

Anguilla's Road to TsunamiReady

Department of Disaster Management, Anguilla

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What is TsunamiReady?

Since June 20, 2001, the National Weather Service (NWS) of the National Ocean and Atmospheric Administration (NOAA) has been implementing the recognition program, *TsunamiReady*TM. This program has helped community leaders and emergency managers strengthen their local operations. As of August, 2011 almost 100 coastal communities have been recognized by the National Weather Service as *TsunamiReady*. These communities are recognized as being better prepared to save lives through better planning, education and awareness. Communities have fewer fatalities and property damage if they plan before a tsunami arrives. No community is tsunami proof, but *TsunamiReady* can help minimize loss to your community.

Why TsunamiReady?

- The Caribbean is a region prone to many natural hazards. Tropical Cyclones , Earthquakes and Volcanic Eruptions are the reality in this region. The latter two hazards in the preceding example also makes us vulnerable to Tsunami events.
- This is compounded by the fact that Tourism is Anguilla's main product.

Anguilla's Road to TsunamiReady!

Anguilla became the first English-speaking Caribbean country to become Tsunami Ready on 30 September 2011.

The journey towards being TsunamiReady was not without its challenges and controversy, but despite this the Department of Disaster Management managed to succeed. The signature of His Excellency The Governor, Mr Alistair Harrison approving the draft evacuation map completed the steps to the recognition process. The recognition review meeting conferred the status.

Anguilla's road to TsunamiReady recognition is detailed following.

TsunamiReady Guidelines

- Guideline 1: Communications and Coordination
- Guideline 2: Tsunami Warning Reception 4 ways for EOC/WP to receive NWS tsunami messages
- Guideline 3: Local Warning Dissemination 2ways EOC/WP can disseminate warnings to public
- Guideline 4: Community Preparedness 2 annual tsunami awareness programs
- Guideline 5: Administrative - Formal planning and a pro-active administration.

The First Wave

The **Anguilla Warning System** with various ways of alerting and informing the public employs a multitude of technological means including but not limited to:

- ❑ BAMBox – Internet based pop up
- ❑ E-mail
- ❑ RDS Warning Receiver – Similar to a clock radio
- ❑ FM Radio Interruption – interrupts the radio broadcast to provide emergency information.

The Anguilla warning system is based on an all hazard warning system with a Common Alerting Protocol or (CAP), as it is commonly called, backbone. The CAP protocol allows all the pieces of the Anguilla Warning System to communicate and work together. So that one warning can activate many different alerting systems, quickly and simultaneously. It is the backbone of the technologies that make up the Anguilla Warning System.

Steps 1 and 2 were fulfilled in this wave.

The Anguilla Warning System

- The Anguilla Warning System is a Common Alert Protocol (CAP) based public alert system.

Tsunamis and the AWS

- A Tsunami threat elicits a Level III response of the AWS.
- In a Level III event all notification methods are activated at their highest priorities.
- Depending on the estimated time to impact the Tsunami Warning Focal Point can activate this Level III alert according to Anguilla's Draft Tsunami Protocol with a simple push of a switch

The Second Wave

Centralised Warning Point

- ❑ The Royal Anguilla Police Force Headquarters is manned 24 hours a day 7 days a week, it was therefore a natural fit to establish as Anguilla's tsunami warning Focal point.
- ❑ The relevant equipment (Fax, Emwin, Telephone, e-mail) is installed and all police officers likely or unlikely to be in the area when a warning is received have been trained as to what to do.
- ❑ The building also hosts the National Emergency Operations Centre when activated.
- ❑ All located within the safe area of the evacuation map.
- ❑ Step 3 was completed in this wave.

The Tsunami Warning Focal Point

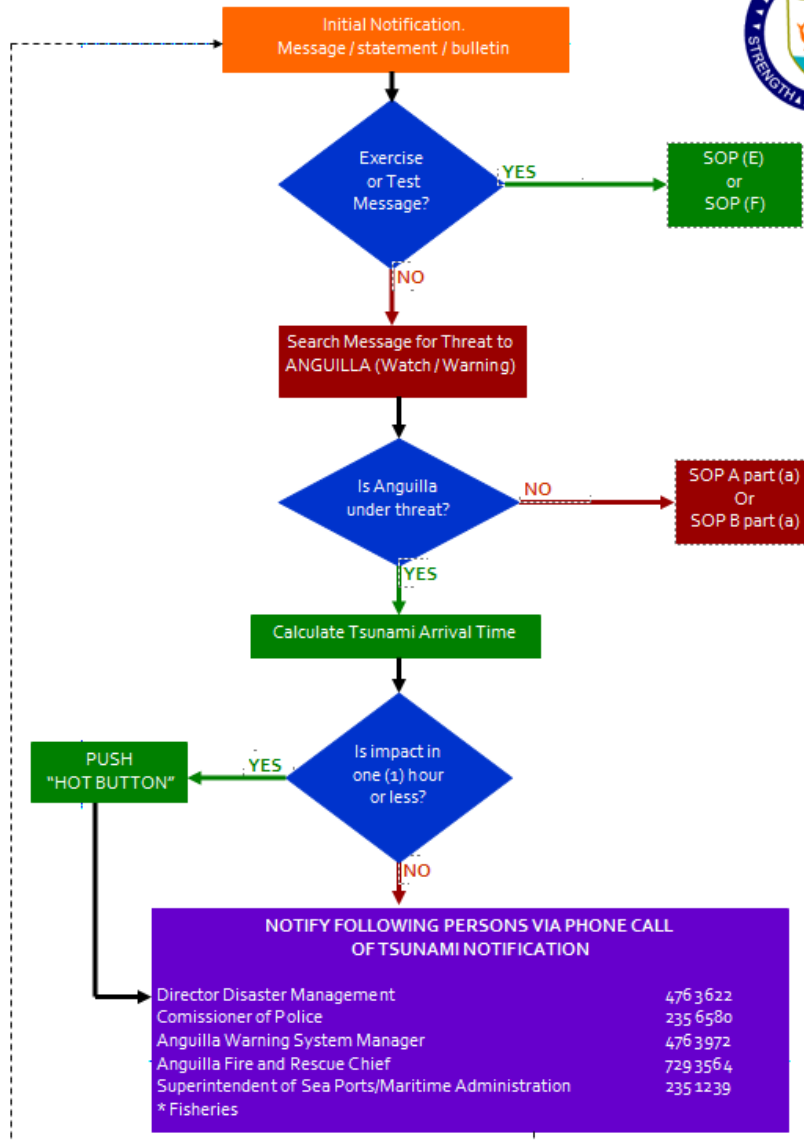
- Anguilla's TWFP is Police Dispatch as it is one of the few 24hr Government agencies.
- One requirement of the TsunamiReady programme was that the country have multiple means of receiving tsunami alert information which can be disseminated to the public.

EMWIN

- Email
- Fax
- Telephone

TWFP Notification Flowchart

Anguilla Tsunami Warning Focal Point Notification Flowchart



The Third Wave

Tsunami Protocol

- ❑ Tsunami plan in the event of a tsunamis was developed using the protocol outline provided by CDEMA.
- ❑ The building also hosts the National Emergency Operations Centre when activated.
- ❑ Staff of the DDM, RAPF, Fire Service, Ports were all asked to take and pass an online tsunami community warning and public awareness course.
- ❑ Step 4 was completed in this wave

The Fourth Wave

Tsunami Hazard Zones

- The process of developing an evacuation map that would show where persons had the highest likelihood of surviving a tsunami using the international rule of thumb of a 100ft or 30m wave impacting Anguilla and coming in approximately 1 mile inland in the absence of bathymetry data to do tsunamis modelling. This was a challenge for an island whose widest point is 3 miles wide.
- Painstaking research was done by the DDM staff to maximize the number of signs able to be erected at that time. 4 Assembly Point signs; 4 evacuation route signs; and 6 tsunami hazard zone signs were finally arrived at.
- Key stakeholder meetings with agencies such as Tourism and MICUH. Landowners were contacted for permission to mount the signs and they were placed.
- Step 5 was completed in this wave.

Tsunami Signs

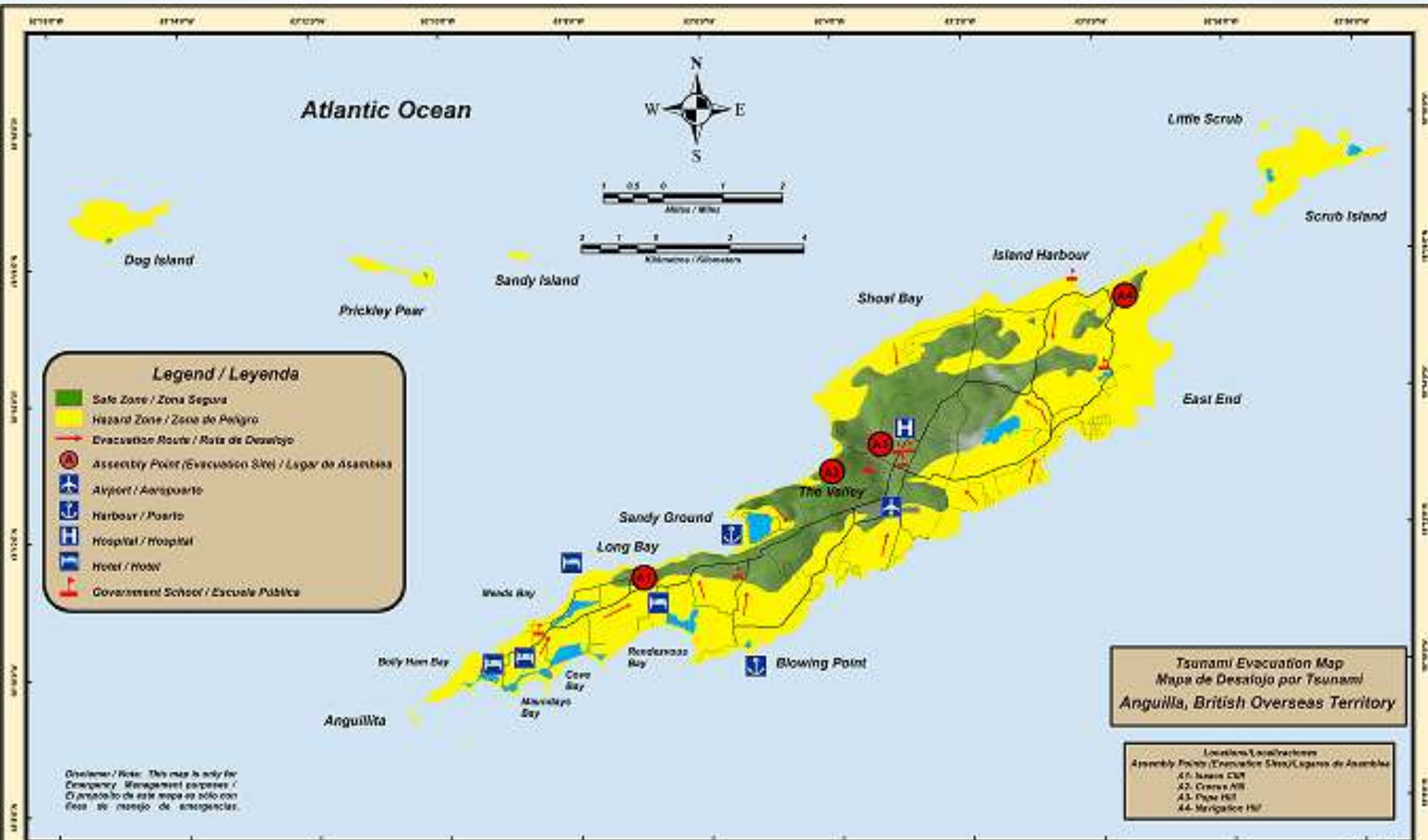
- Another requirement was for the provision of signs across the island clearly identifying Tsunami Hazard Zones, Evacuation Routes and Tsunami Evacuation Sites.



Tsunami Inundation Map

- One of the primary requirements of being TsunamiReady was the provision of a Tsunami Inundation map.
- Anguilla's Draft map was prepared with the help of NOAA and in the absence of bathymetry data it was prepared with the rule of thumb of a 100ft wave height and one mile inland inundation.

Resulting Inundation Map



October 7, 2011



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The Final Wave

Community Tsunami Awareness

- A plan or protocol is only as good as the person(s) who know what's in it. The DDM started a rigorous community awareness campaign focused on tsunami.
- A presentation to Executive Council and the local media was made.
- A Hazard and Tsunami Awareness presentation was developed and a series of 12 community meetings were organized. This is on-going.
- The CaribeWave exercise took place in March 2011 in the Island Harbour community of Anguilla and now continues islandwide annually.
- All tsunami awareness done in 2011 was part of the recognition process
- The TsunamiReady recognition process was completed in this wave.

TsunamiReady Public Education

- DDM, RAPF and DITES officers Comet Tsunami Community Preparedness Course
- Town Hall Meetings
- Community Meetings
- Daily Tsunami Tips on Radio (31)
- Televised community tsunami presentation
- Educational sensitisation sessions for teachers
- Individual sessions with schools in TEZ
- Tsunami Leaflet with map

TsunamiReady Public Education



TsunamiReady Signs

The following signs have been placed at designated locations throughout Anguilla. These signs are explained below:



Assembly Point Signs

This sign has been placed in 4 locations in Anguilla:

1. Navigation Hill, Island Harbour
2. Pope Hill, The Valley
3. Crocus Hill, The Valley
4. Isaac's Cliff, Long Bay/Lower South Hill

Evacuation Route Signs

These signs have been placed along the main road indicating where to turn off the main road to access the assembly/ tsunami evacuation sites. An arrow with the correct direction is placed under the sign.



1. Long Bay/West End Road Junction;
2. C&N Jumbo Plaza/North Hill Rd Junction;
3. Canifari/Chalvilles Junction;
4. Sandy Hill roundabout.

Tsunami Hazard Zone Signs

These 6 signs have been placed at some of our most popular beaches. The purpose is to ensure persons at these beaches are aware of the potential hazard.



- | | |
|-------------------|------------------------|
| 1. Island Harbour | 4. Sandy Ground |
| 2. Shoal Bay | 5. The Cove (Smokey's) |
| 3. Crocus Bay | 6. Meads Bay |



Recognition





Certificate of Recognition

For successfully implementing the joint UNESCO Intergovernmental Oceanographic
Commission and NOAA National Weather Service
TsunamiReady program in Anguilla

December 12, 2011.

Wendy Watson-Wright

Wendy Watson-Wright
Assistant Director General and Executive
Secretary, IOC- UNESCO

Bill Proenza, Director
US National Weather Service
Southern Region

