

**National Tsunami Hazard Mitigation Program (NTHMP)
Mitigation & Education Subcommittee (MES)
Summer Meeting**

NOTES (in red) Presentations

Tuesday, July 26, 2016

8:30 – 9:00 Arrival and networking

9:00 – 9:15 **Welcome and Introductions**, NTHMP MES Co-Chairs & Everyone

9:15 – 9:30 **Meeting Goals; Agenda Review**, MES Co-Chairs

9:30 – 9:35 **Show NOAA Fast Draw Tsunami Video** https://www.youtube.com/watch?v=x0GX_kc7JZo

9:35 – 10:30 **Tsunami Preparedness Campaigns Success Stories/Plans**, Christa Rabenold (Each appropriate State/Territory prepare your topic prior to meeting; 1-3 slides)

- Hawaii – Kevin, Laura, Cindi Preller: Campaigns, stories, HHARP, photo database historical w/NCEI
- Washington – Maximilian, Manuel: TsunamiReady communities, tribes, Vertical Evacuation Parking Garage structure planning
- Oregon – Hotel training, Cascadia Island mapping (where pop will be isolated), Blue Line Project, “Up and Out 2” Wayfinding Study, Oregon Tsunami Conference (Dec. 7-8, 2016) **See Presentation**
- Alaska – Maritime Guidance document for Kodiak (for distant and local tsunamis), preliminary hazard map presentations to communities, Pedestrian evacuation travel time maps, evacuation brochures, TsunamiReady, tsunami operations workshop **See Presentation**
- California **See Presentation**
- American Samoa – Jacinta, Arlita: Tsunami Siren Project (56 Sirens located using Dr. Fai Chung inundation maps), 2 NEHRP proposals funded (more at annual meeting). NWS more awareness for Sept. Tsunami Awareness Month, visit communities who will be receiving alerts (for evacuation maps/routes)
- USVI – Kieran: participated in CaribeWave exercise, registered via TsunamiZone.org, Tested the Tsunami Warning Communications System, Conducted outreach activities, RFP computer modeling projects upcoming, 16 sirens upcoming **See Presentation**
- Puerto Rico – Wilfredo: Puerto Rico Island is TsunamiReady, 4 TsunamiReady Supporters **See Presentation**
- Gulf Coast – Walt: Spring Tsunami Campaign, NWS Regional Push, WFO Push, Tsunami Exercise Participation, promote new TsunamiReady guidelines, NWS “JetStream” online school tsunami tutorial.
- NWS Southern Region – Walt Zaleski **See Presentation**

Working Session

10:45 – 12:00 **Maritime Guidance document development for: Part 2 (Tsunami Response, Preparedness, and Education) & Part 3 (Mitigation & Recovery Planning)** – Rick Wilson, Kevin Miller, & Kevin Richards

<http://nws.weather.gov/nthmp/2016messummer/Maritimeoverview.pdf>

<http://nws.weather.gov/nthmp/2016messummer/Maritimehazardprep.pdf>

- Please read ahead (document to be provided to all members) and be prepared to discuss your status using the below form/template:
- Each State/territory bring a status summary/white paper of their maritime
 - (Provide members a **Survey to help provide Common Topics to Discuss**)
 - (e.g. What is your recommended offshore depth?)
 - Where do people see themselves in 5 years.
 - List of publications on Maritime Preparedness by various partners (Playbooks, technical/science)

MARITIME GUIDANCE DOC – working session discussion

- Coastal Mapping
 - Source considerations
- Reasons for continued work (to be funded): Need best information possible – for life safety
 - How are we making USA Safer?
 - Completing Probabilistic Maps
 - Land Use
 - Building Code
 - Consistency
- USGS-NTHMP Collaboration Outcomes (from Boulder)
 - Workshop notes/actions
 - Use end powerpoint (presented on last day in Boulder)
- Needs of MES can drive activity
- How quickly wave arrives analysis by area (evacuation timing)
- How/Why MMS project work is necessary to support emergency planning
- **Action:** MES would like “Maritime FEMA guidance document” (1-2 pager) on mitigation benefits (LHMP, Planning, etc.)
 - Funds for harbor evacuation procedures
 - Funds for hardening harbors
- Alternate port plans for Islands as critical infrastructure (as part of response – recovery planning)
 - Lessons from: Japan, Katrina, Sandy, Caribbean Port Plan, Hawaii Hurricane Response Plan
- Develop direct Questions
 - Cruise Ships, Tourists, Visitors... whether they should evacuate passengers
- Guidance using data modeling

- Decision making
- Tiger Team formed: Kevin Miller, Maximilian Dixon, Manuel Lugo, Kevin Richards, James Waddell, Althea Rizzo, Arleeta, Tamra Biasco, Cindi Preller, Dan Belanger.

1:00 – 1:45 **Discussion of online collaboration platform**, Gala Gulacsik

- (Basecamp: How, Why, Is it working for you?)

<http://nws.weather.gov/nthmp/2016messummer/BasecampCheatSheet.pdf>

1:45 – 2:15 **Encourage States/Territories to participate more in TsuInfo Alert (suggestions, examples, describe general guidelines for length/content)**, Stephanie Earls, Rocky Lopes

<http://www.dnr.wa.gov/programs-and-services/geology/geologic-hazards/tsunamis/tsuinfo-alert>

2:30 – 3:30 **Common Media Outreach Opportunities & Strategies Social media/outreach Tiger Team (messaging, story, anniversaries, etc.)**, Gala Gulacsik, Chayne Sparagowski, & Kevin Miller

[Social Media / Outreach discussion](#)

- **Action:** Task 1 = List of Events
 - Existing excel spreadsheet (from NCEI via Christa Rabenold) of U.S. Tsunamis with minimum of 1 death or \$1Million in damage.
- **Action:** Develop generic messages for each event/ that can be applied to each event for Twitter, Facebook, etc.
 - Reference for creating public messaging
 - Catalog
- **Questions:**
 - Where to house the list? (e.g. NTHMP website, TsunamiZone, NCEI)
 - Audience?
 - Is there need for 2 lists?
 - Historical vs. Commemorative
 - Can we develop a calendar?
 - Can maintenance be with NCEI?
- **Action:** Simple statement for Nov. 5th (International Tsunami Day)
 - Include TsunamiReady & promote other NTHMP Accomplishments
 - Twitter, Facebook, Social Media
- Sister City
- Japan Youth Exchange
 - Seaside, OR
 - Crescent City, CA (Kamome Children's Book)
 - Can using time to frame out - End date of ShakeOut activities which began in October
- TsunamiZone.org
- NTHMP Web page – can table (of tsunami events) be “live-linked” to NCEI database?
- Annual Maintenance
- Part of National Education Plan (to do in Basecamp)
- Twitter template posts text/content for each event

Mike Mahoney – FEMA

1. NETAP Training
 - a. ROVER Based on FEMA-154 (Rapid Observation of Verification of Earthquake Risk)
 - b. Other training
2. FEMA NEHRP State Assistance program (will change year after next – direct funding with 50% matching funding for states)
 - a. Ed outreach, Bldg code & ordinances,
 - b. Opportunity to change authorization in next attempt at reauthorization
3. Vertical Evacuation refuge guidance FEMA 646 (ASCE Tsunami Chapter; new info is in conflict w/FEMA 646). Ian Robertson is updating the FEMA 646 update.
4. ASCE7-16 passed final ballot, submitted for 2018 Int'l Bldg Code, passed first round of hearings in March 2016. ASCE7-16 document has been challenged to get thru a hurdle in October 2016.

3:30 - 4:30 HAZUS Tsunami Module Update, Cynthia McCoy, FEMA Region 10

<http://nws.weather.gov/nthmp/2016messummer/Hazusupdate.pdf>

HAZUS modernization

- Met in Oakland
- Design phase
- Using Tsunami Methodology (FEMA, 2013)
- March 2017
- Testing: Dec 2016/Jan 2016 contact Cynthia.mccoy@fema.dhs.gov
- Raster based
- Level 1 Runup Only
- Level 2 Runup and Velocity
- Level 3 Numerical modeling (Depth and Momentum Flux are already formatted in ArcGIS GRID)
- Leverage USACE National Structure Inventory (NSI)
- Including the following attributes
 - School Locations, numbers of teachers and students
 - Day/Night pop
 - Etc.
- Attributes to calculate building loss
- Casualty model – function of distance, obstacle, and evacuation route

User release notes will take the place of detailed documentation

Training 2017 -2018

Questions:

1. We have acquired hazard inundation data from multiple (State) authoritative sources for the following case studies. Who at the State did the team coordinate with to acquire the data, exactly how will it be used and is there an opportunity to select a different location?
2. Can the Tsunami Model fragility curve details be shared?

3. More information is needed about the use of velocity model data; errors will be compounded when generating momentum, flux.
4. Can the technical documents be provided at the time of release as there will not be a Hazus Tsunami Technical manual?
5. Can we share the damage functions?

Cynthia McCoy will post answers to these question on Basecamp after speaking with the HAZUS modernization team.

Wednesday, July 27, 2016

8:30 – 9:00 Arrival and networking

9:00 – 9:15 **Member announcements (general updates)**, Everyone

9:15 – 10:00 **International Guidelines for Evacuation Mapping**, Laura Kong

<http://nws.weather.gov/nthmp/2016messummer/TEMPP.pdf>

ITIC, CTWP, PMEL and USAID, along with the UNESCO IOC, USA, NZ, Philippines, and Japan, are developing an international training course on Tsunami Evacuation Maps, Plans, and Procedures (TEMPP). The goal is to build capacity and skills in countries so they can make their own reliable and practical maps and plans. Tim Walsh and George Crawford are part of the Course Development Team, and the City and County of Honolulu and Hawaii State Emergency Management Agency, and California OES have provided EOC response plans for warning and evacuation. It is being piloted in Honduras, in Spanish, in 2015-2016, and there is interest from other Central American and Pacific Island Countries. The trainings teach tsunami inundation modeling (using ComMIT/MOST), how to make evacuation map with communities, response plans, and how to conduct a community tsunami exercise. Course materials are from best practices around the world, including NTHMP. The Japan Fire and Disaster Management Agency wrote excellent and comprehensive national guidance in 2013 and it is being translated into English and Spanish as a best practice. A video was also made on community evacuation mapping including 'Town-Watching'. In Aug 15-18, Tsunami Evacuation Mapping training will be conducted, and Tsunami Response Planning at the end of September.

CTWP and ITIC are also leading efforts to implement international Tsunami Ready community recognition programs in the Caribbean (CAR-TR) and Pacific (PAC-TR), with pilots done in Anguilla and St Kitts and Nevis and possible interest in Tonga, Vanuatu, and Samoa. The International Guidelines were approved by the Caribbean in 2015, and are being considered for the Pacific and Indian Ocean. The Guidelines are adapted and simplified from the 2016 US TsunamiReady program. When the TEMPP training is conducted, the I-TR Program is also introduced and developed with the country.

Discussion

The 2011 NTHMP MMS *Guidelines and Best Practices to Establish Areas of Tsunami Inundation for Non-modeled or Low-hazard Regions*, and MES *Guidelines and Best Practices for Tsunami Evacuation Mapping Guidelines*, were reviewed and adapted for international use. However, references and science attributes were missing. ITIC asked several scientists but could not find primary sources. Some statements appear to be informal, or 'best-expert' judgement,

ACTION:

NTHMP MMS and MES to review their 2011 Guidelines to update and remove duplication (as in per next Topic). ITIC to ask NTHMP MMS (through MMS Chairs) for comment on its draft International Guidance (Guidelines for Establishing Tsunami Inundation Zones for Evacuation Mapping and Planning in Regions without Tsunami Modeling).

ACTION: Share International documents

1. ITIC to share the Japan FDMA National Guidance (English translated), and other best practices with NTHMP through Basecamp
2. ITIC to share International Tsunami Ready Guidelines through Basecamp

Working Session

10:15 – 12:00 **Evacuation approaches, vulnerability assessment, and studies;** Nate Wood, Kevin Miller

- Status: Review of what modeling is existing in select State/Territory examples (a couple to report out)
 - Understanding population in hazard zone and how to address evacuating them
 - Goal of an NTHMP MES Online Resource page
 - Discuss combining two papers:
 - MMS: Guidelines and Best Practices for Tsunami Inundation Mapping for Evacuation Planning, here: http://nws.weather.gov/nthmp/documents/NTHMP_Modeling_Mapping_Guidelines.pdf **start on page 4**
 - MES: Guidelines and Best Practices for Tsunami Evacuation Mapping <http://nws.weather.gov/nthmp/documents/NTHMPTsunamiEvacuationMappingGuidelines.pdf>
- Action: Where do we go from here?
 - Discuss development of online resource (NTHMP MES webpage development)
- Future direction: Goal of Guidance Paper to be developed in 2018-2023 Strategic Plan

<http://nws.weather.gov/nthmp/2016messummer/Evacapproaches.pdf>
<http://nws.weather.gov/nthmp/2016messummer/Alaskapedestrian.pdf>
<http://nws.weather.gov/nthmp/2016messummer/Oregonpedestrian.pdf>
<http://nws.weather.gov/nthmp/2016messummer/VehicularModeling.pdf>
<http://nws.weather.gov/nthmp/2016messummer/Visualizingpedestrian.pdf>

1:15 - 2:30 **MES-MMS cross-cutting needs**

- MES Task Development Working Session, Everyone
 - What MMS tasks feed into MES tasks?
 - What does MES need from MMS (and vice-versa)?
 - Includes MES tasks, MMS tasks from Annual Meeting (including USGS session)

2017 Annual Meeting Agenda (MES topic recommendations)

- Evacuation Modeling Topic (during MMES-MES on Tuesday)
- Maritime Port Planning – K. Richards

2:30 – 3:00 **Post-Tsunami Protocol Update**, Kevin Richards, Laura Kong, & Rick Wilson

- Kevin Richards and Laura Kong updated on Hawaii efforts. Expect Hawaii protocol plan draft for 2017 Annual Meeting.
 1. Hawaii Tsunami Observer Program to be updated to
 - a. Emphasize timely science data sharing
 - b. 'Real-time' arrival / impact observations to EOCs/EM during / after events
 - c. Provide local expertise to 'outside' (US and international) post-tsunami survey teams
 2. ITIC assume role as liaison to HI-EMA -TOP - 'outside' post-tsunami survey teams.
- Rick Wilson and Kevin Miller updated on California efforts. USC scientist installed camera, GPS, and current meters for the 2015 (?) Chile event to observe and quantify the tsunami flow characteristics
- Laura Kong reported that the National Plan for Disaster Impact Assessments: Weather and Water Data (Office of Federal Coordinator for Meteorological Services and Supporting Research) was updated and reformatted in 2016. A Tsunami Protocol Annex is requested - ITIC, per NWSI 10-703 (Post Tsunami Surveys), will lead the development and consultation with other Federal agencies in FY17. Walt Zaleski reported that there are NWS tsunami post-storm reporting requirements in NWSI 10-1605

3:00 – 4:00 **Open/Continued Discussion**, Everyone

- Observer Camera Inventory Project – Rick Wilson Presentation
- ASCE Tsunami Topics – Ian Robertson Presentation, per Mike Mahoney, following on below

4:00 – 4:30 **EERI School Earthquake Safety Initiative (SESI) Tsunami Subcommittee**, Ian Robertson

<http://nws.weather.gov/nthmp/2016messummer/P646SESIupdate.pdf>

Thursday July 28, 2016

8:30 - 9:00 Arrival and networking

9:00 – 9:30 **Minute briefing of the American Samoa Microseismic Monitoring Project**, Timothy Bodell
(on behalf of Jacinta Brown, American Samoa)

<http://nws.weather.gov/nthmp/2016messummer/AmericanSamoaMicroEarthquakes.pdf>

9:30 – 10:00 **Tsunami Messaging Project continuation (wiki available)**, Rocky Lopes

<http://www.tsunamieducation.org/wiki/doku.php?id=messagehome>

<http://nws.weather.gov/nthmp/2016messummer/MessageSummary1.pdf>

<http://nws.weather.gov/nthmp/2016messummer/MessageSummary2.pdf>

Working Session

10:15 – 11:15 **TsunamiReady Supporter MES Feedback**, Rocky Lopes

<http://nws.weather.gov/nthmp/2016messummer/TsunamiReadySupporterInfo.pdf>

TsunamiReady Supporter is the next “growth area” for the TsunamiReady Program since the capacity for “full” TsunamiReady sites is close to being at maximum. (Congratulations to all who have worked so hard to achieve this level with 195 TsunamiReady locations recognized as of 7/28/2016).

The NWS in cooperation with the NTHMP MES will launch the new TsunamiReady Supporter Program by October, 2016. Look for more information from Rocky via email.

11:15 – 12:00 **TsunamiReady Tier Two MES Feedback**, Rocky Lopes

<http://www.tsunamiready.noaa.gov/tr-resources/TRTierTwo.pdf>

The NTHMP MES and the NWS developed “TsunamiReady Tier Two” Guidelines during the discussion and process for revision and update of the main TsunamiReady Guidelines during 2015. Tier Two Guidelines represent the longer-term, harder-to-achieve steps for tsunami mitigation, planning, and recovery.

Rocky will schedule webinar(s) to discuss the Tier Two Guidelines and ways to implement them in late September or October, 2016.

- Announce/Show: TsunamiReady COMET Training (online)

https://www.meted.ucar.edu/training_module.php?id=1198#.V6uojfkrJmN

1:00 – 1:30 Discussion: **2013-2017 NTHMP Strategic Task Review**, *Everyone*

1:30 – 2:00 Discussion: **NTHMP Strategic Plan MES-desired Products/Tasks (2018-2022 initial planning, ahead of Annual Meeting in 2017)**, *Everyone*

Strategic Planning Discussion

What are current inundation mapping needs, status, gaps?

- Reasons for continued work (to be funded): Need best information possible – for life safety
 - How are we making USA Safer?
 - Completing Probabilistic Maps
 - Land Use
 - Building Code
 - Consistency
- Are we done? What's next?
- TWERA planning
- Risk

EXISTING (2013-2017)

- Completed vs. Uncompleted
- Refinement of mapping

FUTURE (2018-2022) for Annual Meeting

- MES Clearly define deliverables
 - Align with state projects
 - Fix DA Table (at the end, headings, etc.)
- Modernize Toolkit (media guide, etc.)
- Tsunami “Week” – “Campaign”
- Building Codes (IBC '18) – inform communities via TsuInfo
 - NETAP Webinar
 - CRS Data
 - Advocacy
- Decision support tool
 - ~~Define requirements~~
 - Maintain S.A. on at risk populations
- Reformat overall Strategic Plan/MES Plan to WCS (action list) format?
 - This is how the end of the document is formatted
 - Needs work – very difficult to use and plan with and develop work
 - Hard to link Action Items to Strategic Plan
 - Hard to develop work plan from Strategic Plan
- Strategic Planning Facilitator?
 - (e.g. OCM, inside/outside)
- Tools – collect info - facilitated

2:15 – 2:30 **National Tsunami Education and Outreach Plan Update**, Christa Rabenold

<http://nws.weather.gov/nthmp/2016messummer/NTHMPEdPlanupdate.pdf>

2:30 – 3:30 **TsunamiZone.org Update**; Jason Ballmann

<http://www.tsunamizone.org/>

- Show new TsunamiZone video

<https://www.youtube.com/channel/UCeIn3StUO36Vumw7-SsNZxQ>

<https://www.youtube.com/channel/UCbr9MP1okx9bxmi9z50uBIQ>

- Caribbean, California, other updates

3:30 – 4:30 **Review Action Items for Annual Meeting**, Everyone

Basecamp To-do lists (Action Items):

1. NTHMP MES Strategic Plan
 - Develop Strategic Planning Tools 2017
 - Conduct MES Webinar in Fall 2016 – Brainstorm 2018 SP Goals
2. Tsunami Observer Program
 - Post protocols for Tsunami Observer Programs doc Laura Kong
3. Common Media and social media outreach
 - Finalize calendar with tsunami events and anniversaries
 - Develop boiler plate social media messages
 - Retitle 2 Mapping documents currently on NTHMP website
4. TsunamiReady
 - MES Feedback on new TsunamiReady components
 - Post a basecamp discussion with the TsunamiReady Supporter language to solicit MES feedback Rocky Lopes (done – comments due 9/9/16)
 - Conduct webinar with MES to review TsunamiReady tier 2 guideline language Rocky Lopes (to be scheduled late September/October 2016.)
 - Review TsunamiReady Tier 2 Guidelines See:
<http://www.tsunamiready.noaa.gov/tr-resources/TRTierTwo.pdf>
 - All MES members: take TsunamiReady COMET training
https://www.meted.ucar.edu/training_module.php?id=1198#.V5-KCaLG8gw
5. Evacuation Modeling
 - Inform the socialization of evacuation modeling on the NTHMP website.
 - Form evacuation modeling subgroup Nate Wood
 - Compile URLs of published work Nate Wood
 - Create template Nate Wood
 - Workshop session during NTHMP Annual meeting
 - Develop short guidance – (Future guidance in 2018 Strategic Plan)
6. MES Input to Maritime Guidance (Part 2: Preparedness; Later: Part 3: Mitigation/Recovery)
 - Assemble Tiger Team - Complete
 - Develop Text
 - Conduct conference call

NEXT MES Webinar

- Continue Strategic Planning Discussion with new tools (from Rocky)
 - List 2017 Accomplishments
 - Propose 5-year goals
 - Consider Gaps (in what we are doing now)
 - Desired outcomes and deliverables
 - Major initiatives
 - Things that need to be addressed regarding tsunami research, outreach, planning, etc.
- Hand off preliminary Strategic Plan data to MMS
- Consider TWERA 2015
- Continuity of Strategic Planning with facilitator prior to annual meeting