Report from the NTHMP Mapping and Modeling Subcommittee
Recommendations and Progress on Action Items from the Coordinating Committee

CC Action Item:

1. Propose recommendations to the NTHMP CC on how a process could be established for sharing and archiving Mapping and Modeling information across all NTHMP. Include at a minimum:
    a. Available grids used for modeling; relevant information about grids used in modeling (whether forecast or inundation/evacuation mapping and modeling);
    b. Model computer codes for use by partners in the NTHMP that have responsibility for modeling and mapping;
    c. Input resolution of bathymetry and topography used to develop grids

M&M Response:

The M&M Subcommittee is addressing the action by charging the M&M Members with identifying the necessary minimum inputs, model outputs and products to ensure reproducible results. M&M will also explore issues and options for sharing of model source code (with appropriate safe guards), proprietary data (where possible and with appropriate safe guards), develop a requirements list, and identify required resources to maintain the necessary data and information, including but not limited to:

- Inputs:
    - Deformation (source) parameters and grids (and metadata)
    - Computational grids (and metadata)
    - DEMs (and metadata, including resolution of input)
    - Model source code (versioned)
    - Parameters used for run
- Model outputs (data)
    - Final run grid data
- Map products
    - Inundation scenarios and reports or metadata
    - Inundation maps (flow depths, velocities, inundation…)
- Web portal to provide access to the above information, possibly limited to registered NTHMP scientists

M&M Actions:

- NGDC send an e-mail clarifying requirements for sharing through the DEM portal. (Due date: September 18, 2008)
- PMEL gather and post on web all necessary data and information to enable benchmarking of models according to OAR-PMEL-135 (Due date: October 1, 2008)
- State Representatives identify the necessary minimum inputs, model outputs, products and metadata to ensure reproducible results, including volume and most likely update schedules (Due date: October 15, 2008)

- States / PMEL send footprints of existing and desired DEMs to NGDC. Existing DEMs require additional input as defined in first bullet "clarifying e-mail" to make them accessible through NGDC DEM portal. (Due date: October 15, 2008)
- NGDC determine resources needed to support archive and versioning, including State partnerships, and provide an estimate of cost. (Due date: November 1, 2008)
- NOAA (Jen coordinating) identify issues and solutions related to sharing of benchmarked code (versions, liability, operational impacts, etc) drawing on expertise in NCEP regarding current practices with weather model code. Report back to the M&M Subcommittee at National NTHMP (November 18, 2008)

CC Action Item:

2. Assess the issues, requirements, and mechanisms related to production of inundation maps. Clarify what is being requested and outcomes expected. Identify risks or issues associated with sharing the identified information [see CC Action 1]. Develop recommendations for the broader NTHMP committee to consider on how a process could be established for sharing this information to advance research and manage operations.
    a. Inventory available mapping and modeling information & products, giving consideration to available grids and associated information about these grids [see CC Action 1], relevant model computer code [see CC Action 1] and standards for use
    b. Develop recommendations for the broader NTHMP for inundation maps

M&M Response:

The M&M Subcommittee is addressing the action by identifying current inundation modeling and mapping practices across NTHMP Partners and identifying available products (September 2008 subcommittee meeting). M&M will follow this with a separate meeting focused on establishing inundation mapping guidelines. Because each State has specific standards and requirements, the M&M will define guidelines, best practices, and descriptors rather than standards. This meeting will require additional resources.

M&M Actions:

- States develop current priority list for community inundation mapping needs; send to co-chairs (Due date: October 15, 2008)
- States develop current list of available inundation mapping and modeling information & products, send to co-chairs (Due date: October 15, 2008)
- Establish guidelines, best practices, and descriptors for inundation maps (Due date: November 2009).
    - The M&M will address best practices in a separate meeting, to be held during calendar year 2009, focused on development of best practices for inundation products, including issues such as: communities with poor relief data, low hazard, or varying record of past events (e.g. only geologic, only anecdotal, instrumental);

compatibility of products; options to identify limitations of map and resolution of inputs etc.

CC Action Item:

3. Determine the applicability of PMELs forecast effort to NTHMP inundation mapping and mitigation

M&M Response:

M&M considers the PMEL forecast effort has limited applicability in its current form for mitigation. The applicability could be substantially increased, in those cases where the States work directly and collaboratively with PMEL to identify a community driven process that includes:

- priorities,
- source scenarios (local and distant),
- model parameters
- high-resolution SIFT DEMs, and
- results in State products and coverage for the communities

To evaluate further the applicability, M&M requires a:

- A "definition of mitigation" from the Mitigation and Education Subcommittee (action assigned to M&ESC at the June 18, 2008 CC meeting) and
- A better understanding of the PMEL forecast modeling process and how this process could support State inundation mapping for mitigation (see action items 2 and 3).

M&M Actions:

- Mitigation and Education Subcommittee provide "definition of mitigation" to M&M (Due date: unknown – not part of this subcommitte)
- M&M (Roger Hansen lead) develop a proposal for a multi-State pilot project (Proposal due by November 1, 2008 for National Meeting).
    - include preliminary assessment to be agreed upon by AK and PMEL (action Elena/Roger and Vasily/Chris: exact definition to be determined by October 1, 2008);
    - the multi-State proposal will include a scope of work, deliverables, and cost to assess the applicability of ComMIT for the interested NTHMP Partners (OR, CA, AK, HI)
        - include an introduction to the ComMIT for interested NTHMP M&M modelers to evaluate utility of PMEL forecast tools and information for inundation modeling for mitigation;
- M&M provide final recommendation to CC (Due date: TBD)

CC Action Item:

4. Determine a method of prioritizing NTHMP DEM development nationwide

M&M Response:

M&M determined that the existing list of priority forecast areas is a good starting point for developing a National DEM priority list that includes the NTHMP partner community mapping priorities. To expand the existing list, M&M will undertake the following actions.

M&M Actions:

- Step 1: Identify existing areas with public DEMs and the data used to create these DEMs [see CC Action Item 1]
    - NGDC and States contact data providers of non-public DEMs to determine if DEMs can be shared within NTHMP for modeling
    - NTHMP Partners send footprints of existing and desired DEMs to NGDC. [see CC Action Item 1]
    - NGDC develop web map showing existing DEMs, planned DEMs to aid National prioritization (November 17, 2008)
    - NGDC and WCATWC update table of DEMs / communities to show DEM, area covered, and communities contained within area
- Step 2: States develop priority list for community inundation mapping needs; send to co-chairs [see CC Action Item 2]
- Step 3: Compare State requirements to existing information and develop list of unmet needs (due November National meeting)
- Step 4: M&M develop process of prioritization during November National NTHMP meeting based on criteria to be determined, but possibly including: hazard level, data quality and availability, forecast requirement, partnerships
- Step 5: NGDC and State partners communicate needs and priorities to data collection agencies