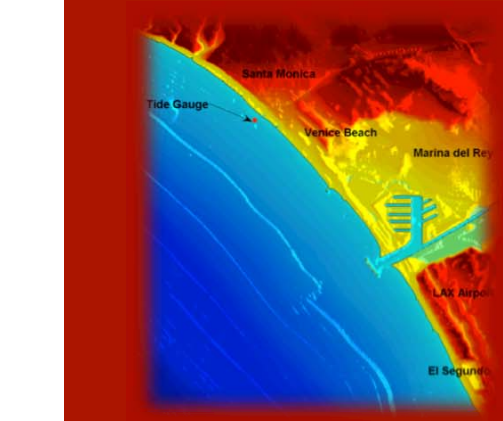


Tsunami Evacuation Maps, Plans, and Procedures (TEMPP)

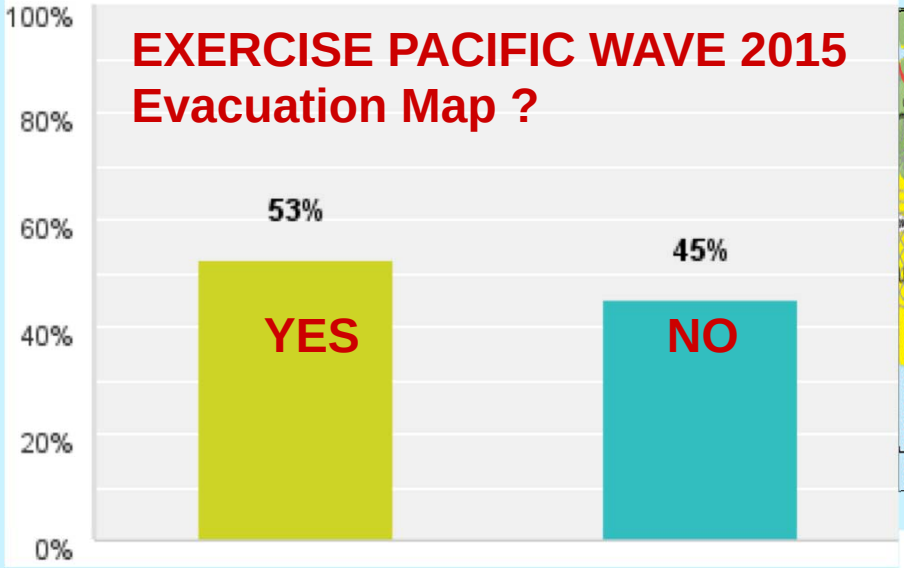
… communities knowing what to do and where to go

ITIC Essential Community Preparedness
Capacity Building, Honduras, Central America, 2015-16

PTWS Next Priority (5 yrs) – Preparedness

Since 2014 PTWS PTWC New Products start, Preparedness:

- ***Communities must know what to do and where to go when a tsunami is imminent (> 50% lack plans)***
- ***ITIC capacity building course –Tsunami Evacuation Maps, Plans, and Procedures (TEMPP)***



Tsunami Signage

TEMPP Course: 2015-2017

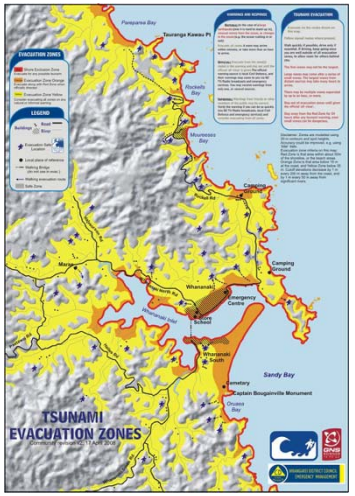
GOAL:

- ***Reliable tsunami evacuation maps done by communities and govt agencies.***
- **Globally applicable standardized tools and methodologies**

- **Develop with Pilot – Central America, in Spanish**
- **5 linked training workshops over 1.5 years (2015-16)**
  Start with modeling. End with functional exercise
- **Final Product: IOC Publication (2017) – TEMPP**
  Review from ICGs, Global TOWS Inter-ICG TT Disaster Mgmt & Preparedness
- **Simultaneous pilots other countries possible subject to funding**

Course Development - Partners

- **ITIC lead**, with USA (CTWP, PMEL, NTHMP), NZ, Philippines, IOC, PTWS WGs, TOWS WG
- **Course Development Team** -
  Warning, Modeling, Disaster Mgmt, Community Preparedness, Educ/Outreach practitioners
- **Pilot Country (Honduras) feedback**
- **PTWS Task Team Evac Planning and Mapping**
  - Chair – Dr. Laura Kong, ITIC
  - Caribbean: Alison Brome, CTIC; Patrick Tyburn, Martinique, France
  - Central America: Norwin Acosta, INETER, Nicaragua
  - SE Pacific: Representative, NDMO (Chile ONEMI or Peru INDECI), Chair, PTWS Southeast Pacific Working Group
  - SW Pacific: 'Ofa Fa'anunu, Tonga Metl Svc; Chair, PTWS SWP WG
  - DRR and Community Preparedness: Julie Leonard, PTWS WG 3 Vice-Chair; John Kimbrough, USAID/OFDA/LAC
  - IO and SE Asia: Ardito Kodijat, IOTIC; Irina Rafliana, Indonesia
  - Mediterranean and North Atlantic: Gerassimos Papadopoulos, Greece

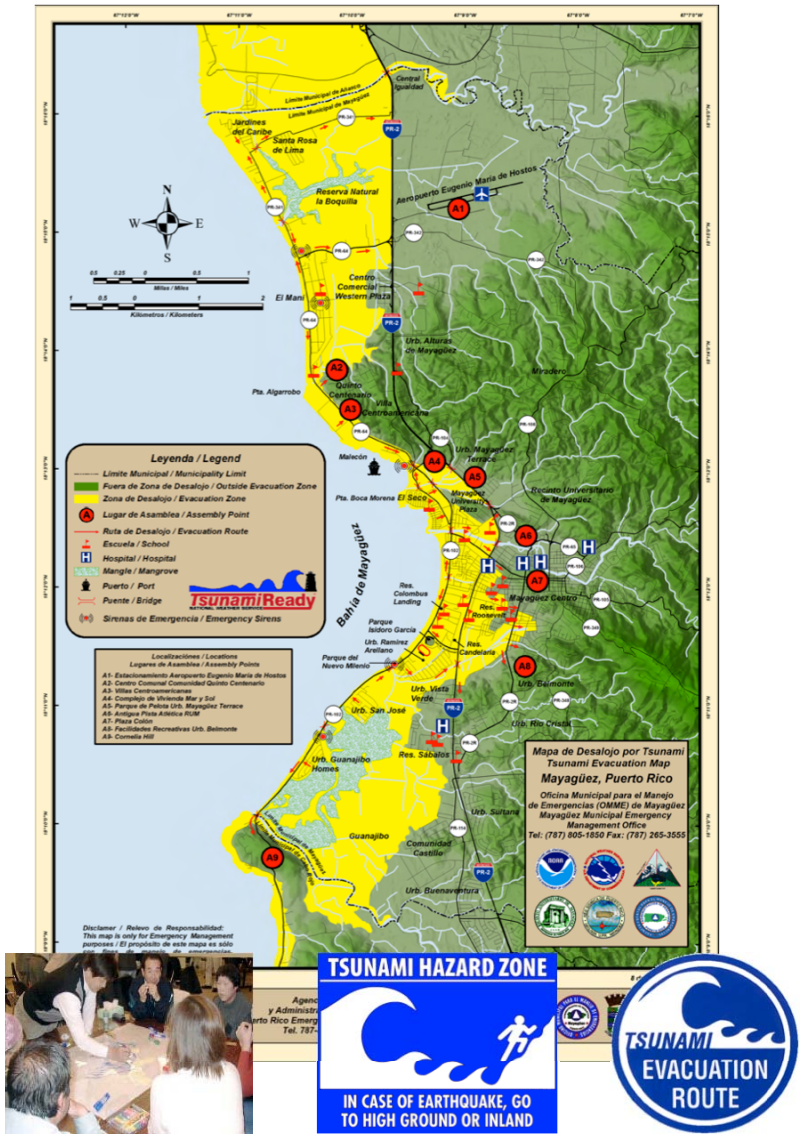


New Zealand

Focus and Stakeholders:
Scientists make Inundation Maps for Evacuation

1. **Simple approach (poor bathymetry):**
   - Historical observations provide value of maximum tsunami run-up in locality
   - This constant value of maximum run-up will be used to determine inundation line everywhere in the community
2. **Refined approach:**
   - Historical seismic events are used as tsunami sources in hydrodynamic models.
   - Hydrodynamic models are used to compute tsunami inundation and run-up. Variable maximum run-up will be used at different locations
3. **Sophisticated approach (good bathymetry):**
   - A Credible Worst Case scenario is evaluated from all available data (historical, seismic, tectonic)
   - Hydrodynamic models are used to compute tsunami inundation and run-up. Variable maximum run-up will be used at different locations

Focus and Stakeholders: Communities make Evacuation Maps



- ✓ **Local workshops**
- ✓ **All Stakeholders**
- ✓ **GIS-facilitated maps**
- ✓ **Critical facilities, Schools, Hospitals, Special needs**
- ✓ **Safe Assembly areas**
- ✓ **Time of day, year**
- ✓ **Walking routes, Practice Exercises**

WORKSHOP / TRAINING SCHEDULE	DATES	PURPOSE / GOAL
TEMPP 1: Tsunami Inundation Modeling – ComMIT/MOST tool	27-31 July 2015	Inundation modeling training using ComMIT tool and MOST model
TEMPP 2: Seismic Tsunami Sources for Honduras Meeting	29 Feb– 1 March 2016	Identification of credible worst-case tsunami scenarios to use for inundation mapping
TEMPP 2: Inundation Mapping for Evacuation – process	2-3 March 2016	Create Inundation map for a given community as an ensemble of inundation scenarios. Output results in GIS formats
TEMPP 3: Evacuation Mapping – process, Intl Tsunami Ready (TR)	15-19 Aug 2016	Create Evacuation Map from Inundation Map using GIS and community process; Implement national TR program
TEMPP 4: Response Plans and SOPs, Socialization, Community Exercises	27-39 Sep 2016	Create Response Plan (warning / evacuation SOPs); Develop Exercise Plan, Create essential awareness materials (signage, maps, flyers)
TEMPP 5 Official Adoption Ceremony, Functional Exercise	Nov / Dec 2016	Official Adoption of Maps, Functional Tsunami Exercise, inc evacuation, TR recognition, Pilot Wrap-up

Pilot Activities: May – June, 2015

1. **IOC CL 2578, Pilot Announcement, May 2015**

   Honduras selected (1 Pacific, 1 Caribbean community)

2. **Pilot Kick-off, June 15-19, 2015**
   - Stakeholders coordination meeting
   - Brief on process. ID communities/agencies/govt/NGO

3. **Course Development, June 22-26, 2015 + continuing**
   - Inundation and evacuation mapping best practices – Japan, Hawaii/WA/PR States, Philippines, NZ, IOC
   - Hazard Assessment tools: NOAA ComMIT, GIS

TEMPP1: ComMIT Modeling - July 27-31, 2015

- **Inundation and evacuation mapping best practices:**
- **Hazard and evacuation mapping tools: ComMIT, GIS**

TEMPP Input and Planning, Feb, June 2016

- **PTWS Task Team on Evacuation Mapping and Planning and TOWS TTs - input**
- **TOWS Task Team on Disaster Management & Preparedness (TT-DMP)**
  - ***TEMPP Project to establish Evacuation Mapping Guidelines (TT-DMP activity)***


PTWS TT - TOWG TT-TWO


TOWS TT-DMP

TEMPP2, Feb 29 – Mar 3, 2016

- **Seismic Tsunami Sources for Honduras – Expert Mtg**
- **Tsunami Inundation Mapping for Evacuation training**

Course Documents

- Evacuation Overview
- Numerical Models in Hazard Assessment
- ComMIT tool manual (MOST model), including Appendices (abridged requirements, in Spanish)
- Seismic Worst-Case Scenarios for Tsunami Hazard Assessment (no credible sources)
- Establishing Tsunami Inundation for areas not-modeled or with low-hazard (no history, low population, poor DEM)
- Creating Evacuation Maps – 2013 Japan National Guidance, Philippines, NTHMP
- How to Create Community Tsunami Response Plans – UNESCO SOPs, NTHMP (Hawaii, CA)
- How to Conduct Community Tsunami Exercises