BASIC INFORMATION

1. ICG/CARIBE EWS Tsunami National Contact (TNC)

The person designated by a Member State to an Intergovernmental Coordination Group (ICG) to represent his/her country in the coordination of international tsunami warning and mitigation activities. The person is part of the main stakeholders of the national tsunami warning and mitigation system. The person may be the Tsunami Warning Focal Point, from the national disaster management organization, from a technical or scientific institution, or from another agency with tsunami warning and mitigation responsibilities.

Name: Dr. Stephen Ramroop
Title: Chief Executive Officer
Organization: The Office of Disaster Preparedness and Management
Postal Address: 4A Orange Grove Road, Tacarigua, Trinidad
E-mail Address: sramroop@mns.gov.tt
Telephone Number: 868 640-1285, 868 640-8905
Fax Number: 868 640-8988
Cellular Telephone Number: 868 789-2779, 868 710-5563

Alternate:
Name: Major (Ret’d) Chevalier Jackson
Title: Corporate Services Manager
Organization: The Office of Disaster Preparedness and Management
Postal Address: 4A Orange Grove Road, Tacarigua, Trinidad
E-mail Address: cjackson@mns.gov.tt
Telephone Number: 868 640-1285, 868 640-8905
Fax Number: 868 640-8988, 868 640-9746
Cellular Telephone Number: 868 494-8802

Alternate:
Name: Mr. Eric Mackie
Title: Regional Coordinator
Organization: The Office of Disaster Preparedness and Management
Postal Address: 4A Orange Grove Road, Tacarigua, Trinidad
E-mail Address: emackie@mns.gov.tt
Telephone Number: 868 640-1285, 868 640-8905
Fax Number: 868 640-8988, 868 640-9746
Cellular Telephone Number: 868 761-4344

2. ICG/CARIBE EWS Tsunami Warning Focal Point (TWFP)

The 7x24 contact person, or other official point of contact or address, is available at the national level for rapidly receiving and issuing tsunami event information (such as warnings). The Tsunami Warning Focal Point either is the emergency authority (civil defense or other designated agency responsible for public safety), or has the responsibility of notifying the emergency authority of the event characteristics (earthquake and/or tsunami), in accordance
with national standard operating procedures. The Tsunami Warning Focal Point receives international tsunami warnings from the PTWC, or other regional warning centres.

Name:
Title:
Responsible Organization: Trinidad and Tobago Meteorological Services
Postal Address: PO Box 2141, National Mail Center, Piarco, Trinidad
E-mail Address:
Emergency Telephone Number:
Emergency Fax Number:

3. Tsunami Advisor(s), if applicable

(Person, Committee or Agency managing Tsunami Mitigation in country)
Name: Dr. Joan Latchman
Title: Ag. Director
Postal Address: UWI Seismic Research Centre, St Augustine, Trinidad
E-mail Address: uwiseismic@uwiseismic.com, j_latchman@uwiseismic.com
Emergency Telephone Number: 868 662 4659
Emergency Fax Number: 868 663-9293

4. Tsunami Standard Operating Procedures for a Local Tsunami (when a local tsunami hazard exists) See Appendix A.

5. Tsunami Standard Operating Procedures for a Distant Tsunami (when a distant tsunami hazard exists)

- The Pacific Tsunami Warning Centre (PTWC) identifies and characterizes tsunamigenic events. PTWC sends tsunami advisories to the National Tsunami Focal Point – the Trinidad and Tobago Meteorological Services (Met Office)
- Met Office will pass the alerts, warnings and other information to ODPM and TEMA, who then assess whether to declare a potential tsunami emergency.
- The ODPM and TEMA will alert key members of communities to be affected and initiate evacuation plans.
- The ODPM and TEMA will disseminate the alerts, watches, warnings and other necessary information to the communities at risk through the media (radio, television) and the internet.
- The ODPM and TEMA will alert and update the government.
- The ODPM and TEMA will disseminate information about terminating the emergency situation, also via the media, bulletins, etc.

See Appendix A for details of this improved protocol.
6. **National Sea Level Network**

The position and details of the stations/sensors around Trinidad and Tobago are available to the Hydrographic Unit, Lands and Surveys Division of the Ministry of Agriculture, Land and Marine Resources and also the Institute of Marine Affairs.

Currently there are five operational Sea Level Gauges in Trinidad and Tobago that are under the purview of the Hydrographic Unit. Three of these are in Trinidad, one in the capital city of Port-Of-Spain on the Port of Port-Of-Spain, one in LaBrea and one on Pt. Galeota.

There are two stations in Tobago, one of which is in Charlotteville on the north end of the island, while the other is on the port of Scarborough.

All the stations report via satellite link to the Hydrographic Unit. At this time, the ODPM does not have direct access to the data but discussions are underway to have this situation addressed.

The Meteorological Services of Trinidad and Tobago (TTMet) have recently acquired four sea level gauges and is in the process of making these operational. See section on Sea Level Gauges below.

7. **Information on Tsunami occurrences**

*Please include sea level observations, pictures, wave arrival descriptions, public, media, or other responses to warnings, lessons learned, etc.*

According to the Seismic Research Unit of the University of the West Indies, there are no recorded incidents of tsunamigenic activity in Trinidad and Tobago. However, in September 2005, a series of large swells inundated several beaches in Trinidad and Tobago. Coastal property such as vending stalls and boats were damaged. Many curious onlookers converged on the beaches. The lesson learned here was that there was a lack of knowledge regarding awareness of and preparedness for tsunami and coastal hazards.

8. **Web sites (URLs) of national tsunami-related web sites**

- [www.uwiseismic.com](http://www.uwiseismic.com) Seismic Research Centre Webpage
- [www.weready.org](http://www.weready.org) CDEMA Earthquake and Tsunami Portal
- [www.metoffice.gov.tt](http://www.metoffice.gov.tt) Trinidad and Tobago Meteorological Services
- [www.odpm.gov.tt](http://www.odpm.gov.tt) Office of Disaster Preparedness and Management
- [www.tema365.com](http://www.tema365.com) Tobago Emergency Management Agency

9. **Summary plans of future tsunami warning and mitigation system improvements.**

*This information will be used to aid the development of the CARIBE EWS Implementation Plan.*

In the wake of the January 12, 2010 Haiti earthquake, local officials have been making a concerted effort to identify and address factors that contribute to increased vulnerability to large earthquakes. There are notable shortcomings in the legal, institutional and operational frameworks under which disaster risk management is
carried out. These shortcomings are being addressed in the form of disaster management policies and, eventually, strategic plans and legislation.

UWI SRC plans to host a series of panel discussions to raise public awareness of critical earthquake vulnerability issues and compile a list of recommendation that will be presented to relevant stakeholders for action. This activity is planned for late April 2010.

UPDATE: July 05th to 06th 2010 – The Seismic Research Centre and the Office of Disaster Preparedness and Management (ODPM) partnered to host a national consultation relevant to the broad topic “Earthquake Safety in Trinidad and Tobago – A call for action!” at the Arthur Lok Jak Graduate School of Business, Mt. Hope, Trinidad and Tobago. Attendees included representatives from the Tobago Emergency Management Agency, Public Utilities, Association of Professional Engineers, Ministry of Planning & the Environment – Town and Country Planning Division, Ministry of Works and Transport – Construction Division, Departments of the UWI - Department of Civil Engineering, Department of Surveys and Land Information, Department of Humanities. The objective of this consultation was to identify the measures necessary to improve earthquake safety in Trinidad and Tobago and communicate the findings to the relevant authority.

The need for quick and effective dissemination of disaster information is high and the ODPM is currently working on developing and implementing a national multi-hazard early warning system. The model tsunami communication protocol recently developed under the CDEMA project will be adapted and adopted.

The Town and Country Planning Division of the Ministry of Planning, Housing and the Environment will assist in making existing near-coast bathymetry data available for disaster risk reduction activities. In light of this, Work Group IV will be approached to develop some inundation models for Trinidad and Tobago.

The ODPM is currently undertaking the task of acquiring the Bathymetric data and a working group comprising the ODPM, the Institute of Marine Affairs, the Hydrographic Unit of Lands and Surveys, the Harbour Masters office and other key stakeholders is being formulated to handle the task. The work should be completed in one year.

NATIONAL PROGRAMMES AND ACTIVITIES INFORMATION

10. NARRATIVE

Detailed description of innovations or modifications to National tsunami warnings procedures or operations since last National Report, tsunami research projects, tsunami mitigation activities and best practices (especially in preparedness and emergency management), as well as public education programmes or other measures taken to heighten awareness of the tsunami hazard and risk.

This is Trinidad and Tobago’s fourth National Report since the inception of the Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions. The country recognises that there is much work to be done in terms of designing and establishing an early warning system for tsunamis and other coastal hazards.
International Communication Systems
Trinidad and Tobago currently receives tsunamigenic information via the World Meteorological Organization (WMO) Global Telecommunications System (GTS). Over the next year, the ODPM and the Met Office will seek to acquire the United States National Oceanic and Atmospheric Administration (NOAA) Emergency Managers Weather Information Network (EMWIN) for redundancy and to improve access to information. Currently, Met Office is directly linked to the GTS.

Update April 2011: A decision was taken to delay acquisition of the EMWIN system because of planned changes in software and hardware. This project remains ongoing and may be actioned in the coming year.

Sea Level Gauges
2010: The Meteorological Services of Trinidad and Tobago (TTMet) is in the process of acquiring five (5) sea level gauges for installation around the coast of Trinidad and Tobago. The gauges have the potential to contribute to the Caribe EWS, depending on the method of communication available (e.g., satellite). This will be confirmed in the coming months.

Update April 2011: The TTMet has purchased four (4) gauges which are now in the country and are awaiting the award of a contract to a local firm for their installation in the coastal waters of Trinidad and Tobago.

Update 2012: The TTMet is now in the process of positioning the gauges. The first of these will be situated in the Toco area on the North-East coastline and is scheduled to become operational in about two months. The remainder will be positioned along other areas of the coastline on a phased basis.

Tsunami and Other Coastal Hazards Warning Systems (TCHWS) Project
On March 1, 2010, the ODPM in collaboration with UWI Seismic Research Centre launched the Caribbean Disaster Management Agency (CDEMA)-funded TCHWS Project. During that week, the UWI SRC presented educational information on
tsunamis, warning signs and responses to the media, regional disaster coordinators, community development officers, lifeguards, tour guides, the fishing community and the yachting community. On March 3, the project was conducted in Tobago and involved the Tobago Emergency Management Agency (TEMA).

The project involved the development of a range of public education tools and products to improve awareness and preparedness for tsunamis. These include public service announcements (PSAs), lesson plans for teachers, posters, presentations and pamphlets. The PSAs will be aired and printed in the media over the coming months, and the educational material will be presented to the Ministry of Education and teachers for use in classrooms. Tsunami awareness signage will be installed at coastal sites. Stakeholders responsible for public safety in coastal areas will be trained to use the products developed for the TCHWS project in their local/community programs.

A National Tsunami Warning Protocol and Testing Workshop was conducted at the Cascadia Hotel from the 21st to 22nd March 2011. At this workshop, the Tsunami Warning Protocol was reviewed and improved and was tested in part in a regional Tsunami exercise the day following the workshop. While it is not complete, the protocol will allow Trinidad and Tobago to establish a suitable response to an immediate, regional or Tele-tsunami threat. The agenda for the workshop had three (3) objectives and three (3) outcomes. These were:

**Objectives:**
1. To familiarise national stakeholders with the tsunami and storm surge protocol development process;
2. To review and enhance the Draft National Tsunami and the Draft National Storm Surge Protocols

**Outcomes:**
1. An increased understanding of the tsunami and storm surge protocol development process amongst national stakeholders;
2. An appreciation for the tsunami testing process amongst national stakeholders; and
3. A tested and enhanced Draft National Tsunami Protocol and a Storm Surge Protocol for finalization by the TCHWS Consultant with information from the NDO and the participants.

**Multi Hazard Community Early Warning System in Tobago**
In January 2008, the Tobago Emergency Management Agency (TEMA) began installation of its Multi Hazard Community Early Warning System to provide alerts and warning to communities remotely via radio messages and siren tones. At this time, the system comprises two sirens and submissions have been made in the budget for the acquisition of five (5) more. These will serve the windward side of the island including the capital of Scarborough. Tsunami warning, hurricane / storm warning and severe weather messages can be sent remotely from the field or from the Tobago Emergency Operations Centre to the communities in the southwest of Tobago that are at risk to these hazards.

Update March 2012: Contact with the Director of TEMA has revealed that requests for proposals are being formulated for the purchase and installation of the remaining five gauges on a phased basis. There is as yet no timeline for completion.
Multi Hazard Early Warning System in Trinidad
The ODPM is in the process of identifying the most appropriate early warning system for the country. Discussions are continuing with suppliers of various elements of the system.

The San Fernando City Corporation, with oversight from the ODPM, is currently developing an Egress/Evacuation Policy for the city and included in the policy is an All Hazard Alert Broadcast (AHAB) system which will include Tsunami alerts, as the city is located on the shores of the Gulf-Of-Paria. Initially, the AHAB system will be installed within the City core and will consist of three (3) sirens but will be expanded to the suburbs. This system will carry tones and voice messages to the population of the area, advising them of impending danger and/or the need to evacuate. This Early Warning System will serve as a model for other areas of the country.

Revised 01 April 2012
Submitted by: \textsc{Eric Mackie}

\textsc{Regional Coordinator}
\textsc{The Office of Disaster Preparedness and Management}
APPENDIX A

**TCHWS PROJECT**

**NATIONAL TSUNAMI WARNING PROTOCOL AND TESTING WORKSHOP - TRINIDAD**

The Model Tsunami Warning Information Dissemination Protocol for CDEMA Participating States was developed through the Tsunami and Other Coastal Hazards Warning System Project, which was implemented by the Caribbean Disaster Emergency Management Agency (CDEMA) [formerly CDERA] over the period 2007 - 2010.

The document was produced by Alerting Solutions Inc., formerly Hormann America Inc.

Special appreciation is extended to the Tsunami and Other Coastal Hazards Warning System Improved Notification Technical Sub-Committee, the UNESCO IOC International Tsunami Information Centre (ITIC) and Professor Narcisse Zahibo, Université des Antilles et de la Guyane.

The development and publication of this Model Tsunami Warning Information Dissemination Protocol for CDEMA Participating States have been made possible through the financial support of the United States Agency for International Development/Office of U.S. Foreign Disaster Assistance (USAID/OFDA) and the in-kind contribution from the CDEMA Participating States.

This activity is co-funded by the United States Agency for International Development (USAID). The views expressed herein are those of the author(s) and do not necessarily reflect the views of the donor agencies supporting the activity or of CDEMA (formerly CDERA).

© 2010

This document and any updates to it are available at [www.cdema.org](http://www.cdema.org).

**CDEMA**

Caribbean Disaster Emergency Management Agency (CDEMA)
Building #1, Manor Lodge Complex
Lodge Hill, St. Michael, Barbados, West Indies

The United States Agency for International Development
At a future date, when the CTWC is built and operational, this information may include coastal tide stations and recorder information about the tsunami waves and their likely size.

4.3 TSUNAMI WARNING: SOP A IMMEDIATE ACTIONS CHECKLIST

<table>
<thead>
<tr>
<th>[ ] 1. SOP A IMMEDIATE ACTIONS CHECKLIST</th>
</tr>
</thead>
</table>
| TWFP Duty Officer must review the message from the PTWC and learn if the tsunami is forecast to arrive at Trinidad and Tobago.  
[ ] a. Does not threaten Trinidad and Tobago. |
| After assessment of the Bulletin, the TWFP determines the event does not threaten (insert name of CDEMA PS's) coastlines. The TWFP should continue to monitor information about the event and contact civil authorities to advise that a Tsunami Bulletin was received; that assessment shows that it will not impact (insert name of CDEMA PS); and, that no further action is required. (Use Attachment A, page 34, for directory of Civil Authorities' Contact Information) |
| [ ] i. Contact the Director, the Office of Disaster Preparedness and Management. |
| [ ] ii. Contact the Trinidad and Tobago Police Force. |
| [ ] iii. Contact the Trinidad and Tobago Fire Brigade. |
| [ ] iv. Contact the Trinidad and Tobago Defence Force. |
| [ ] b. Tsunami threatens Trinidad and Tobago. Initiate Evacuation. |
| [ ] i. Evacuate all coastal areas of Trinidad and Tobago. |
| Or |
| [ ] ii. Evacuate all vulnerable coastal areas. (Use Attachment B, page 35, for Listing of Vulnerable Coastal Areas.) |

1 Examples of sample Tsunami Watch Bulletin and Tsunami Information Statements which illustrates the kind of information a Participating State can expect to receive from the PTWC are provided in Appendix A.
### And

[iii. Notify Civil Authorities. (Use Attachment A, page 34, for directory of Civil Authorities’ Contact Information)](attachment)

### 2. ACTIVATE PUBLIC ALERTING

(Use Attachment C, page 36, for Listing of Alerting Devices and Directory of Contact Information for Device Activation)

### 3. CONTACT RADIO, TV, AND CABLE BROADCAST STATIONS.

(Use Attachment D, page 37, for Directory of Broadcast Media Partner Contact Information). Advise -- Tsunami Evacuation Alert

(Use Attachment F, page 39, for Broadcast Message—Tsunami Evacuation Alert)

- a. Evacuate all coastal areas of Trinidad and Tobago

- Or

- b. Evacuate all vulnerable coastal areas.

(Use Attachment B, page 35, for Listing of Vulnerable Coastal Areas.)

### 4. CONTACT CELL PROVIDERS.

(Use Attachment E, page 38, for Directory of Cell Service Company Partner’s Contact Information.)

### 5. CONTACT COAST GUARD DISPATCH.

Advise Tsunami Alert. (Use Attachment G, page 40, for Broadcast Message to Mariners.)

### 6. TWFP Duty Officer reports to the Director Office of Disaster Preparedness and Management at the National Emergency Operations Centre (NEOC) to provide continuing assistance throughout the remainder of the alert.

### 7. End of Procedure.

---

### 5. SOP B (ATLANTIC OCEAN GENERATED TSUNAMI)

SOP B may also be used for tsunamis expected as a result of an anticipated volcanic eruption when there are several days to prepare for both the volcanic eruption and the expected tsunami.
5.0 PURPOSE

To provide procedural guidance and action steps to be followed in responding to a PTWC issued TSUNAMI WATCH BULLETIN due to a distant (ocean wide) seismic event to determine whether the Tsunami Watch Bulletin identifies Participating State as threatened.

5.1 GENERAL

The PTWC will issue a Tsunami Watch Bulletin or Tsunami Information Statement under the following conditions in the Caribbean:

- An earthquake occurs with a preliminary 6.5 to 7.8 in the Atlantic Ocean.
- An earthquake occurs with a preliminary 7.9 or greater magnitude in the Atlantic Ocean.

Arrival time of tsunami generated by either of the preceding events is over 3 hours. While this does not mean there is significant time with which to evaluate danger or to begin warning the public; it does provide more opportunity for the Tsunami Warning Center and the Participating State’s National TWFP to evaluate the situation and make better forecasts for wave arrival time and arrival locations.
5.3 TSUNAMI WARNING: SOP B IMMEDIATE ACTIONS CHECKLIST
<table>
<thead>
<tr>
<th></th>
<th>SOP B IMMEDIATE ACTIONS CHECKLIST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWFP Duty Officer must review the message from the PTWC and learn if the tsunami is forecast to arrive at Trinidad and Tobago.</td>
</tr>
<tr>
<td></td>
<td>a. If the event does not threaten Trinidad and Tobago.</td>
</tr>
<tr>
<td></td>
<td>After assessment of the Bulletin (the TWFP determines the event does not threaten Participating State’s coastlines) the TWFP should continue to monitor information about the event and contact civil authorities to advise that a Tsunami Bulletin was received; that assessment shows that it will not impact CDEMA PS; and, that no further action is required. (Use Attachment A, page 34, for Directory of Civil Authority’s Contact Information)</td>
</tr>
<tr>
<td></td>
<td>i. Contact the Director, Office Disaster Preparedness and Management</td>
</tr>
<tr>
<td></td>
<td>ii. Contact the Trinidad and Tobago Police Force</td>
</tr>
<tr>
<td></td>
<td>iii. Contact the Trinidad and Tobago Fire Brigade</td>
</tr>
<tr>
<td></td>
<td>iv. Contact the Trinidad and Tobago Defence Force</td>
</tr>
<tr>
<td></td>
<td>b. Tsunami threatens Trinidad and Tobago</td>
</tr>
<tr>
<td></td>
<td>Current:</td>
</tr>
<tr>
<td></td>
<td>Trinidad and Tobago’s TWFP Duty Officer will initiate dialogue with the PTWC Duty Officer to verify assessment of tsunami wave arrival time, potential for size of wave, etc. It is presumed that this should take no longer that 15 to 20 minutes. Following this discussion, Trinidad and Tobago National TWFP Duty Officer should proceed with remainder of the SOP.</td>
</tr>
<tr>
<td></td>
<td>Or</td>
</tr>
<tr>
<td></td>
<td>Future:</td>
</tr>
<tr>
<td></td>
<td>Trinidad and Tobago TWFP Duty Officer will participate in a CTWC Conference Call (this will only be possible once the CTWC is built and operational)</td>
</tr>
<tr>
<td></td>
<td>Conference Call in Number: ____________________________</td>
</tr>
<tr>
<td></td>
<td>Participant Code: ____________________________</td>
</tr>
<tr>
<td></td>
<td>Following the Conference Call, Trinidad and Tobago National TWFP Duty Officer should proceed with remainder of the SOP.</td>
</tr>
<tr>
<td></td>
<td>c. Immediately contact Civil Authorities, advise expected Tsunami Arrival Time. (Use Attachment A, page 34, for Directory of Civil Authority’s Contact Information)</td>
</tr>
</tbody>
</table>
### ACTIVATE PUBLIC ALERTING

2. ACTIVATE PUBLIC ALERTING (Use Attachment C, page 36, for listing of alerting devices and directory of contact information device activation)

### CONTACT RADIO, TV, AND CABLE BROADCAST STATIONS

3. CONTACT RADIO, TV, AND CABLE BROADCAST STATIONS. (Use Attachment D, page 37, for Directory of Broadcast Media Partner Contact Information). Advise -- Tsunami Evacuation Alert (Use Attachment F, page 39, for Broadcast Message—Tsunami Evacuation Alert)

   a. Evacuate COASTAL Trinidad and Tobago
   Or
   b. Evacuate all vulnerable coastal areas. (Use Attachment B, page 35, for Listing of Vulnerable Coastal Areas.)

### CONTACT CELL PROVIDERS

4. CONTACT CELL PROVIDERS. (Use Attachment E, page 38, for Directory of Broadcast Media Contact Information.)

### CONTACT COAST GUARD DISPATCH

5. CONTACT COAST GUARD DISPATCH. Advise Tsunami Alert. (Use Attachment G, page 40, for Broadcast Message to Mariners.)

### TWFP Duty Officer reports to the Director, Office of Disaster Preparedness and Management at the National Emergency Operations Centre (NEOC) to provide continuing assistance throughout the remainder of the alert.

### End of Procedure.
6. **SOP C (No Potential for Tsunami)**

6.1 **PURPOSE**

To provide procedural guidance and action steps to be followed in responding to a PTWC issued TSUNAMI INFORMATION STATEMENT due to a local or regional seismic event.

6.2 **GENERAL**

The PTWC will issue a Tsunami Information Statement under the following conditions:

- An earthquake occurs more than 100 km from the surface for all locations and is less than or equal to 6.0 magnitude in the Caribbean or 6.5 magnitude in the Atlantic.

6.3 **IMMEDIATE ACTIONS CHECKLIST**

<table>
<thead>
<tr>
<th></th>
<th><strong>SOP C IMMEDIATE ACTIONS CHECKLIST</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. TWFP Duty Officer must review the message from the PTWC and contact civil authorities to advise that a Tsunami Bulletin was received; that review/assessment shows that it will not impact Participating State; and, that no further action is required. (Use Attachment A, page 34, for directory of Civil Authorities’ Contact Information)</td>
</tr>
<tr>
<td></td>
<td>i. Contact the Director, Office of Disaster Preparedness and Management</td>
</tr>
<tr>
<td></td>
<td>ii. Contact the Trinidad and Tobago Police Force</td>
</tr>
<tr>
<td></td>
<td>iii. Contact the Trinidad and Tobago Fire Brigade</td>
</tr>
<tr>
<td></td>
<td>iv. Contact the Trinidad and Tobago Defence Force</td>
</tr>
<tr>
<td></td>
<td>2. No further action required. End of Procedure.</td>
</tr>
</tbody>
</table>
7. SOP D (CANCELLATION)

7.1 PURPOSE

To provide procedural guidance and action steps to be followed in responding to a PTWC issued TSUNAMI INFORMATION STATEMENT due to a local or regional seismic event.

7.2 GENERAL

The PTWC will issue a Tsunami Information Statement advising that all danger of a Tsunami has passed.

- Cancellation Message

7.3 IMMEDIATE ACTIONS CHECKLIST

<table>
<thead>
<tr>
<th></th>
<th>SOP D IMMEDIATE ACTIONS CHECKLIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] 1.</td>
<td>TWFP Duty Officer must contact the Director of the Disaster Management Organization and report receipt of cancellation message from the PTWC but take no further action. (Use Attachment A, page 34, for directory of Civil Authorities’ Contact Information.)</td>
</tr>
<tr>
<td>[ ] i.</td>
<td>Contact the Director, Office Disaster Preparedness and Management.</td>
</tr>
<tr>
<td>[ ] 2.</td>
<td>No further action required. End of Procedure.</td>
</tr>
</tbody>
</table>

8. SOP E (TEST MESSAGE)

8.1 PURPOSE

To provide procedural guidance and action steps to be followed in responding to a PTWC issued TSUNAMI TEST BULLETIN.
8.2 GENERAL

The PTWC will issue a Tsunami Test Bulletin approximately 4 times a year.

- Test Bulletin

8.3 IMMEDIATE ACTIONS CHECKLIST

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] 1.</td>
<td>TWFP Duty Officer must contact the Civil Authorities and report receipt of Test Bulletin from the PTWC. (Use Attachment A, page 34, for directory of Civil Authorities’ Contact Information)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i.</td>
<td>Contact the Director, Office of Disaster Preparedness and Management</td>
<td></td>
</tr>
<tr>
<td>ii.</td>
<td>Contact the Trinidad and Tobago Police Force</td>
<td></td>
</tr>
<tr>
<td>iii.</td>
<td>Contact the Trinidad and Tobago Fire Brigade</td>
<td></td>
</tr>
<tr>
<td>iv.</td>
<td>Contact the Trinidad and Tobago Defence Force</td>
<td></td>
</tr>
</tbody>
</table>

[ ] 2. No further action required. End of Procedure.

9. SOP F (Drill/Prepare Procedure)

9.1 PURPOSE

To provide opportunity for all first responder organizations to drill and practice their SOPs for a tsunami. Tsunami’s are rare events but the hazard is real throughout the Caribbean. Unless dedicated drills are held routinely and thinking given to the procedures of the drill,

---

3 It is recommended that (insert name of CDEMA PS) TWFP and Director, Office of Disaster Preparedness and Management develop a series of tests of their tsunami systems to coincide with receipt of each PTWC Test message. Such exercises can be used to update contact information lists and identify weaknesses in operations which can then be remedied.
improvements integrated, first responders will not be ready, they will not know how to respond to protect the public during the tsunami (assist with evacuations, shelter requirements, etc.) and the follow up recovery efforts when a devastating tsunami occurs.

There are several components to adequate preparation:

1. Drills that address technical and operational responsibilities:
   a. Assure technical infrastructure is available at all times
   b. Verifies accuracy of contact information
   c. Keeps track of and constantly seeks to improve response time
   d. Practices that test response during various days of the week and times of days
   e. Provides incentive to all participant organizations to further prepare their organization for response activities once the alert is received

2. Routine Training Sessions to address ideas and thoughts for improvements for infrastructure and operations.

3. Annual Tests to assure readiness and understanding of an individuals responsibility in such an event.

### 7.2 GENERAL

This SOP is intended as an initial drill/prepare procedure. It is expected that each organization that participates in the process will develop further SOPs that prepare their own organizations for response to tsunami alerts. To begin, this drill procedure will address the practice requirements of the key organizations to receive the alert message and to check the readiness of tools involved in the tsunami alert and notification process:

1. Tsunami Warning Focal Point
2. National Disaster Management Organization
3. Police
4. Fire
5. Defense
6. Coast Guard
7. Broadcast Media/Cell Service Providers
8. Public Alerting Tools

### 9.3 NATIONAL TSUNAMI DRILL SCHEDULE

Because the responsibility for Disaster Management lies with the National DMO, it is recommended that the Director of the DMO initiate the drill procedure. Further, to establish drills at random times on random days to assist each organizations preparations for a “what if” scenario, it is recommended that the DMO activate drills according to the following schedule.
2009:
February: First Sunday of the Month, at 11:00 a.m.
April: First Wednesday of the Month, at 3:00 a.m.
June: First Friday of the Month, at 7:00 p.m.
August: First Monday of the Month, at 11:00 a.m.
October: First Thursday of the Month, at 3:00 a.m.
December: First Saturday of the Month, at 7:00 p.m.

2010
January: First Tuesday of the Month, at 12:00 noon
March: First Friday of the Month, at 4:00 a.m.
May: First Sunday of the Month, at 8:00 p.m.
July: First Wednesday of the Month, at 12:00 noon
September: First Saturday of the Month, at 4:00 a.m.
November: First Monday of the Month, at 8:00 p.m.

2011
February: First Thursday of the Month, at 1:00 p.m.
April: First Saturday of the Month, at 5:00 a.m.
June: First Monday of the Month, at 9:00 p.m.
August: First Friday of the Month, at 1:00 p.m.
October: First Sunday of the Month, at 5:00 a.m.
December: First Tuesday of the Month, at 9:00 p.m.

2012: Repeat 2009 Day Schedule, using 2:00 p.m., 6:00 a.m., and 10:00 p.m. as drill times.

2013: Repeat 2010 Day Schedule, using 3:00 p.m., 7:00 a.m., and 11:00 p.m. as drill times.

2014: Repeat 2011 Day Schedule, using 4:00 p.m., 8:00 a.m., and 12:00 midnight as drill times.

2015: Repeat 2009 Day Schedule, using 5:00 p.m., 9:00 a.m., and 1:00 a.m. as drill times.

2016: Repeat 2010 Day Schedule, using 6:00 p.m., 10:00 a.m., and 2:00 a.m. as drill times.

2017: Repeat 2011 Day Schedule, using 7:00 p.m., 11:00 a.m., and 3:00 a.m. as drill times.
### 9.3.1 IMMEDIATE ACTIONS CHECKLIST

<table>
<thead>
<tr>
<th></th>
<th>SOP F IMMEDIATE ACTIONS CHECKLIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] 1.</td>
<td><strong>Director of the Office of Disaster Preparedness and Management</strong> must make contact with TWFP Duty Officer using the same mechanism/s that is/are used for a real tsunami alert (EMWIN/GTS, and in some cases fax machines) and announce a <em>National Drill of the Tsunami Warning System</em>. Initiation of the <em>National Drill Message</em> by the <strong>Office of Disaster Preparedness and Management</strong> begins the clock ticking for the drill records. Attachment H on page 41, provides a timeline reporting document for use by the DMO.</td>
</tr>
<tr>
<td>[ ]</td>
<td>Contact the National TWFP:</td>
</tr>
<tr>
<td>[ ] 2.</td>
<td><strong>TWFP Duty Officer</strong> must review the National Drill message from the DMO, note the exact time of receipt and the mechanism of delivery used (if multiple messages received, note all of them) and immediately must contact the Civil Authorities and report receipt of a <em>National Drill Message</em> from the <strong>Office of Disaster Preparedness and Management</strong>. (Use Attachment A, page34, for Directory of Civil Authorities’ Contact Information)</td>
</tr>
<tr>
<td>[ ] i.</td>
<td>Contact the Director, <strong>Office of Disaster Preparedness and Management</strong></td>
</tr>
<tr>
<td>[ ] ii.</td>
<td>Contact the Trinidad and Tobago Police Force</td>
</tr>
<tr>
<td>[ ] iii.</td>
<td>Contact the Trinidad and Tobago Fire Brigade</td>
</tr>
<tr>
<td>[ ] iv.</td>
<td>Contact the Trinidad and Tobago Defence Force</td>
</tr>
<tr>
<td>[ ] 3.</td>
<td><strong>TWFP Duty Officer</strong> must contact persons responsible for activating PUBLIC ALERTING DEVICES; advise <em>National Tsunami Drill</em>. (Use Attachment C, page 36, for Listing of Alerting Devices and Directory of Device Activation Contact Information)</td>
</tr>
</tbody>
</table>
5. **TWFP Duty Officer** must CONTACT CELL PROVIDERS. (Use Attachment E, page 38, for Directory of Cell Service Provider Company Partner Contact Information.) Advise -- **National Tsunami Drill** (Use Attachment I, page 43, for Broadcast Message—**National Tsunami Drill**)

6. **TWFP Duty Officer** must CONTACT COAST GUARD DISPATCH at (please complete by adding correct contact numbers/radio frequencies). Advise -- **National Tsunami Drill** (Use Attachment J, page 44, for Mariners Broadcast Message—**National Tsunami Drill**)

7. **TWFP Duty Officer** must report to the **Director National DMO** that the National Drill Message has been delivered and provide the DMO the contact name, time of message delivery, mechanism/s by which the message was delivered. Use Attachments A, C, D, and E, pages 34, 36, 37, and 38 respectively, for making the report about who was reached and when. In the event a contact person telephone/radio contact number/s are not answered, the TWFP Duty Officer must submit a written report about the attempt to the Director National DMO so that the situation can be immediately addressed.

8. **Director National Office of Disaster Preparedness and Management** must prepare a Drill Summary Report and follow up with each agency, advising about the results of the drill, explaining how it compared with previous drills in terms of overall time taken to get the alert message out. Once the Drill Summary Report is finalized, the **Director National Office of Disaster Preparedness and Management** may make a report to the Prime Ministers Office along with any recommendations for improvements in responses that are required.

9. End of National Drill Procedure. All drill activity log files to be sent to the drill manager (Director—Office of Disaster Preparedness and Management, CDEMA and CTWC for analysis. Drill summary report to be issued within 10 business days from the execution of drill.
### ATTACHMENT A. DIRECTORY OF CIVIL AUTHORITIES CONTACT LIST

<table>
<thead>
<tr>
<th>AGENCY NAME</th>
<th>Emergency Contact Name</th>
<th>24x7 Telephone Number</th>
<th>24x7 Cell Phone Number</th>
<th>SAT Phone Number</th>
<th>Via Radio Channel/s (HF &amp; VHF)</th>
<th>Name of Recipient and Time Message Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police Force</td>
<td>(POLICE FORCE DISPATCH)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>(FIRE DISPATCH)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defence Force</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ATTACHMENT B. LISTING OF TSUNAMI VULNERABLE COASTAL AREAS

**TRINIDAD AND TOBAGO VULNERABLE COASTLINE LOCATIONS BY NAME**

1. _________________________________

2. _________________________________

3. _________________________________

**TRINIDAD AND TOBAGO OUTLYING ISLAND’S & CAY’S VULNERABLE COASTLINE LOCATIONS BY NAME**

1. _________________________________

2. _________________________________

3. _________________________________
# ATTACHMENT C. LISTING OF ALERTING DEVICES AND DEVICE ACTIVATION

## CONTACT INFORMATION

<table>
<thead>
<tr>
<th>Alert Device</th>
<th>Device Activation Emergency Contact Name</th>
<th>24x7 Telephone Number</th>
<th>24x7 Cell Phone Number</th>
<th>Name of Recipient and Time Message Received</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## ATTACHMENT D. DIRECTORY OF TSUNAMI ALERT MEDIA PARTNERS

<table>
<thead>
<tr>
<th>BROADCAST STATIONS (Radio, Television, Cable)</th>
<th>Emergency Contact Name</th>
<th>24x7 Telephone Number</th>
<th>24x7 Cell Phone Number</th>
<th>Via Radio Channel/s (HF &amp; VHF)</th>
<th>Name of Recipient and Time Message Received</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ATTACHMENT E. DIRECTORY OF TSUNAMI ALERT CELL SERVICE COMPANY PARTNERS

<table>
<thead>
<tr>
<th>Cell Service Company</th>
<th>Emergency Contact Name</th>
<th>24x7 Telephone Number</th>
<th>24x7 Cell Phone Number</th>
<th>Via Radio Channel/s (HF &amp; VHF)</th>
<th>Name of Recipient and Time Message Received</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ATTACHMENT F. BROADCAST MESSAGE FOR MEDIA PARTNERS

URGENT TSUNAMI WARNING
BROADCAST SCRIPT

A TSUNAMI WARNING HAS BEEN ISSUED.
THIS IS AN URGENT TSUNAMI WARNING FOR

[ ] 1. ALL COASTAL AREAS OF TRINIDAD AND TOBAGO

OR

[ ] 2. ALL VULNERABLE COASTAL AREAS OF TRINIDAD AND TOBAGO
A TSUNAMI HAS BEEN GENERATED. IMMEDIATELY EVACUATE ALL BEACHES AND ALL LOW LYING COASTAL AREAS. MOVE INLAND TO HIGHER GROUND

---

4 The locations of Vulnerable Coastal areas (when identified by analysis will be listed on Attachment B).