

NTHMP Mitigation & Education Subcommittee

Summer Meeting Minutes

August 1, 2017

Tuesday, August 1

8:30 – 9:30 MES & MMS Joint Meeting – Welcome and dialogue with NTHMP Chair Dr. Grant Cooper

Rocky Lopes – Welcome

Jeff Lorens – Administrative remarks

Introductions

Grant Cooper – Opening Remarks:

- Orientation to Salt Lake City
- Thanked Troy Nicolini for contributions in tsunami program
- Gave remarks on strategic plan in context of TWERA and encouraged us to think Nationally.
- Recognition: Laura Kong for MES co-chair position in previous years; Gala Gulacsik for two years as MES co-chair.

Althea Rizzo asked if Direct Assistance to the states will be preserved considering the President's FY18 budget. Grant Cooper said TWERA has language about the grants; however, the budget suggests to delete it. The House disagrees with deleting it.

Grant Cooper said that proposed cuts to DART buoy maintenance was rejected by the House as well.

James Waddell inquired how we can assist with showing the NTHMP achievements and worth. Grant Cooper encouraged "how to tell the story in the national context."

Mike Angove added that there is a balancing of focus on sensing, forecast, warning with mitigation and education.

Corina suggested improving the NTHMP website to tell our story. Rocky Lopes said there are no resources or capabilities to do this at NWS Headquarters. This would have to be accomplished via a state grant project.

James Waddell suggested developing a joint powerpoint that can be pulled at any time. Grant Cooper suggested strengthening relationship with Emergency Managers so that they may carry message forward.

Maximilian Dixon mentioned he has been tasked by NEMA EQ subcommittee to draw from NTHMP governance structure to apply it to NEHRP.

Kara Gately suggested to provide accompany slides along with subcommittee reports to tell the story. Rocky concurred and added that images and visual images are welcome and can be incorporated into the website. Keep an open mind about how to tell the story.

Chip Guard remarked that NOAA is pushing a Weather Ready Nation and suggested that it could be replicated through TsunamiReady and its supporter program. He acknowledged the requirements are higher for TsunamiReady and supporter.

Rocky Lopes announced that the TsunamiReady website URL has changed and will be announced in next TsuInfo Alert Newsletter. (<https://www.weather.gov/tsunamiready/>) There are many links errors in the tsunami.gov site coming to awareness that need to be rectified.

Christa Rabenold – the NOAA Acting Administrator has pushed story maps in the past year as a way to promote partnerships and work in NOAA. NOAA will produce one World Tsunami Awareness Day...please promote through social media. We can continue to use the tool to promote our efforts after the day passes.

Tim Walsh suggested external sources NBC affiliate in Seattle to do a week-long series on earthquake and tsunami preparedness that has high profile awareness. In addition, they have been working with Seattle Times to get hard-hitting stories published. The National Academy of Sciences has conducted a series of educational webinars in which NOAA has been involved.

Rocky Lopes suggested sending links of published articles to NTHMP so that they may be placed on the website.

Christa VH – Suggested seeking out other partners or recognizing their contribution to the program (e.g. in-kind). In addition, identify other funding sources. Should this be part of our strategic plan? Grant Cooper noted the recommendation of conducting social science. Rocky Lopes suggested documenting what people are doing with the work you are creating and how effective are you. Need social science research that proves that link. Invest in social science to get research done cooperatively to demonstrate active results that work NTHMP is doing in various subcommittees is having an effect on public safety.

Maximilian Dixon gave an example that social science research suggests that risk understanding has been saturated along the WA coast and now they are moving into action. Rocky Lopes suggested sharing this information amongst states. Rocky Lopes recommended a renowned social scientist, Dr. Mike Lindell, who can provide advice about who is the right organization to do the research. Maximilian Dixon offered that he is willing to apply for a large joint project to conduct social science research at the next round of applications. Christa Rabenold said there is an evaluation of workshops on the MES website for your consumption.

Mike Angove closed the conversation on the note that we can expect resources to decrease and it is up to us to maintain our readiness posture while facing less resources. Grant Cooper concurred.

Chip Guard suggested putting more stress on uncertainty to shift focus from rarity.

Jonathan Allen suggested there is a need for an overarching assessment about suite of products and how effective they are. Multi-state type effort. How effective local programs are in communities. Assessments will vary dramatically depending on the community and time of year (e.g. response during tourist season).

Althea Rizzo opposed characterizing tsunamis as rare events as they happen monthly at an international level. She suggested emphasizing how often they happen. Mike Angove remarked that it is the big impactful events that draw resources.

Rocky Lopes announced the annual meeting will be in Seattle. January 29-February 2nd. Hosted at NOAA Sand Point. More information to come.

9:30 – 9:45 Break

9:45 – 10:00 Introductions and Meeting Goals, MES Co-Chairs & Members

Kevin Miller opened up the MES and reviewed the week's agenda. He encouraged folks to review the grant allowables spreadsheet that was sent previously. Rocky suggested to add MES Terms of Reference to today's agenda.

Rocky Lopes responded to a question regarding replacement of FEMA rep co-chair. The MES voted by unanimous consent to have Tamra Biasco return as an MES Co-Chair to replace Gala Gulacsik. This vote will be affirmed at the next NTHMP Coordinating Committee meeting.

10:00 – Noon Working Session: TsunamiReady Tier Two, Troy Nicolini & Rocky Lopes

Rocky Lopes opened discussion of TsunamiReady discussion with a historical review of its evolution. He presented the guidelines that outline what a community must do to be recognized. Communities renewed their TsunamiReady recognition under new guidelines and no communities renewed under old guidelines. There are 197 TsunamiReady counties and communities across US and territories. All U.S. territories are TsunamiReady recognized. New opportunities have been saturated so focus for metrics is shifting to renewal. Rocky described each component of the program: TsunamiReady Supporter – minimal guidelines; Tier Two. Rocky Lopes framed the discussion with how are we going to strategize our roll-out and engagement on TsunamiReady Tier two. He introduced Troy Nicolini. He reviewed Mit-4-6.

- Mit 4 – high ground with route. (E.g. Crescent City)
- Mit 5 – high ground w/o route. (e.g. King Salmon)
- Mit-6 – no high ground (e.g. Fairhaven)

This is designed to be a progression approaches to addressing the evacuation issues. Laura Kong inquired about evacuation mapping in the early stages and how can... Troy Nicolini said that this is assuming that the community still became TsunamiReady even with barriers to evacuation. Nate Wood reminded the group that in the past, it was determined that if a community has a problem with evacuation that will be addressed in long term, they were allowed to become TsunamiReady. Troy Nicolini clarified that Tier two was created to address these cases. Nate Wood expressed concern that a community should not be labeled with a Mit level because all levels should be discussed in each community. Troy Nicolini clarified that it's a process not a label. Nate Wood said that everyone should strive to be a Tier two and acknowledge that these are various levels of efforts. Nate Wood said Tier two appears that it is resource-heavy process but in reality it could be a one-time discussion in some communities. Troy Nicolini explained that the review cycle offers the community the chance to explain what they're doing to address the problem. Nate Wood countered if it is that simple –why have a separate Tier Two program? Rocky Lopes offered that TsunamiReady recognition is a voluntary program.

Is Tier Two have a plan, or have a structure? Suggesting we hold off until we can actually save all lives. Also, what about liability? Research for people suing for people dying in tsunamis? Not a certification program, only recognition.

Troy Nicolini provided an overview of purpose and incentive of TsunamiReady programs. Tier two is not required, a community can decide to be TsunamiReady.

Group should capture benefits of going through Tier two process. What do you use it for to accomplish?

WCM – educate WCMs on local mitigation plans and NTHMP funding. Troy suggested an action of educating WCMs. Rocky asked for volunteers to help explain these concepts to them. Troy will work with Jeff and Rocky to develop materials to provide for education.

Rocky Lopes posed question to the group. Kevin Richards responded: EMs discover mitigation opportunities alongside community. He noted that people burn out after certification and that carrying it forward for taking mitigation action is a challenge.

Maximilian Dixon implied that funding will be needed to support maintaining tsunami ready. Rocky responded that everyone should consider this for the grant allowables discussion and think about what you would trade off.

Kevin Miller brought up probabilistic mapping and building code development in the Pacific that will influence this. Outreach and planning will need to be delivered to inform this process.

Christa Rabenold inquired if we can now move forward on implementing Tier two. Should we go public? Troy said we should start engaging WCMs. She suggested highlighting communities and benefits in TsuInfo Alert. Kevin Richards warned that WCMs may refer questions to the EMs – expectations should be set for available resources.

MES Business

Gala Gulacsik will be resigning from FEMA Region X to pursue a PhD at the University of Washington. Everyone wished her well and thanked her for her service with the NTHMP.

Rocky facilitated a vote to replace the FEMA MES Co-Chair position.

Tamra Biasco was elected as the FEMA MES Co-Chair. (This vote will be confirmed by the NTHMP Coordinating Committee at its next meeting.) It was added that there are no term limits for MES Co-Chair positions. The language was also clarified that anyone from the floor can nominate any FEMA representative.

MES Terms of Reference and Rules of Procedure

Rocky gave an overview of the purpose and contents of the two documents. Rocky proposed updates as prompted by TWERA. He also added proposed language directing subcommittees to develop work plans that tie into strategic plan. This encourages clarity as well as accurate and accountability on milestones in the strategic plan.

With a few editorial changes, the MES voted to adopt the proposed updated MES Terms of Reference.

Noon – 1:00 PM Lunch

1:00 – 1:45 Presentation of Tools

- HAZUS Tsunami Module, FEMA representative

In 2017 FEMA released the Hazus Tsunami Model. The release represents the first time that analysis will be available for most US territories. It also includes a new National Structure Inventory, five case studies and two types of damage analysis (Earthquake and Tsunami or Tsunami only). MES agreed that it is a great tool and significant training and support will be required for implementation by most states.

- NCEI Update, Kelly Stroker

NCEI presented on updates to the Hazards Interactive Map. They have added Tsunami energy plots to the map viewer for some historic events. These were obtained from Nate Becker at PTWC. It would be great to have more of these to include in the viewer and they will be added as they come in: <https://maps.ngdc.noaa.gov/viewers/hazards/>

NCEI also presented on using Story Maps to tell the story of a tsunami event. Kelly presented an example of a story map that has been published for the [2015 Chilean Earthquake](#) and

Tsunami. This is meant to tell the post-event summary of the socio economic impacts of tsunami events. The group asked how past tsunami events would be prioritized and what would be the next one that NCEI would work on. Kelly said that they would focus on significant anniversary events (eg perhaps the 1992 Nicaragua event next) but there isn't a prescribed list. The idea will be to do these story maps for future events to replace the Tsunami event summary pages.

1:45 – 2:45 Tsunami Preparedness Campaign Reports, State/Territory Members

2:45 – 3:00 Break

3:00 - 3:50 Role of MES in nationally-developed exercises, Christa von Hillebrandt

Christa von Hillebrandt introduced the subject by recalling that tsunami exercises were included in TWERA, as well as 3 TsunamiReady® guidelines. She reviewed the experience of NTHMP and NOAA supported CARIBE WAVE and LANTEX exercises, as well as PACIFEX. She noted that the TWC invest considerable amount of time in the production of the handbooks and in issuing the simulated products during the exercises. In the case of CARIBE WAVE the participation was 679,985 people from 47 countries and territories including Puerto Rico and USVI, making it well worth the effort. A discussion was held on how NTHMP can further support tsunami exercises that are included in the TsunamiReady guidelines. It was agreed that the TWC should continue supporting with the development of the exercise handbooks with the simulated messages. It was also noted that many states and FEMA have their exercise structures which can be used in support of tsunami exercises. Tsunamizone.org was also recognized as a tool for tracking and promoting participation in tsunami exercises.

3:50 – 4:10 World Tsunami Day, Laura Kong

Dr. Laura Kong gave an update on World Tsunami Awareness Day which is celebrated every year on November 5. One of the focuses this year is on tsunami evacuation exercises for schools and it was agreed that videos of such exercises in the US should be prepared and shared with the international community.

4:10 – 4:30 Strategy for MES Developing NTHMP Talking Points on important topics,
Everyone

Adjourn

MES Meeting: Wednesday, August 2

8:30 – 9:00 Arrival and networking

Rocky Lopes made administrative announcements for the NTHMP group dinner.

Rocky reviewed proposed changes to the terms of reference for the WCS. Dan Belanger proposed to change the West Coast/Alaska Tsunami Warning Center to the National Tsunami Warning Center. Dan Belanger moved and Althea Rizzo seconded. The WCS Terms of Reference were adopted.

9:00 – 10:30 Strategic Planning; Using TWERA, Rocky Lopes

Rocky Lopes gave opening remarks for the strategic planning session. Keep mission and vision the same. The strategic planning session is for the MES to contribute to the content of the upcoming strategic plan under development. The current strategic plan is active during the development. Between now and NTHMP CC meeting, the workgroup will be writing the strategic plan. He emphasized that this will be a transparent process. The first draft of the strategic plan will be written and provided to the NTHMP at its CC meeting in November. This will allow two months for review and edit by subcommittees and finalization and adoption of the new strategic plan at the 2018 Annual Meeting. Rocky will align the new strategic plan with the FY18 grant cycle and update the guidance. All applicants will be given the new strategic plan in which to align their applications.

Kevin Miller expressed concern with workload. He referenced planning of the annual meeting, grant applications, holidays, etc. Rocky acknowledged that and said that's why two full months is provided for review of the proposed new Strategic Plan. With no alternatives on timing, Kevin said that he understood.

Rocky Lopes reviewed three content inputs for the strategic plan: NTHMP strengths and weaknesses from the External Review report. He reviewed the report and suggested lifted language from the executive summary. Of note:

- Partner-state ability to share best practices
- Strong partnerships
- NTHMP structure
- Relationship with Emergency Managers and physical scientists
- Range of capabilities and activities of each state (territory is assumed when referring to "state")
- The Island Caucus is considered a strength to address unique evacuation issues
- Innovative products and practices
- Hazard mitigation crosses MES and MMS
- Social vulnerability work of USGS Pedestrian Evacuation Tool and HAZUS-MH tsunami model

- Public outreach – consistency and tailoring to community-specific needs; evaluating outreach activities effectiveness
- Social science is considered a strength and weakness. For example, research has shaped tsunami warning messages. Expansion and sharing of research should be considered for future work.
- Annual meeting is a benefit to collaboration.

Rocky stated that the review committee emphasized even though first order goals have been done, there is still more to do. Rocky reviewed weaknesses to be addressed in the strategic plan as recommended by the external reviewers:

- Did not observe collaboration between subcommittees. More strong collaboration between MES and MMS. An example solution could be the development of a fourth group - Mitigation and Recovery Subcommittee. Need the flexibility to accommodate other structures.

Maximilian Dixon expressed concern that some programs are young and may not have the foundational knowledge to understand needs. Kevin Miller suggested starting with building codes issues with a smaller caucus.

Maximilian Dixon said we need to have a discussion about what research needs to take place. Nathan Wood suggested potentially another caucus to discuss this. Rocky Lopes emphasized that a caucus is a good approach a long-term activity. For example, long-term research needs.

Another weakness: Development of guidance products because it is not consistently applied. Rocky recommended that these should reflect flexibility for implementation at various locations. This should change based on scientific information.

Mapping was considered a weakness due to the lack of uniform color scheme.

TWERA and TWEA are suggestions from Congress for activities to consider. This is not a legislative mandate. We do not have to a specific line item per TWERA recommendation. There may be some items that NTHMP already addresses other falls in another agency's program area.

TWERA no longer calls for a 5-year external review. Kevin Miller suggested writing in external review as part of the strategic plan. Kevin Miller suggested having a WFO representative attend Meetings. Maximilian Dixon stated that he brings in the WCM to the tsunami working groups.

Rocky acknowledged the MES document which assesses components of the existing Strategic Plan. This should be considered when suggesting input for the strategic plan.

10:30 – 10:45 Break

11:30 -Noon Strategic Planning; Using External Review Report, Rocky Lopes

Noon – 1:00 Lunch

1:00 – 2:30 Strategic Planning; Using 2017 Strategic Plan Elements, Rocky Lopes

The remainder of time dedicated to strategic planning was used to develop inputs to the MES Strategic Planning Worksheet using a brainstorming technique. The MES developed high-level goals and suggested strategies to meet those goals. Before conclusion of this discussion, Rocky reviewed each goal and strategy to determine how measurable and accountable they were (or revised to comply with behavioral objective procedures.)

2:30 – 2:45 Break

Evacuation Best Practices:

2:45 – 3:05 Tsunami Warning Sign Discussions, Kevin Miller

3:05 – 3:25 Pedestrian Evacuation Updates, Nate Wood

Nate Wood facilitated a discussion on pedestrian evacuation linkage with emergency managers. For example, Oregon is doing beat the wave maps while other states are doing travel time maps. He suggested we should have standardization for each type (e.g. colors, bins for travel speech). Maximilian Dixon said he hasn't seen social science about which approach is understandable. He suggested having standard deliverables (e.g. mobile platform, maps). Nate suggested developing an NTHMP workshop to delve into this he would be involved to advise but he does have the capability to lead and make decisions on the issue. Guidelines for modeling, mapping product development, dissemination and outreach. Nate has involvement with modeling and cartographic component. He brought up existing research on effectiveness of cartographic methods (e.g. 2-D, 3-D, etc.). Laura Kong said we need a workshop to facilitate understanding of the maps. People should be able to read the map and understand the assumptions behind them. This will help EMs to know what questions to ask of your modelers. Dan Belanger noted that the maps are developed without community input and it resulted in confusion. Ideally, emergency manager input would be incorporated as well as the community.

3:25 – 3:45 Blue Line and Way Finding Projects, Althea Rizzo

3:45 - 4:15 FEMA Showcase of Safe Haven/Newport Projects, Gala Gulacsik & Althea Rizzo

Adjourn

MES Meeting, Thursday August 3

8:30 - 9:00 Arrival and networking

9:00 - 10:00 Grant-allowable Activities Discussion (MES-only topics), Everyone

10:00 – 10:30 Cell phone topics: Earthquake Tsunami Warning System, WEA, and Apps
(see page 74 for minutes)

10:30 – 10:45 Break

10:45 – 11:10 National Education Projects, Christa Rabenold

See notebook page 75 for beginning of minutes.

Send updated links to Christa. Please review Partner Web Resources Page to ensure links are correct. Add publications and resource page. Christa will remove WA link to evacuation mobile app from Tsunami Maps page.

Christa Rabenold reviewed the tsunami education and outreach plan developed in 2014. California and Caribbean are the only folks who have tsunami zone web pages. SCEC is willing to make individual pages for those interested.

Christa inquired if anyone is interested in being an NTHMP reviewer of the Coordinators Manual. Kevin Miller volunteered. Althea Rizzo and James Waddell also volunteered.

NTHMP National Media Tsunami Guidebook. There was confusion about whether we are still pursuing the update of the guidebooks. Christa reminded the subcommittee of the survey and reviewed the results. Headquarters was revealed to not think this was useful for the media audience. There is a question about who the audience is of this guidebook. Many folks have volunteered to help with the update. Maximilian Dixon stated that his media does not use the book. He expressed it was better as an internal tool that provides basic information and a communication plan. She inquired if this should be a project. Christa VH said that it should be updated with a wider use. Kevin Richards said that since the survey showed so many people find it useful that we have to keep it alive. Nate Wood questioned the “national” applicability and that it seemed more important as a state product. Christa concurred that feedback showed that local information would be helpful. Christa will regroup with staff and determine the path forward. Maximilian Dixon said they are changing the content, format, and audience of their guidebook. Christa mentioned that WA’s guidebook is on the NTHMP website. Christa VH said that the national guidebook has a lot of incorrect information and should be pulled from the site. The group concurred to pull it from the site. In its place she will place the NTWC FAQ. Christa reviewed the projects that were identified in the outreach and education plan and their status.

Get in habit of using tsunami.gov. For right now sites are redirecting to tsunami.gov. TsunamiReady site has changed and is redirecting to weather.gov/tsunamiready. Old TsunamiReady site server will shut down in the future.

1:00pm Island Caucus Report, Kevin Richards

Kevin Richards gave a report on the Island Caucus to a joint meeting of the subcommittees. He invited the group to listen in on the island caucus. He reviewed the caucus purpose.

What are our common issues?:

- Limited and consistent staff with inability to respond
- Isolation impacting response and recovery capability due to slow logistical supply chain
- Just in time resources – living delivery to delivery in terms of food. Feeding people depends on ability to use a crane and unload a ship.
- Standardized mapping for the islands.
- Looking at staff sharing amongst islands as opposed to Federal personnel.
- Handling tourists in an event.
- Schools in inundation zone.
- Communications.

Jon Allen inquired about post-disaster supplies. He asked about the island process to improve process for getting supplies. He pointed out that after a large EQ and tsunami, there will be island communities in Oregon. Kevin Richards responded that Hawaii EMA hired a Catastrophic Disaster Planner to its staff who is investigating DoD and other agency claims that they can perform in a disaster. To supply one day of food for Hawaii would take 300+ flights of MREs. Hawaii is now shifting two 2-weeks supplies prescription to the public. Kevin explained that one-on-one interviews facilitate a more candid conversation with partner agencies than a survey. They use industrial focused presentations. Juan inquired if there was a document that outlines the process for doing this planning. Kevin has slide shows and white papers that document this. Kevin Miller asked if he has looked at international solutions. Roy replied that they look at MOAs from other entities that would not be affected when they would (e.g. those with high ground). Maximilian Dixon commented that New Zealand brought in US folks to play in their exercise. He inquired if they had a process to request international resources. Kevin Richards said no because Navy would supply more capabilities faster. Kevin said Hawaii would likely reach out to Washington, Oregon, and California before international. Christa VH pointed out that tourism is 98% of economy and most of the schools are in the inundation zones so these are two important issues. Rocky Lopes emphasized the need to integrate tourism considerations into NTHMP efforts.

Joint MES/MMS Meeting (1:00 – 4:30) – Potential Topics

- NTHMP Maritime Guidance, Planning, and Policy Development
- TWERA / Grant-allowable activities discussion
- External Review Report

Rocky Lopes framed the purpose of the joint MES/MMS discussion. Kevin Miller brought up the pedestrian evacuation Guidelines.

Corina Forson noticed that this format is different from the previous and inquired how we interpreted the form. Second column is the end goal and the milestones are the steps to get

there. Rocky emphasized that we should need to update the 5-year plan until 5 years from publishing.

Manageable number of key strategic goals – objectives to meet goals – consolidating input into major strategic goals.

Pedestrian evacuation mapping – Nate Wood the standardized guidelines would not have to be exactly the same in each place. Instead we could have a workshop to look at the range of products and what is acceptable and defensible. Kevin M. two-day forum of what has been done (e.g. clearance times for evacuation). Rocky Lopes interjected that an NTHMP partner could request a grant request on behalf of entire NTHMP. He emphasized that we need to sort the priority guidelines. Nate Wood emphasized that the responsibility to lead this effort and fund it lies with the state and territories. Kara Gately if there was a plan to make pedestrian evacuation an online GIS-based pedestrian evacuation map. Nate Wood replied that this is the type of topic that could be fleshed out at a 2-day workshop.

Social science research – informed by external review report but folded it back up into research topic. Rick W. asked if this would have to be a multi-state or NTHMP wide research effort. Kevin Miller replied that this could come from an individual or the MES could say this is a priority. Kara Gately said that MMS would like to be involved in research decisions. Marie Eble mentioned that there was discussion of Maritime-based research but that it should be a joint MES-MMS effort. When there is state coordination happen it should be brought back to the MES and MMS.

Not only frame this in terms of grant funded tasks. Reminded that subcommittees can't receive money but can guide projects. Need a process of what collaboration can occur. Rocky will schedule a meeting phone call to facilitate this process during the grant application period.

Mitigation & Recovery – Maximilian Dixon gave overview of this item.

Christa Rabenold emphasized consistency and flexibility and that we have some guidelines and we should continue to implement them. Chip Guard commented that animation of wave propagation is very useful in communicating effects. He recommended the MES and MMS work together to develop these animations. Kevin Miller responded that that's happening at the state level in CA and that this would also be helpful on the website. Maximilian Dixon concurred that they are helpful and he is looking into what we already have and what we need.

Room for collaboration on implementation of HAZUS tsunami at a national level.

Rocky brought up MMS input.

Tsunami Science, Modeling, Mapping, Evacuation, and Maritime – It was pointed out that some of these items are related to research. Should consider how we can be inclusive all partners in NTHMP supported events (e.g. remote access). Dmitry added that they want input from MES on tsunami sources as well. For example, some sources are 9.5M and from a EM perspective what is the MCE? What is the timespan of events they are looking for.

Maximilian Dixon added that they would also gather local EM input on that. For example, even across communities it varies (e.g. L1, L2, XXL, etc.). Kevin Miller added that Local EMs need simple and concise ways to explain the modeling and science. It was also mentioned that it should be discussed how we communicate the information to communities and what is effective.

Catalog what maps have been created... - Jon Allen inquired if we have the status of what has been mapped. Rocky has miles coastline that have been mapped but not the gap. Rick W. suggested using TsunamiReady communities to evaluate our progress towards this milestone.

Dmitry commented that they crank out inundation maps as soon as the DEMs are created. But he is unsure if NCEI can complete DEMs for all coastal communities in five years. It should be considered that it wouldn't be necessary to create an evacuation map for some communities in which an inundation map would suffice.

Chip Guard pointed out that a flow chart is needed to map out modeling after an event.

Mike Angove briefed on Tsunami Program Milestone

Maritime Guidance, Planning, and Procedures Development – offshore safe guidance is adopted. What opportunities are there for involving the USCG at the NOAA headquarters level? Mike Angove said he wasn't sure what their role would be other than that their systems are in line with the WCS warning process and procedures. Marie brought up the point that their involvement would be getting product needs.

Rocky Lopes readdressed grants allowables. Will be given the opportunity to provide final comments to it. Grant allowable activities will feed into grant guidance but NWS will have final say but they will be transparent. As you prepare your pre-applications you'll have something to work from to align your applications to. The first-round NTHMP grant pre-applications will be due on Friday, January 12, 2018. During grant development time there will be multi-partner calls to discuss what you're considering putting in for projects. Focus your work in one year – it is not a two-year grant. To allow for slippage, you don't have request an extension (doesn't exist any longer) you will have a two year performance period. If asks are multi-hazard then costs should be shared and not just be placed on NTHMP grants. Nate Wood asked about landslides obstructing tsunami evacuation routes (as a result of an earthquake). Rocky responded that it matters how directly the project relates to tsunami hazard. Christa R. reminded the group that the phone apps tend to have a multi-hazard applicability. If it is just tsunami-related then that's NTHMP. There will be a doodle poll sent out for grant activities workgroup. MES webinar will potentially be rescheduled.

Kara Gately provided TView presentation. Live via internet nctr.pmel.noaa.gov/tview

Follow up info will be sent out asking for BETA testers from this group. Looking for feedback on useability. Can submit feedback via interface within TView itself. For developers to review.

Emergency Managers will have login. Data will be online. Timeline is early 2018. Dependencies include finding a host. And manpower, people on the project.

Email will be sent by Kara to request BETA testers. Possible way to disseminate FASTER products. Long term will be use of Tview for all.

Products during a tsunami include:

- Travel time contours
- SIFT (real time, inundation forecast, by model)
 - Does include tides in the new SIFT model
 - Time of arrival in relation to the tidal oscillation
- Current Tsunami Wave Front
- High resolution models
- High resolution maps (for local near shore flooding in harbors like HNL) inundation
- Currents
- Includes max drawdown

Not currently including arrival times due to the fact that shortest method accepted by TWCs is not via modeled, rather another method.

Demo of evacuation routes, assembly areas, tsunami hazard zones.

Q. Is PTWC planning to provide the same products? Yes, both TWCs will be sending their products to Tview, SIFT and RIFT. Overall goal is any model can be on this site. And ultimately, one result with transparency regarding source (TWC) and model (SIFT, etc.).

Q. Who is the audience? Emergency Managers, USCG, JTWC.

Mike A – you don't want to just give this to EM's it's a very sophisticated model. This does not play with people who have not been initiated.

Q. State level? Yes, looking for guidance from core customers. Is it easy to find. Is it easy to use?

Maximilian. As I get used to this product. I want to pass this on to alert & Warning center. Once I explain this to them. Then other folks need training locally. Training will take time and planning. And a plan.

Also what about updates during a Tsunami what if we cancel, what if we upgrade (e.g. WARNING). Need to determine how that will roll out (via RSS feed, or?).

Q. FEMA need to train/educate/include ROCC recipients. Be involved in the process.

Q. How long does it take from EQ, to rollout of SIFT? Need an observation (DART or Tide Gauge) before any results. Dependent on how far to that observing capability, then some running of model. Purchasing GPUs hope that can reduce time to run model to 5-10 min. Best case 1 hour. Worst case 3 hours.

TWC procedure that we do not publish an alert & warning forecast until we have an observation.

Large EQ in near field subduction. We do that. Can do that in advance.