**NTHMP General Meeting Day 2, Thursday February 9, 2012**

Attendees:

**NOAA/NWS** – Vickie Nadolski, National Weather Service Western Region Dir.

**NOAA/NWS** – Jane Hollingsworth, NWS Tsunami Program Manager

**NOAA/NWS** – Paul Whitmore, Director, West Coast/Alaska Tsunami Warning Center

**NOAA/NWS** – Charles McCreery, Director, Pacific Tsunami Warning Center

**NOAA/NWS** – Jason Tuell, Chief MSD/OCWWS

**NOAA/NWS** – Troy Nicolini, WCM, Eureka, CA

**NOAA/NWS** – Melinda Bailey, NWS Southern Region

**NOAA/NWS** – Jeff Lorens, NWS Western Region

**NOAA/NWS** – Christa von Hillebrandt, Carribbean Tsunami Program

**NOAA/NWS** – Lewis Kozlosky, NWS Tsunami Program

**NOAA/ITIC** – Laura Kong, NOAA International Tsunami Information Center

**NOAA/OAR** – Marie Eble, Pacific Marine and Environmental Laboratories

**NOAA/OAR** – Vasily Titov, Pacific Marine and Environmental Laboratories

**NOAA/NGDC** – Susan McLean, National Geophysical Data Center

**NOAA/NOS** – Russel Jackson, NOAA Coastal Services Center

**NOAA/NOS** – Adam Stein, NOAA Coastal Services Center

**NOAA/NOS** – Nir Barnea, NOAA Marine Debris

**FEMA** – Tamra Biasco

**FEMA** – Mike Mahoney

**American Samoa –** Lisa Togiai, Dept. of Homeland Security

**AK** - Erv Petty, Alaska Dept. Homeland Security and Emergency Mgmt.

**AK** – Roger Hansen, University of Alaska, Fairbanks

**AL –** Charles Williams, Alabama Emergency Management Agency

**CA** – Kevin Miller, California Emergency Management Agency

**CA** – Rick Wilson, California Geological Survey

**CA** – Chuck Real, California Geological Survey

**MD** – Rainer Dombrowsky, Maryland Emergency Management Agency

**HI -** Kevin Richards, State of Hawaii Civil Defense

**OR –** George Priest, Oregon Department of Geology and Mineral Industries

**OR** – Althea Rizzo, Oregon Emergency Management

**PR** – Victor Huerfano, Puerto Rico Seismic Network, UPR

**WA** - Tim Walsh, Washington Division of Geology and Earth Resources

**WA** – John Schelling, Washington Emergency Management Department

**WA** – Noemi Lachapelle, Washington Emergency Management Department

**USGS** – David Oppenheimer, Menlo Park, CA

**East Coast States** – Rainer Dombrowsky, Maryland Emergency Management Agency

**East Coast States** – Jim Kirby, U. Delaware

**East Coast States** – Stephan Grilli, U. Rhode Island

**East TN State U. –** Chris Gregg

**Gulf Coast States** – Charles Williams, Alabama Emergency Management Agency

**Gulf Coast States** – Juan Horillo, Texas A&M University

**Pacific Islands** – Lisa Togiai, American Samoa DHS

**U.S. Navy** – Matthew Watts, JTWC

**USGS –** Nate Wood

**Canada** – Daniel Ingram, Environment Canada

**Canada** – George Parkes, Environment Canada

**Canada –** Teron Moore, Emergency Management British Columbia

**Lewis Kozlosky - NTHMP Grants Process Review**

* Call for New Proposals (Completed December 15, 2011)
  + For New Proposals Only
  + Annual Project Plan and Budget
  + Tied to NTHMP Performance Metrics based on Outcomes found in the NTHMP Strategic Plan
  + Partners should request funding levels for activities they can reasonably accomplish
  + NTHMP-CC Preliminary Review of New Proposals
  + Completed February 9, 2012
  + Comments were sent to Applicants
* Guidance for Formal Applications for *New* Proposals
  + Distributed to NTHMP Partners - November 9, 2011
  + Following CC approval of funding, formal applications planned to be due April 2012 through NOAA Grants On-line
  + NOAA Subject Matter Expert Review of Applications (30 Days)
  + Using process outlined in Appendix E of the `Rules of Procedure
  + Dept. of Commerce Legal Review (14 Days)
  + Negotiation Period – if required (10 Days)
  + Award Processing – Working toward July 30, 2012
  + Notification of Grant Award (NOAA Grants Management)
  + Acceptance of Grant Award (Partner)
* *Continuing* Grants for FY09/FY10-12 Awards (Ref. NTHMP Rules of Procedure, Appendix F)
  + No need to submit grant applications through process mentioned above
  + Continuation of Funding (FY12) influenced by Sub-Committee Reviews of Semi-Annual Progress Reports
  + Sub-Committee Review Reports will be provided to NTHMP Grant Review Panel; the Review Panel will make recommendations to NOAA on funding amounts for FY12
  + NTHMP Program Administrator will notify each grant awardee of Review Panel recommendation and negotiate FY12 funding award and project plan as necessary

Victor Heurfano, can previous proposals be amended? Yes, existing proposals can be amended provided the amendment is within scope and funding of the original project.

**Tamra Biasco - HAZUS**

* Tsunami module development started September 2011
* Bill Graff (VP ImageCAT Long Beach, CA) contractor for HAZUS
* Atkins managing the development
* Objectives for Tsunami Module:
  + Develop a standardized loss estimation methodology for the US to assess the impacts from local or distant tsunamis
  + Methodology compatible with existing Hazus-MH models for earthquake, flood, and hurricane
  + Managed by FEMA / NIBS with review by Tsunami Oversight Committee (Gary Chalk, Ian Robertson, Jim Goltz, and others); OSU (Harry Yeh), NOAA (provide credible large scenarios), Applied Research & Associates (Peter Victory), Charles Kircher & Associates (damage functions, debris, etc. – EQ vs Tsu damage)
  + 100% draft methodology is expected by September 2012; Benchmarking, validation, calibration, and refinement of methodology
  + Overall methodology: local event starts with EQ and includes shake damage to local lifelines pre-wave; add additional damage to buildings from inundation (includes EQ moderate damage state followed by tsunami)
  + Not incorporating critical facilities (power plants), but are incorporating damage to ports / harbors
  + For distant or non-local events; do not have the pre-wave damage from shaking
  + Looking at flow effects and impacts from debris; general inventory data on numbers and types of buildings; using Census block level / Dunn & Bradstreet and other environment databases that need to be augmented with other methods to add height of building (i.e. perhaps from LiDAR, aerial photos, etc.). Will be doing pilot study areas to check. George Priest suggestion to do a study where good recent LiDAR exists (also look at areas where past well documented events and perhaps on-the-ground study to compare with).
  + Lifeline Systems: transportation, utilities, ships / cargo-cruises, etc., are included, but facilities like nuclear and LNG terminals are not.
  + Casualty model used, Yeh OSU
  + Debris and debris transport (requires building material information)
  + Shelter Demands
  + Shelter locations, boats, containers; Flood depth damage functions reflective of structural type and height; momentum flux damage; casualty estimates provided for four different phases of the tsunami propagation (not just the cumulative estimate at the end); Debris model reflecting floating pieces of damaged buildings.
  + Rick Wilson should be a process to put questions / suggestions to this team in the pre-development phase. Would be good to incorporate expertise of NTHMP in the HAZUS development.

**Kevin Richards – Hawaii Report**

* 2011: Oahu & Hawaii mapping and modeling complete; working Maui now; Kauai kickoff meeting in fall 2011; anticipate completion in CY2012; concern now regarding greater than 9 Alaska EQ (USGS currently working on sources for eastern Aleutian Islands)
* Tsunami Advisory Group (TAG) – new group made up of representatives from ITIC, PTWC, UH, Counties, and SCD; meets as needed
* HI State EQ Advisory Committee (HSEAC) ; meets as needed
* NTHMP Activities: outreach to Islands, west coast tsunami briefing
* Tsunami Ready Communities: Kailua, Marine Corp Base Hawaii, Ewa Beach, USCG, Pearl Harbor, Kameoha, Kapolei, North Shore, Maui TR last year; challenge is that HI has no official body below county (ie no city, town government); Kevin now reaching out to and briefing “neighborhood” committees to reach local populace.
* Special Projects: Tsunami Awareness Kits; Menus Project – originally designed for restaurants to provide digital (translated) audio; adopting to provide basic tsunami content (up to 10 minutes) in multiple languages (15 options to utilize); Oahu tsunami signs; Kahu Radio beefed up to reaching more distant audiences; Maui Train the Trainer; worked with Hilo Airport to provide evacuation through airport Keaukala; developing mobile tsunami display unit.
* Frequent exercises.

Marie Eble - What Islands were actually observed through “HI tsunami observer program?” Oahu was pretty good, others fairly spotty.

* Kevin Richards also summarized Guam presentation; very organized, work with NWS/PMEL – Pago Pago – DoD to make good strides for TR and preparedness.

**Kevin Miller (Jim Goltz’ replacement) and Rick Wilson: California Report**

* 8 staff, 4 CalEMA, 2 CA Geological Survey, 2 CA State Humboldt University; subcontract with USC, URS, and Uof A; federal funding via NTHMP & FEMA; coordinate with 5 NWS WFOs and 20 Coastal Counties; regional working groups
* Public education: Do not go to shore, when not to evacuate / over evacuate; understanding TWC products; Internal challenges – 2012 staff reductions from state / local budget reductions
* Areas of need: jurisdictions, maritime community, media and reaching hotels, tourist areas
* 100K residents in coastal inundation zones; outreach support to communities, schools, local government; purchasing signage (~3,000 on coast); hold workshops / facilitate exercises; build / maintain kiosks with additional information (~2/year)
* Technical assistance: Assist with inundation map interpretation, evacuation planning and drills, sign placement, TR assistance, scenario playbooks for managers, guidance for maritime community, GIS assistance and projects
* Tsunami Preparedness Week (March) coordination; materials distribution, workshops, media events, 1-year anniversary of Tohoku; Living on Shaky Ground
* Accomplishments: 24/7 Duty officer rotation, Live Code test (4th year), Tsunami Preparedness Week (3rd year), 18 TR communities; lead on USGS SAFRR Scenario project Geology, Preparedness/outreach and policy;
* Tsunami inundation, modeling, mapping completed for all low-lying population areas; filling in some gaps (EM community; Landuse Planning community, Maritime community); Catalina Island in draft stage (also working TR); Completed high-resolution (10-m) modeling for southern community and compared with current 90-m to 30-m grid and found minimal or no impact on inundation
* Re-evaluating CSZ based on OR research and Tohoku to see if change evacuation maps are needed
* Working now on Land-use planning maps (PTHA) and Probabilistic workshop comparing different probabilistic models for single area
* Developed draft tsunami playbook for “tweener” events (small warning or large advisory type events) for rapid and distant events (worst case CSZ ~2 hours, and AK ~10 hour events) and providing gradated evacuation lines
* CA tsunami maritime safety goals; when, where, how long, where are dangerous currents
* Pre- / Post-tsunami Field Team and Information Clearinghouse; Pre-event establish network and determine field locations; during event clearinghouse to CalEMA to collect real-time information; post event, collect perishable data and report to CalEMA
* Maritime evacuation: Crescent City, Santa Cruz, LA/Long Beach, San Diego, (5 total); working with UofAK and others to ground truth currents inside and outside of harbors with final FEMA risk product; working with USCG, Navy

**Nir Barnea (NOS Debris Program) - Japan Tsunami Marine Debris**

* Established in 2005 to research, prevention, and reduction of marine debris
* AK, HI, WC, GOM, EC, Caribbean - 6 regions (marinedebris.noaa.gov); deal with all types of debris (floats, canisters, human remains, hazardous materials)
* Survey, mapping, removal post Katrina and Rita with USCG for clean-up
* Japan – 27 square miles inundated with unknown total debris ~25 million tons; some debris sunk –dispersed widely over Northern Pacific – much will likely be caught in “garbage patches”
* Initial tracking via satellite, but by 14 April not able to detect (limit 15-m resolution) due to dispersion; Japan Coast Guard continued to conduct rescue / recovery of debris through June 2011; now recovering individual pieces (i.e. a cargo container, boat etc). Do not expect “large debris flow” from Japan event; rather bits and pieces; using NOAA OSCURS Model to predict / approximate flow; Northwestern HI islands possible impact in year 1; between HI and NW Pacific Coast (BC, WA, OR) in 2013; flowing toward CA and back out to ocean in 2014; rough agreement with U of HI model
* Good collaboration with partners to assess, reach out to communities (especially reassure that debris not likely to be radioactive – debris washed out before reactor problems and from a much wider area than the single point source for Fukijima Diechi, (USCG, FEMA, EPA, NOAA, state and local, debris spotters); Sightings help calibrate models
* Challenge is to get accurate message out with many misstatements (i.e. radioactive debris found on beaches, body parts found on beaches…); need to do more briefing to communities;
* Using reports from ships to verify debris patterns; confirmed sitings; requesting DOD 2-m resolution satellite imagery for additional surveillance
* Do not know how much debris to start and how much is still afloat, do not know exact timeline and of that debris how much will sink and when (containers will sink eventually; booms may not)
* Working with Japan on joint debris assessment and response framework; all US regions of potential impacts; local response plans
* Nir Barnea would like any information from the 2004 Indian Ocean tsunami, and can provide talking points and presentation material to state reps and look at scheduling some teleconference; Nate Wood – recommends doing more media events (briefings, interviews, etc.); Focus on “State what we know, state what we do not know, stick to the science.”
* Lewis Kozlosky is to get contact information and Debris Program briefing out to West Coast and Hawaii WFOs.
* George Priest - concern regarding radiation (particulate radiation with long half-life being spewed into air while debris was still near-shore); Nir Barnea said they did look at water-born radiation, but not airborne; modeling indicates that washing due to wave action over a period of years removes radiation but that WA debris team has volunteered to spot-check debris for radiation through 2013. Teron Moore -encouraging coordination both for messaging across Pacific, but also to coordinate response.
* Marie Eble, Rick Wilson, and John Schelling: See about Nir Barnea joining / briefing the summer MES/MMS meeting in Seattle.
* Is the debris coming ashore now from the Japan tsunami? Do not know for sure. It would be very early based on models. There is a lot of debris in the ocean and Japanese debris show up often on Pacific coasts. Representative of Japanese Consulate is attempting to verify if debris recently on-shore came from tsunami, but no answer now.

CNMI – Juan Camacho could not attend.

**Adam Stein PRiMO**

* Pacific Risk Management ‘Ohana (your extended family):
  + Grass roots effort, no mandate; multi-agency, fed/state/ngo/commercial
  + 10th Pacific Partner’s Meeting March 13-15, 2012, Waikiki Beach Marriot
  + Enable / support variety of tsunami activities in the Pacific, including tsunami survivor stories; HI tsunami risk assessment project; American Samoa LiDAR collection
  + LiDAR 1.5M dollar project covered by contributions from various agencies moving forward for summer 2012
  + HI Tsunami Evacuation Information Services; enter address / zip code and get back consistent evacuation information (found that use goes up immediately after training; then found that usage spiked in event mode and caused computer to crash – migrated to NOAA server and able to support 15,000 users in one hour).
  + Site location: http://www.prh.noaa.gov/hnl/pages/tsunami\_safety.php
  + Any interest in expanding to other states; interest in including on tsunami.gov? Is mobile (android) application available to extend to other state mobile apps? (Oregon has)
  + George Priest: Rather than having a single server of maps, Oregon prefers having similar look & feel across states with local control of content
  + Question: CA, HI, OR, WA already have map services on-line; is this a web mash-up, a replication of web service capability, or a new development of some existing some new services? This site is not a replication of services and provides evacuation maps only, vs. inundation maps like other states may have.

**Roger Hansen and Irv Petty – Alaska Report**

* Science projects: Movie with GPS sites / seismometers; using the GPS stations computed displacement due to Japan earthquake, no problems with observations going off-scale, but does take some time to compute earthquake magnitude; AK now using GPS stations to monitor Aleutians along with strong motion stations to recover source information; expanding network of GPS stations due to EarthScope; Japan challenge in processing stations in realtime (JAMSTEC);
* Continue inundation modeling using a more complex suite of sources than the NOAA forecast scenarios; also doing EQ + Landslide modeling; Seward and Whittier complete; AK peer-reviewed reports for each area
* 3 tsunami warnings in 2011; March 10 Tohoku with 5 community evacuations; June 2 Amukta Pass; September 23 Amukta Pass (local evacuations from both latter events due to strong local shaking); proved to be a challenge in terms of providing shelter
* Unalaska became TsunamiReady in October 2011; challenge with small community government turnover
* 2012 TR target; Saint Paul, Cold Bay, Cordova, Whittier (possible, pending stable local partnerships)
* Sitka Tsunami Operations Workshop (40 members, 20 communities) tsunami and earthquake science, preparedness, warning reception / dissemination, evacuation planning, recovery process with FEMA and State; TsunamiReady requirements
* Outreach: School visits, city leaders, evening public forum
* Siren installation: Sitka (100% covered with 1 from NTHMP and many all hazard from DHS), Kake (2), Karluk, Larsen Bay; NOAA Weather Radios have variable reception – 50 radios to be distributed to communities with reception; Heidi and the Tsunami and Molly and the Earthquake very popular outreach materials (kids booklets)
* FEMA interactive / touch screen kiosk project – Valdez Museum complete; incorporates tsunami survivor interviews (Seward pending; Kodiak complete)

**David Oppenheimer – USGS Report**

* USGS statutory roles for notifications and warnings for earthquakes, volcanic eruption
* Support NTHMP with seismic, source, deposits science and observations; USGS ad hoc partnership in tsunami sources
* Eric Geist: Simulation of 1975 Kalapana tsunami; earthquake triggered landslide causing tsunami inundation (causing deaths)
* Mapped bathymetry off shore from Scotch Cap Lighthouse to look for landslide associated with 1946 tsunami; doing similar studies off-shore California and Lituya Bay Alaska; working in Puget Sound with NOAA and WA to identify sources (3 faults possible major tsunami sources); working on probabilistic tsunami scenarios
* Moore Foundation: $6M grant (with support to USGS to manage) to improve earthquake source and magnitude information (Earthquake early warning to improve timing from 3-4 minutes to under 10 seconds); challenge is accurate magnitudes; saturate above ~M7; USGS also moving toward standard software for earthquake location / size and will deliver when available. American Recovery and Reinvestment Act funding supported replacement of a lot of seismic monitoring stations
* New: Tsunami Scenario (Lucy talking later) for possible MW9 earthquake in Aleutians

**Afternoon Session**

**Lucy Jones: Science Application for Risk Reduction (SAFRR) TSCENARIO, USGS Science Advisor for Risk Reduction**

* + USGS Mission organization: Natural Hazards Mission includes earthquakes, volcanoes, etc.
  + Innovate the application of hazard science for the safety and security of public
  + Great Shake Out – 5.5M people participated in first scenario, has grown since and gone international
  + Did “Big Storm” scenario; now moving on to Tsunamis
    - Use best science; talk to community partners, include broad range of expertise with end users part of effort from the start; work with appropriate national partners
  + Start with earthquake source; wave modeling, currents, coastal hazards, structures, environmental impacts, economic impacts, casualties, policy: forecasts and warnings
  + Stephanie Ross (USGS and California Geological Survey (Rick Wilson leads) – willing to include other partners
  + Started with Southern California where Ports of Long Beach and Los Angeles are located as focus, therefore selected Aleutian Arc as “worst source” using 1788-like source; generally LA is not getting much signal, not as much hazard, but central / northern CA does get energy; Keith Porter of University of Colorado is mapping assets at risk; Nate Wood is leading social vulnerability (once know where water will be, look at who and what challenges located in inundation; follow-up with groups (schools, etc.) on how information received (i.e. Tohoku); Rick Wilson (paleotsunami deposit investigations);
  + Nate Wood: Would like to have inundation maps from all Pacific coast states for this source (Costas, Pat Linet USC; WCATWC). Vasily: possibly at 90 or 30m scale; Pat Linet is doing 5m detailed for 3 locations); Stephanie Ross Coastal and Marine Geology in Menlo Park is project leader
  + Anne Wein of USGS Menlo Park doing economic impacts and resilience; ports, ship re-routing, export diversion, use of inventories, substitutions, relocation; Kevin Miller is the education / outreach lead ; Need to work with labor force at ports
  + Chuck Real of California Geological Survey is leading Policy working group to identify gaps/issues in current policies; land-use planning and development; emergency response; in California coastal development falls entirely under the California Coastal Development Commission – working with Commission to incorporate frequency and impacts to get better handle on reasonable policy
  + Detailed geologic source; coarse scale model for Pacific basin; fine scale models for select areas; link back to state mitigation / policy efforts
* Source is coming out of the USGS – Partner source scenario working group; this can be incorporated into the MMS mapping source scenarios; sources are 50x25 to be more seismically realistic based on trapezoids (not quite like NOAA’s scenarios – but could incorporate into unit sources)
* **Lucy Jones: Once they are ready, coordinate with the MMS to get the unit sources on NTHMP web site for MMS review**. **Perhaps get Barry Eakins on team for DEMs.**

USGS Science Strategy Team is recommending a Tsunami Coordinator for USGS Hazard Mission.

**Susan Mclean and Rick Wilson - NTHMP Repository**

* Was an 18-month effort to catalog and prototype 1-stop access to tsunami products from NTHMP
* Scott Thurston and Loren Pahlke will describe and package content from DSpace proof-of-concept and make available to NTHMP members; sufficient to implement DSpace in few years (beyond this, technology change may be too great to make useful)
* Going forward: Develop NTHMP web resources to provide access to NTHMP material, MMS and MES review annually and let NGDC know of any changes; NGDC will work with PMEL to implement updates on NTHMP web site
* NGDC will archive products for back-up to states

**Christa von Hillebrandt - US Virgin Islands Report**

* Total population based on 2010 census is approximately 51K for St. Thomas and St Croix, 4k for St John’s
* August 2009 NTHMP awarded $42K; FEMA funded 24-hour 911 message system; state of the technology EOC; 10 sirens with funding for additional 10 sirens to complete coverage of island; 100 signs (FEMA funded)
* Inundation mapping for USVI not complete; WCATWC recommended 1-mile inland or 100’ vertical evacuation; evacuation maps have been developed
* There are problems with the DEMs – need to resolve with Barry Eakins to determine the specific issues. NTHMP guidelines should be used for mapping in non-modeled areas.

**Wrap-up and Closing from Jane Hollingsworth**