INTERGOVERNMENTAL COORDINATION GROUP FOR THE TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEMS FOR THE CARIBBEAN AND ADJACENT REGIONS
Seventeenth Session, May 6-9 (Nicaragua)

NATIONAL REPORT
BARBADOS

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. Leo Brewster
Title:	Director
Organization:	Coastal Zone Management Unit (CZMU)
Postal Address:	Warrens Tower 2, Warrens St Michael, Barbados WI
E-mail Address:	director@coastal.gov.bb & lbrewster@coastal.gov.bb
Emergency Telephone Number:	246-535-5740
Emergency Fax Number:	246-535-5741
Cellular Number:	246-256-3171
Web Page:	www.coastal.gov.bb

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

The 24 x 7 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:	Mr. Sabu Best
Title:	Director
Responsible Organization:	Barbados Meteorological Services
Postal Address:	Charnocks, Christ Church, Barbados, WI

E-mail Address:	sabu.best@barbados.gov.bb
Emergency Telephone Number:	246 535-0021 to 0025
Emergency Fax Number:	246 535-0029
Emergency Cellular Number:	246 231-3060
Web Page:	www.barbadosweather.org

National Tsunami Warning Centre (if different from the above)
(Same as above)

3. Tsunami Advisor(s), if applicable
(Person, Committee or Agency managing Tsunami Mitigation in country)

Name:	Ms. Kerry Hinds
Title:	Director
Organization:	Department of Emergency Management (DEM)
Postal Address:	George Greaves Building, #24 Warrens Industrial
Park,	Warrens, St. Michael, Barbados, WI
E-mail Address:	Kerry.hinds@barbados.gov.bb
	deminfo@barbados.gov.bb
Telephone Number:	246-438-7575
Fax Number:	246-421-8612
	246-425-1289
Cellular Number:	246-234-4835
Web Page:	www.dem.gov.bb

Name:	Dr. Leo Brewster
Title:	Director
Organization:	Coastal Zone Management Unit (CZMU)
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The Technical Standing Committee on Coastal Hazards (TSCCH) is also an advisory Committee. The Committee comprises representatives from the:

1. Coastal Zone Management Unit (CZMU), (Co-Chair)
2. Department of Emergency Management (DEM), (Co-Chair)
3. Barbados Meteorological Services (BMS)
4. The Barbados Police Service (TBPS)
5. Barbados Government Information Service (BGIS)
6. Ministry of Innovation, Science & Smart Technology: Telecommunications Unit
7. Planning and Development Office (PDO)
8. Ministry of Home Affairs and Information (MHAI)
9. Ministry of Finance, Economic Affairs and Investment
10. Ministry of Tourism and International Transport (MTIT)

11. Ministry of Energy and Business Development
12. Barbados Defence Force (BDF)/ Barbados Coast Guard (BCG)
13. The Barbados Fire Service (BFS),
14. Ministry of Transport, Works and Water Resources(MTWWR): Drainage Division
15. Ministry of the Environment and National Beautification (Blue Economy): Fisheries Division
16. Ministry of Education, Technological and Vocational Training (METVT)
17. National Conservation Commission (NCC),
18. Barbados Hotel and Tourism Association (BHTA)
19. Barbados National Union of Fisherfolk Organizations (BARNUFO)
20. Barbados Light and Power Company Limited (BL&P),
21. Barbados Port Inc. (BPI)
22. Ministry of Youth, Sports and Community Empowerment
23. Ministry of People Empowerment and Elder Affairs (MPEEA)
24. Barbados Council for the Disabled (BCD)
25. Barbados Chamber of Commerce and Industry (BCCI)
26. Barbados Building Standards Authority
27. Caribbean Institute for Meteorology and Hydrology (CIMH),
28. Caribbean Disaster Emergency Management Agency (CDEMA) and a
29. Community Representative.

4. **Tsunami Standard Operating Procedures for a Local Tsunami** (when a local tsunami threat exists, less than 1-hour travel time)

5. **Tsunami Standard Operating Procedures for a Regional Tsunami** (when a regional tsunami threat exists, 1-3 hour travel time)

6. **Tsunami Standard Operating Procedures for a Distant Tsunami** (when a distant tsunami threat exists, more than 3 hour travel time)

For each situation, please provide the following:

- ***What organization identifies and characterizes tsunamigenic events?***

  Currently, the Pacific Tsunami Warning Centre (PTWC) is responsible for identifying and characterizing tsunamigenic events and disseminating threat information messages on threats to the Warning Focal Point which is the Barbados Meteorological Services (BMS) who receives the message on the Global Telecommunications System (GTS),California Integrated Seismic Network (CISN), Facsimile (Fax), web and e-mail. The BMS then disseminates the threat messages locally by telephone, e-mail, Common Alerting Protocol (CAP), BMS Insight Application, BMS website/social media platforms and ASTRO Radio.

- ***What is the threshold or criteria for declaring a potential tsunami emergency?***

  Prior to March 2014, the BMS received the information in the form of a warning message. Now, the information is received in the form of an information statement/threat message. This message is then analyzed and determined whether the system should be activated.

  IF IT IS DETERMINED THAT WAVE HEIGHTS OF ONE (1) METRE OR GREATER ABOVE THE NORMAL HIGH TIDE ARE LIKELY TO AFFECT THE ISLAND, THEN A POTENTIAL TSUNAMI EMERGENCY IS DECLARED.

- ***What organization acts on the information provided by the agency responsible for characterizing the potential tsunami threat?***

  The DEM is the organization through which the National Emergency Management System (NEMS) is activated. The DEM is not a 24-hour agency, however, included in the Barbados National Tsunami Warning Protocols there is the provision for the Barbados Meteorological Services (BMS) to *directly* alert the public at short notice or outside of normal working hours (i.e., 8:15 am – 4:30 pm), or on weekends. The 24-hour agencies such as the Barbados Fire Service, Barbados Defence Force and The Barbados Police Service *are currently being developed to act as Alternate Tsunami Warning Focal Points in the eventuality that the Barbados Meteorological Services becomes compromised and is unable to issue the warnings based on the information coming from the PTWC.* In the instance where the Tsunami threat does not give ample time to filtrate the information through the NEMS the Barbados Meteorological Services warns the public.

  * Refer to the Barbados Tsunami Warning Protocol Schematic on Page 9.

- ***How is the tsunami information (warning, public safety action, etc) disseminated within country? Who is it disseminated to?***

  There is a Mass Alerting and Dissemination Tsunamis Warning Protocol (Figure 1) specifically designed for Barbados using mass media: radio, television, social media, BMS Insight Application and the Common Alerting Protocol (CAP) system. All cellular vendors (i.e., FLOW Barbados and Digicel) also provide texting services to all cellular users at a cost. The message is also conveyed on the Emergency Telecommunication System: UHF Astro, VHF and the emergency services mobile sirens may also be used. The CAP system and BMS Insight Application is also used and disseminates information to users who have signed up through email or by downloading the application. CAP also issues radio interrupts currently to four (4) radio stations- Slam 101.1, Y103.3, CITA 90.1, The One 98.1.

  The CAP is in the process of expanding its capacity, transitioning from four (4) radio stations to seventeen (17), while nine (9) broadcasting companies including the Caribbean Broadcasting Corporation, Starcom Network Inc., Barbados Broadcasting Service Limited, Habmar Investments Inc., Christ is the Answer, HITZ 106.7 FM, Pulse Broadcast Services Inc., Nothing but God and Sterling Communications Inc.—have signed Memoranda of Understanding to solidify this partnership. The CAP requires some level of upgrading to be more efficient and the DEM is working with the Ministry of Innovation, Science and Smart Technology and the Telecommunications Unit to support the upgrade.

  The information is disseminated to the general public, coastal communities, tourism and private sectors, the public utilities sector and the decision-makers.

The following procedures outline the steps to be taken in alerting and informing the relevant authorities and the public in the event of a tsunami threat to Barbados:

- Each meteorologist on shift at the Barbados Meteorological Service must ensure that all equipment and software programs used for receiving Tsunami Alert Messages from the Pacific Tsunami Warning Center (PTWC) are completely functional and current. This includes the California Integrated Seismic Network (CISN) program for earthquake alerts, and BMS Apparatus software.
- Any malfunctioning of these programs or equipment should be documented in the office log and immediately drawn to management's attention.

LOCAL/ REGIONAL EARTHQUAKE EVENTS:

(Events occurring within the area bounded by 5°N - 20°N and 50°W - 70°W)

1. An earthquake in close proximity to Barbados greater than 3.0 in magnitude shall be logged.

2. If shaking is felt ***** or significant local alerts of possible earthquake occurrence are received:
    - The Duty Meteorologist should consult the CISN display for assistance in verifying or confirming the activity,
    - Gather all relevant information such as date, time of origin, co-ordinates and location and the depth and magnitude of the earthquake.

***In the case there is shaking of a severe nature, the operations building shall be evacuated as personnel seek to protect life and limb. This will cause a delay in dissemination of messages as the building(s), both operational and back up needs to be reassessed for operational safety.**

Note: *The CISN program cannot confirm or deny whether a tsunami has been generated. However, based on established guidelines, an earthquake of magnitude 7.1 or greater within the Caribbean, and magnitude 6.5 or greater within the Atlantic region can possibly generate a tsunami.*

3. Once the earthquake event has been confirmed by the CISN display, this shall become priority. The Duty Meteorologist with the assistance of the Meteorological Assistants shall:
    - Immediately alert DEM and all First Responders via the Astro Radio network,
    - Alert the news media via fax or CAP alert,
    - Provide the basic initial information.

This must be done while monitoring for official communication from the PTWC.

Note: *The Pacific Tsunami Warning Center (PTWC) will only issue tsunami bulletins for earthquakes of magnitude 6.0 or greater. The first bulletin may not be issued until about 5 - 6 minutes after the earthquake event has occurred.*

If the magnitude of the earthquake is such that tsunami generation is possible, then this information shall also be relayed as a means of providing an advance alert.

Note: *The Director of the BMS, if not present, shall be informed. If unable to reach the Director, then the Deputy Director or any other senior personnel shall be informed. However, any inability to contact these persons shall not delay the dissemination of the information to other relevant authorities.*

All times of events and communications must be clearly logged using the Log of Events Table. This includes the receipt of messages from the PTWC, the transmission of messages whether by email, fax, Astro Radio or by telephone, the termination of the tsunami watches and warnings.

4. Once the first official tsunami message from the PTWC has been received and evaluated, the Duty Meteorologist with the assistance of the Meteorological Assistants shall:

    - Update First Responders via Astro radio,
    - Update the media, the Director of the DEM and the Director of the BMS via telephone.

If there is no tsunami threat, then an Earthquake Information Statement shall be prepared and disseminated via the Common Alerting Protocol (CAP) server, Astro, BMS Insights App, email list and the BMS Website/ Social Media Platforms.
If a possible tsunami threat is indicated, then a Tsunami Warning shall be prepared and disseminated via the Common Alerting Protocol (CAP) server, e-mail list, BMS Insights App and the BMS Website/Application/ Social Media Platforms.

5. The Duty Meteorologist shall continue to monitor for updated information from the PTWC and relay the updated information to:
    - Local officials via Astro radio,
    - The Common Alerting Protocol (CAP) server,
    - E-mail list and
    - The BMS Website/Application/ Social Media Platforms

6. Once the information received from PTWC indicate that the tsunami threat has diminished, the Duty Meteorologist, with the assistance of the Meteorological Assistants, shall relay this information to:
   - All First Responders via the Astro radio and
   - The media, the Director of the DEM and the Director of the BMS via telephone.

7. In collaboration with the Director of the DEM or designate and the Duty Meteorologist shall correspond with the Barbados Coast Guard (BCG) about the sea conditions by telephoning (246) 536-2900 or via Astro radio. Once the information received indicates that conditions along the coastal areas are safe, a tsunami termination bulletin shall be prepared and disseminated via the CAP server, e-mail list, Astro and the BMS Website/Application/ Social Media Platforms.

6. Tsunami Standard Operating Procedures for a Distant Tsunami (when a distant tsunami threat exists; more than 3 hours travel time)

DISTANT EARTHQUAKE EVENTS

(Events occurring outside of the area bounded by 5°N - 20°N and 50°W - 70°W)

1. For distant earthquake events, the Duty Meteorologist should await the official tsunami messages and products from the PTWC. However, in the case of CISN display alerting of an earthquake event greater than 7.1 magnitude in the Caribbean or greater than magnitude 6.5 in the Atlantic, then the potential for tsunami generation exists. The Duty Meteorologist should consult the RIFT (Real- time Inundation Forecast of Tsunami) Model Regional Tsunami Scenarios guide as an early assessment tool.

   Note: *These scenarios are all for magnitude 8.4 earthquakes, which represents "worst case" scenarios.*

2. Once the official tsunami message has been received from the PTWC, steps 3 to steps 6 of the local/ regional earthquake event procedure shall be followed as instructed below.

3. Once the first official tsunami message from the PTWC has been received and evaluated, the Duty Meteorologist with the assistance of the Meteorological Assistants shall:
   - Update First Responders via Astro radio,

- Update the media, the Director of the DEM and the Director of the BMS via telephone.

If there is no tsunami threat then an Earthquake Information Statement shall be prepared and disseminated via the Common Alerting Protocol (CAP) server, e-mail list and the BMS Website/Application.

If a possible tsunami threat is indicated, then a Tsunami Warning shall be prepared and disseminated via the CAP server, e-mail list, Astro and the BMS Website/Application/ Social Media Platforms.

4. The Duty Meteorologist shall continue to monitor for updated information from the PTWC and relay the updated information to:
    - National Emergency Management System via Astro radio,
    - The Common Alerting Protocol (CAP) server,
    - E-mail list and
    - The BMS Website/Application/Social Media Platforms.

5. Once the information received from PTWC indicate that the tsunami threat has diminished, the Duty Meteorologist with the assistance of the Meteorological Assistants shall relay this information to:
    - All First Responders via the Astro radio and
    - The media via email, and to the Director of the DEM and the Director of the BMS via telephone.

6. In collaboration with the Director of the DEM or designate, the Duty Meteorologist shall correspond with the Barbados Coast Guard about the sea conditions by telephoning (246)536-2900 or communicating via the ASTRO radio system. Once the information received indicates that conditions along the coastal areas are safe, a tsunami termination bulletin shall be prepared and disseminated via the CAP server, e-mail list and the BMS Website/Application.

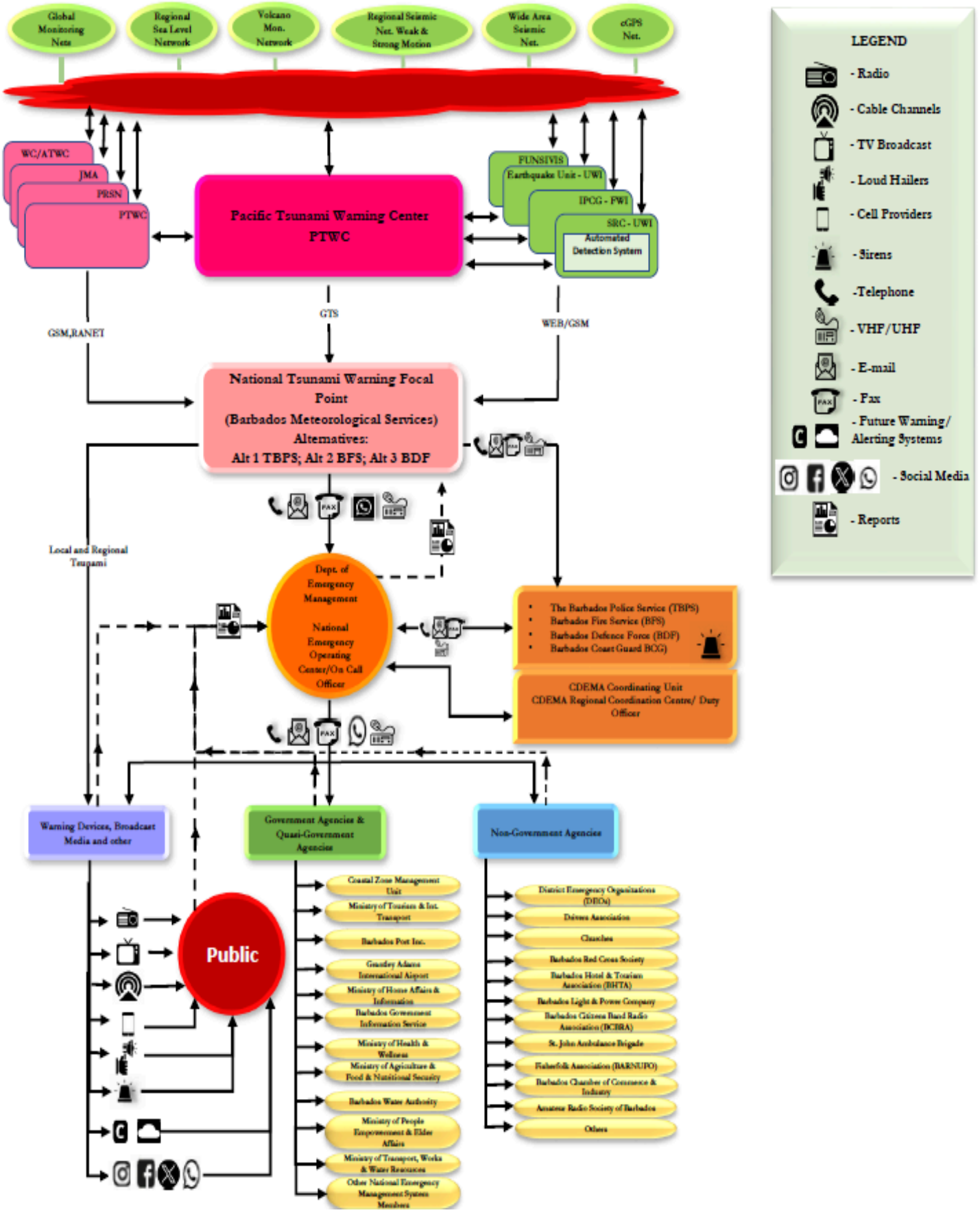

Figure 1. Barbados Tsunami Warning Protocol Schematic

- ***How is the emergency situation terminated?***

  The emergency situation is terminated when the "Tsunami Discontinuation" is issued by the Warning Focal Point/Warning Centre, and the "All Clear" is made by the Tsunami Advisory indicating that the threat is over.

- ***For Distant Tsunami Procedures:***

  What actions were taken in response to threat messages issued by PTWC and/or US NTWC, during the intersessional period?

  No threat messages were issued in the period under review. Therefore, no action was taken.

7. **National Sea Level Network**

Table 1: Summary of Sea Level Stations on Barbados's coastline

Station Name	Location	Latitude	Longitude	Sensors
Port St. Charles	*St. Peter Northwest Coast*	13.263	-59.6446	*Tide Gauge (working) Radar Sensor (working) Aqua Bubbler (working) Pressure Level (working)*
Barbados Coast Guard	*St. Michael*	*Not provided*	*Not provided*	*Radar Sensor (working)*
Bridgetown Port	*St. Michael*	13.108	-59.629	*Sea Level Station (Decommissioned)*
Consett Bay (x2)	*St. John*	13.17994	-59.4664	*Radar Sensor (working)*
Speightstown	*St. Peter*	13.25025	-59.64089	*Radar Sensor (working)*
Oistins	*Christ Church*	13.0706	-59.547	*Radar Sensor (offline)*
Holetown	*St. James*	13.18712	-59.63523	*Radar Sensor (offline)*
Bridgetown	*St. Michael*	13.11135	-59.63141	*Radar Sensor (working)*

FIGURE 2: GAUGE LOCATION – PORT ST. CHARLES

FIGURE 3: RADAR SENSOR LOCATION – BARBADOS COAST GUARD

FIGURE 4: RADAR SENSOR LOCATION – CONSETT BAY, ST. JOHN

8. **Information on Tsunami occurrences/Tsunami Exercises**

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

The DEM, through its TSCCH, spearheaded the Coastal Hazards and Earthquake Smart Month in March 2024. One of the focal activities during this month was Exercise Caribe Wave, which acted as a vessel to practice and evaluate the emergency operations procedures of agencies and businesses on the island with respect to the tsunami hazard. The exercise evaluated the viability of the National Tsunami Warning Protocol and Standard Operating Procedures (SOPs) as well as the National Tsunami Disseminating Protocol. Additionally, exercising and evaluating earthquake safety and evacuation procedures served as a continuation to the on-going task of preparation, planning and response.

Figure 5: Staff & students of the St. Albans Primary School evacuating the school and heading to higher ground on receiving the tsunami alert. (Caribe Wave 2024)

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

DEM Website: https://dem.gov.bb/
DEM Facebook Page: https://www.facebook.com/dem246/
DEM Twitter Page: https://twitter.com/dem_barbados
DEM Instagram: https://www.instagram.com/dem.barbados/?hl=en
Government Information Service (GIS) Website: https://gisbarbados.gov.bb/gis-news/
GIS Facebook Page: https://www.facebook.com/gisbarbados/
GIS Twitter: https://twitter.com/gisbarbados/
GIS Instagram: https://www.instagram.com/gisbarbados/?hl=en
Public Affairs Department (PAD)Facebook: https://www.facebook.com/padbarbados/
Public Affairs Department Twitter: https://twitter.com/padbarbados
PAD Instagram: https://www.instagram.com/padbarbados/
Barbados Meteorological Services (BMS): https://www.barbadosweather.org/
BMS Facebook: https://www.facebook.com/BarbadosMeteorologicalService/
BMS Instagram: https://z-p42.www.instagram.com/barbadosmetservices/?hl=es

10. **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.*

- Continued updating of the Standard Operating Procedures (SOPs) and Protocols for Tsunami Warnings

- Continued implementation and testing of the CAP and the BMS Insight Application. The Caribe Wave 2024 exercise highlighted some areas for improvement which will be addressed in the near term.

- The National Hazard Mitigation Committee was established as a Standing Committee of the Emergency Management Advisory Council (EMAC) and developed a draft national hazard mitigation policy and plan. This committee continues to provide support to the National Tsunami and Coastal Hazards Programme.

- Continued implementation of the National Coastal Risk Information and Planning Platform (NCRIPP) which aims to enable risk-based decision-making in the areas of physical development planning and emergency management planning through the probabilistic assessment of natural hazards which impact the coast. As such, the NCRIPP will provide up to date scientific information to support the completion of the Coastal Evacuation Plan, Evacuation routes and the identification of Hazard and Safe Zones as well as the erection of evacuation signs in coastal communities. To date the NCRIPP has completed vulnerability, hazard and risk assessments for tsunami and other coastal hazard scenarios and the planning platform to support decision-making and is awaiting integration with government agencies.

- The Coastal Zone Management Unit in collaboration with International Tsunami Information Centre- Caribbean (ITIC CAR) produced an island-wide Tsunami Inundation and evacuation map for Barbados.

- Barbados continues to support the Caribbean Tsunami Information Center (CTIC) as host country.

- Continue working with communities (householders, academic institutions, public and private sector institutions) to encourage increased levels of preparedness.

- Coastal Community Vulnerability Assessments are being implemented to provide a profile of communities for inclusion in the National Vulnerability Grid.

- The completion of more Tsunami Ready designated coastal communities.

Detection System:

- Training for Emergency Response personnel and Warning Centre personnel is also being targeted to improve the capacity of the National System.

- The Coastal Zone Management Unit has worked towards ensuring that the Port St Charles Tide Gauge, Radar Sensor, Aqua Bubbler, Pressure Level monitor is fully functioning.

NATIONAL PROGRAMMES AND ACTIVITIES INFORMATION

11. EXECUTIVE SUMMARY

Brief statement of no more than one page addressing all items discussed in the Narrative section of the National Report (below)

The Department of Emergency Management in conjunction with the Coastal Zone Management Unit continue to collaborate as co-chairs of the Technical Standing Committee on Coastal Hazards. This standing committee is tasked with the responsibility for the development and implementation of the National Coastal Hazards and Earthquake Programme in Barbados. Emphasis is being placed on the public education and awareness programme regarding these particular hazards with focus on the involvement of coastal communities, the private sector - especially the Tourism sector and insurance agencies, the disabled community and the youth population.

Attention is also being placed on the further enhancement of the Mass Notification and Alerting Mechanisms by improving the National Multi-Hazard Early Warning System. In addition, the scientific information and data requirements necessary to influence and enhance the Programme are being pursued. Over the last year, an additional thirteen (13) radio stations have signed MOU’s with the National Disaster Office to facilitate Mass Notifications through the CAP System.

12. 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), tsunami exercises, as well as public education programmes or other measures taken to heighten awareness of the tsunami hazard and risk.

Modifications to National tsunami warnings procedures or operations

Technical Standing Committee on Coastal Hazards

During the 2023-2024 period the TSCCH conducted meetings which were geared towards the planning and execution of the Coastal Hazards and Earthquake Smart Month in March 2024. The Evacuation Sub-Committee of the TSCCH also met a number of times relative to areas of interest such as alerting as well as other matters relating to the achievement of the Tsunami Ready Recognition for the Christ Church West Community (Garrison St. Michael to Rendezvous Christ Church) and St. James Central community (Porters, St. James to Batt's Rock, St. Michael). The TSCCH also met to chart the way forward for the renewal of the recognition for the Shermans to Mullins communities as well as other coastal communities which have been earmarked.

The BMS through the TSCCH also conducted a consultation relative to an update of their tsunami alerting protocols.

Global Tsunami Recognition

In June 2020, Barbados under the guidance of TSCCH achieved its first Global Tsunami Ready Recognition for the area Shermans, St. Lucy to Mullins in St. Peter. Barbados received support from the Caribbean Tsunami Information Centre (CTIC) and the European Commission Humanitarian Aid Department's Disaster Preparedness Programme (DIPECHO) in this endeavor.

Three years later, in September 2023, the communities of the Christ Church West constituency (Garrison, St. Michael to Rendezvous, Christ Church) achieved their Tsunami Ready Recognition. An official ceremony was held with all stakeholders to present the recognition to the Christ Church West District Emergency Organisation. Support was received from International Tsunami Information Center Caribbean Office (ITIC-CAR), The National Oceanic and Atmospheric Administration (NOAA), the United States Agency for International Development (USAID) and the National University of Costa Rica.

Currently, the communities of the St. James Central constituency are in the final stages of attaining their Recognition. Barbados received technical, administrative and financial support from the Caribbean Tsunami Information Centre (CTIC), The National Oceanic and Atmospheric Administration (NOAA), the Norwegian Agency for Development Corporation (NORAD) and the Intergovernmental Oceanographic Commission of UNESCO (UNESCO/IOC).

As mentioned earlier Barbados has also started the Tsunami Ready Recognition renewal process for the communities from Shermans, St. Lucy to Mullins, St. Peter through the engagement of the District Emergency Organisations utilizing the inundation mapping obtained from the Pacific Marine Environmental Laboratory (PMEL). The decision was also made by the TSCCH to conduct the renewal as well as upcoming projects along the thirty (30) constituencies to ensure that there is no exclusion of coastal communities for the upcoming projects.

Barbados Tsunami Warning Protocol and Standard Operating Procedures

The BMS introduced an additional tool for impact-based forecasting in 2020. This was followed by the introduction of the BMS Insights Application for smart phones in 2021. The impact-based forecasting tool and the BMS Insights App both serve to notify the public and all stakeholders of pending hazard events.

A Community Emergency Operations Plan Template was developed and made available for adaptation by community emergency response groups. Five (5) District Emergency Organisations – St. Lucy, St. Peter, St. James North, St. James Central and Christ Church West adapted the template and now have Community Emergency Operations Plans for their areas. St. Michael North West and St. Michael West has started the process for developing and enhancing their Community Operations Plan.

Common Alerting Protocol: Mass Notification System

At present, work is ongoing with relation to the upgrade of the CAP Mass Alerting System to improve its operability and reach. This includes refining the system to achieve seamless interoperability with our various established social media channels as well as to ensure there is full operability of the mechanism responsible for activating the local radio stations interrupts.

The CAP is also in the process of expanding its capacity, transitioning from four (4) radio stations to seventeen (17), while nine (9) broadcasting companies including the Caribbean Broadcasting Corporation, Starcom Network Inc., Barbados Broadcasting Service Limited, Habmar Investments Inc., Christ is the Answer, HITZ 106.7 FM, Pulse Broadcast Services Inc., Nothing But God and Sterling Communications Inc.—have signed Memoranda of Understanding to solidify this partnership. The CAP requires some level of upgrading to be more efficient and the DEM is working with the Ministry of Innovation, Science and Smart Technology and the Telecommunications Unit to support the upgrade.

Public Education and Awareness Programme

The Barbados population has been kept abreast of tsunami and other coastal hazards through public awareness and education activities which targets coastal communities, the Tourism

Sector stakeholders, the Insurance Agencies, the disabled community, school population and the general public. The table below captures these public awareness and promotional activities geared at the various segments of the Barbadian population during the period April 2023 - March 2024.

Table 2: National Tsunami Public Awareness Programme April 2023 - March 2024

Public Awareness Activities	***Target Audience***	***Collaborating Agencies/ Entities***
Television and Radio Public Service Announcements (PSAs)	*General Public*	• *TSCCH* • *Barbados Government Information Service* • *Private Media Houses*
Tsunami Trivia Programmes	*General Public*	• *TSCCH* • *Private Sector Business Agencies* • *Caribbean Tsunami Information Centre*
Real Talk in the Face of Danger Podcast	*General Public*	• *Public Affairs Department* • *Barbados Fisheries Division*
Earthquake and Tsunami Virtual Seminar Workshop	*General Public*	• *University of the West Indies – Seismic Research Centre* • *Montserrat Volcano Observatory* • *TSCCH*
Tsunami and Coastal Hazards Webinar	*Sagicor General Insurance Agency*	• *Sagicor General* • *Coastal Zone Management Unit*
Tsunami and Coastal Hazards Webinar	*G4S Security Services*	• *G4S Security Services* • *Coastal Zone Management Unit*
Tsunami Ready Recognition Project Webinar	*General Public* *Barbados Small Business Association* *Realtors*	• *TSCCH*

	Hoteliers *Guest House Owners* *Barbados Chamber of Commerce and Industry* *Barbados Hotel and Tourism Association*	
World Tsunami Awareness Day – National District Emergency Organisation Training	*General Public*	• *TSCCH* • *Private Business Sector* • *Caribbean Tsunami Information Centre*
Tsunami Ready 5k Walk and Run	*General Public*	• *TSCCH* • *Private Sector* • *Caribbean Disaster Management Agency*
Coastal Hazards and Earthquake Smart Month Launch	*General Public*	• *TSCCH* • *Media Houses* • *Public/Private Business Sector*
Community Awareness and Outreach Events for the Porters, St. James to Batts Rock, St. Michael and Garrison to Rendezvous Tsunami Ready Project Areas	*General Public: Community residents, businesses and other stakeholders in the communities identified for recognition*	• *TSCCH* • *Religious Institutions*
National Earthquake Preparedness Day	*General Public*	• *Public Information and Education Sub-Committee of the TSCCH.*
Caribe Wave Exercise: Pre –Exercise Sensitization and Actual Event	*General Public* *Private Business Sector Entities* *Tsunami Ready Communities Designees* *Coastal Communities*	• *TSCCH* • *Private Sector Business Agencies* • *Voluntary Organizations (BCBRA, DEOs)* • *Ministry of Education, Technological and Vocational Training*

	National Emergency Management System	• *Government Public Sector*

*An overwhelming number of businesses donated generously towards the Tsunami 5k Walk & Run activity. Three hundred and fifty (350) T-shirts were sponsored by USAID. Generosity was also seen with prize donations from the following businesses: PCR Bakery, West Indian Biscuit Company, NiceFace by Ellenaj, Ocean Fisheries, Rapid Response Team, Burger King/Little Caesar, Ice Lab, Dina's Bar & Cafe, Republic Bank Barbados Limited, Massy Distribution and Kooyman.

Figure 6: World Tsunami Awareness Day – National District Emergency Organisation Training, Island Inn Hotel, Aquatic Gap, St. Michael

Figure 7: Run Tsunami Run 5K 2024 - Speightstown, St. Peter

Figure 8: Coastal Hazards & Earthquake Smart Month Launch 2024 - Folkestone Marine Park, St. James

Figure 9: Coastal Hazards & Earthquake Smart Month 2024 Launch Flyer

Figure 10: National Earthquake preparedness day flyer March 08, 2024

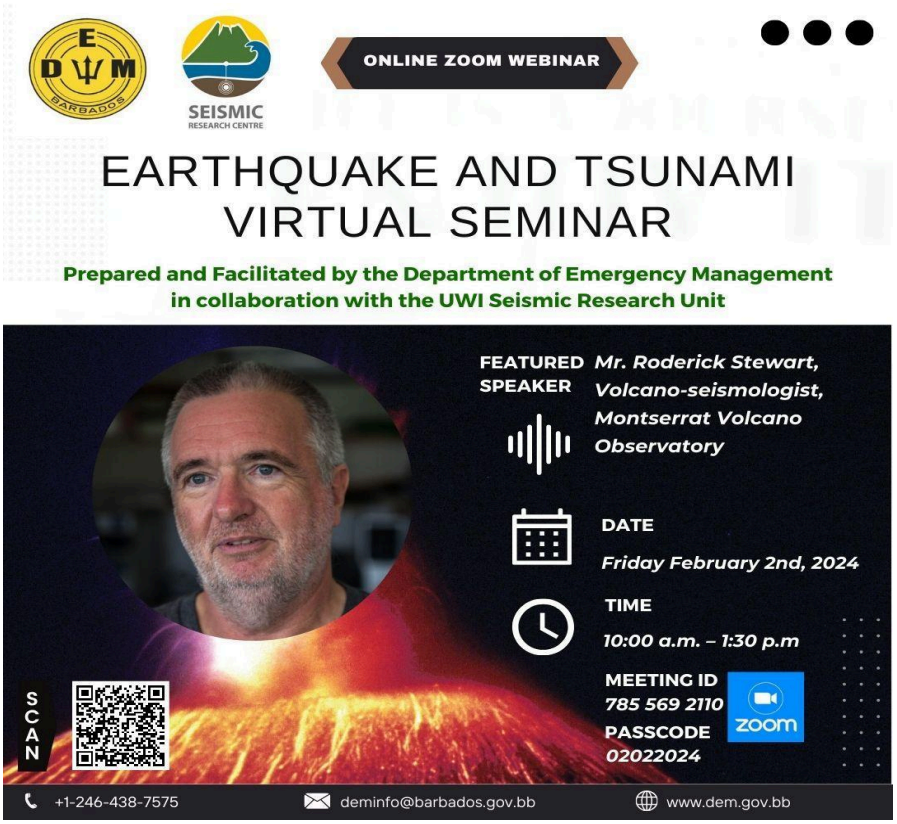

Figure 11: Earthquake and Tsunami Virtual Seminar Flyer

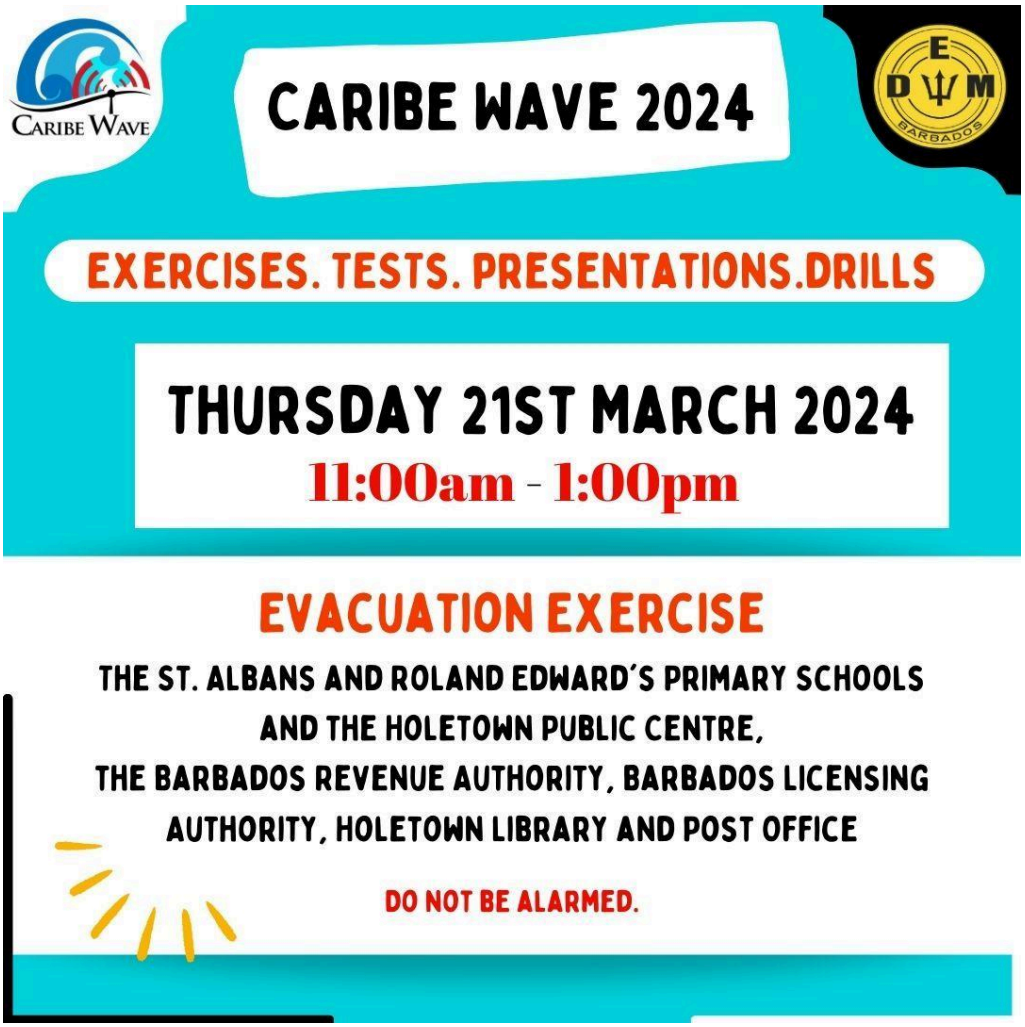

Figure 12: Public information graphic on Caribe Wave Exercise 2024

Figure 13: Community Consultation Sessions, St. James Central Community

Figure 14: Public Education Outreach, St. James Central DEO

Figure 15: Tsunami Ready Recognition Ceremony –Christ Church West Community


Reflecting the Pride
A Bajan Legacy

Figures 16-18: School Seminars (Orientations) on the Tsunami Hazard and Evacuation

Figure 19: Orientation (Seminar) & Community Outreach at Little Good Harbor Hotel, Fish Pot Restaurant & Community (Shermans to Mullins Tsunami Ready Recognition Renewal) – Caribe Wave 2024

Figure 20: Zone 2 District Emergency Organizations' Supplementary Emergency Operations Centre at Queens College School – Caribe Wave 2024

Figure 21: Evacuation of staff and students of the St. Albans Primary School – Caribe Wave 2024

Figure 22: Evacuation of staff from the Holetown Public Complex – Caribe Wave 2024

Figure 23: Exercise Staff, Roland Edwards Primary School Evacuation – Caribe Wave 2024