

# **TUVALU PROGRESS REPORT**

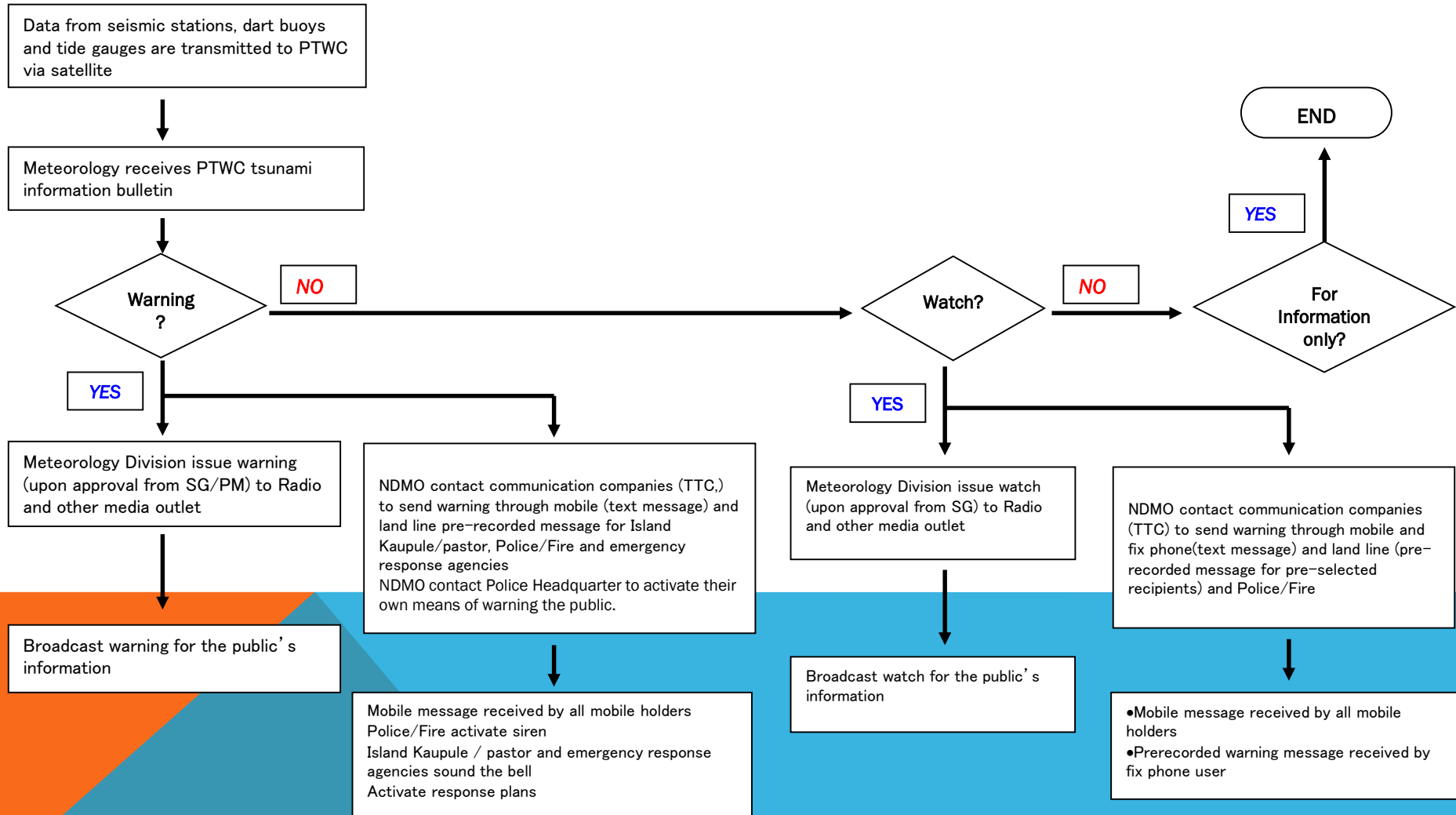
## **TSUNAMI DETECTION, WARNING, RESPONSE AND TSUNAMI MITIGATION ACTIVITIES**

**22<sup>ND</sup> – 23<sup>RD</sup> AUGUST 2016**

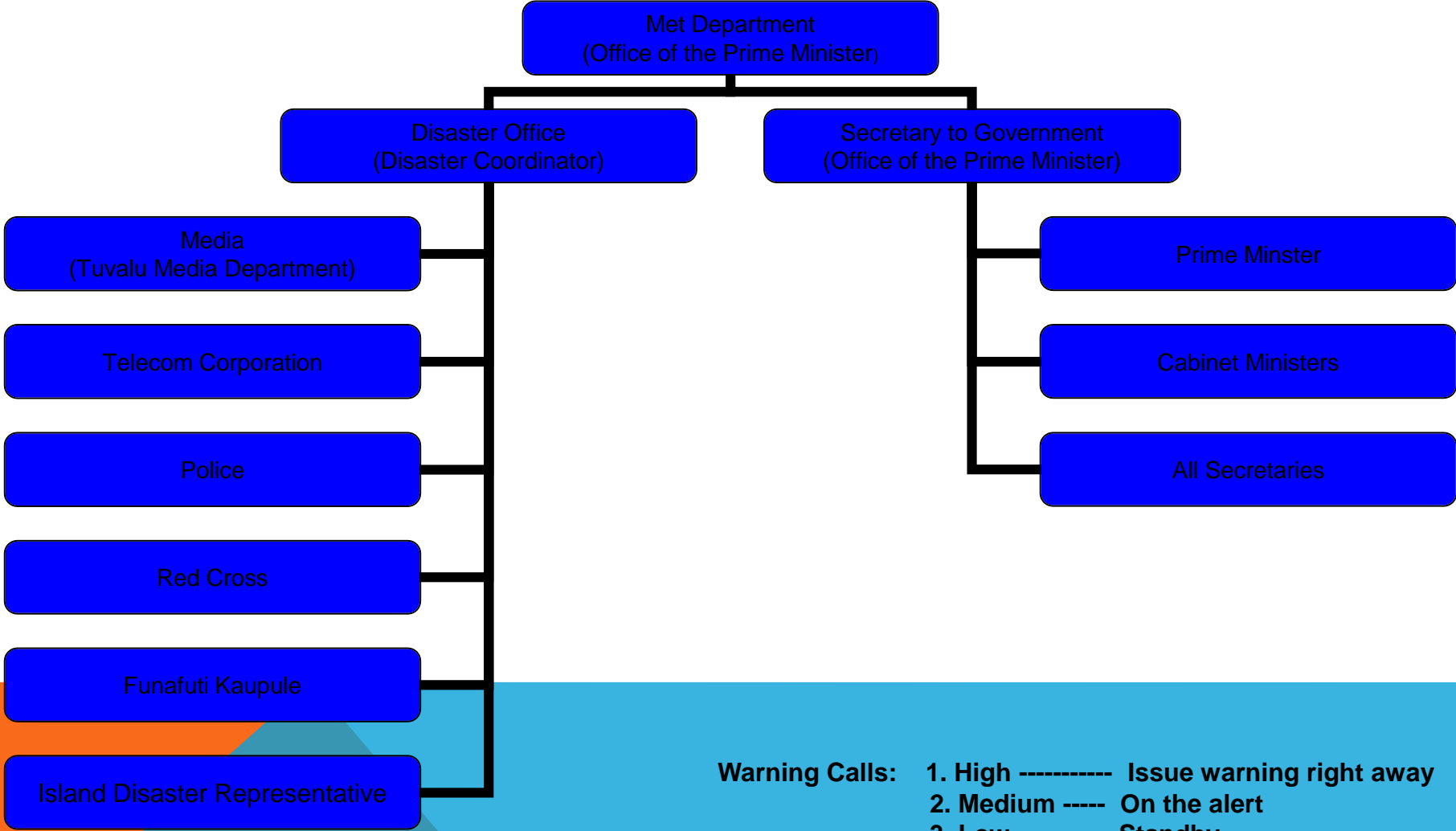
**HONIARA, SOLOMON ISLANDS**

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# FLOW CHART – DISSEMINATION TSUNAMI WARNING

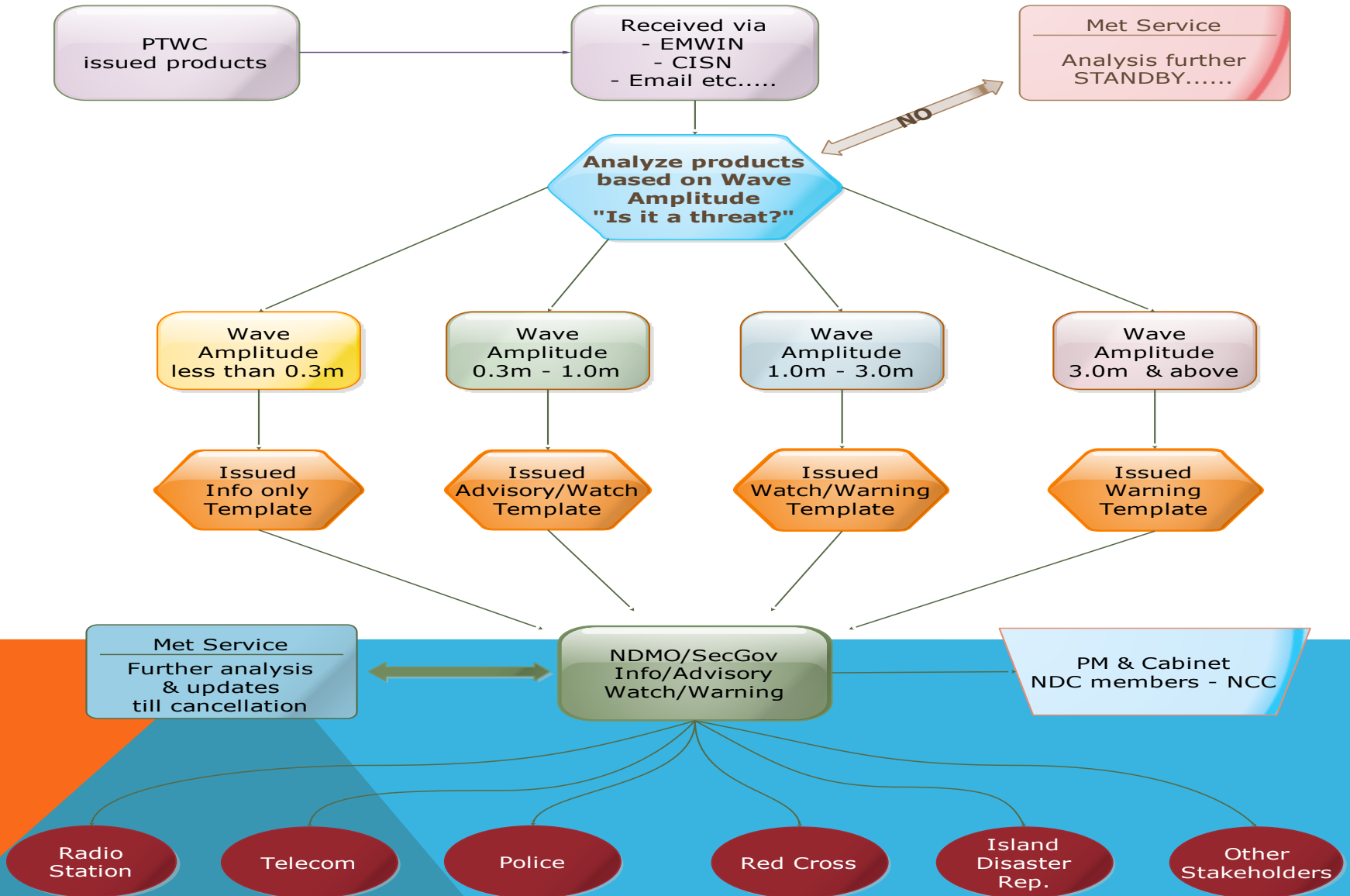


# DISSEMINATION OF TSUNAMI WARNING



- Warning Calls:**
- 1. High ----- Issue warning right away
  - 2. Medium ----- On the alert
  - 3. Low ----- Standby


# TUVALU MET SERVICE STANDARD OPERATING PROCEDURES TSUNAMI MESSAGE FLOWCHART



# TUVALU TIMELINE-DRIVEN SOPs – 2014


	TIME min after EQ	OBSERVATION	ACTION PTWC	ACTION TMS	ACTION NDMO & SecGov	Media	Police	Telecom	Other
TSUNAMI ACTION TIME LINE	0	Earthquake occur							
	1-5	Seismic Alarm triggers		Receives info EMWIN/CISN and emails					
	5-10	Tsunami threat might observe	PTWC Msg 1	Analysis EQ & t ext Msg 1					
	10-30	More EQ data collected & being analysis	PTWC Msg 2 Forecast	Analysis EQ & ext Msg 2 .. Issue decision	Receive decision.... Further analyze before issuing	Live broadcast warnings - NDMO	Set fire truck siren alarming the public	Send out txt msg to all subscribers	Red Cross relay warning via Sat phones to all RC reps.....
	30-60	Tsunami confirmed	PTWC Msg 3 SL obs	Confirm threat areas and update NDC	Call up NDC all meet in NCC	Live broadcast warnings - NDMO	Set fire truck siren alarming the public	Send out txt msg to all subscribers	-
	1-3+ hrs		PTWC Msg 4+ SL obs	Monitor and report tsunami updates to NDC	NDC decision making on threat zones and evacuation plan/sites	Live broadcast updates - NDMO	Assist on evacuation	Send out txt updates to all subscribers	PWD assist threat zones with evacuation
	3-8+ hrs		PTWC Msg 5+ Last Message	Analyze Msg receive till warning cancellation	Planning, reporting & updates casualty	Live broadcast updates - NDMO	Assist on evacuation	Send out updates to all subscribers	PWD assist threat zones with evacuation
	8-12+ hrs	Safe to Return		Cancel the warning	Give the All-Clear msg	Live broadcast warning cancellation & all clear - NDMO		Send out updates to all subscribers	

# CURRENT STATUS OF COMMUNICATION

- Tuvalu Telecom Corporation (TTC) a Government owned company provide international linkage for Tuvalu;
  - TTC also provide satellite linkage to the Outer Islands and the rest of the world;
  - Tuvalu Radio also provide radio transmission on an AM band throughout the country;
  - NDMO has satellite phone on each of the Outer Is. for communication during disasters;
  - Meteorology Department has a HF Radios on 3 Met Outer Stations
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Activity	Plan of Action	Comments
1. Improving early warning and monitoring systems	i) Upgrading and installation communication systems on all stations ii) Conduct need analysis and prepare proposal  Proposal being implemented by our NAPA 2 - HF radios & accessories - Antenna - Chatty Beetle - Backup generator	Will work together with NAPA 2 expert in installing and conduct training on all islands.  15 Chatty Beetle have been arrived Still awaiting others. Installation may be starting in September.
2. New tide gauge at new wharf.	A new tide gauge proposed to attach to new wharf i) Inspection team and Engineer from BoM visit Tuvalu on Jan 2015 ii) New site for new Tide Gauge have been discussed and approved by Ministry concerned in mid Feb 2015 iii) Engineering drawing and planning now under development with consultant company	No confirmation from BoM new dates for the installation of the new Tide Gauge. MOU to be send to Australia/awaits Dir. actions.

# WHAT IS IN PROGRESS?

- Under the UNDP National Adaptation Program of Action (NAPA II) it will equip all Outer Islands with new HF Radio which are capable to send emails;
  - Installation and conduct training of Chatty Beetle systems on all islands
  - New Tide Gauge (installation work in Oct/Nov 2016)
  - TTC will focus more on wireless (mobile) to avoid the costs of land lines network;
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# ISSUES & CHALLENGES

- Connectivity is poor;
  - Low bandwidth;
  - AM Radio Station not broadcasting 24 hours
  - During TC Pam most of the copper wire network for landline phones were inundated with sea water;
  - Satellite phones are very expensive to operate.
  - Implement a National Tsunami respond plan with Disaster Office
  - Electricity in outer islands do not run 24hrs
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# To improve Tsunami warning systems

- More proactive awareness program - National Tsunami response plan with Disaster Office
- Conduct awareness program especially on outer islands – schools, community ....etc
- More trainings in analysing and issuing these warnings eg PTWC new enhanced products...
- Competency/certifying requirement of staffs in issuing these warnings
- Conduct trainings on the USGS Seismic PC real-time display
- Focus on communication gaps on relaying the warning to the last person.....



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