

National Reports will be posted to the ICG/CARIBE EWS-XVI web site without TWFP contact details

NATIONAL REPORT
Submitted by (Virgin Islands)

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: Jasen H. Penn
Title: Director
Organization: Disaster Management
Postal Address: Government of the Virgin Islands, Road Town, Tortola , VG1110
E-mail Address: bviddm@surfbvi.com, japenn@gov.vg
Telephone Number: 1 284 468 4200
Fax Number: 1 284 468 4208
Cellular Telephone Number: 1 284 468 9665

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: Mark Collins
Title: Commissioner of Police
Responsible Organization: Royal Virgin Islands Police Force
Postal Address: P.O. Box 64, Road Town, Tortola, VG1110
E-mail Address: mcollins@rvipolice.vg , control@rvipolice.vg
Emergency Telephone Number: 1284 368 5371 , 1284 484 3822
Emergency Fax Number: 1 284 494 5968
Emergency Cellular Telephone Number: 1 284 368 9334

National Tsunami Warning Centre

Person in Charge: Victor Huerfano
Title: Director
Responsible Organization: Puerto Rico Seismic Network
Postal Address: Box 9017 , Mayaguez PR, 00681-9017
E-mail Address: staff@redsismica@uprm.edu
Emergency Telephone Number: 1 787 833 8433
Emergency Fax Number: 1 787 265 1684
Emergency Cellular Telephone Number:

3. Tsunami Advisor(s), if applicable

Name: Jasen Penn
Title: Director
Postal Address: Road Town, Tortola, Virgin Islands, VG1110
E-mail Address: japenn@gov.vg
Emergency Telephone Number: 1 284 468 4200
Emergency Fax Number: 1 284 468 4208
Emergency Cellular Telephone Number: 1 284 468 9665

3. **Tsunami Standard Operating Procedures for a Local Tsunami (when a local tsunami threat exists, less than 1 hour travel time)**
 4. **A.Drop, Cover and Hold.**
 5. **B.Verify information received from PTWC and information provided by PRSN(5mins).**
 6. **C.Once it has been determined that a Tsunami was generated contact Governor for approval to activate National Early Warning and Multi Hazard Alert System if not protocol allows Director to go ahead (10mins).**
 7. **D.System is activated to alert public to evacuate.**
 8. **E. Public has also been sensitized that there is a high probability a local event will cause damage from an earthquake. Public should then move to higher ground without being preempt by the Tsunami Warning Focal Point.**

5. **Tsunami Standard Operating Procedures for a Regional Tsunami (when a regional tsunami threat exists, 1–3 hour travel time)**
 9. **A.Drop, Cover and Hold.**
 10. **B.Verify information received from PTWC and information provided by PRSN(5mins).**
 11. **C.Once it has been determined that a Tsunami was generated contact Governor for approval to activate National Early Warning and Multi Hazard Alert System if not protocol allows Director to go ahead (10mins).**
 12. **D.System is activated to alert public to evacuate.**
 13. **E.Notify key operation group members. ‘**
 14. **F. Officers will then safeguard the Governor, Premier and the Magistrate. Any executive orders needed to be signed these are the key individuals to do.**

6. **Tsunami Standard Operating Procedures for a Distant Tsunami (when a distant tsunami threat exists, more than 3-hour travel time)**
 1. **A.Drop, Cover and Hold.**
 2. **B.Verify information received from PTWC and information provided by PRSN(5mins).**
 3. **C.Once it has been determined that a Tsunami was generated contact Governor for approval to activate National Early Warning and Multi Hazard Alert System if not protocol allows Director to go ahead (10mins).**
 4. **D.System is activated to alert public to evacuate.**
 5. **E.Notify key operation group members. ‘**
 6. **F. Officers will then safeguard the Governor, Premier and the Magistrate. Any executive orders needed to be signed these are the key individuals to do.**

For each situation, please provide the following:

- *What organization identifies and characterizes tsunamigenic events?*

The Pacific Tsunami Warning Centre (PTWC) will be the organisation that does this for the Virgin Islands.

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

Once such information is received from the PTWC and shared with TWFP and via PRSN and it is indicated at Tsunami Alert (Watch, Warning) is issued, The National Protocols will be activated.

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

The Department of Disaster Management (initiates the protocols and the national plan for the Virgin Islands) and the Royal Virgin Islands Police Force (To provide the information to the DDM)

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

This information is disseminated via the Territory's NEWMAS at various levels. This system includes Sirens, Emergency App, SMS, Emergency Broadcast, Radio Data System, Marine VHF, Marine land mobile.

- *How is the emergency situation terminated?*

The Governor will give the all clear after receiving credible information that the Virgin Islands is no longer under a tsunami threat.



- *For Distant Tsunami Procedures:*

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

We have never had to take action however we continue to share any information as it pertains to felt earthquakes in the territory indicating whether tsunami is generated or not.

7. National Sea Level Network

Please include a table with position and description of stations/sensors, and a map.

<i>Location</i>	Cane Garden Bay Tide Gauge
<i>GPS Coordinates</i>	18 24 46N , 64 39 39W
<i>Type of Sensor</i>	Radar Sensor , Weather Station (Barometric Pressure, Wind Speed, Wind Direction, Temperature).
<i>Map of location</i>	
<i>Image of Tide Gauge being commissioned</i>	

8. Information on Tsunami occurrences/Tsunami Exercises

The Virgin Islands has taken in part in several tsunami exercises since 2009. This year we took part in the Caribe Wave 2024 with participation being well over 4000. We provided several publications of the event. See photos in the table below. Some of the lessons learned despite being a part of this exercise for so many years, people are still not aware that the sirens are outdoor units and expect to hear them everywhere. We decided to develop a campaign with the hopes that this helps with further education. A number of our evacuation routes need to be evaluated. Some are just too far and persons may fair better with vertical evacuation.

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

10.

Tsunami Protocol up for revision next year however if process can begin this year it will be undertaken and tested for Caribe Wave 2025. A new siren to be installed this year. Future projects include developing a evidence based and community centre EWS to augment the NEWMHAS. Tsunami Evacuation routes being digitized to work in conjunction with our app so that users can see their location and a route will be mapped to their device

NATIONAL PROGRAMMES AND ACTIVITIES INFORMATION

11. EXECUTIVE SUMMARY

This report highlights the activities of the Department of Disaster Management as it relates to tsunamis in 2023. The beginning of year sees the preparation for Caribe Wave where training and refreshers are provided on protocols and procedures. Systems are tested monthly and maintained in keeping with EMAP Accreditation standards. Such systems include the Siren Network, Emergency Broadcast System, Radio Data System testing of radio stations, DDM App, Short Messaging System, Instant Messaging and Social Media Channels. Several public outreach events were used as promotion this included gameshow and participation in a hurricane expo. We participated in the Caribe Wave 2024 by having a full scale evacuation exercise including the civil service and the private sector. We have embarked on projects to improve our tsunami routes by using GPS Coordinates and location finding to direct persons to safe locations. Other improvements include the reestablishment of seismic stations, strong motion sensors and core gps stations. In addition the installation of Tide Gauges more specifically in Cane Garden Bay. It should be note also that the territory achieved Tsunami Ready recognition in 2022.

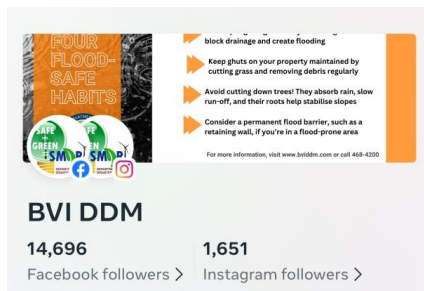
12.

Training of the members of the Tsunami Warning Focal Point

The Virgin Islands provided training to the Royal Virgin Islands Police Force (RVIPF) TWFP in February 2023. This is to ensure new officers are familiar with the protocols and procedures and how to activate the NEWMHAS. A total of 6 officers were trained from a number of shifts.

The NEWMHAS of the Virgin Islands

The NEWMHAS is tested every 4th Friday of the month. This includes the activation of 16 electronic and voice capable sirens,



6 emergency broadcast encoders installed in six radio stations, 150 radio data system radios installed in clinics, police stations, schools and critical facilities, an emergency app with 2000 users connected, SMS messaging access to subscribers

(access to over 15,000) via the three local telephone service providers FLOW, DIGICEL and CCT Global Communications.

Social Media Channels

The DDM maintains subscribers over 20,000.. Facebook has 14,696 followers, Instagram 1,651, twitter 783,

Caribe Wave Exercise 2024

The Virgin Islands took part in the exercise in March 2023. Durng that period we had a registration of over 4000 persons an increase from 2500 the previous year. A cross section of the population took part which include kindergaten, primary and secondary. Private businesses in the financial services industry, banks and marine sector and the entire civil service.



Evacuation Maps

The Virgin Islands has evacuation maps for all key islands , Tortola, Virgin Gorda, Anegada and Jost Van Dyke. The DDM also creates maps in GIS for businesses and concerned citizens who want to visualize where their building lies within the evcauation zones.

Public Outreach

Two key public outreach forums were conducted. The gameshow family feud was replicated to include comprehensive disaster management and hazards. This was a public private partnership between hardware stores and super markets. A number of their staff participated at hosts. The other outreach program was with Redcross as they host a disaser expo each year and we participate. This provides interaction between all cross section of public where relative information is shared.

Seismic System reestablished

The Puerto Rico Strong Motion Program assisted the Virgin Islands in reestablishing seven strong motion sensors. These were now upgraded to solar and battery powered and modern sensors as well. They have been in gradual stages reestablishing the network since 2018. The Puerto Rico Seismic Network in conjunction with the Network of the Americas reestablished two seismic stations. One on Tortola at Russel Hill and the other at North Sound Virgin Gorda. The network of americas team reestablished the core gps station on North Sound Virgin Gorda. This station is currently logging and sharing data.



Tide Gauges

The Puerto Rico Seismic Network assisted the Virgin Islands in commissioning a tide gauge in Cane Garden Bay and diagnose the issues with the tide gauge in Baughers Bay. The Virgin Isands is slated to have four tide gauges and expect to have two full functioning tide gauges by the end of 2024.

Visual Camera

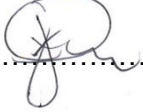
The Virgin Islands invested in coastal camera weather station which is proved to be very effective. This camera system keeps an archive of weather information as well as visual video with time lapse and historic information. <https://bvi.weatherstem.com/tortola>

Tsunami ready recognition

The Virgin Islands first received Tsunami recognition in 2014. This was under the recongition program under the National Oceanic Atmospheric Administration (NOAA). To date the Virgin Islands maintains this recognition which was achieved in 2022. This however was under the UNESCO IOC.

Future Activities

The Virgin Islands will like to pursue Cap Compliancy however this undertaking requires funding. In addition, there is the need to expand our siren network and this is being pursued as well. The visual camera has offered significant benefits in providing additional information for decision making. The exercise revealed several corrective actions are needed with our protocol and our aim is to have this updated before the next Caribe Wave 2025. In final policy is needed to successfully guide the implementation of a comprenensvie early warning system. With that in mind our aim is to further develop or Multi Hazard Early Warning System Policy to provide this support for the Virgin Islands.

.....
Date: May 9th 2024 Name: ...Jasen H. Penn 

**Seventeenth session of the IOC Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions
(ICG/CARIBE-EWS-XVII)
Managua, Nicaragua, 6–9 May 2024**

INFORMATION NOTE FOR PARTICIPANTS

1. Contacts

The ICG/CARIBE-EWS XVII is hosted by Instituto Nicaragüense de Estudios Territoriales (INETER) on behalf of the Government of Nicaragua. The Tsunami Advisory Center (CATAC) is subordinated to the Director of INETER.

Principal local contacts are:

Dr. Wilfried Strauch

Coordinator of CATAC/INETER and local organizer

Emails: wilfried.strauch@yahoo.com, wilfried.strauch@ineter.gob.ni

Cellphone/Whatsapp: +505-89246234

Home phone: +505-22331383

Ing. Rosario Aviles

Logistics Assistant

Emails: raaa130660@hotmail.com, raaa130660@yahoo.com

Cellphone/Whatsapp: +505-89695505

Other personnel mainly from INETER's seismology section will provide assistance to the session.

2. Venue and Accommodation

The Meeting will be organized at the **Hotel Crowne Plaza Managua**. The hotel rooms have to be reserved and paid by the participants of the meeting through its [webpage](#).

3. Visa, Arrival, Departure and Customs Requirements

INETER will inform the authorities about your participation in the meeting. In a special communication INETER will ask you to provide your travel information to considerably accelerate your entrance formalities to Nicaragua. Further visa requirements are provided on the [website](#) of the General Directorate of Migration and Immigration of Nicaragua (in Spanish only), but you are kindly advised to verify the visa requirements subject to your conditions.

The arrival of most of the participants by air travel will be at the International Airport of Managua (MGA) "Augusto C. Sandino".

All travelers should have a return ticket and evidence of funds to support themselves during your presence in Nicaragua. You must always carry a valid identity document.

Once you arrive in Nicaragua, you must purchase a tourist card for \$10 USD at the immigration counter (exact change recommended), valid for up to a total of 90 days in any of the member countries of the Central America-4 Border Control Agreement. Visitors remaining longer must obtain an extension from Nicaraguan immigration to avoid large fines.

Individuals traveling from countries at risk of yellow fever transmission must show proof of yellow fever vaccination administered at least 10 days before travel to be permitted entry to Nicaragua. If you use a passport of a different nationality than you did on prior trips to Nicaragua, Nicaraguan authorities may deny you entry. If you possess multiple nationalities, you should carry a valid passport for all of them.

International Airport of Managua (MGA) "Augusto C. Sandino" has only one exit. Please look for the INETER personnel (speaking Spanish and English) who will be waiting for you. If there is some unusual situation (you lost your flight, you failed to meet the INETER personnel), please try to phone or chat via Whatsapp or using email to one of the contacts given above.

You must exit Nicaragua with the same passport used for entry. If your passport is lost or stolen while in Nicaragua, you will need to get a new entry stamp from Nicaraguan Immigration before you can depart by following instructions available on the [website](#) of the General Directorate of Migration and Immigration of Nicaragua (in Spanish only). This cannot be done at the airport on departure.

Customs procedures at the airport are normally very fast (X-Ray). The entrance with special equipment as drones, professional cameras, scientific equipment is only possible with previous permissions. If you bring in the equipment without the permission customs will retain it during your stay and you must request it back from the Airports customs office when you leave the country. If you intend to enter Nicaragua with such items, please inform INETER in advance.

4. Transport

INETER will organize transportation of participants from the airport to the hotel using their pickups or buses. The distance is about 15 km and it will take around 20 to 40 minutes for rides to get to destination, depending on traffic. There are currently big construction works on the way.

Taxi

In case you fail to get in contact with personnel from INETER you might need to use a taxi. Please, use only the official taxis which are available at the airport exit. A taxi ride from airport to hotel should cost around 20 USD. The official taxis will bring you directly to the hotel. Therefore you won't need to share it with other passengers which is a common practice in Nicaragua (for cheap taxi transportation). There is no UBER service in Nicaragua and similar services should be taken with caution.

Land Connections

Some participants who come from Central America might enter the country passing the border with Honduras in the North of Nicaragua or from Costa Rica in the South. Similar border procedures to the ones of air connections apply, see above.

Bus terminals in Managua

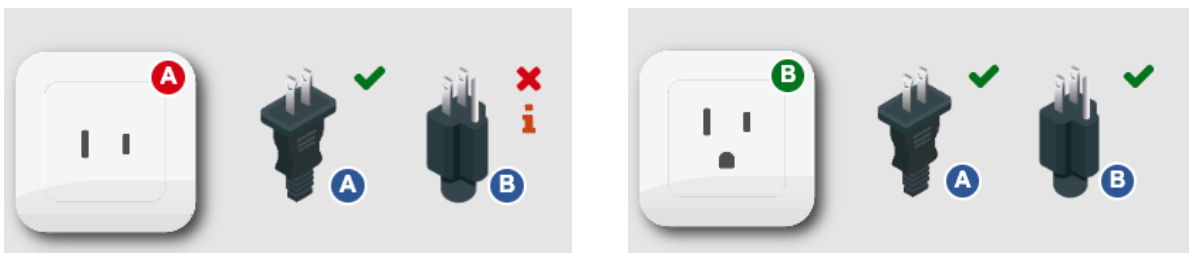
There are several international bus terminals in Managua, most are rather close to the meeting Hotel. If you plan to arrive by bus, please, inform INETER in advance about your probable arrival time and bus company to be picked up and driven to the hotel. You can also use a taxi to get to the hotel.

5. Currency

Nicaragua uses the "Cordoba" as its currency. 1 American Dollar corresponds to about 37 Cordobas. The money exchange at the airport might offer very unfavorable exchange rates. You can easily obtain the cash you need using your credit or debit cards at many ATM's in Managua. Please consider that the use of US money is very common in Nicaragua. You can pay nearly everywhere with US dollars, except for very small businesses or when you must pay only small amounts. Also, when you pay in dollars you can get the exchange in Cordobas and you can use them to pay smaller transactions. It might even not be necessary to use any cash for the participation in the meeting as the use of credit or debit cards is very common in Nicaragua except for small businesses or in small villages. Changing cash from other currencies other than dollars (e.g. Euro) is rather complicated and only offered at banks.

6. Voltage and plugs

The voltage in Nicaragua is 120 V and the type A and B plugs (US style) are used. You may need a power plug adapter for sockets type A. Sockets type B can fit your plugs but may not always be available locally¹.



¹ <https://www.power-plugs-sockets.com/us/nicaragua/#:~:text=Do%20your%20power%20plugs%20fit,not%20always%20be%20available%20locally.>

7. Additional Information

Shopping

There is a big shopping center "Plaza Inter" in front of the Hotel Crown Plaza with ATMs and restaurants.

Sightseeing

Interesting sites near the hotel are:

- "Laguna de Tiscapa" a crater lake in a not longer active volcano
- Paseo and port "Salvador Allende" at Lake Managua with many restaurants and view to the lake and the Apoyeque volcano complex.
- Old Cathedral of Managua – destroyed by the earthquake in 1972.
- The offices of Civil Protection Agencies SINAPRED and Civil Defense and National Assembly of the Republic of Nicaragua are at only 400m and 1km away from the hotel, respectively.

Climate in Managua

Nicaragua has a tropical climate, temperatures in May in daytime are around 30-35 degrees Celsius, slightly lower temperatures during the night, 26-30 degrees Celsius. There might be slight rain falls.