Anguilla: TsunamiReady!

Tsunami Ready?

A Brief Look at The Anguilla Tsunami Warning Protocol

November 4-8
La Romana, Dominican Republic
Outline

- TsunamiReady
- Anguilla Warning System
- Anguilla Tsunami Warning Protocol
An Open letter from A. Tsunami

“Hi, I’m A. Tsunami.

Maybe you have heard of me. After all I have been bestowed with many names over countless centuries. But of all the great and terrible names I possess the most dangerous may very well be: “nothing”, “never going to happen” and “not in my lifetime”.

For it is customary that those who have not seen me do not fear me and do not understand me.

But those who have seen me, understand me and their FEAR of me is mandatory.

I may not come today, I may not come tomorrow, you may be blessed to never see me in your lifetime...

But rest assured I am real and I am coming. Little Anguilla, 35 square miles of pristine beaches and nary a obstacle in sight...I simply must visit you.

Be therefore warned that If you fail to prepare for my arrival I promise that I WILL be the very last tourist many of you will ever meet.

When I was but a young earthquake my mother said to me “A word to the wise is sufficient...”

Sincerely,

A. Tsunami
Anguilla and TsunamiReady

- By virtue of having a functional Warning System in 2009 and a draft Tsunami Protocol in place by early 2011, Anguilla decided to take the next required steps to promote total tsunami readiness.

- Since June 20, 2001, the National Weather Service (NWS) of the National Ocean and Atmospheric Administration (NOAA) has been implementing the recognition program, TsunamiReadyTM.

- 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.

- Anguilla gained its TsunamiReady certification in December 2011. Becoming in the process the first English speaking international territory to do so.
As part of TsunamiReady Certification Anguilla had to ensure there were several instruments and policies in place. These included:

- Functional Warning System capable of alerting the population to tsunami danger.
- Tsunami Protocol
- A tsunami evacuation map
- A 24 hr functioning Tsunami Warning Focal Point to receive alerts
- Tsunami signs erected to designate Assembly points and evacuation routes
- Public education component to raise tsunami awareness and evacuation procedures
What is the Anguilla Warning System

- A Common Alerting Protocol (CAP) Based All Hazard Warning System. CAP is an XML based protocol and is the common element of the individual warning components which allows all components to be triggered by a single action.

- You can think of CAP as an interpreter which allows distinct warning mechanisms to understand and react to a single alert message.

- The system has been operational in Anguilla since 2007.

- The system evolved throughout the years adding completely new dissemination methods and improving and enhancing existing methods.
### The evolution of the AWS

<table>
<thead>
<tr>
<th>2007</th>
<th>2009</th>
<th>2010-2013</th>
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<tbody>
<tr>
<td>• Initial Protocol and Policy development</td>
<td>• Improved BamBox (repurposed for Public Notification)</td>
<td>• Implementation of new CAP 1.2 server.</td>
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<td>• CAP Server</td>
<td>• Development of Public Email notification, (website and server)</td>
<td>• Tsunami “hot button” software and hardware designed in house</td>
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<td>• Single Radio Interrupt Unit</td>
<td>• Development of Public Outreach materials for Anguilla Warning System.</td>
<td>• Blackberry App developed for Anguilla Warning System</td>
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<td>• RDS receivers and transmitter</td>
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<td>• Expansion of FM broadcast capability. (6 DASDEC units and 1 in house developed unit)</td>
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<tr>
<td>• Initial BamBox for Staff Notification</td>
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<td>• Marine Alert and Weather Alert Technology added to system.</td>
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<td></td>
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<td>• Multi lingual alert dissemination capability</td>
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<td>• Multi lingual “Stay Safe” public Education Campaign.</td>
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AWS and Tsunamis

- The AWS has a Warning Policy that governs its use.

- Tsunami Activations are governed by a stand-alone policy called The Anguilla Tsunami Protocol and include very specific use cases of the Anguilla Warning System during tsunami threat scenarios as well as during exercises and national drills.
The Tsunami Protocols For Anguilla

- The Tsunami Protocols for Anguilla are in draft as of November 2013.
- The Protocols cover the gamut of procedures relating to actual tsunami events as well as exercises and drills.
- The Protocols provide Standard Operating Procedures for:
  - The operation of the Tsunami Warning Focal Point
  - The complete notification procedure for a tsunami event.
  - The activation of the Anguilla Warning System for a tsunami event.
  - Drill and Exercise simulations of tsunami events
The Tsunami Warning Focal Point

- Royal Anguilla Police Force is the TWFP
  - The fact that Anguilla lacks any local 24 hour Met forecasting office means that the role of TWFP is fulfilled by the Royal Anguilla Police Force.

- This provides a unique set of challenges and necessitated that the Tsunami Protocols address notification differently than in most cases.
The Tsunami Protocols

- The Tsunami Protocols therefore dictate that the Tsunami Warning Focal Point responsibility include:
  - Monitoring of ALL Tsunami related information and alerts via (EMWIN, FAX, TELEPHONE and EMAIL).
  - Rudimentary processing of the Tsunami alert information.
  - Initial notification to Police, Disaster Management.
  - May include activation of the Anguilla Warning System in a specific threat scenario.
The Tsunami Warning Focal Point

- Department of Disaster Management is responsible for training of the Police Officers in their roles as the TWFP.

- The Department has ensured that at least one Police Officer on each shift is trained to handle incoming Tsunami messages as per the Tsunami Protocol.

- Training is ongoing and the target is to train 100% of the Police Officers to ensure maximum redundancy.
Anguilla Tsunami Warning Focal Point Notification Flowchart

Initial Notification
Message / statement / bulletin

Exercise or Test Message?

Search Message for Threat to ANGUILLA (Watch/Warning)

Is Anguilla under threat?

Calculate Tsunami Arrival Time

Is impact in one (1) hour or less?

PUSH "HOT BUTTON"

NOTIFY FOLLOWING PERSONS VIA PHONE CALL OF TSUNAMI NOTIFICATION

- Director Disaster Management: 476 3622
- Commissioner of Police: 235 6580
- Anguilla Warning System Manager: 476 3972
- Anguilla Fire and Rescue Chief: 729 3564
- Superintendent of Sea Ports/Maritime Administration: 235 1239
- Fisheries
Tsunami Inundation Map

- Anguilla’s Draft Inundation map was prepared with the help of NOAA
  - absence of bathymetry data necessitated use of the international rule of thumb of a 100ft wave height and one mile inland inundation.

- The list of vulnerable areas of Anguilla as well as the Tsunami Evacuation sites are listed in the Anguilla Tsunami Protocols and reflect the information obtained from the inundation map.
Tsunami Evacuation Map

Legend / Leyenda

- Safe Zone / Zona Segura
- Hazard Zone / Zona de Peligro
- Evacuation Route / Ruta de Desalojo
- Assembly Point (Evacuation Site) / Lugar de Asamblea
- Airport / Aeropuerto
- Harbour / Puerto
- Hospital / Hospital
- Hotel / Hotel
- Government School / Escuela Pública

Tsunami Evacuation Map
Mapa de Desalojo por Tsunami
Anguilla, British Overseas Territory

Government of Anguilla - Department of Disaster Management
Gobierno de Anguilla - Departamento de Manejo de Desastres
Tel (264) 497-2920; Fax (264) 497 3124

Global SMART
Drills and Exercises

- The Tsunami Protocols include SOPs for the exercising and testing of the protocols and tsunami simulations.

- The SOPs treat all tsunami related exercises and drills with the same level of seriousness and organisational response in most cases as an actual event.
Anguilla’s Tsunami Exercise History

- Two such exercises involved the evacuations under simulation of a tsunami threat for
  - 2011 Caribe wave Coastal community inclusive of a Primary Schools and evaluated
    - Time of receipt of alerts from the PTWC
    - Dissemination time (community, fishermen, school)
    - Receipt of warning by Community
    - Evacuation time to site (deemed safe at time)
Anguilla’s Tsunami Exercise History

- CaribWave 2013 this exercise was expanded to include all Government Primary Schools and evaluated
  - the School Tsunami evacuation plans
    - Receipt time of alerts
    - On foot evacuation time to Assembly sites
  - Recent addition to the AWS (weather radios, BlackBerry app)
Conclusion: Improvements needed but a solid foundation

- The Anguilla Tsunami Protocol is a living document.
- One key area which is absent from the Protocols at this point is a Public Education Strategy to complement the strong warning capabilities.
Thank you for listening.

Any Questions?

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