

Exercise LANTEX14 Gulf of Mexico Participant Handbook

A Gulf of Mexico Tsunami Warning Exercise
March 26, 2014

US National Tsunami Hazard Mitigation Program
Warning Coordination Subcommittee



NOTE: The contents of this handbook are patterned after the Exercise Pacific Wave 08 manual published by the Intergovernmental Oceanographic Commission. Citation: *Exercise Pacific Wave 08. A Pacific-wide Tsunami Warning and Communication Exercise, 28-30 October 2008*. IOC Technical Series No. 82. Paris, UNESCO, 2008, and the Lantex13/CaribeWave13 handbooks.

Exercise

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1. Background

This tsunami exercise is being conducted to assist tsunami preparedness efforts throughout the Gulf of Mexico region. Recent tsunamis and their associated earthquakes, such as the 2004 Indian Ocean, 2009 Samoa, 2010 Haiti and Chile, and 2011 Japan, attest to the importance of proper planning for tsunami response. This exercise will simulate a large earthquake which triggers a submarine landslide which in turn generates a tsunami.

The following description of Gulf of Mexico tectonics is adapted from information on the University of Florida web site (http://www.clas.ufl.edu/users/rrusso/florida_eq.html).

Although seismicity in the Gulf of Mexico is very low compared to active margins of the planet, earthquakes in that region do occur. The majority of these have occurred in the eastern Gulf of Mexico (Figure 1). These earthquakes are mostly small magnitude events (magnitudes 3-4), though in 2006 two events with magnitudes of 5.2 and 6.0 occurred. The earthquakes occurred at relatively shallow depths beneath the Earth's surface in the deep water of the Gulf west of the Florida Escarpment (Figure 1). The lack of large earthquakes is consistent with the absence of tsunamis in the historical record of the Gulf coast states. Though, even earthquakes with moderate magnitudes (around 6.0) can produce a tsunami if they occur in the vicinity of unstable sediments deposited on a sloping surface by causing those sediments to slide.

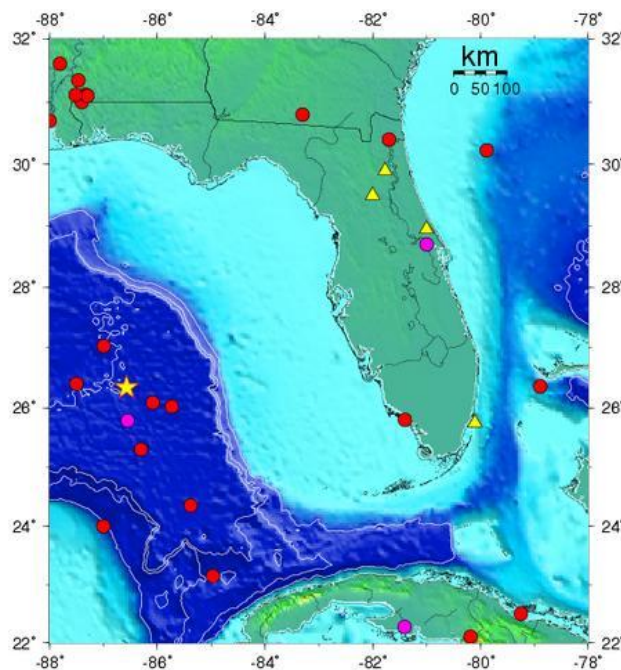


Figure 1. The locations of earthquakes which occurred in the eastern Gulf of Mexico since 1875 are displayed. The red and purple circles show the epicenters of the predominantly shallow (0-35 km) earthquakes. The yellow triangles are reported and/or located earthquakes that occurred near Florida prior to 1975. The large yellow star in the Gulf of Mexico marks the location of the September 10, 2006 magnitude 6.0 earthquake.

USGS researchers have identified multiple locations within the Gulf of Mexico with sediment build-up which have slid in the past and could possibly slide again in the future (ten Brink et al., 2008; ten Brink et al., 2009). These regions are shown in Figure 2 (ten Brink et al., 2009).

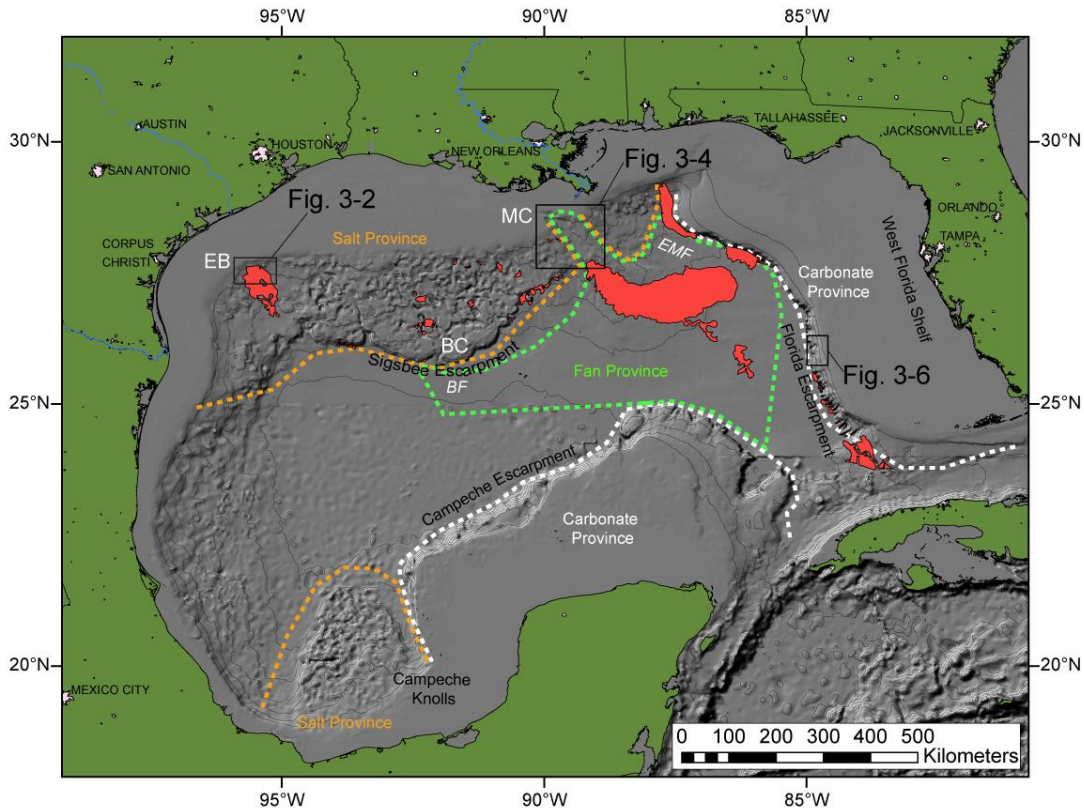


Figure 2. Bathymetry of the Gulf of Mexico. Landslide deposits shown in red. Primary geologic provinces are highlighted by the dashed lines. EB-East Breaks Landslide, MC-Mississippi Canyon, BC-Bryant Canyon, EMF-East Mississippi fan, BF Bryant fan (Figure 1-1 in ten Brink et al., 2009).

This exercise is based on a moderate sized earthquake, magnitude 6.6, occurring in the Mississippi Canyon which triggers a large slump of sediment moving southeast. The likelihood of occurrence of an event like this is considered low based on the tsunami history of the Gulf of Mexico. However, a similar earthquake/tsunami event occurred in 1929 off Newfoundland in Canada, and therefore is possible. Simulated tsunami warning and advisory messages from the NTWC based on this scenario (which is located approximately 190 miles southwest of New Orleans, Louisiana at 27.49°N, 91.29°W shown in Figures 3 and 4) are included and used to drive the exercise. Similar recent exercises in the Pacific and Atlantic Basins have proven effective in strengthening preparedness levels of emergency management organizations.

Tsunami warning services for the U.S. Gulf of Mexico coasts are provided by the U.S. National Tsunami Warning Center (NTWC) in Palmer, Alaska. NTWC messages include warnings, advisories, watches, and information statements. Primary recipients of NTWC messages include Weather Forecast Offices (WFO), national/state/territory emergency operation centers, the U.S. Coast Guard, and

military contacts. These agencies disseminate the messages directly to coastal residents and visitors.

NOAA and the U.S. National Tsunami Hazard Mitigation Program (NTHMP) are providing the framework for this exercise as a means for emergency responders throughout the U.S. Gulf of Mexico to test and update tsunami response plans. The huge coastal impact which tsunamis can impact should provide a strong incentive for local jurisdictions to prepare for a tsunami. Given the potential impact of such an event in Mexico and Cuba, the Pacific Tsunami Warning Center is also providing exercise products (www.caribewave.info) within the framework of the UNESCO IOC Intergovernmental Coordination Group for Tsunamis and Other Coastal Hazards for the Caribbean and Adjacent Regions (CARIBE EWS).



Figure 3. Lantex14 event location (small scale).

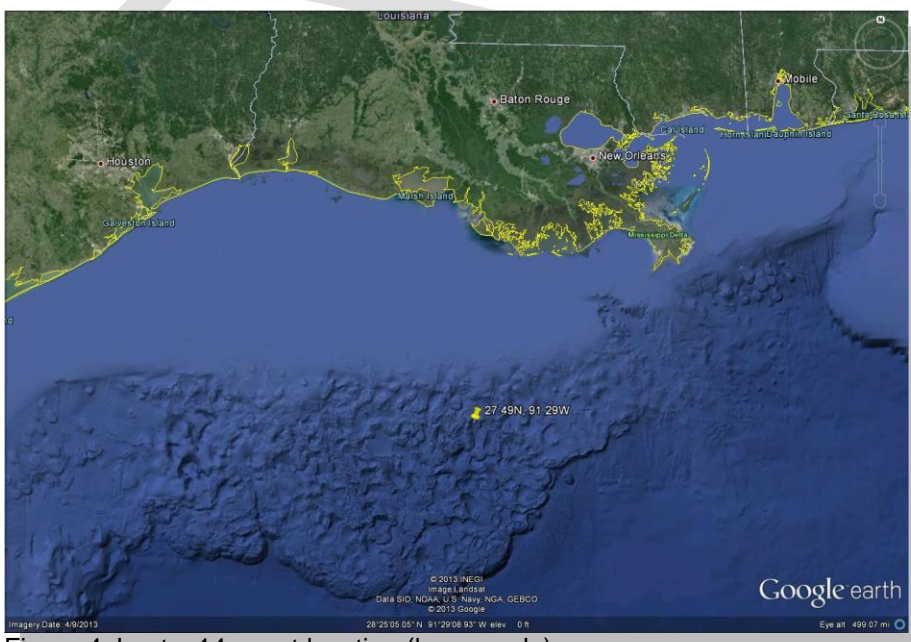


Figure 4. Lantex14 event location (large scale).

2. Exercise Concept

2.1 Purpose

The purpose of the exercise is to improve Tsunami Warning System effectiveness along the Gulf of Mexico coasts. The exercise provides an opportunity for emergency management organizations throughout the Gulf of Mexico to exercise their operational lines of communications, review their tsunami response procedures, and promote tsunami preparedness. Regular exercising of response plans is critical to maintain readiness for an emergency. This is particularly true for tsunamis, which are infrequent but high impact events. Every Gulf of Mexico emergency management organization (EMO) is encouraged to participate.

2.2 Objectives

Each organization can develop their own objectives for the exercise depending on their level of involvement in the scenario. The following are the exercise's overarching objectives.

- Ensure message transmission from the TWC to Tsunami Warning Focal Points (TWFP) and from these primary contacts to the EMOs.
- Test tsunami response plans for Gulf of Mexico and Atlantic EMOs that have developed plans, and provide a catalyst for countries and EMOs that have not developed plans.
- Review communication alternatives for receiving tsunami messages, locally disseminating tsunami alerts, and evaluate potential response actions and challenges at EMOs and Tsunami Warning Focal Points (TWFP).
- Identify processes to issue local all-clear notices.

2.3 Type of Exercise

The exercise should be carried out such that communications and decision making at various organizational levels are exercised and conducted without disrupting or alarming the general public. Individual localities, however, may at their discretion elect to extend the exercise down to the level of testing local notification systems such as the Emergency Alert System (EAS), sirens, or loudspeakers.

Exercises stimulate the development, training, testing, and evaluation of Disaster Plans and Standard Operating Procedures. Exercise participants may use their own past multi-hazard drills (e.g. flood, hurricane, tsunami, earthquake, etc.) as a framework to conduct LANTEX14.

Exercises can be conducted at various scales of magnitude and sophistication. The following are examples of types of exercises conducted by EMOs:

1. **Orientation Exercise (Seminar):** An Orientation Exercise lays the groundwork for a comprehensive exercise program. It is a planned event, developed to bring

together individuals and officials with a role or interest in multi-hazard response planning, problem solving, development of standard operational procedures (SOPs), and resource integration and coordination. An Orientation Exercise will have a specific goal and written objectives and result in an agreed upon Plan of Action.

2. **Drill:** The Drill is a planned activity that tests, develops, and/or maintains skills in a single or limited emergency response procedure. Drills generally involve operational response of single departments or agencies. Drills can involve internal notifications and/or field activities.
3. **Tabletop Exercise:** The Tabletop Exercise is a planned activity in which local officials, key staff, and organizations with disaster management responsibilities are presented with simulated emergency situations. It is usually informal, in a conference room environment, and is designed to elicit constructive discussion from the participants. Participants will examine and attempt to resolve problems, based on plans and procedures, if they exist. Individuals are encouraged to discuss decisions in depth with emphasis on slow-paced problem solving, rather than rapid, real time decision-making. A Tabletop Exercise should have specific goals, objectives, and a scenario narrative (see Appendix A for a Sample Tabletop Exercise Outline).
4. **Functional Exercise:** A Functional Exercise is a planned activity designed to test and evaluate organizational capacities. It is also utilized to evaluate the capability of a community's emergency management system by testing the Emergency Operations Plan (EOP). It is based on a simulation of a realistic emergency situation that includes a description of the situation (narrative) with communications between players and simulators. The Functional Exercise gives the players (decision-makers) a fully simulated experience of being in a major disaster event. It should take place at the appropriate coordination location (i.e. emergency operations center, emergency command center, command post, master control center, etc.) and activate all the appropriate members designated by the plan. Both internal and external agencies (government, private sector, and volunteer agencies) should be involved. It requires players, controllers, simulators, and evaluators. Message traffic will be simulated and inserted by the control team for player response/actions, under real time constraints. It may or may not include public evacuations. A Functional Exercise should have specific goals, objectives, and a scenario narrative.
5. **Full-scale Exercise:** A Full-scale Exercise is the culmination of a progressive exercise program that has grown with the capacity of the community to conduct exercises. A Full-Scale exercise is a planned activity in a "challenging" environment that encompasses a majority of the emergency management functions. This type of exercise involves the actual mobilization and deployment of the appropriate personnel and resources needed to demonstrate operational capabilities. EOCs and other command centers are required to be activated. A Full-scale Exercise is the largest, costliest, and most complex exercise type. It may or may not include public evacuations.

Example Time Frames for Different Exercise Types

Style	Planning Period	Duration	Comments
Orientation Exercise	2 wks	1 day	Individual or mixed groups
Drill	2 days	1 day	Individual technical groups generally
Tabletop Exercise	2 weeks	1-3 days	Single or multiple agency
Functional Exercise	1-2 months	1-5 days	Multiple Agency participation
Full-scale Exercise	2-6 months	1 day/ week	Multiple Agency participation

3. Exercise Outline

3.1 General

Tsunami Warning and Watch messages for this exercise are issued by the NTWC based on a hypothetical earthquake with the following hypocenter parameters:

- Origin Time 14:00:00 UTC March 26, 2014
- Latitude 27.49°N
- Longitude 91.29°W
- Magnitude 6.6 – Mw
- Depth 5km

The earthquake is assumed to trigger a large sub-sea landslide, which in turn generates a large tsunami. Expected impact for the landslide generated tsunami is determined from the Alaska Tsunami Forecast Model (ATFMv2). ATFMv2 indicates a tsunami generally between one and five meters along the Gulf of Mexico coastline, with a maximum of near 11 meters at Pilot Station E off the Louisiana coast. Based on the models, the exercise alert areas are limited to the Gulf of Mexico and SE Florida, and do not include other NTWC areas-of-responsibility. Appendix B provides model results.

Initially, NTWC issues a bulletin which places the United States' Gulf of Mexico coast in a Warning. Definitions of the products that will be issued by the TWC during this exercise are provided below.

Tsunami Warning - A tsunami warning is issued when a tsunami with the potential to generate widespread inundation is imminent, expected, or occurring. Warnings alert the public that dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after initial arrival. Warnings alert emergency management officials to take action for the entire tsunami hazard zone. Appropriate actions to be taken by local officials may include the evacuation of low-

lying coastal areas, and the repositioning of ships to deep waters when there is time to safely do so. Warnings may be updated, adjusted geographically, downgraded, or cancelled. To provide the earliest possible alert, initial warnings are normally based only on seismic information.

Tsunami Advisory - A tsunami advisory is issued due to the threat of a potential tsunami which may produce strong currents or waves dangerous to those in or near the water. Coastal regions historically prone to damage due to strong currents induced by tsunamis are at the greatest risk. The threat may continue for several hours after the arrival of the initial wave, but significant widespread inundation is not expected for areas under an advisory. Appropriate actions to be taken by local officials may include closing beaches, evacuating harbors and marinas, and the repositioning of ships to deep waters when there is time to safely do so. Advisories are normally updated to continue the advisory, expand/contract affected areas, upgrade to a warning, or cancel the advisory.

The TWC will not issue live messages over broadcast dissemination channels other than to issue an initial dummy message to start the exercise at 1402 UTC on March 26, 2014. However, messages from the NTWC will be emailed and faxed to specific recipients who have requested live dissemination throughout the event. The content of the dummy message is given in Appendix C. The dummy message will indicate that exercise participants should refer to the first message provided in this handbook. From then on, participants should follow the schedule in Table 1 to look at new messages if they are not receiving them via email or fax. Table 1 is the timeline for when messages would be issued by the NTWC if this were a real event, and can be used by EMOs to drive the exercise timing. The warning messages (as shown in Appendix D) cover a 9-hour period, though in an actual event they would likely continue longer. World Meteorological Organization (WMO) and Advanced Weather Interactive Processing System (AWIPS) headers used in the dummy message are listed in Table 2.

The NTWC issues two official products each time a message is issued. The ones provided in Appendix D are known as the public message which does not contain codes or text intended for automated systems. The other message not shown in Appendix D is the segmented message under the WMO code WEXX20 PAAQ. This message includes encoded NWS zones, Valid Time Event Codes (VTEC), and their level of threat. The segmentation is used for automated processing systems which parse NWS products. NTWC also issues additional graphical and web-based products to its web site, as well as experimental Spanish products under the WMO header WEXX40 PAAQ.

Participants may elect to exercise using their own timelines in order to achieve their particular objectives. For example, a particular EMO's Exercise Controller may choose to feed the NTWC bulletins into the exercise at times of their own choosing, or alternatively put them in envelopes with the time they must be opened written on each, with each key participant agency having their own set of envelopes. The messages, provided in Appendix D, will facilitate this approach.

EMOs are welcome to modify estimated arrival times and/or wave amplitudes to suit their exercise – for example, to have the tsunami arrive sooner and with larger

amplitude. Other exercise injects, such as tsunami damage reports, are also encouraged.

3.2 Master Schedule (Exercise Script)

Table 1: Scenario Timeline

Tsunami generated by a landslide which was triggered by a magnitude 6.6 earthquake with epicenter at 27.49°N, 91.29°W on March 26, 2014 at 1400 UTC. The initial warning is being disseminated at 1402 UTC.

Date (UTC)	Time (UTC)	NTWC Message			
		#	Type	Dummy	Email
03/26/2014	1400		***Earthquake Occurs***		
03/26/2014	1402	01	Warn	Yes	Yes
03/26/2014	1431	02	Warn	No	Yes
03/26/2014	1502	03	Adv/Warn	No	Yes
03/26/2014	1601	04	Adv/Warn	No	Yes
03/26/2014	1703	05	Adv/Warn	No	Yes
03/26/2014	1801	06	Adv/Warn	No	Yes
03/26/2014	1902	07	Adv/Warn	No	Yes
03/26/2014	2001	08	Adv/Warn	No	Yes
03/26/2014	2100	09	Adv	No	Yes
03/26/2014	2200	10	Adv	No	Yes
03/26/2014	2302	11	Can	No	Yes

The initial dummy message will be disseminated over all standard TWC broadcast channels as listed in Table 2. This is being issued to test communications with EMOs and Tsunami Warning Focal Points, and to start the exercise. All messages will be disseminated over a special email list to provide the messages in real time to organizations requesting this service. To request this service, please contact Christa von Hillebrandt (address listed in 3.5) with your organization name and email address. *Please note that the NTWC Dummy message is being issued with the WMO ID WEXX30 PAAQ and AWIPS ID TSUATE.*

TWC Message Types:

- Warn Tsunami Warning
- Adv Tsunami Advisory
- Can Cancellation

Dummy:

- Yes Dummy Issued
- No Dummy Not Issued

Email:

- Yes Message disseminated via special email list
- No Message not disseminated via special email list

Table 2: Product Types

Product Types Issued for Dummy Message with Transmission Methods

Center	WMO ID	AWIPS ID	NWWS	GTS	EMWIN	AISR	Fax	Email
NTWC	WEXX30 PAAQ	TSUATE	Yes	Yes	Yes	Yes	Yes	Yes

NWWS	NOAA Weather Wire Service
GTS	Global Telecommunications System
EMWIN	Emergency Manager's Weather Information Network
AISR	Aeronautical Information System Replacement

3.3 Actions in Case of a Real Event

In the case of a real event occurring during the exercise, the NTWC will issue their normal messages for the event. Such messages will be given full priority and a decision will be made by the NTWC whether to issue the dummy message and to send email messages to selected recipients. Smaller earthquakes that only trigger a Tsunami Information Statement will not disrupt the exercise. All documentation and correspondence relating to this exercise is to be clearly identified as "LANTEX14" and "Exercise."

3.4 Procedure for False Alarm

Any time disaster response exercises are conducted, the potential exists for the public or media to interpret the event as real. Procedures should be set up by all participating entities to address public or media concerns involving this exercise in case of misinterpretation by media or the public.

3.5 Resources

Although EMOs will have advance notice of the exercise and may elect to stand up a special dedicated shift to allow normal core business to continue uninterrupted, it is requested that realistic resource levels be deployed in order to reflect some of the issues that are likely to be faced in a real event.

Questions on the exercise can be addressed to:

<u>Person</u>	<u>Telephone #</u>	<u>Email</u>
Christa von Hillebrandt, NWS CTWP Manager	787-833-8433	christa.vonh@noaa.gov
Melinda Bailey, NWS Southern Region	817-978-1100x107	melinda.bailey@noaa.gov
Paul Whitmore NTWC Director	907-745-4212	paul.whitmore@noaa.gov
James Waddell NTWC Rep.	907-745-4212	james.waddell@noaa.gov
Charles McCreery PTWC Director	808-689-8207	Charles.mcCreery@noaa.gov
Amy Godsey NTHMP Gulf Rep.	850-617-9121	Amy.Godsey@em.myflorida.com

3.6 Media Arrangements

One advantage in conducting exercises is that it provides a venue to promote awareness of the exercise topic. Many residents along the Gulf of Mexico coast may not realize that a tsunami warning system exists for their region, let alone the proper response. Communities may wish to invite their local media to the exercise to promote local awareness of the tsunami hazard. Appendix E contains a sample press release which can be adapted as necessary.

4 Post-Exercise Evaluation

All participating agencies are requested to provide brief feedback on the exercise. This feedback will assist NTHMP and NOAA in the development of subsequent exercises. Comments on the exercise, proposed improvements to the messages, or any other items related to the tsunami warning system in the Gulf can be addressed to the persons listed in section 3.5.

5 References

ten Brink, U., D. Twichell, E. Geist, J. Chaytor, J. Locat, H. Lee, B. Buczkowski, R. Barkan, A. Solow, B. Andrews, T. Parsons, P. Lynett, J. Lin, and M. Sansoucy (2008). Evaluation of tsunami sources with the potential to impact the U.S. Atlantic and Gulf coasts, *USGS Administrative report to the U.S. Nuclear Regulatory Commission*, 300 pp.

ten Brink, U., D. Twichell, P. Lynett, E. Geist, J. Chaytor, H. Lee, B. Buczkowski, and C. Flores (2009). Regional Assessment of Tsunami Potential in the Gulf of Mexico: U.S. Geological Survey Administrative Report.

Appendix A. Example Tabletop Exercise

Tabletop Exercise Development Steps

Source: California Office of Emergency Services

A Tabletop Exercise is a planned activity in which local officials, key staff, and organizations with disaster management responsibilities are presented with simulated emergency situations. It is usually informal and slow paced, in a conference room environment, and is designed to elicit constructive discussion from the participants to assess plans, policies, and procedures. Participants will examine and attempt to resolve problems, based on plans and procedures, if they exist. Individuals are encouraged to discuss decisions in depth based on their organization's Standard Operating Procedures (SOPs), with emphasis on slow-paced problem solving, rather than rapid, real time decision-making. An Exercise Controller (moderator) introduces a simulated tsunami scenario to participants via written message, simulated telephone or radio call, or by other means. Exercise problems and activities (injects) are further introduced. Participants conduct group discussions where resolution is generally agreed upon and then summarized by a group leader. A Tabletop Exercise should have specific goals, objectives, and a scenario narrative.

The following provides a Tabletop Exercise structure with sample text and example.

1. Vulnerability Analysis: Problem Statement

An example for a hurricane might be:

Due to the recent Hurricane incidents that the Southeast region of the United States, an awareness of the threat risk involved in these disasters has become more apparent, therefore the need for evacuation system is vital. The state of Louisiana continues its ongoing tasks of planning, preparing, and training for Hurricane preparedness.

2. Purpose (Mission): Intent, what you plan to accomplish (Policy Statement)

An example for a hurricane might be:

The State of Louisiana has realized and recognizes the need for a more efficient and effective evacuation system, and is responding with this Comprehensive Exercise Plan. These events will include seminars, workshops, a tabletop exercise, functional and full-scale exercises within an 18-month time frame, under the State Homeland Security grant program.

3. Scope: **Exercise Activities** **Agencies Involved** **Hazard Type** **Geographic Impact Area**

An example might be:

Emergency Services coordinators at local levels of government will identify representative jurisdictions from each of the six mutual aid regions located throughout the State to participate as host jurisdictions in a series of disaster preparedness exercises. These host jurisdictions will develop a progressive series of exercises each type building upon the previous type of exercise. The process will begin with a vulnerability analysis for each jurisdiction and continue through a progression of exercise activities including: orientation seminars, workshops, and tabletop and functional exercises. The eventual objective of these activities will be to reduce disaster impacts to their populations and city infrastructure. All events will be evaluated utilizing US Homeland Security Exercise Evaluation Program (HSEEP) after action reporting (AAR)

standards. Steps for corrective actions will be made a part of the after action process and report. Surrounding jurisdictions in the mutual aid area will act as exercise design team members, exercise evaluators, or exercise observers for the purpose of information transfer to increase their operational readiness. Jurisdictions will participate on a rotational basis every two years to provide the opportunity for multiple jurisdiction participation.

4. Goals and Objectives:

Criteria for good objectives: Think SMART

- Simple (concise)
- Measurable
- Achievable (can this be done during the exercise?)
- Realistic (and challenging)
- Task Oriented (oriented to functions)

An example might be:

Comprehensive Exercise Program (CEP) Objectives

- *To improve operational readiness*
- *To improve multi-agency coordination and response capabilities for effective disaster response*
- *To identify communication pathways and problem areas pre-event between local jurisdictions and operational area, regional and state emergency operations centers*
- *To establish uniform methods for resource ordering, tracking, and supply for agencies involved at all levels of government.*

5. Narrative:

The Narrative should describe the following:

- Triggering emergency/disaster event
- Describe the environment at the time the exercise begins
- Provide necessary background information
- Prepare participants for the exercise
- Discovery, report: how do you find out?
- Advance notice?
- Time, location, extent or level of damage

6. Evaluation:

The Evaluation should describe the following:

- Objectives Based
- Train Evaluation Teams
- Develop Evaluation Forms

7. After Action Report (AAR): The AAR should be compiled using the evaluation reports

8. Improvement Plan (IP): The IP should reduce vulnerabilities.

Appendix B. Scenario Description

The earthquake hypocenter parameters are:

- Origin Time 14:00:00 UTC March 26, 2014
- Latitude 27.49°N
- Longitude 91.29°W
- Magnitude 6.6 – Mw
- Depth 5km

This earthquake immediately triggers a submarine landslide in the vicinity of the epicenter. The slide is 100 cubic km volume; 22km wide; 65km long; 120m maximum thickness; and a Gaussian profile along the long axis. The long axis of the slide is oriented NW to SE and is centered near the north end of the Mississippi Canyon (Figure B1). The slide speed increases to 50m/s until the 2000m isobath is reached at which time friction begins to slow the speed to 0. The slide is used as the driving force for the ATFMv2 model which generated expected impacts throughout the region. The models indicated a tsunami mostly between one and five meters along the Gulf of Mexico coastline, and a maximum of near 11 meters at Pilot Station E off the Louisiana coast.

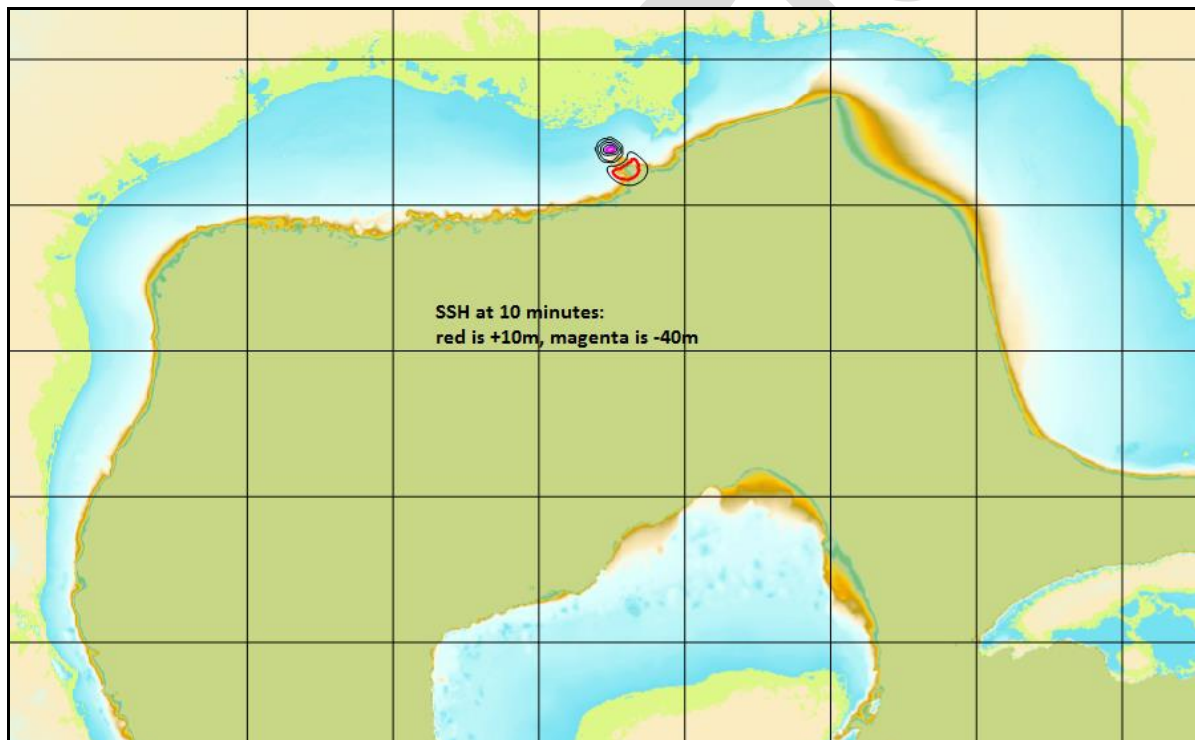


Figure B1. Landslide source location and sea level perturbation 10 minutes after start of slide.

Sample model outputs are shown in Figures B2 through B9 with forecast maximum heights above sea level provided in the Table B1. Note that where model outputs are listed at a coastal point, the highest tsunami elevation reached on the shore could be double that of the model outputs due to inundation effects.

Tsunami Travel Times

Tsunami travel time contours in hours, beginning from the earthquake origin time.

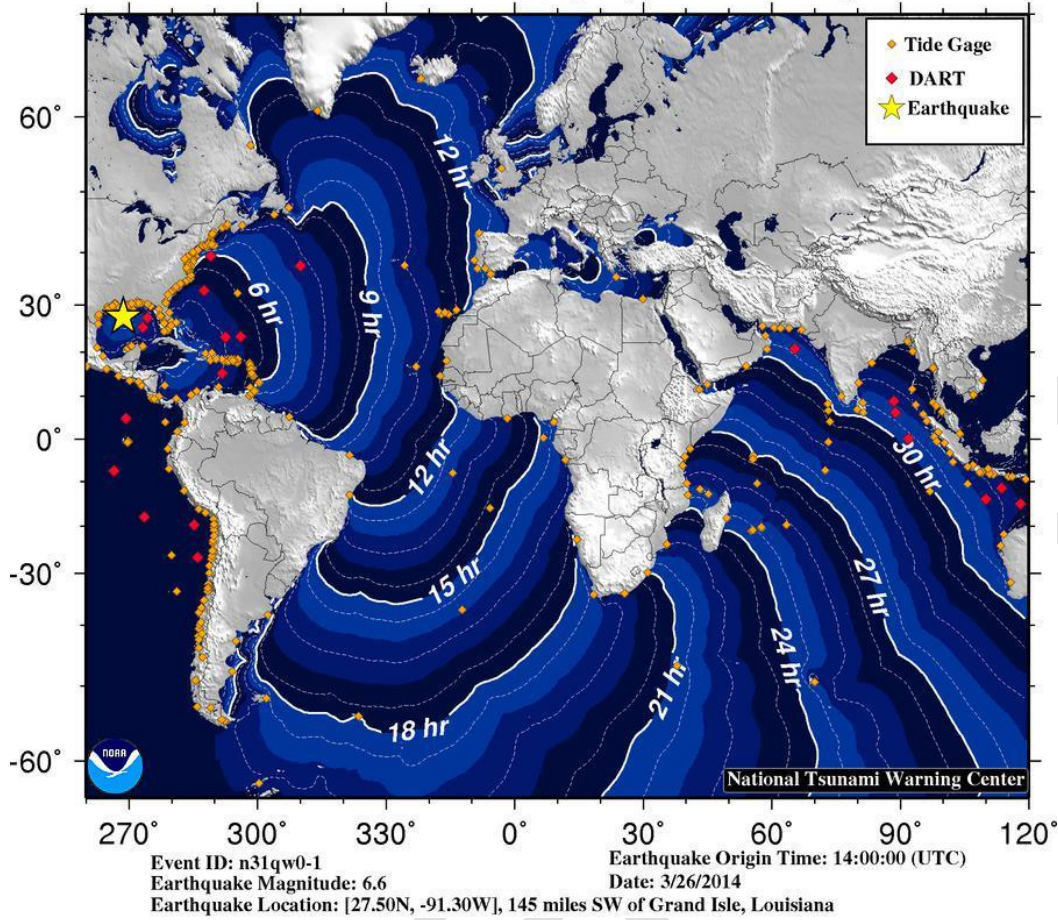
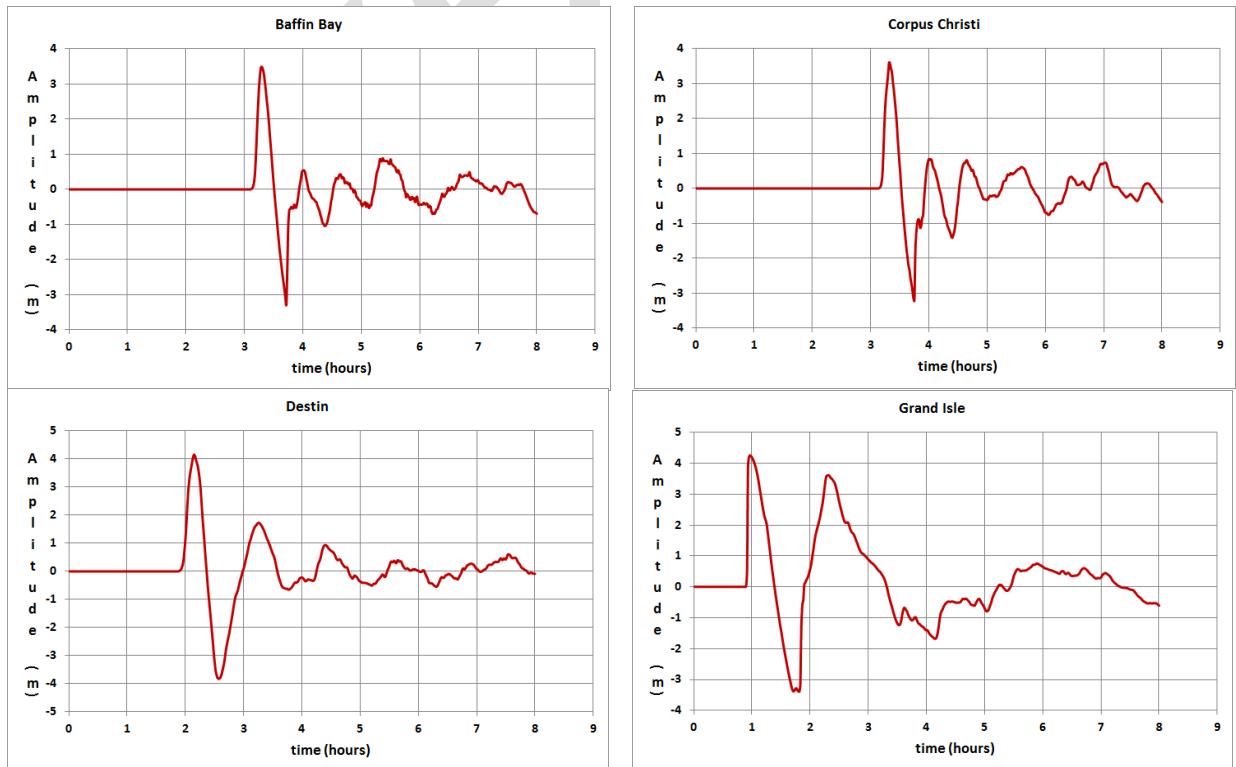
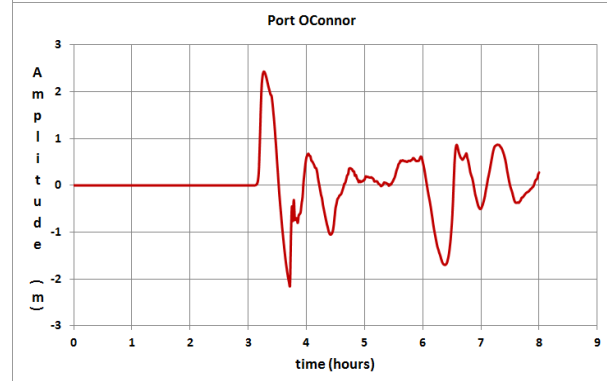
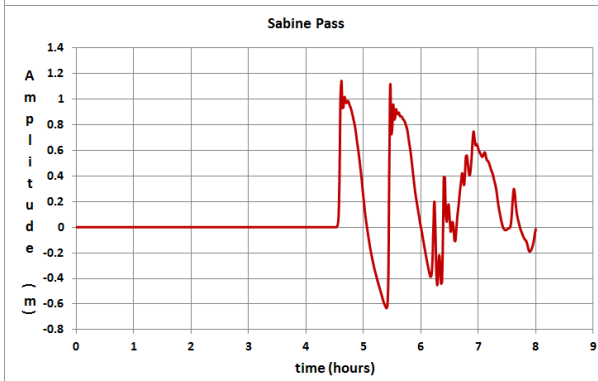
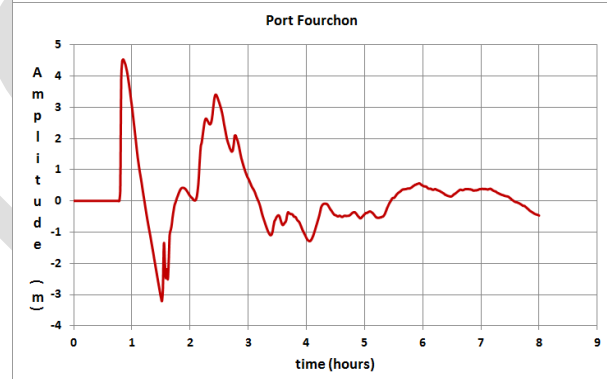
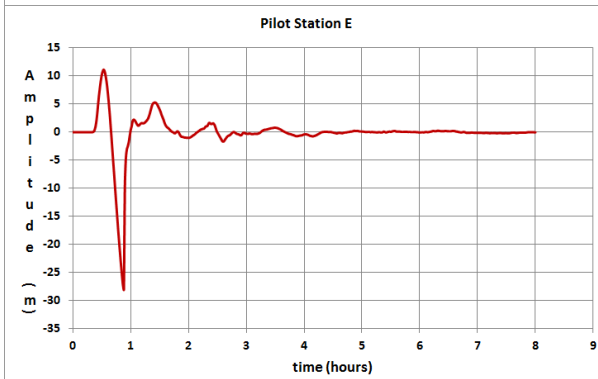
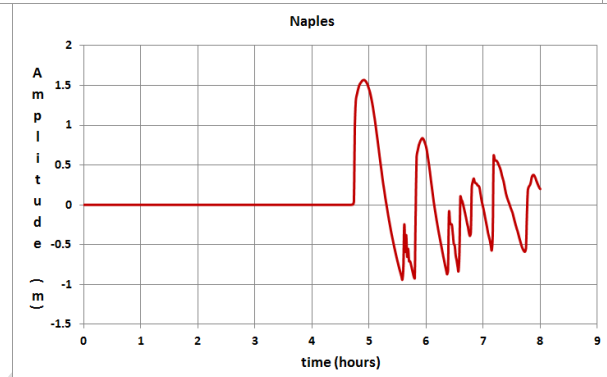
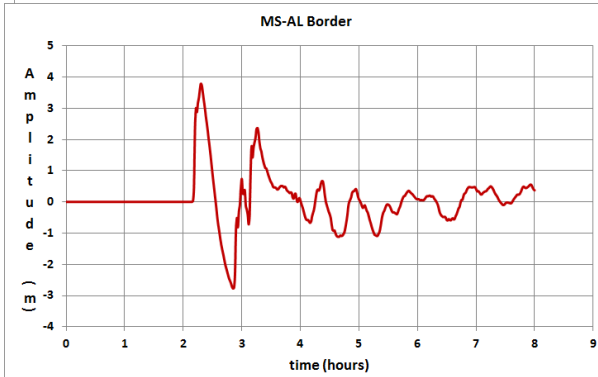
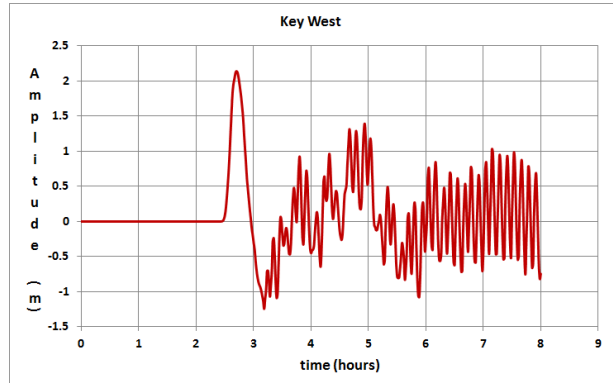
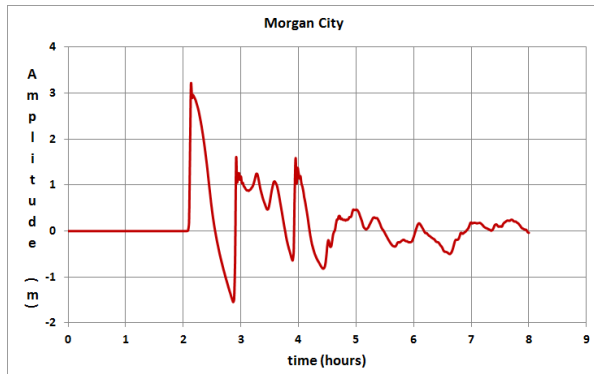


Figure B2. Tsunami travel time map based on the landslide source.



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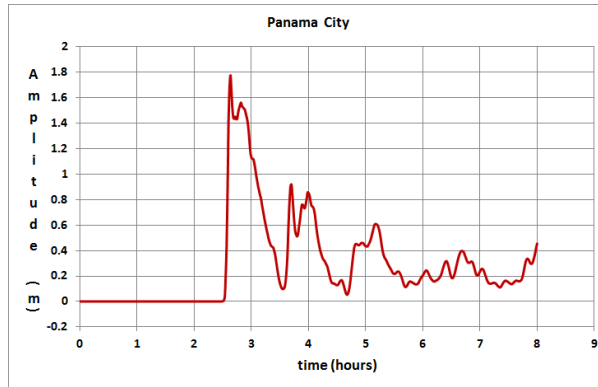


Figure B3. Tsunami variations over time at various locations along the Gulf of Mexico.

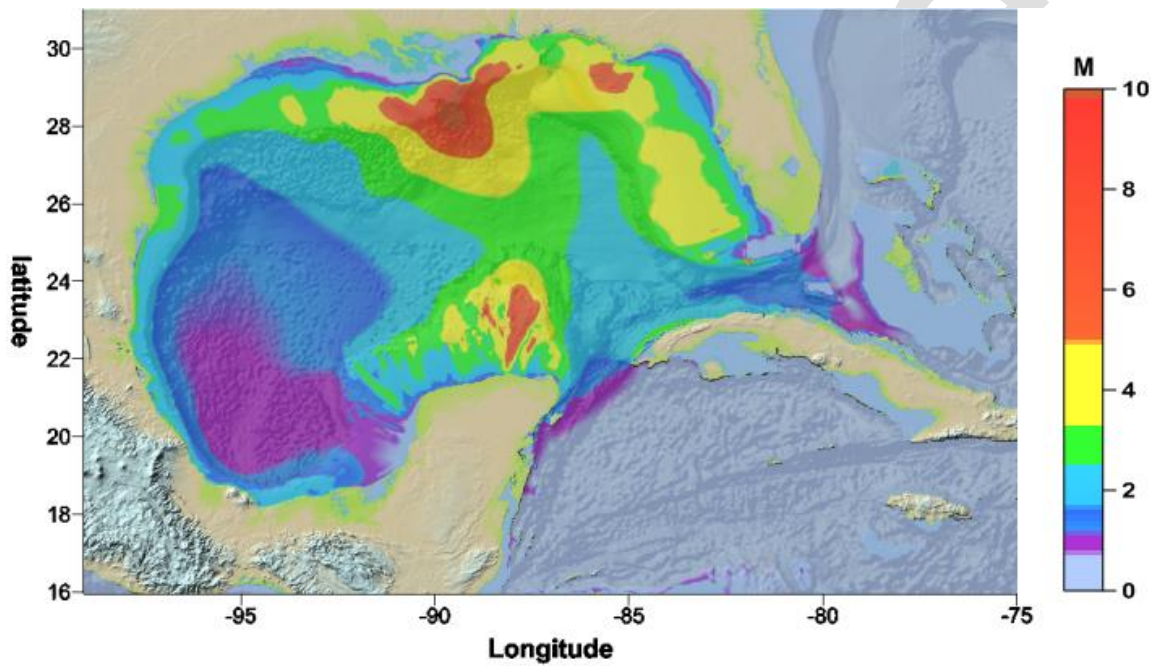


Figure B4. Maximum forecasted tsunami heights within the Gulf of Mexico.

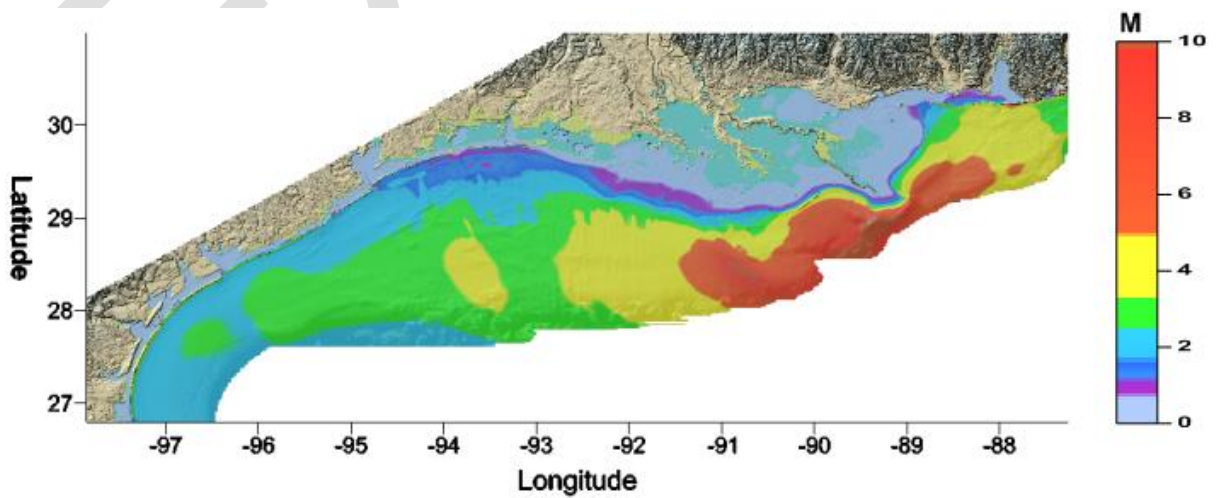


Figure B5. Maximum forecasted tsunami heights along the Louisiana – Texas coasts.

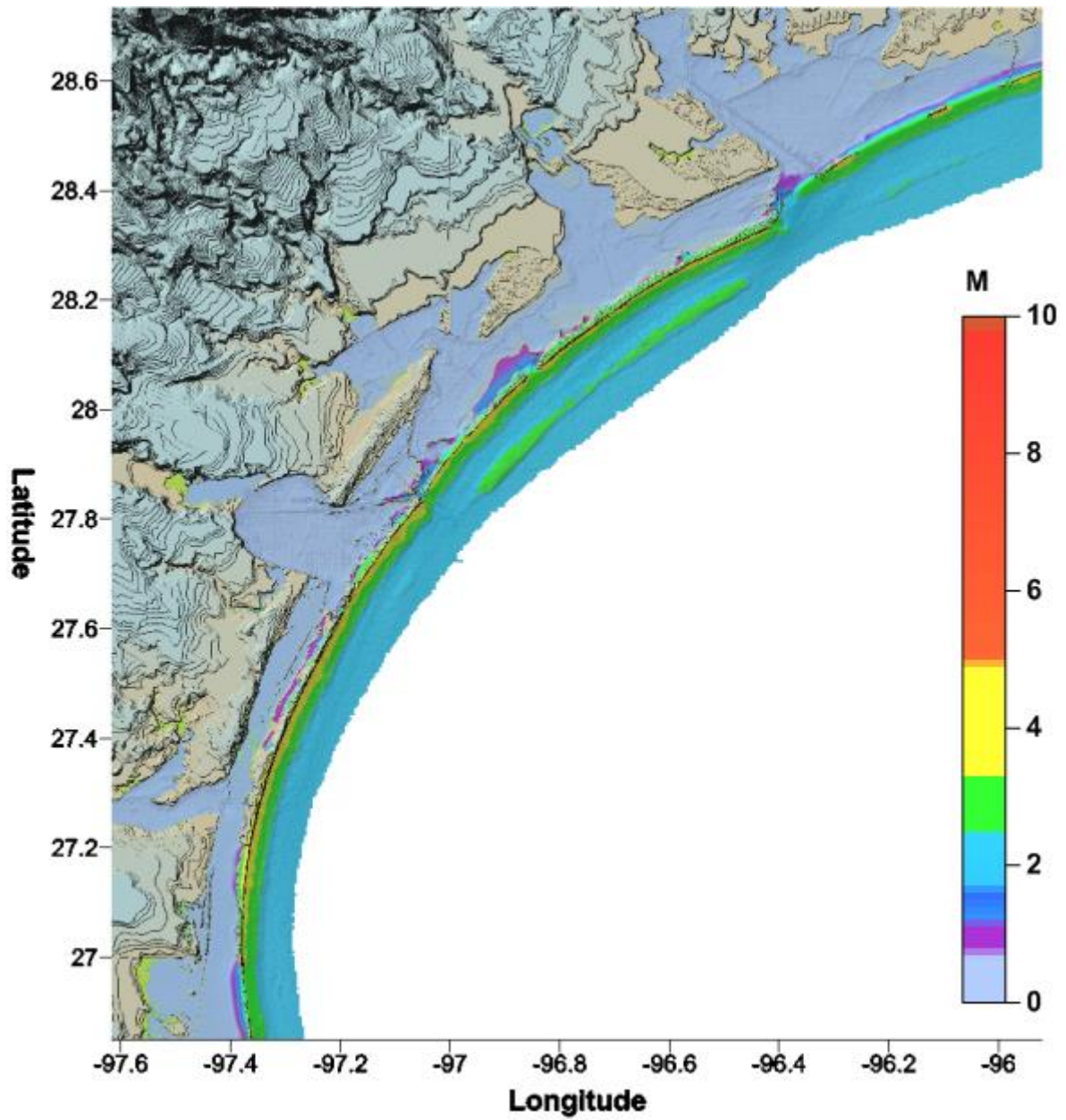


Figure B6. Maximum forecasted tsunami heights along the south Texas coast.

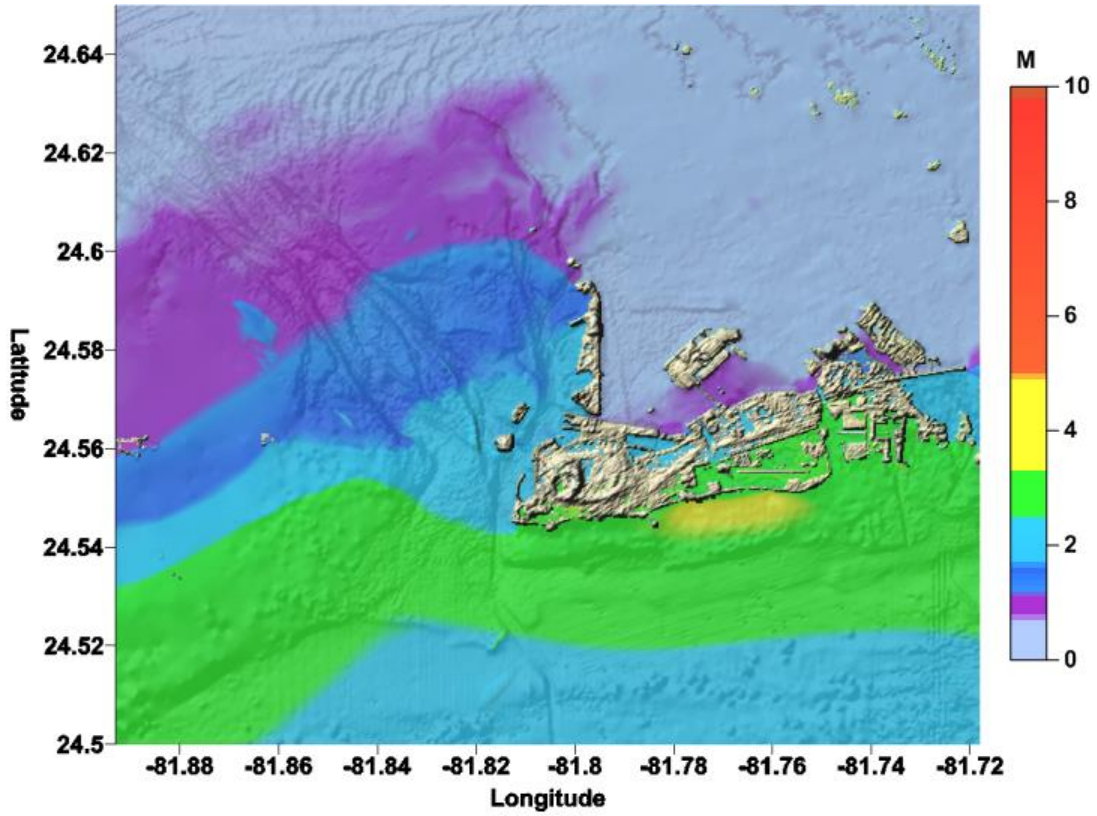


Figure B7. Forecasted inundation levels and tsunami heights at Key West, Florida.

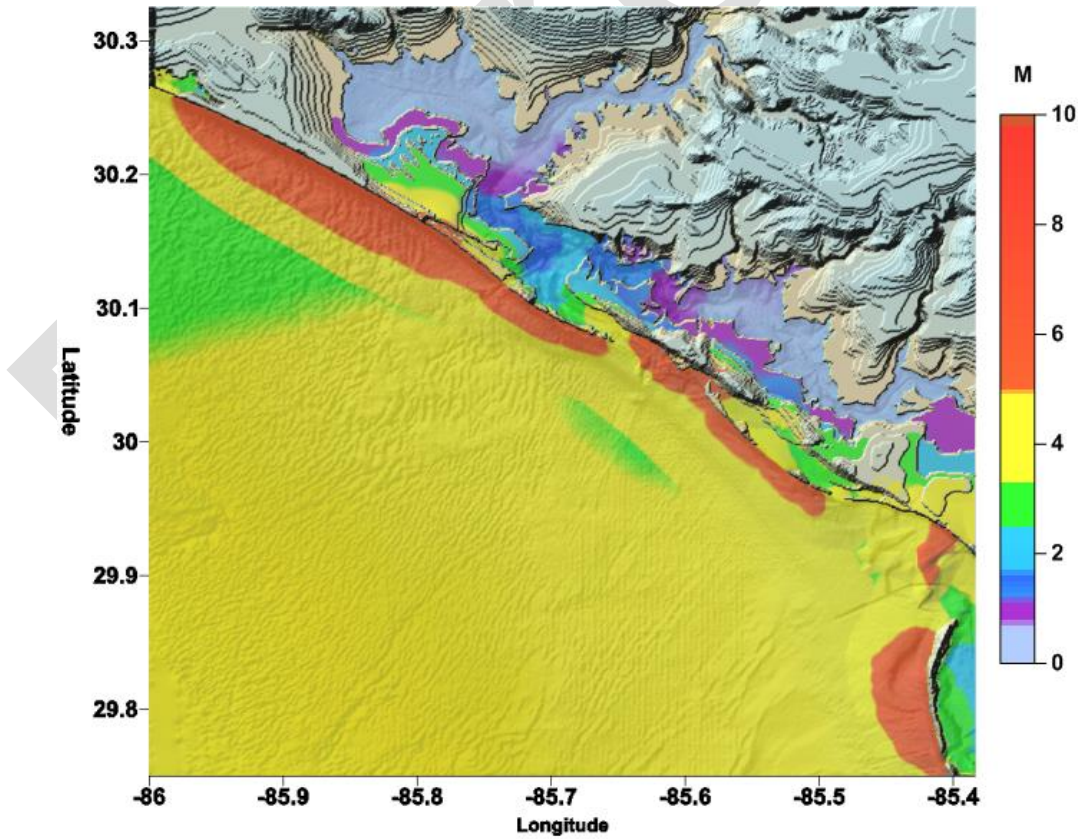


Figure B8. Forecasted inundation levels and tsunami heights at Panama City, Florida.

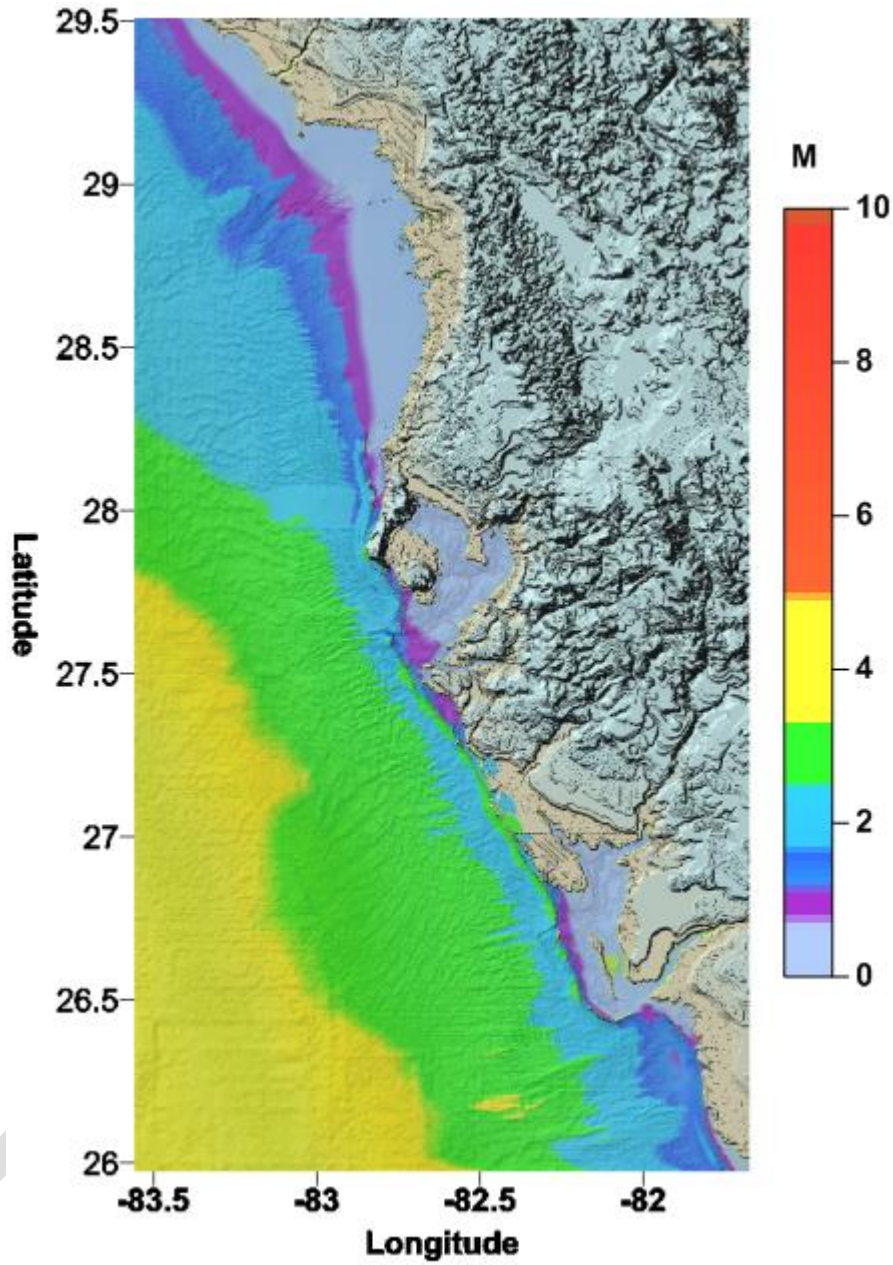


Figure B9. Forecasted inundation levels and tsunami heights at Clearwater, Florida.

LANTEX14 Handbook

Location	Travel Time (hr:min)	Max Amplitude	Leading Edge
PILOT STATION E LA	00:33	35.50 FT/10.82 M	elevation
PORT FOURCHON LA	00:51	14.89 FT/4.54 M	elevation
GRANDISLE LA	00:58	13.99 FT/4.26 M	elevation
D42429	01:08	8.07 FT/2.46 M	elevation
D42409	01:09	7.39 FT/2.25 M	elevation
MORGAN CITY LA	02:08	10.47 FT/3.19 M	elevation
DESTIN FL	02:09	13.64 FT/4.16 M	elevation
EUGENE ISLAND LA	02:16	8.94 FT/2.73 M	elevation
MS-AL BORDER	02:18	12.44 FT/3.79 M	elevation
VERACRUZ MX	02:28	4.28 FT/1.30 M	elevation
MADERO MX	02:32	6.95 FT/2.12 M	elevation
BILOXI MS	02:38	3.08 FT/0.94 M	elevation
PANAMA CITY FL	02:38	5.83 FT/1.78 M	elevation
COZUMEL MX	02:42	5.23 FT/1.60 M	elevation
KEY WEST FL	02:43	7.02 FT/2.14 M	elevation
TEXAS-MX BORDER	02:57	12.12 FT/3.70 M	elevation
VACA KEY FL	03:08	2.25 FT/0.69 M	elevation
PORT OCONNOR TX	03:16	7.98 FT/2.43 M	elevation
BAFFIN BAY TX	03:17	11.43 FT/3.48 M	elevation
CORPUS CHRISTI TX	03:20	11.68 FT/3.56 M	elevation
ROCKPORT TX	03:21	9.29 FT/2.83 M	elevation
FREEPORT TX	03:27	6.70 FT/2.04 M	elevation
OCEAN REEF FL	03:30	3.30 FT/1.01 M	elevation
PALM BEACH FL	03:45	1.79 FT/0.55 M	elevation
MIAMI FL	03:48	0.91 FT/0.28 M	elevation
JUPITER INLET FL	04:00	1.79 FT/0.55 M	elevation
CLEARWATER BEACH FL	04:05	6.52 FT/1.99 M	elevation
GALVESTON TX	04:14	4.64 FT/1.41 M	elevation
PORT MANATEE FL	04:33	1.33 FT/0.40 M	elevation
HIGH ISLAND TX	04:34	3.82 FT/1.16 M	elevation
WAVELAND MS	04:34	0.17 FT/0.05 M	elevation
SABINE PASS TX	04:37	3.75 FT/1.14 M	elevation
FORT MEYERS FL	04:49	4.45 FT/1.36 M	elevation
SUWANNEE RIVER FL	04:51	2.93 FT/0.89 M	elevation
NAPLES FL	04:54	5.14 FT/1.57 M	elevation
BONITA BEACH FL	05:00	4.38 FT/1.34 M	elevation
ST PETERSBURG FL	05:06	0.72 FT/0.22 M	elevation
WAVELAND MS	06:39	0.33 FT/0.10 M	elevation
FLAGLER FL	07:06	0.43 FT/0.13 M	elevation

Table B1: Coastal height forecast for event. The height is the maximum elevation of the tsunami above sea level. The height does not take into account uplift or subsidence of the location due to the earthquake. The height is a measure offshore, the onshore elevations may be double those of the coastal height.

Appendix C. TWC Dummy Messages

National Tsunami Warning Center

WEXX30 PAAQ 201402
TSUATE

TEST...TSUNAMI EXERCISE MESSAGE NUMBER 1...TEST
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
1002 AM EDT WED MAR 26 2014

...LANTEX14 GULF OF MEXICO TSUNAMI EXERCISE MESSAGE. REFER TO NTWC MESSAGE 1 IN
THE EXERCISE HANDBOOK. THIS IS AN EXERCISE ONLY...

THIS MESSAGE IS BEING USED TO START THE LANTEX14 GULF OF MEXICO TSUNAMI
EXERCISE. THIS WILL BE THE ONLY EXERCISE MESSAGE BROADCAST FROM THE NATIONAL
TSUNAMI WARNING CENTER EXCLUDING SPECIAL EMAIL MESSAGES DISCUSSED IN THE
HANDBOOK. THE HANDBOOK IS AVAILABLE AT THE WEB SITE NTWC.ARH.NOAA.GOV. THE
EXERCISE PURPOSE IS TO PROVIDE EMERGENCY MANAGEMENT A REALISTIC SCENARIO TO TEST
TSUNAMI RESPONSE PLANS.

THIS IS ONLY AN EXERCISE.

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Exercise

Appendix D. TWC Exercise Messages

The following messages, created for the LANTEX14 tsunami exercise, are representative of the official standard products issued by the NTCW during a magnitude 6.6 earthquake and tsunami originating 186 miles southwest of New Orleans, Louisiana at 27.49°N, 91.29°W. During a real event, the TWC would also issue graphical and html-based products to their web sites and via RSS.

NTWC Bulletin #1

WEXX30 PAAQ 261402
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 1
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
902 AM CDT WED MAR 26 2014

...A TSUNAMI WARNING IS NOW IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

- * THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA
- * FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC AND GULF OF MEXICO - THE LEVEL OF TSUNAMI DANGER IS BEING EVALUATED. FURTHER INFORMATION WILL BE PROVIDED IN SUPPLEMENTARY MESSAGES.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 6.6
* ORIGIN TIME 1000 EDT MAR 26 2014
 0900 CDT MAR 26 2014
 1000 AST MAR 26 2014
 1400 UTC MAR 26 2014
* COORDINATES 27.5 NORTH 91.3 WEST
* DEPTH 3 MILES
* LOCATION 145 MILES SW OF GRAND ISLE LOUISIANA
 185 MILES SW OF NEW ORLEANS LOUISIANA

IMPACTS FOR TSUNAMI WARNING AREAS

-
- * WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.
 - * THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS

-
- * IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.
 - * BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.
 - * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

LANTEX14 Handbook

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF OF TSUNAMI
* FLORIDA	
KEY WEST	1212 EDT MAR 26
PANAMA CITY	1137 CDT MAR 26
SAINT PETERSBURG	1508 EDT MAR 26
* TEXAS	
CORPUS CHRISTI	1128 CDT MAR 26
GALVESTON	1235 CDT MAR 26
* MISSISSIPPI	
BILOXI	1323 CDT MAR 26

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS MESSAGE WILL BE UPDATED IN 30 MINUTES.
- * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.
- * CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

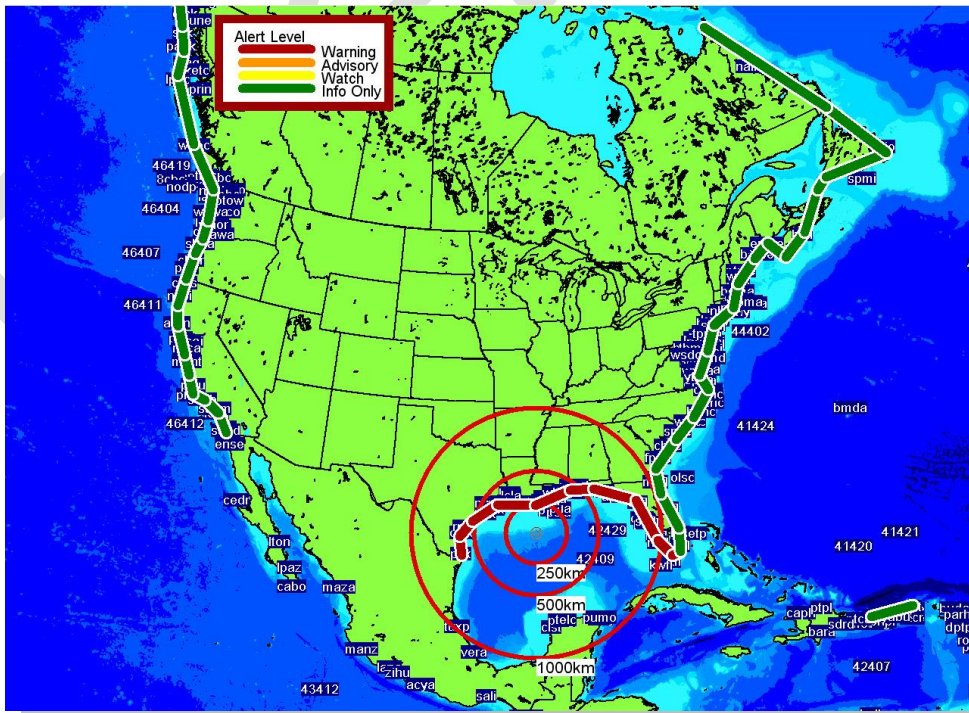


Figure D1: Map showing Warning areas after Message 1.

NTWC Bulletin #2

WEXX30 PAAQ 261431
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 2
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
931 AM CDT WED MAR 26 2014

THERE ARE NO NEW UPDATES IN THIS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

- * THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA
- * FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC AND GULF OF MEXICO - THE LEVEL OF TSUNAMI DANGER IS BEING EVALUATED. FURTHER INFORMATION WILL BE PROVIDED IN SUPPLEMENTARY MESSAGES.

IMPACTS FOR TSUNAMI WARNING AREAS

- * WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.
- * THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS

- * IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.
- * BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.
- * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF OF TSUNAMI
----	-----
* FLORIDA	
KEY WEST	1212 EDT MAR 26
PANAMA CITY	1137 CDT MAR 26
SAINT PETERSBURG	1508 EDT MAR 26

* TEXAS	
CORPUS CHRISTI	1128 CDT MAR 26
GALVESTON	1235 CDT MAR 26

* MISSISSIPPI

LANTEX14 Handbook

BILOXI 1323 CDT MAR 26

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 6.6
* ORIGIN TIME 1000 EDT MAR 26 2014
0900 CDT MAR 26 2014
1000 AST MAR 26 2014
1400 UTC MAR 26 2014
* COORDINATES 27.5 NORTH 91.3 WEST
* DEPTH 3 MILES
* LOCATION 145 MILES SW OF GRAND ISLE LOUISIANA
185 MILES SW OF NEW ORLEANS LOUISIANA

NEXT UPDATE AND ADDITIONAL INFORMATION

* THIS MESSAGE WILL BE UPDATED IN 30 MINUTES.

* REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.

* CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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NTWC Bulletin #3

WEXX30 PAAQ 261502
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 3
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
1002 AM CDT WED MAR 26 2014

UPDATES IN THIS MESSAGE INCLUDE MODIFIED ALERT AREAS.
UPDATES IN THIS MESSAGE INCLUDE NEW OBSERVATIONS.

THE EARTHQUAKE APPEARS TO HAVE TRIGGERED A SUBSEA LANDSLIDE WHICH IN TURN HAS GENERATED A LARGE TSUNAMI. THE TSUNAMI HEIGHTS CAN NOT BE FORECASTED. PEOPLE IN THE COASTAL WARNING ZONE SHOULD MOVE AT LEAST A MILE INLAND OR TO THE THIRD STORY OR HIGHER OF A CONCRETE STRUCTURE BEFORE THE EXPECTED ARRIVAL TIME.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...A TSUNAMI ADVISORY IS NOW IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF FLORIDA FROM OCEAN REEF FLORIDA TO

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FLAGLER BEACH FLORIDA

- * FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC AND GULF OF MEXICO - THIS IS FOR INFORMATION ONLY

IMPACTS FOR TSUNAMI WARNING AREAS

- * WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.
- * THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS

- * A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.
- * CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.
- * THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS - UPDATED

- * IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.
- * IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.
- * BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.
- * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	FORECAST START OF OF TSUNAMI		
* FLORIDA			
KEY WEST	1212	EDT	MAR 26
PANAMA CITY	1137	CDT	MAR 26
MIAMI	1315	EDT	MAR 26
SAINT PETERSBURG	1508	EDT	MAR 26
MELBOURNE BEACH	1524	EDT	MAR 26
* TEXAS			
CORPUS CHRISTI	1128	CDT	MAR 26
GALVESTON	1235	CDT	MAR 26
* MISSISSIPPI			
BILOXI	1323	CDT	MAR 26

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

TIME OBSERVED MAX

LANTEX14 Handbook

SITE	OF MEASUREMENT	TSUNAMI HEIGHT
PILOT STATION E LA	1433 UTC 03-26	30.2FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE	6.6
* ORIGIN TIME	1000 EDT MAR 26 2014
	0900 CDT MAR 26 2014
	1000 AST MAR 26 2014
	1400 UTC MAR 26 2014
* COORDINATES	27.5 NORTH 91.3 WEST
* DEPTH	3 MILES
* LOCATION	145 MILES SW OF GRAND ISLE LOUISIANA
	185 MILES SW OF NEW ORLEANS LOUISIANA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.
- * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.
- * CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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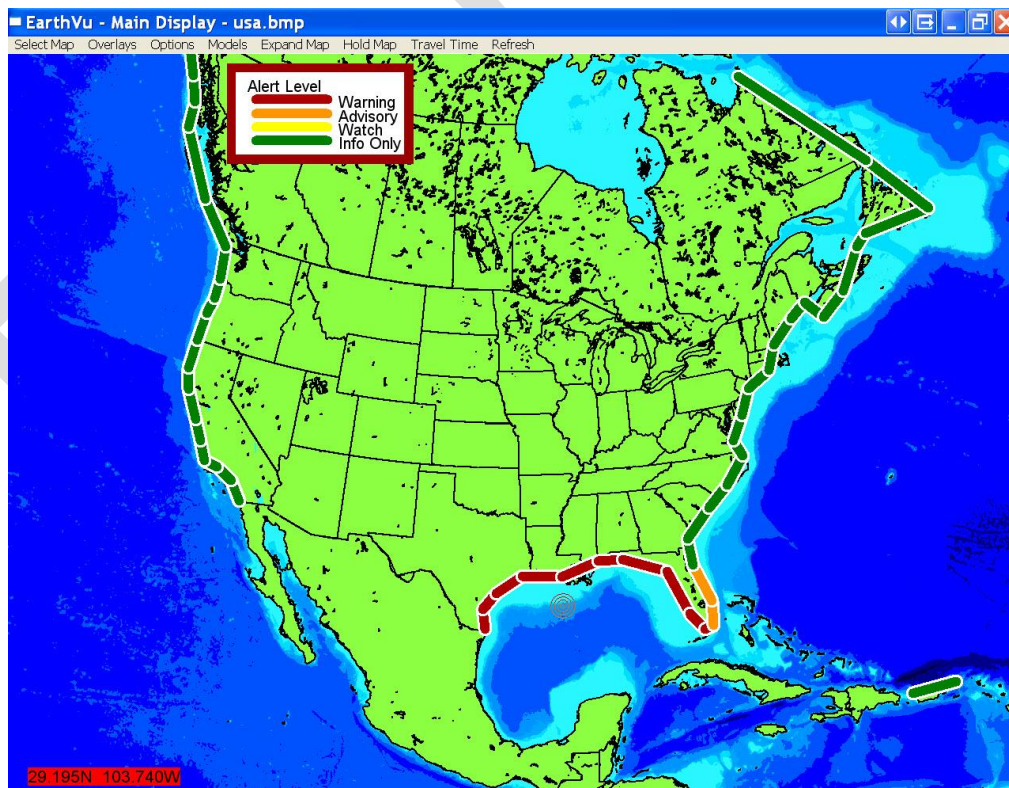


Figure D2: Map showing Warning/Advisory areas after Bulletin 3.

NTWC Bulletin #4

WEXX30 PAAQ 261601
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 4
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
1101 AM CDT WED MAR 26 2014

UPDATES IN THIS MESSAGE INCLUDE NEW OBSERVATIONS.

THE EARTHQUAKE APPEARS TO HAVE TRIGGERED A SUBSEA LANDSLIDE WHICH IN TURN HAS GENERATED A LARGE TSUNAMI. THE TSUNAMI HEIGHTS CAN NOT BE FORECASTED. PEOPLE IN THE COASTAL WARNING ZONE SHOULD MOVE AT LEAST A MILE INLAND OR TO THE THIRD STORY OR HIGHER OF A CONCRETE STRUCTURE BEFORE THE EXPECTED ARRIVAL TIME.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

- * THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA

TSUNAMI ADVISORY IN EFFECT FOR...

- * THE COASTAL AREAS OF FLORIDA FROM OCEAN REEF FLORIDA TO FLAGLER BEACH FLORIDA
- * FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC AND GULF OF MEXICO - THIS IS FOR INFORMATION ONLY

IMPACTS FOR TSUNAMI WARNING AREAS

-
- * WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.
 - * THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS

-
- * A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.
 - * CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.
 - * THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS

-
- * IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

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- * IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.
- * BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.
- * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF OF TSUNAMI
* FLORIDA	
KEY WEST	1212 EDT MAR 26
PANAMA CITY	1137 CDT MAR 26
MIAMI	1315 EDT MAR 26
SAINT PETERSBURG	1508 EDT MAR 26
MELBOURNE BEACH	1524 EDT MAR 26
* TEXAS	
CORPUS CHRISTI	1128 CDT MAR 26
GALVESTON	1235 CDT MAR 26
* MISSISSIPPI	
BILOXI	1323 CDT MAR 26

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
PILOT STATION E LA	1433 UTC 03-26	20.2FT
GRAND ISLE LA	1458 UTC 03-26	14.0FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

THE PILOT STATION TIDE GAUGE APPEARS TO HAVE BEEN DESTROYED BY THE TSUNAMI.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE	6.6
* ORIGIN TIME	1000 EDT MAR 26 2014
	0900 CDT MAR 26 2014
	1000 AST MAR 26 2014
	1400 UTC MAR 26 2014
* COORDINATES	27.5 NORTH 91.3 WEST
* DEPTH	3 MILES
* LOCATION	145 MILES SW OF GRAND ISLE LOUISIANA
	185 MILES SW OF NEW ORLEANS LOUISIANA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.
- * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.

LANTEX14 Handbook

* CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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NTWC Bulletin #5

WEXX30 PAAQ 261703
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 5
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
1203 PM CDT WED MAR 26 2014

UPDATES IN THIS MESSAGE INCLUDE NEW OBSERVATIONS.

THE EARTHQUAKE APPEARS TO HAVE TRIGGERED A SUBSEA LANDSLIDE WHICH IN TURN HAS GENERATED A LARGE TSUNAMI. THE TSUNAMI HEIGHTS CAN NOT BE FORECASTED. PEOPLE IN THE COASTAL WARNING ZONE SHOULD MOVE AT LEAST A MILE INLAND OR TO THE THIRD STORY OR HIGHER OF A CONCRETE STRUCTURE BEFORE THE EXPECTED ARRIVAL TIME.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

- * THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA

TSUNAMI ADVISORY IN EFFECT FOR...

- * THE COASTAL AREAS OF FLORIDA FROM OCEAN REEF FLORIDA TO FLAGLER BEACH FLORIDA
- * FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC AND GULF OF MEXICO - THIS IS FOR INFORMATION ONLY

IMPACTS FOR TSUNAMI WARNING AREAS

-
- * WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.
 - * THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS

-
- * A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.
 - * CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI

LANTEX14 Handbook

ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS

- * IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.
- * IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.
- * BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.
- * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF OF TSUNAMI		
* FLORIDA			
KEY WEST	1212	EDT	MAR 26
PANAMA CITY	1137	CDT	MAR 26
MIAMI	1315	EDT	MAR 26
SAINT PETERSBURG	1508	EDT	MAR 26
MELBOURNE BEACH	1524	EDT	MAR 26
* TEXAS			
CORPUS CHRISTI	1128	CDT	MAR 26
GALVESTON	1235	CDT	MAR 26
* MISSISSIPPI			
BILOXI	1323	CDT	MAR 26

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
PILOT STATION E LA	1433 UTC 03-26	20.2FT
GRAND ISLE LA	1458 UTC 03-26	14.0FT
MORGAN CITY LA	1608 UTC 03-26	10.5FT
PENSACOLA FL	1609 UTC 03-26	9.6FT
EUGENE ISLAND LA	1673 UTC 03-26	8.9FT
VERACRUZ MX	1628 UTC 03-26	4.3FT
MADERO MX	1632 UTC 03-26	6.9FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE	6.6
* ORIGIN TIME	1000 EDT MAR 26 2014
	0900 CDT MAR 26 2014
	1000 AST MAR 26 2014
	1400 UTC MAR 26 2014
* COORDINATES	27.5 NORTH 91.3 WEST
* DEPTH	3 MILES

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* LOCATION 145 MILES SW OF GRAND ISLE LOUISIANA
 185 MILES SW OF NEW ORLEANS LOUISIANA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.
- * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.
- * CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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NTWC Bulletin #6

WEXX30 PAAQ 261801
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 6
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
101 PM CDT WED MAR 26 2014

UPDATES IN THIS MESSAGE INCLUDE NEW OBSERVATIONS.

THE EARTHQUAKE APPEARS TO HAVE TRIGGERED A SUBSEA LANDSLIDE WHICH IN TURN HAS GENERATED A LARGE TSUNAMI. THE TSUNAMI HEIGHTS CAN NOT BE FORECASTED. PEOPLE IN THE COASTAL WARNING ZONE SHOULD MOVE AT LEAST A MILE INLAND OR TO THE THIRD STORY OR HIGHER OF A CONCRETE STRUCTURE BEFORE THE EXPECTED ARRIVAL TIME.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

- * THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA

TSUNAMI ADVISORY IN EFFECT FOR...

- * THE COASTAL AREAS OF FLORIDA FROM OCEAN REEF FLORIDA TO FLAGLER BEACH FLORIDA
- * FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC AND GULF OF MEXICO - THIS IS FOR INFORMATION ONLY

IMPACTS FOR TSUNAMI WARNING AREAS

- * WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.
- * THE FIRST WAVE MAY NOT BE THE LARGEST.

LANTEX14 Handbook

IMPACTS FOR TSUNAMI ADVISORY AREAS

- * A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.
- * CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.
- * THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS

- * IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.
- * IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.
- * BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.
- * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF OF TSUNAMI
----	-----
* FLORIDA	
MIAMI	1315 EDT MAR 26
SAINT PETERSBURG	1508 EDT MAR 26
MELBOURNE BEACH	1524 EDT MAR 26
* TEXAS	
GALVESTON	1235 CDT MAR 26
* FLORIDA	
* MISSISSIPPI	
BILOXI	1323 CDT MAR 26

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
-----	-----	-----
PILOT STATION E LA	1433 UTC 03-26	20.2FT
GRAND ISLE LA	1458 UTC 03-26	14.0FT
MORGAN CITY LA	1608 UTC 03-26	10.5FT
PENSACOLA FL	1609 UTC 03-26	9.6FT
EUGENE ISLAND LA	1673 UTC 03-26	8.9FT
VERACRUZ MX	1628 UTC 03-26	4.3FT
MADERO MX	1632 UTC 03-26	6.9FT
DAUPHIN IS. AL	1745 UTC 03-26	4.3FT
KEY WEST FL	1743 UTC 03-26	7.0FT
PORT OCONNOR TX	1716 UTC 03-26	8.0FT
CORPUS CHRISTI TX	1720 UTC 03-26	11.7FT
ROCKPORT TX	1721 UTC 03-26	9.3FT

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FREEPORT TX 1727 UTC 03-26 6.7FT
OCEAN REEF FL 1730 UTC 03-26 3.3FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE
TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 6.6
* ORIGIN TIME 1000 EDT MAR 26 2014
0900 CDT MAR 26 2014
1000 AST MAR 26 2014
1400 UTC MAR 26 2014
* COORDINATES 27.5 NORTH 91.3 WEST
* DEPTH 3 MILES
* LOCATION 145 MILES SW OF GRAND ISLE LOUISIANA
185 MILES SW OF NEW ORLEANS LOUISIANA

NEXT UPDATE AND ADDITIONAL INFORMATION

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE
INFORMATION.

* CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN
ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC
TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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NTWC Bulletin #7

WEXX30 PAAQ 261902
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 7
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
202 PM CDT WED MAR 26 2014

UPDATES IN THIS MESSAGE INCLUDE NEW OBSERVATIONS.

THE EARTHQUAKE APPEARS TO HAVE TRIGGERED A SUBSEA LANDSLIDE
WHICH IN TURN HAS GENERATED A LARGE TSUNAMI. THE TSUNAMI
HEIGHTS CAN NOT BE FORECASTED. PEOPLE IN THE COASTAL WARNING
ZONE SHOULD MOVE AT LEAST A MILE INLAND OR TO THE THIRD STORY
OR HIGHER OF A CONCRETE STRUCTURE BEFORE THE EXPECTED ARRIVAL
TIME.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI -
ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO OCEAN REEF
FLORIDA

LANTEX14 Handbook

TSUNAMI ADVISORY IN EFFECT FOR...

- * THE COASTAL AREAS OF FLORIDA FROM OCEAN REEF FLORIDA TO FLAGLER BEACH FLORIDA
- * FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC AND GULF OF MEXICO - THIS IS FOR INFORMATION ONLY

IMPACTS FOR TSUNAMI WARNING AREAS

- * WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.
- * THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS

- * A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.
- * CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.
- * THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS

- * IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.
- * IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.
- * BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.
- * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF OF TSUNAMI
* FLORIDA	
SAINT PETERSBURG	1508 EDT MAR 26
MELBOURNE BEACH	1524 EDT MAR 26

* TEXAS

* MISSISSIPPI	
BILOXI	1323 CDT MAR 26

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
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LANTEX14 Handbook

PILOT STATION E LA	1433 UTC	03-26	20.2FT
GRAND ISLE LA	1458 UTC	03-26	14.0FT
MORGAN CITY LA	1608 UTC	03-26	10.5FT
PENSACOLA FL	1609 UTC	03-26	9.6FT
EUGENE ISLAND LA	1673 UTC	03-26	8.9FT
VERACRUZ MX	1628 UTC	03-26	4.3FT
MADERO MX	1632 UTC	03-26	6.9FT
DAUPHIN IS. AL	1745 UTC	03-26	4.3FT
KEY WEST FL	1743 UTC	03-26	7.0FT
PORT OCONNOR TX	1716 UTC	03-26	8.0FT
CORPUS CHRISTI TX	1720 UTC	03-26	11.7FT
ROCKPORT TX	1721 UTC	03-26	9.3FT
FREEPORT TX	1727 UTC	03-26	6.7FT
OCEAN REEF FL	1730 UTC	03-26	3.3FT
VACA KEY FL	1806 UTC	03-26	2.3FT
PORT CANVERAL FL	1800 UTC	03-26	1.8FT
GALVESTON TX	1814 UTC	03-26	4.6FT
WAVELAND MS	1834 UTC	03-26	0.2FT
FORT MEYERS FL	1849 UTC	03-26	4.4FT
NAPLES FL	1854 UTC	03-26	5.1FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

- * MAGNITUDE 6.6
- * ORIGIN TIME 1000 EDT MAR 26 2014
0900 CDT MAR 26 2014
1000 AST MAR 26 2014
1400 UTC MAR 26 2014
- * COORDINATES 27.5 NORTH 91.3 WEST
- * DEPTH 3 MILES
- * LOCATION 145 MILES SW OF GRAND ISLE LOUISIANA
185 MILES SW OF NEW ORLEANS LOUISIANA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.
- * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.
- * CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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NTWC Bulletin #8

WEXX30 PAAQ 262001
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 8
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
301 PM CDT WED MAR 26 2014

UPDATES IN THIS MESSAGE INCLUDE NEW OBSERVATIONS.

THE EARTHQUAKE APPEARS TO HAVE TRIGGERED A SUBSEA LANDSLIDE WHICH IN TURN HAS GENERATED A LARGE TSUNAMI. THE TSUNAMI HEIGHTS CAN NOT BE FORECASTED. PEOPLE IN THE COASTAL WARNING

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ZONE SHOULD MOVE AT LEAST A MILE INLAND OR TO THE THIRD STORY OR HIGHER OF A CONCRETE STRUCTURE BEFORE THE EXPECTED ARRIVAL TIME.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

----- TSUNAMI WARNING IN EFFECT FOR...

- * THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA

TSUNAMI ADVISORY IN EFFECT FOR...

- * THE COASTAL AREAS OF FLORIDA FROM OCEAN REEF FLORIDA TO FLAGLER BEACH FLORIDA
- * FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC AND GULF OF MEXICO - THIS IS FOR INFORMATION ONLY

IMPACTS FOR TSUNAMI WARNING AREAS

- * WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.
- * THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS

- * A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.
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- * THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS

- * IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.
- * IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.
- * BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.
- * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

----- FORECAST

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SITE START OF
 OF TSUNAMI

 * FLORIDA
 SAINT PETERSBURG 1508 EDT MAR 26
 MELBOURNE BEACH 1524 EDT MAR 26

* TEXAS

* MISSISSIPPI

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
PILOT STATION E LA	1433 UTC 03-26	20.2FT
GRAND ISLE LA	1458 UTC 03-26	14.0FT
MORGAN CITY LA	1608 UTC 03-26	10.5FT
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EUGENE ISLAND LA	1673 UTC 03-26	8.9FT
VERACRUZ MX	1628 UTC 03-26	4.3FT
MADERO MX	1632 UTC 03-26	6.9FT
DAUPHIN IS. AL	1745 UTC 03-26	4.3FT
KEY WEST FL	1743 UTC 03-26	7.0FT
PORT OCONNOR TX	1716 UTC 03-26	8.0FT
CORPUS CHRISTI TX	1720 UTC 03-26	11.7FT
ROCKPORT TX	1721 UTC 03-26	9.3FT
FREEPORT TX	1727 UTC 03-26	6.7FT
OCEAN REEF FL	1730 UTC 03-26	3.3FT
VACA KEY FL	1806 UTC 03-26	2.3FT
PORT CANVERAL FL	1800 UTC 03-26	1.8FT
GALVESTON TX	1814 UTC 03-26	4.6FT
WAVELAND MS	1834 UTC 03-26	0.2FT
FORT MEYERS FL	1849 UTC 03-26	4.4FT
NAPLES FL	1854 UTC 03-26	5.1FT
VIRGINIA KEY FL	1934 UTC 03-26	1.7FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 6.6
 * ORIGIN TIME 1000 EDT MAR 26 2014
 0900 CDT MAR 26 2014
 1000 AST MAR 26 2014
 1400 UTC MAR 26 2014
 * COORDINATES 27.5 NORTH 91.3 WEST
 * DEPTH 3 MILES
 * LOCATION 145 MILES SW OF GRAND ISLE LOUISIANA
 185 MILES SW OF NEW ORLEANS LOUISIANA

NEXT UPDATE AND ADDITIONAL INFORMATION

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.
 * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.
 * CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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NTWC Bulletin #9

WEXX30 PAAQ 262100
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 9
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
400 PM CDT WED MAR 26 2014

UPDATES IN THIS MESSAGE INCLUDE MODIFIED ALERT AREAS.

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI ADVISORY IN EFFECT FOR...

- * THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO FLAGLER BEACH FLORIDA
- * FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC AND GULF OF MEXICO - THIS IS FOR INFORMATION ONLY

IMPACTS FOR TSUNAMI WARNING AREAS

-
- * WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.
 - * THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS

-
- * A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.
 - * CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.
 - * THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS

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- * IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.
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 - * BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.
 - * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.
 - * DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

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ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
PILOT STATION E LA	1433 UTC 03-26	20.2FT
GRAND ISLE LA	1458 UTC 03-26	14.0FT
MORGAN CITY LA	1608 UTC 03-26	10.5FT
PENSACOLA FL	1609 UTC 03-26	9.6FT
EUGENE ISLAND LA	1673 UTC 03-26	8.9FT
VERACRUZ MX	1628 UTC 03-26	4.3FT
MADERO MX	1632 UTC 03-26	6.9FT
DAUPHIN IS. AL	1745 UTC 03-26	4.3FT
KEY WEST FL	1743 UTC 03-26	7.0FT
PORT OCONNOR TX	1716 UTC 03-26	8.0FT
CORPUS CHRISTI TX	1720 UTC 03-26	11.7FT
ROCKPORT TX	1721 UTC 03-26	9.3FT
FREEPORT TX	1727 UTC 03-26	6.7FT
OCEAN REEF FL	1730 UTC 03-26	3.3FT
VACA KEY FL	1806 UTC 03-26	2.3FT
PORT CANVERAL FL	1800 UTC 03-26	1.8FT
GALVESTON TX	1814 UTC 03-26	4.6FT
WAVELAND MS	1834 UTC 03-26	0.2FT
FORT MEYERS FL	1849 UTC 03-26	4.4FT
NAPLES FL	1854 UTC 03-26	5.1FT
VIRGINIA KEY FL	1934 UTC 03-26	1.7FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 6.6
* ORIGIN TIME 1000 EDT MAR 26 2014
0900 CDT MAR 26 2014
1000 AST MAR 26 2014
1400 UTC MAR 26 2014
* COORDINATES 27.5 NORTH 91.3 WEST
* DEPTH 3 MILES
* LOCATION 145 MILES SW OF GRAND ISLE LOUISIANA
185 MILES SW OF NEW ORLEANS LOUISIANA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.
- * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.
- * CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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NTWC Bulletin #10

WEXX30 PAAQ 262200
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 10
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK

LANTEX14 Handbook

500 PM CDT WED MAR 26 2014

UPDATES IN THIS MESSAGE INCLUDE NEW OBSERVATIONS.

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI ADVISORY IN EFFECT FOR...

- * THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO FLAGLER BEACH FLORIDA
- * FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC AND GULF OF MEXICO - THIS IS FOR INFORMATION ONLY

IMPACTS FOR TSUNAMI WARNING AREAS

-
- * WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.
 - * THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS

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- * A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.
 - * CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.
 - * THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS

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- * IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.
 - * IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.
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 - * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.
 - * DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
-----	-----	-----
PILOT STATION E LA	1433 UTC 03-26	20.2FT
GRAND ISLE LA	1458 UTC 03-26	14.0FT
MORGAN CITY LA	1608 UTC 03-26	10.5FT
PENSACOLA FL	1609 UTC 03-26	9.6FT
EUGENE ISLAND LA	1673 UTC 03-26	8.9FT
VERACRUZ MX	1628 UTC 03-26	4.3FT

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MADERO MX	1632 UTC	03-26	6.9FT
DAUPHIN IS. AL	1745 UTC	03-26	4.3FT
KEY WEST FL	1743 UTC	03-26	7.0FT
PORT OCONNOR TX	1716 UTC	03-26	8.0FT
CORPUS CHRISTI TX	1720 UTC	03-26	11.7FT
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GALVESTON TX	1814 UTC	03-26	4.6FT
WAVELAND MS	1834 UTC	03-26	0.2FT
FORT MEYERS FL	1849 UTC	03-26	4.4FT
NAPLES FL	1854 UTC	03-26	5.1FT
VIRGINIA KEY FL	1934 UTC	03-26	1.7FT
SAINT PETERSBURG FL	2033 UTC	03-26	1.2FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

- * MAGNITUDE 6.6
- * ORIGIN TIME 1000 EDT MAR 26 2014
0900 CDT MAR 26 2014
1000 AST MAR 26 2014
1400 UTC MAR 26 2014
- * COORDINATES 27.5 NORTH 91.3 WEST
- * DEPTH 3 MILES
- * LOCATION 145 MILES SW OF GRAND ISLE LOUISIANA
185 MILES SW OF NEW ORLEANS LOUISIANA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.
- * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.
- * CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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NTWC Bulletin #11

WEXX30 PAAQ 262302
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 11
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
602 PM CDT WED MAR 26 2014

...THE TSUNAMI ADVISORY IS CANCELLED...

CANCELLATIONS

- * THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF

LANTEX14 Handbook

TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM
BROWNSVILLE TEXAS TO FLAGLER BEACH FLORIDA

IMPACTS - UPDATED

- * TSUNAMI ACTIVITY HAS SUBSIDED ALONG THE COASTS OF PUERTO RICO... U.S. VIRGIN ISLANDS... BRITISH VIRGIN ISLANDS... AND U.S. AND CANADIAN COASTS IN THE ATLANTIC.
- * ONGOING ACTIVITY MAY PERSIST IN SOME AREAS CAUSING STRONG CURRENTS DANGEROUS TO SWIMMERS AND BOATS.
- * THE DETERMINATION TO RE-OCCUPY HAZARD ZONES MUST BE MADE BY LOCAL OFFICIALS.

RECOMMENDED ACTIONS - UPDATED

- * DO NOT RE-OCCUPY HAZARD ZONES UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

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MADERO MX	1632 UTC 03-26	6.9FT
DAUPHIN IS. AL	1745 UTC 03-26	4.3FT
KEY WEST FL	1743 UTC 03-26	7.0FT
PORT OCONNOR TX	1716 UTC 03-26	8.0FT
CORPUS CHRISTI TX	1720 UTC 03-26	11.7FT
ROCKPORT TX	1721 UTC 03-26	9.3FT
FREEPORT TX	1727 UTC 03-26	6.7FT
OCEAN REEF FL	1730 UTC 03-26	3.3FT
VACA KEY FL	1806 UTC 03-26	2.3FT
PORT CANVERAL FL	1800 UTC 03-26	1.8FT
GALVESTON TX	1814 UTC 03-26	4.6FT
WAVELAND MS	1834 UTC 03-26	0.2FT
FORT MEYERS FL	1849 UTC 03-26	4.4FT
NAPLES FL	1854 UTC 03-26	5.1FT
VIRGINIA KEY FL	1934 UTC 03-26	1.7FT
SAINT PETERSBURG FL	2033 UTC 03-26	1.2FT
PORT ISABEL TX	2055 UTC 03-26	1.1FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS WILL BE THE FINAL U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGE ISSUED FOR THIS EVENT.
- * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.
- * CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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Appendix E. Sample Press Release for Local Media

TEMPLATE FOR NEWS RELEASE

USE AGENCY MASTHEAD

Contact: (insert name)
(insert phone number)
(insert email address)

FOR IMMEDIATE RELEASE
(insert date)

GULF OF MEXICO TSUNAMI EXERCISE TO BE CONDUCTED March 26, 2014

(insert community/county/state name) will join other localities in the Gulf of Mexico as a participant in a tsunami response exercise on March 26, 2014. The purpose of this exercise is to evaluate local tsunami response plans, increase tsunami preparedness, and improve coordination throughout the region.

(insert a promotional comment from a local official, such as “The 2010 Haiti and Chile earthquakes and tsunamis have reminded the world again of the urgent need to be more prepared for such events,” said (insert name of appropriate official). “This important exercise will test the current procedures of the Tsunami Warning System and help identify operational strengths and weaknesses in each community.” (Please modify for uniqueness.))

The exercise, titled LANTEX14, will simulate a Tsunami Warning and Advisory situation throughout the U.S. Gulf of Mexico which requires implementation of local tsunami response plans. The exercise will (insert “include” or “not include”) public notification.

The exercise will simulate an earthquake and tsunami generated 186 miles southwest of New Orleans, Louisiana at 10:00 am Eastern Daylight Time (or appropriate local time) on March 26, 2014. Exercise participants will be provided with a handbook which describes the scenario and contains tsunami messages from the National Tsunami Warning Center (NTWC). The NTWC is currently responsible for providing tsunami information to the Atlantic coasts of U.S. and Canada, the Gulf of Mexico coast, Puerto Rico, the U.S. Virgin Islands, and the British Virgin Islands.

Insert paragraph tailored for specific community. Could identify participating agencies and specific plans. Could describe current early warning program, past tsunami exercises (if any), ongoing mitigation and public education programs, etc. Could describe tsunami threat, history of tsunami hazards, if any.

If any real tsunami threat occurs during the time period of the exercise, the exercise will be terminated.

The exercise is sponsored by the U.S. National Oceanic and Atmospheric Administration (NOAA) and the U.S. National Tsunami Hazard Mitigation Program (NTHMP – a partnership of 29 states and territories and three federal agencies). For

more information on the U.S. tsunami warning system, see www.tsunami.gov. For more information on the NTHMP, see nthmp.tsunami.gov.

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On the Web:

National Tsunami Warning Center

<http://ntwc.arh.noaa.gov>

NOAA Tsunami Program

<http://www.tsunami.gov>

NTHMP:

<http://nthmp.tsunami.gov>

Insert state/local emergency response URLs

Exercise