISIANA  
AND SOUTHERN MISSISSIPPI\*\*

NEW INFORMATION

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\* CHANGES TO WATCHES AND WARNINGS:

- NONE

\* CURRENT WATCHES AND WARNINGS:

- A HURRICANE WARNING AND STORM SURGE WARNING REMAIN IN EFFECT  
FOR:

ASCENSION...ASSUMPTION...JEFFERSON...LAFOURCE...LIVINGSTON...ORLEANS...  
TANGIPAHOA...TERREBONNE...ST. BERNARD...ST. JAMES...ST. JOHN THE  
BAPTIST...

ST. TAMMANY PARISHES IN SOUTHEAST LOUISIANA

- A HURRICANE WATCH AND STORM SURGE WATCH REMAIN IN EFFECT  
FOR:

HANCOCK...HARRISON...JACKSON COUNTIES IN SOUTHERN MISSISSIPPI

\* STORM INFORMATION:

- ABOUT 600 MI SSE OF NEW ORLEANS LA
- 22.1N 71.9W
- STORM INTENSITY 150 MPH WITH HIGHER GUSTS
- MOVING NORTHWEST AT 16 MPH

## SITUATION OVERVIEW

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EXTREMELY DANGEROUS HURRICANE OMEGA IS EXPECTED TO IMPACT SOUTHEAST LOUISIANA AND SOUTHERN MISSISSIPPI THIS WEEKEND. THE MAIN CONCERN IS FOR DEVASTATING TO LOCALLY CATASTROPHIC DAMAGE FROM WIND AND SURGE IN SOUTHEAST LOUISIANA AND SOUTHERN MISSISSIPPI SOMETIME BETWEEN SATURDAY NIGHT AND SUNDAY NIGHT.

THE POTENTIAL EXISTS FOR MODERATE TO HIGH IMPACTS ASSOCIATED WITH MAJOR INLAND FLOODING FROM HEAVY RAINS. WIDESPREAD RIVER FLOODING IS EXPECTED.

ISOLATED TORNADOES ARE POSSIBLE AS THE SYSTEM APPROACHES AND MOVES ACROSS THE AREA.

WHEN MAKING DECISIONS, DO NOT FOCUS ON THE EXACT FORECAST TRACK AND INTENSITY. IT IS TOO EARLY TO PROVIDE SPECIFIC INFORMATION.

## SIGNIFICANT POTENTIAL IMPACTS

### \* WIND:

DEVASTATING TO CATASTROPHIC DAMAGE IS EXPECTED IN PORTIONS OF SOUTHEAST LOUISIANA INCLUDING BOTH THE SOUTH SHORE AND NORTH SHORE REGIONS. THIS MEANS THE POTENTIAL FOR:

- STRUCTURAL DAMAGE TO COMMERCIAL AND RESIDENTIAL BUILDINGS WITH SOME HAVING COMPLETE WALL AND ROOF FAILURES.
- COMPLETE DESTRUCTION OF MOBILE HOMES.
- NUMEROUS ROADS IMPASSABLE DUE TO LARGE DEBRIS.
- MANY BRIDGES AND OTHER ACCESS ROUTES IMPASSABLE.
- WIDESPREAD POWER OUTAGES FOR POSSIBLY MONTHS IN HARDEST HIT AREAS.

### \* SURGE:

LIFE-THREATENING STORM SURGE IS POSSIBLE ACROSS PORTIONS SOUTHEAST LOUISIANA AND THE MISSISSIPPI COAST. THIS MEANS THE POTENTIAL FOR:

- LEVEE SYSTEMS THREATENED WITH POTENTIAL FOR OVERTOPPING INCLUDING THE METRO NEW ORLEANS RISK REDUCTION SYSTEM, RESULTING IN LIFE THREATENING FLOODING.
- STRUCTURAL DAMAGE FROM SEA WATER.
- SEVERE BEACH EROSION.
- SECTIONS OF ROADWAYS WASHED OUT AND ESCAPE ROUTES SEVERELY FLOODED.

- STRUCTURAL DAMAGE TO BUILDINGS IN FLOOD PRONE AREAS.
- DAMAGE COMPOUNDED BY FLOATING DEBRIS.
- DAMAGE TO MARINAS, DOCKS, AND PIERS.

IT IS TOO EARLY TO PROVIDE SPECIFIC INFORMATION BUT ALONG COASTAL COLLIER AND MAINLAND MONROE THERE IS A POTENTIAL FOR LIFE THREATENING SURGE PENETRATING MILES INLAND.

PRECAUTIONARY/PREPAREDNESS ACTIONS

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\* EVACUATIONS:

SEVERAL PARISHES AND JURISDICTIONS HAVE ISSUED EVACUATION ORDERS. GO TO [XXX.ORG](http://XXX.ORG) FOR THE LATEST EVACUATION INFORMATION.

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

\* OTHER PREPAREDNESS INFORMATION:

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

PEOPLE IN THE WARNING AREA SHOULD FINISH PREPARATIONS NOW. FOR THOSE UNDER A WATCH, REVIEW YOUR PREPAREDNESS PLANS AND BE READY TO IMPLEMENT THEM SHOULD A WARNING BE ISSUED FOR YOUR AREA.

FOR MARINE INTERESTS UNDER A WATCH OR WARNING, RETURN TO PORT OR SEEK SAFE HARBOR. DETERMINE THE BEST STRATEGY FOR SECURING YOUR CRAFT.

CLOSELY MONITOR NOAA WEATHER RADIO OR OTHER LOCAL NEWS OUTLETS FOR OFFICIAL STORM INFORMATION. LISTEN FOR POSSIBLE CHANGES TO THE FORECAST.

\* ADDITIONAL SOURCES OF INFORMATION:

FOR INFORMATION ON APPROPRIATE PREPARATIONS SEE [READY.GOV/LOUISIANA](http://READY.GOV/LOUISIANA)

FOR INFORMATION ON LOCAL EVACUATION SHELTERS SEE [WWW.EMERGENCY.LOUISIANA.GOV/DISASTER\\_EVALUATION\\_GUIDE.HTML](http://WWW.EMERGENCY.LOUISIANA.GOV/DISASTER_EVALUATION_GUIDE.HTML)

FOR INFORMATION ON CREATING AN EMERGENCY PLAN SEE [GETAGAMEPLAN.ORG](http://GETAGAMEPLAN.ORG)

FOR ADDITIONAL DISASTER PREPAREDNESS INFORMATION SEE [REDCROSS.ORG](http://REDCROSS.ORG)

NEXT UPDATE

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THE NEXT LOCAL STATEMENT WILL BE ISSUED BY THE NATIONAL WEATHER  
SERVICE IN SLIDELL AROUND 6 PM EDT, OR SOONER IF CONDITIONS

WTUS82 KLIJ DDHMM

TCVLIX

## TCV Example #1

WTUS82 KLIX DDHMM  
TCVLIX

URGENT - IMMEDIATE BROADCAST REQUESTED  
HURRICANE OMEGA LOCAL WATCH/WARNING VTEC STATEMENT AL012009  
NATIONAL WEATHER SERVICE NEW ORLEANS LA  
1130 AM EDT FRI AUG 15 2014

LAZ062-152315-  
/O.CON.KLIX.HU.W.1001.000000T0000Z-000000T0000Z/  
/O.CON.KLIX.SS.W.1001.000000T0000Z-000000T0000Z/  
ORLEANS-  
INCLUDING THE CITIES OF...NEW ORLEANS  
1130 AM EDT FRI AUG 15 2014

...HURRICANE WARNING IN EFFECT...  
...STORM SURGE WARNING IN EFFECT...  
...FLOOD AND/OR TORNADO WATCH HEADLINES WILL BE HERE TOO...

### \* WIND:

- POTENTIAL IMPACT: EXTREME.
  - DEVASTATING TO LOCALLY CATASTROPHIC WIND DAMAGE INCLUDING:
  - STRUCTURAL DAMAGE TO COMMERCIAL AND RESIDENTIAL BUILDINGS, SOME HAVING COMPLETE WALL AND ROOF FAILURES.
  - COMPLETE DESTRUCTION OF MOBILE HOMES.
  - NUMEROUS ROADS IMPASSABLE DUE TO LARGE DEBRIS.
  - WIDESPREAD TO COMPLETE POWER OUTAGES FOR AT LEAST MONTHS IN HARDEST HIT AREAS.
  - HIGH RISE OFFICE BUILDINGS WILL SWAY DANGEROUSLY AND MOST WINDOWS WILL BE BLOWN OUT.
- MAX SUSTAINED WIND:
  - 95-115 MPH WITH GUSTS TO 140 MPH.
- TIMING:
  - HURRICANE FORCE: BETWEEN SATURDAY NIGHT AND EARLY SUNDAY AFTERNOON.
  - TROPICAL STORM: BETWEEN SATURDAY AFTERNOON OR EVENING AND LATE SUNDAY NIGHT.

### \* STORM SURGE AND STORM TIDE:

- POTENTIAL IMPACT: EXTREME.  
- LIFE THREATENING CONDITIONS INCLUDING:  
- POTENTIAL FOR OVERTOPPING OF THE HURRICANE PROTECTION  
LEVEE

SYSTEM RESULTING IN LIFE THREATENING FLOODING.

- STRUCTURAL DAMAGE FROM SEA WATER.
- SEVERE BEACH EROSION.
- SECTIONS OF ROADWAYS WASHED OUT.
- LOW-LYING ESCAPE ROUTES SEVERELY FLOODED.
- STRUCTURAL DAMAGE TO NUMEROUS BUILDINGS.
- DAMAGE COMPOUNDED BY FLOATING DEBRIS.

- MAX STORM SURGE: 8 - 12 FT ABOVE GROUND.

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

\* RAINFALL:

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

- AMOUNTS: 8 - 12 INCHES.

\* TORNADO:

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

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/O.CON.KLIX.HU.W.1001.000000T0000Z-000000T0000Z/  
/O.CON.KLIX.SS.W.1001.000000T0000Z-000000T0000Z/  
ST. TAMMANY-  
INCLUDING THE CITIES  
OF...COVINGTON...LACOMBE...MANDEVILLE...SLIDELL  
1130 AM EDT FRI AUG 15 2014

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

...FLOOD AND/OR TORNADO WATCH HEADLINES WILL BE HERE TOO...

\* WIND:

- POTENTIAL IMPACT: EXTREME.
  - DEVASTATING WIND DAMAGE INCLUDING:
    - STRUCTURAL DAMAGE TO COMMERCIAL AND RESIDENTIAL BUILDINGS, WITH SOME HAVING COMPLETE WALL AND ROOF FAILURES.
    - COMPLETE DESTRUCTION OF MOBILE HOMES.
    - NUMEROUS ROADS IMPASSABLE DUE TO LARGE DEBRIS.
    - WIDESPREAD POWER OUTAGES FOR POSSIBLY MONTHS IN HARDEST HIT AREAS.
- MAX SUSTAINED WIND:
  - 80-100 MPH WITH GUSTS TO 125 MPH.
- TIMING:
  - HURRICANE FORCE: BETWEEN SATURDAY NIGHT AND EARLY SUNDAY AFTERNOON.
  - TROPICAL STORM: BETWEEN SATURDAY AFTERNOON OR EVENING AND SUNDAY NIGHT.

\* STORM SURGE AND STORM TIDE:

- POTENTIAL IMPACT: EXTREME.
  - LIFE THREATENING CONDITIONS INCLUDING:
    - STRUCTURAL DAMAGE FROM SEA WATER.
    - SECTIONS OF ROADS WASHED OUT.
    - LOW-LYING ESCAPE ROUTES SEVERELY FLOODED.
    - STRUCTURAL DAMAGE TO BUILDINGS.
    - DAMAGE COMPOUNDED BY FLOATING DEBRIS.
    - DAMAGE TO MARINAS, DOCKS, AND PIERS.
    - MANY SMALL CRAFT BROKEN AWAY FROM MOORINGS, ESPECIALLY IN UNPROTECTED ANCHORAGES, LIFTED ONSHORE AND STRANDED.
- MAX STORM SURGE: 7 - 10 FT ABOVE GROUND.
- TIMING:
  - SURGE GREATER THAN 2 FT: BETWEEN SATURDAY NIGHT AND SUNDAY AFTERNOON.

\* RAINFALL:

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

- MAJOR FLOODING ALONG AREA RIVERS.
  - AMOUNTS:                   8 - 12 INCHES.
  - \* TORNADO:
  - POTENTIAL IMPACT:    LOW.
  - POSSIBLE TORNADOES IN RAIN BANDS AHEAD OF THE HIGHER WINDS DURING EVACUATION AND PREPAREDNESS ACTIVITIES.
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## TCV Example #2

URGENT - IMMEDIATE BROADCAST REQUESTED  
HURRICANE OMEGA LOCAL WATCH/WARNING VTEC STATEMENT AL012009  
NATIONAL WEATHER SERVICE NEW ORLEANS LA  
1130 AM CDT FRI AUG 15 2014

LAZ062-152315-  
/O.CON.KMFL.HU.W.1001.000000T0000Z-000000T0000Z/  
/O.CON.KMFL.SS.W.1001.000000T0000Z-000000T0000Z/  
ORLEANS-  
INCLUDING THE CITIES OF...NEW ORLEANS  
1130 AM CDT FRI AUG 15 2014

...HURRICANE WARNING IN EFFECT...  
...STORM SURGE WARNING IN EFFECT...  
...FLOOD AND/OR TORNADO WATCH HEADLINES WILL BE HERE TOO...

### \* WIND:

- MAX SUSTAINED WIND: 95-115 MPH WITH GUSTS TO 140 MPH
- ONSET HURRICANE: SATURDAY NIGHT
- DURATION: 6-12 HOURS
- ONSET TROPICAL STORM: SATURDAY AFTERNOON THRU EVENING
- DURATION: 24-30 HOURS
- POTENTIAL IMPACT: EXTREME - DEVASTATING WIND DAMAGE

+ STRUCTURAL DAMAGE TO COMMERCIAL AND RESIDENTIAL  
BUILDINGS  
WITH SOME HAVING COMPLETE WALL AND ROOF FAILURES  
+ COMPLETE DESTRUCTION OF MOBILE HOMES  
+ NUMEROUS ROADS IMPASSABLE DUE TO LARGE DEBRIS  
+ WIDESPREAD TO COMPLETE POWER OUTAGES FOR AT LEAST  
MONTHS IN  
THE HARDEST HIT AREAS  
+ HIGH RISE OFFICE BUILDINGS WILL SWAY DANGEROUSLY AND  
MOST  
WINDOWS WILL BE BLOWN OUT

### \* STORM SURGE AND STORM TIDE:

- MAX STORM SURGE: 8-12 FT ABOVE GROUND
- ONSET > 2 FT: SATURDAY NIGHT THROUGH SUNDAY MORNING
- DURATION: 6-12 HRS
- POTENTIAL IMPACT: EXTREME

+ POTENTIAL FOR OVERTOPPING OF THE HURRICANE PROTECTION  
LEVEE SYSTEM RESULTING IN LIFE THREATENING FLOODING  
+ STRUCTURAL DAMAGE FROM SEA WATER  
+ SEVERE BEACH EROSION  
+ SECTIONS OF ROADWAYS WASHED OUT  
+ LOW-LYING ESCAPE ROUTES SEVERELY FLOODED  
+ STRUCTURAL DAMAGE TO NUMEROUS BUILDINGS  
+ DAMAGE COMPOUNDED BY FLOATING DEBRIS

\* RAINFALL:

- AMOUNTS: 8-12 IN  
- POTENTIAL IMPACT: HIGH

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

\* TORNADO:

- POTENTIAL IMPACT: LOW

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

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/O.CON.KLIX.SS.W.1001.000000T0000Z-000000T0000Z/  
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...HURRICANE WARNING IN EFFECT...  
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\* WIND:

- MAX SUSTAINED WIND: 80-100 MPH WITH GUSTS TO 125 MPH  
- ONSET HURRICANE: SATURDAY NIGHT  
- DURATION: 6-12 HOURS  
- ONSET TROPICAL STORM: SATURDAY AFTERNOON THRU EVENING

- DURATION: 24-30 HOURS
- POTENTIAL IMPACT: EXTREME - DEVASTATING WIND DAMAGE

- + STRUCTURAL DAMAGE TO COMMERCIAL AND RESIDENTIAL BUILDINGS
- WITH SOME HAVING COMPLETE WALL AND ROOF FAILURES
- + COMPLETE DESTRUCTION OF MOBILE HOMES
- + NUMEROUS ROADS IMPASSABLE DUE TO LARGE DEBRIS
- + WIDESPREAD POWER OUTAGES FOR POSSIBLY MONTHS IN HARDEST HIT AREAS

\* STORM SURGE AND STORM TIDE:

- MAX STORM SURGE: 7-10 FT ABOVE GROUND
- ONSET > 2 FT: SATURDAY NIGHT THROUGH SUNDAY MORNING
- DURATION: 6-12 HRS
- POTENTIAL IMPACT: EXTREME

- + STRUCTURAL DAMAGE FROM SEA WATER
- + SECTIONS OF ROADS WASHED OUT
- + LOW-LYING ESCAPE ROUTES SEVERELY FLOODED
- + STRUCTURAL DAMAGE TO BUILDINGS
- + DAMAGE COMPOUNDED BY FLOATING DEBRIS
- + DAMAGE TO MARINAS, DOCKS, AND PIERS
- + MANY SMALL CRAFT BROKEN AWAY FROM MOORINGS, ESPECIALLY IN UNPROTECTED ANCHORAGES, LIFTED ONSHORE AND STRANDED

\* RAINFALL:

- AMOUNTS: 8-12 IN
- POTENTIAL IMPACT: HIGH
- + AREAS OF WATER ENTERING HOMES AND BUSINESSES
- + FLOODING OF PRIMARY/SECONDARY ROADS AND OVERFLOW CANALS
- + MAJOR FLOODING ALONG AREA RIVERS

\* TORNADO:

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

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WARRANT.

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