



FEMA

# TMAC

## Technical Mapping Advisory Council Meeting December 9-10, 2015

### **TMAC Members**

Juliana Blackwell  
Richard Butgereit  
Mark DeMulder  
John Dorman  
Leslie Durham  
Scott Edelman  
Steve Ferryman  
Gale Fraser  
Carrie Grassi\*\*  
Chris Jones\*\*

Howard Kunreuther  
Wendy Lathrop\*  
David Mallory  
Robert Mason  
Sally McConkey  
Luis Rodriguez  
Javier Ruiz  
Christine Shirley  
Cheryl Small

### **Subcommittee Members**

Doug Bellomo, U.S. Army Corps of Engineers  
Ken Ashe, Amec Foster Wheeler  
Dwayne Bourgeois, North Lafourche Conservation,  
Levee, and Drainage District

Doug Marcy, NOAA  
Jonathan Westcott, FEMA

### **Government Attendees**

David Bascom, FEMA  
Kathleen Boyer, FEMA, TMAC ADFO  
Mark Crowell, FEMA, TMAC DFO

Michael Godesky, FEMA, TMAC ADFO  
Victoria Hill, DHS  
Traci Silas, DHS

### **Registered Public Attendees**

Chad Berginnis, ASFP  
Mike Buckley, Dewberry  
Greg Burns, Van Scoyoc Associates  
Michael DePue, Atkins Global  
Rebecca Elliot, Ph.D. Candidate, UC Berkeley  
Jenn Gale, Phelps & Phelps, LLP  
Midge Hirsch, JP Morgan Chase  
Merrie Inderfurth, ASFP

Gib Jones, Dewberry  
Tim McCormick, CTCS, P.L.C.  
Tim Murphy, Flood Control District of Maricopa County  
Marc Pearson, Stantec  
Tamra Spielvogel, National Associate of Home Builders  
John Sun, Stream Methods  
Hillary West, JP Morgan Chase

### **Support Staff**

Kirsten Folkedal, Booz Allen Hamilton  
Laura Karnas, Booz Allen Hamilton  
Jen Marcy, Atkins Global

Krista Bethune Melnar, AECOM  
Meredith Tull, Booz Allen Hamilton  
Adam Warfield, Booz Allen Hamilton

\*Attended on December 9, 2015, only.

\*\*Attended on December 10, 2015, only.

### **Purpose**

The purpose of the meeting is to allow the Technical Mapping Advisory Council (TMAC) members to (1) review revisions made to final drafts of the *2015 TMAC Annual Report* and the *TMAC Future Conditions Risk Assessment and Modeling Report*, as approved by the Council during the October 20-21, 2015 TMAC meeting; (2) discuss and entertain a motion to formally submit the 2015 TMAC reports with

executive summaries to the FEMA Administrator; and (3) hold a strategic planning session to discuss plans for 2016.

## **December 9, 2015**

### **Welcome/ Call to Order/ Roll Call**

Ms. Kathleen Boyer, TMAC Alternate Designated Federal Officer (ADFO), welcomed members to the meeting. She then introduced Mr. Mark Crowell, Federal Emergency Management Agency (FEMA), and Mr. Mike Godesky, FEMA, who serve as the TMAC DFO and ADFO, respectively. Ms. Boyer proceeded with a roll call of TMAC members and provided an overview of the Adobe Connect virtual meeting functions. She reminded everyone of the *Federal Advisory Committee Act* (FACA) compliance provisions. Following her remarks, Ms. Boyer made a motion to convene the meeting, which Mr. Scott Edelman, TMAC member, seconded.

### **Process Schedule/Meeting Objective**

Mr. John Dorman, TMAC Chair, provided an overview of the agenda and discussed the meeting's objectives, including:

1. To hear, in a confirming way, the revisions and resolutions that were made to the *TMAC Future Conditions Risk Assessment and Modeling Report* and the *2015 TMAC Annual Report*;
2. To adopt the *2015 TMAC Annual Report Summary* and the *TMAC Future Conditions Risk Assessment and Modeling Report – Summary of Report*;
3. To receive a presentation from FEMA on its flood mapping program; and
4. To discuss potential topics for the *2016 TMAC Annual Report*.

### **2015 Annual Report, Future Conditions Report, Executive Summaries – Review**

#### *TMAC Future Conditions Risk Assessment and Modeling Report*

Mr. Edelman thanked the primary chapter leads, as well as Ms. Jen Marcy, Atkins Global, and the Booz Allen Hamilton team for their efforts providing technical support, technical edit and production of the reports. Mr. Edelman reviewed the changes that have been made, by section, since the October 20-21, 2015, TMAC meeting, including:

#### Summary of Report (Executive Summary)

- Pictures: captions were added with locations, if known;
- TMAC member names added;
- Recommendation “taglines” added to discussion pages for each recommendation;
- “Discussion” narratives for all recommendations were revised;
- Opening paragraphs revised; and
- The name changed to “Summary of Report”, as it is not a true executive summary.

#### Section 1: Introduction

- Language made consistent between the *2015 TMAC Annual Report* and *Future Conditions Report* where appropriate (*TMAC Future Conditions Risk Assessment and Modeling Report* has small, but purposeful differences);
- Changes to the “Purpose” section, in accordance with changes to Executive Summary; and
- TMAC member name, affiliation, and title changes made.

#### Section 2: Background

- Definitions of Special Flood Hazard Area (SFHA) and non-SFHA (less than 1 foot, etc.) added;
- Model language made more general;
- Number of communities in the National Flood Insurance Program (NFIP) updated;

- Language made consistent between the *2015 TMAC Annual Report* and *TMAC Future Conditions Risk Assessment and Modeling Report*, where appropriate;
- Zone A (versus “A Zone”) decision made;
- Zone tables added; and
- References and footnotes added and revised.

#### Section 3: Future Conditions and Changes in the Floodplain

- Wording and numbering edits to sub-recommendations as adopted in the October TMAC meeting and delivered to the FEMA Administrator;
- Several wording changes and edits;
- Fact-checks completed;
- Repetitive language regarding the National Climate Assessment deleted;
- Figures corrected, figure titles added; and
- References and footnotes added and revised.

#### Section 4: Future Data Needs

- Wording and numbering edits to sub-recommendations as adopted in the October TMAC meeting and delivered to the FEMA Administrator in the *TMAC Future Conditions Report Interim*;
- Opening paragraph wording;
- 3D Elevation Program (3DEP) paragraph changes;
- Receding versus stabilized shoreline graphic added; and
- “Design flood” language revised.

#### Section 5: Approaches for Future Conditions Calculation and Mapping

- Wording and numbering edits to sub-recommendations as adopted in the October TMAC meeting and delivered to the FEMA Administrator in the *TMAC Future Conditions Report Interim*;
- Added box regarding no actionable science for riverine at this time; and
- Re-inserted flowchart graphic (previously removed).

#### Sections 6 and 7: Additional Considerations and Recommendations

- Alignment of edits to Report Summary that impact Section 6;
- Wording and numbering edits to sub-recommendations in Section 7 as adopted in the October TMAC meeting and delivered to the FEMA Administrator in the *TMAC Future Conditions Report Interim*;
- Removed final paragraph of Section 7;
- Revised description of sub-recommendations in Section 7;
- Removed “type” from tables in Section 7; and
- Added “Sub-Recommendation” header to tables in Section 7.

#### Glossary, References, and Appendices

- Compiled acronym list;
- Deleted terms from previous version of glossary that are not included in report;
- Added terms to glossary from the body of report;
- Compiled reference section from references previously provided by authors;
- Worked with authors, where necessary, to include references that were not originally included;
- Updated subject matter expert (SME) presentation table to include two missing presentations; and
- Updated SME presentation table to include SME affiliations.

#### All Sections:

- Four new or adapted graphics developed where needed;
- Formal titles added for all figures;
- Text boxes re-formatted;
- Sub-recommendation format revised;

- Report template re-formatted and aligned with the 2015 TMAC Annual Report format;
- Table of Contents, Table of Figures, and List of Tables added;
- Glossary completed;
- References section completed; and
- Technical edit performed.

Next, participants discussed the *TMAC Future Conditions Risk Assessment and Modeling Report - Summary of Report*. Mr. Robert Mason, TMAC member, said that there was some concern regarding editing the recommendations. Mr. Edelman commented that because the recommendations were previously voted on, the subcommittee cannot revise them. Ms. Wendy Lathrop, TMAC member, said that she made several edits that were not incorporated into this version. Mr. Edelman responded that Booz Allen Hamilton will incorporate those edits during the technical edit. Participants agreed that all graphics must have captions.

### **Public Comment Period**

Ms. Boyer announced that, per FACA, members of the public are provided the opportunity to provide oral and written comments on the issues to be considered by the TMAC. Ms. Boyer requested that speakers limit their public comments to no more than three minutes and said that the public comment period will not exceed 20 minutes. Mr. Chad Berginnis, Association of State Floodplain Managers (ASFPM), provided the following comment:

*Some of the ASFPM leadership have begun digesting the reports and are largely withholding judgement and comment until the full reports with complete context are released. Because I only have three minutes, I want to highlight three concerns our initial review has identified. A more comprehensive analysis and comment by ASFPM will occur after the final reports are issued highlighting both the good and problematic aspects of the report. So I apologize in advance if this three minute comment period is perceived as overly negative.*

#### Annual Report

*The TMAC report gives an exaggerated and unrealistic snapshot of the state of flood mapping in the United States, overstating the quality/expanse of the current inventory, and contains NO data on current issues, problems and challenges (with the exception of one sentence on page 4-31). Section 4.2 of the Annual Report makes it seem that coverage is nearly everywhere in the United States . . . based on number of map panels. But we all collectively know that there may be NO map panels that fully show all flood risk areas as defined under the Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12) and where the flood risk data is fully current. In 4.2.1.2 the text goes on to imply that 98% of the population has current flood risk data (you certainly don't suggest otherwise) via updated map panels. It appears – if I have done the math correctly – that the report dismisses mapping flood hazard areas on Federal lands, yet provide no justification for doing so. Why? Might there be some factors that even on federal lands mapping should be done?*

*It appears that in both reports flood risk assessment is a co-equal with flood risk identification. The National Flood Mapping Program in BW-12, on balance does not set it up this way and the reports do not make an effective argument for why this should be so. Given the huge need for flood hazard identification, structure specific flood risk assessment is a much lower priority and we question even to the extent that the federal government should be doing this versus state and local partners. Structure specific risk assessments do not help in any way to further the land use regulatory aspect of the NFIP. I have significant concerns about Recommendation #14 and its implication that we are transitioning away from something that is now ineffective and to something that is perceived as more effective. What are we transitioning away from?*

#### Future Conditions Report

*We are concerned with the explanation in the report that future conditions should be expressly non-regulatory, yet the law requires that the future conditions be shown on the FIRM even if it is somewhat unclear as to the manner in which the data should be applied (mandatory for flood insurance or land use regulations). It would be one thing if TMAC were to recommend that it be shown on the FIRM in an informational manner, it is an entirely different thing to say it should be non-regulatory, especially in light of the recommendation that a future report is going to do a deep dive into the regulatory implications of future conditions. I think the explanation for the recommendation is unintentionally misleading and would have rather the report stayed silent on the topic until a deeper analysis could be done. I recall at the FEMA operating partners meeting that there was a recent decision to get away from using the terms regulatory and non-regulatory products entirely. I would also note that more and more communities and states are adopting – or recommend adopting future conditions. Communities across the country have adopted some sort of future conditions as part of their FIRMS and/or floodplain management regulatory scheme. The techniques are proven and although it is acknowledged by TMAC and ASFPM that the riverine future conditions techniques are immature, future land use for example is easily incorporated. As recently as October of 2015, a report by New Jersey Future, in analyzing Sandy impacts recommended that: The state and each county and municipality should map areas likely to be flooded today and in 2050 and adopt these maps as part of their land-use plans.*

Mr. Howard Kunreuther, TMAC member, asked about the process for addressing comments when issues are raised by members of the public. Mr. Dorman responded that a number of people provide comments at each TMAC meeting, and that those comments provide insight that is reflected in the report at this point. There is no opportunity to incorporate Mr. Berginnis' comments into the 2015 reports as they have already been adopted, but his comments can be discussed in the future. No further public comments were received.

## **2015 Annual Report, Future Conditions Report, Executive Summaries – Review**

### *2015 Annual Report*

Ms. Leslie Durham, TMAC member, thanked members for their work in completing the *2015 TMAC Annual Report*. She noted that the *2015 TMAC Annual Report* executive summary is a separate document from the report and organized by the TMAC's goals.

Discussing the executive summary, Ms. Durham noted the following revisions:

- Name change: changed to "Summary of Report" as it is not a true Executive Summary;
- Pictures: captions were added with locations, if known. A few pictures updated or added based on changes in the *2015 TMAC Annual Report*, print resolution, format changes;
- TMAC member names were updated;
- Recommendations updated to align with adopted recommendations;
- Recommendation discussions updated to align the *2015 Annual Report Summary* with changes made in the body of the adopted *2015 TMAC Annual Report*;
- Opening paragraphs were also edited to align the *2015 Annual Report Summary* with changes made in the adopted *2015 TMAC Annual Report*;
- Technical edit performed;
- Review and edits from members included; and,
- Minor format changes (e.g. *Biggert-Waters Flood Insurance Reform Act of 2012* (BW-12) mandate boxes).

Ms. Sally McConkey, TMAC member, recommended that this section list all of the TMAC's duties, as listed in BW-12 and not just those applicable to the *2015 TMAC Annual Report*. She noted that this will help make a connection to the *TMAC Future Conditions Risk Assessment and Modeling Report*.

Ms. McConkey also said that each one page write-up should include a sentence directing the reader to where a full discussion of the recommendation can be found in the *2015 TMAC Annual Report*.

Participants agreed that having this cross-reference would be beneficial to the reader. Additionally, she commented that by saying “based on current flood hazards and current risk assessments,” the TMAC is limiting itself and recommended it be revised to say “current and future.” Participants agreed on the modification.

Participants continued to discuss the *2015 TMAC Annual Report Summary* and recommendations. Discussing figure 4, Ms. McConkey noted that the legend should be revised to improve readability. Ms. McConkey also said that all of the recommendations are combined to one page; however, recommendation 14 is two pages long, making it seem as though it holds higher priority than others. Participants noted that the verbiage is more specific than in other recommendations and Mr. Luis Rodriguez, TMAC member, suggested reducing the text and directing the reader to the full report for additional information. Ms. Christine Shirley, TMAC member, suggested deleting the last paragraph; however, TMAC members disagreed with this change.

Additionally, participants agreed that the first paragraph should be consistent among all recommendations.

Discussing figure 21, Mr. Edelman suggested that the colors be better differentiated between each item. In addition, Mr. Mason noted that figure 22 has an extra character in the text. Ms. Lathrop also recommended spelling out “appropriations.”

Ms. Durham noted that the summary document does not contain a reference section and that references are listed in the full report. Ms. Lathrop recommended having full citations in the summary section to help the reader. In addition, TMAC members said that there are several areas that need references and Mr. Dorman said that they would be inserted, where appropriate. Participants also agreed that the summary document should contain a glossary.

Next, Ms. Durham addressed the revisions in the full report. Discussing the Foreword, Ms. Durham noted the following revisions:

- Addressed comments from the October 20-21, 2015 TMAC meeting; and
- Technical edit performed, including formatting revisions.

Discussing section 1, *Introduction*, Ms. Durham noted the following revisions:

- Language made consistent between the *2015 TMAC Annual Report* and the *TMAC Future Conditions Risk Assessment and Modeling Report*, where appropriate;
- TMAC member names and affiliation changes submitted by members were made;
- Comments from the October 20-21, 2015, TMAC meeting were addressed;
- Technical edit performed, including verification of citations and references; and
- Format revisions were made.

Discussing section 2, *Background*, Ms. Durham noted the following revisions:

- Language made consistent between the *2015 TMAC Annual Report* and the *TMAC Future Conditions Risk Assessment and Modeling Report*, where appropriate;
- Zone A (versus “A Zone”) decision made;
- Zone table added;
- Other changes requested at the October TMAC meeting made (definition of SFHA/non-SFHA, model-backed comments, updated number of communities in NFIP, etc.);
- Added Figure 2-1: Summary of current NFIP building requirements and Figure 2-2: Coastal A Zone relationship to flood zones;
- Updated 2.2.1, *Regulatory Products*, to align with Glossary definitions of regulatory products;
- Technical edit performed, including verification of citations and references;
- Format revisions were made; and
- Section author reviewed and approved edits were made.

Discussing section 3, *Quality of Flood Information*, Ms. Durham noted the following revisions:

- Edits requested at the October TMAC meeting were made;
- Updated precision, accuracy and resolution graphic;
- Technical edit performed, including verification of citations and references;
- Format revisions were made; and
- Section author reviewed and approved edits were made.

Discussing section 4.1, *Community of Users and Uses*, Ms. Durham noted the following revisions:

- Changes requested at the October TMAC meeting were made (updated Figure 4-1, moved Figure 4-3 to Section 4.6, *Data Distribution and Management*, and deleted Conclusions from National Research Council (NRC) Report box, etc.);
- Slight reorganization to add 4.1.1, *Products*, and 4.1.2, *Product Uses*;
- Technical edit performed, including verification of citations and references;
- Format revisions were made; including the BW-12 mandate box; and
- Section author reviewed and approved edits were made.

Discussing section 4.2, *Flood Hazard Identification – Program Goals and Priorities*, Ms. Durham noted the following revisions:

- Changes requested at the October TMAC meeting were made (updated New, Validated, and Updated Engineering data (NVUE) and Coordinated Needs Management Strategy (CNMS) values, clarified the riverine versus coastal discussion etc.);
- Technical edit performed, including verification of citations and references;
- Format revisions were made; including the BW-12 mandate box; and
- Section author reviewed and approved edits made.

Discussing section 4.3, *Flood Hazard Identification – Core Data, Models, and Methodology*, Ms. Durham noted the following revisions:

- Changes requested at the October TMAC meeting were made (added 4.3.3.1.1, *Issue Analysis*, under 4.3.3.1, *Datums and the National Spatial Reference System*, updated 4.3.4.1, *Analysis of Observed Flood Data*, updated Key Findings, reorganized riverine and coastal, separated recommendation 7 into riverine and coastal, etc.);
- Technical edit performed, including verification of citations and references;
- Format revisions were made; including the BW-12 mandate box update; and
- Section author reviewed and approved edits were made.

Discussing section 4.4, *Flood Hazard Identification – Production Processes*, Ms. Durham noted the following revisions:

- Changes requested at the October TMAC meeting were made (clarified riverine versus coastal discussion, edited Key Decision Point (KDP) discussion, etc.);
- Converted KDP Figure into Table 4-5;
- Technical edit performed, including verification of citations and references;
- Format revisions were made; including the BW-12 mandate box; and
- Section author reviewed and approved edits were made.

Discussing section 4.5, *Flood Risk Assessment and Communication*, Ms. Durham noted the following revisions:

- Changes requested at the October TMAC meeting were made (removed duplicate paragraph, revised text due to change in recommendation 14, updated text below 4.5.2, etc.);
- Technical edit performed, including verification of citations and references;
- Format revisions were made; including the BW-12 mandate box; and
- Section author reviewed and approved edits were made.

Discussing section 4.6, *Data Distribution and Management*, Ms. Durham noted the following revisions:

- Changes requested at the October meeting were made (moved Figure 4-3 from section 4.1, *Community of Users and Uses*, to section 4.6);
- Technical edit performed, including verification of citations and references;
- Format revisions were made; including the BW-12 mandate box; and
- Section author reviewed and approved edits were made.

Discussing section 4.7, *Federal Partner Collaboration*, Ms. Durham noted the following revisions:

- Changes requested at the October TMAC meeting were made (added introductory language to 4.7.1, *National Academy of Public Administration's (NAPA) Key Findings and Recommendations*, added NAPA recommendation 15, updated Key Findings, added National Hydrology Dataset (NHD) discussion, etc.);
- Table 4-7: Types of Data Used in Flood Mapping, Source Datasets, and Source Agencies was added;
- Technical edit performed, including verification of citations and references;
- Format revisions were made; including the BW-12 mandate box; and
- Section author reviewed and approved edits made.

Discussing section 4.8, *Cooperating Technical Partners (CTP)*, Ms. Durham noted the following revisions:

- Changes requested at the October TMAC meeting were made (verified Mapping Activity Statement (MAS) categories, updated title of Section 4.8.1.3 to *Evaluating CTP Performance*, etc.);
- The examples of CTPs that have added value text box were expanded;
- Separated Key Findings and Discussion for Recommendations 19, 20 and 21;
- Technical edit performed, including verification of citations and references;
- Format revisions; including the BW-12 mandate box; and
- Section author reviewed and approved edits were made.

Discussing section 4.9, *Maintenance and Funding*, Ms. Durham noted the following revisions:

- Changes requested at the October TMAC meeting were made (clarified riverine versus coastal discussion, updated NVUE and CNMS values and discussion, removed recommendation 23, etc.);
- Added Figure 4-15;
- Technical edit performed, including verification of citations and references;
- Format revisions were made; including the BW-12 mandate box; and
- Section author reviewed and approved edits made.

Discussing section 5, *Glossary*, Ms. Durham noted the following revisions:

- Updated to align with the *TMAC Future Conditions Risk Assessment and Modeling Report* definitions; and
- Edited to align with report definitions.

Discussing section 6, *Acronyms and Abbreviations*, Ms. Durham noted the following revisions:

- Moved acronyms and abbreviations to section 6; and
- Verified this section against the body of the report.

Discussing section 7, *References*, Ms. Durham noted the following revisions:

- Compiled section from references previously provided by section authors;
- Worked with section authors, where necessary, to include references that were not originally included; and
- Verified and completed the references, when information was provided by authors.

Discussing the appendices, Ms. Durham note the following revisions:

- Updated SME presentation table to include two missing presentations; and

- Updated SME presentation table to include SME affiliations.

### **2015 Annual Report, Future Conditions Report, Executive Summaries**

Following the discussion, Mr. Steve Ferryman, TMAC member, made a motion to adopt the *2015 Future Conditions Summary of Report* and the *2015 Annual Report Summary Report*. Mr. Kunreuther seconded the motion. Ms. Boyer announced that members of the public were invited to provide comments on the issues considered by the TMAC; however, there were no public comments. Following the public comment period, Mr. Dorman called for a vote to adopt the summary reports, as amended by the Council, which the TMAC members unanimously adopted.

Ms. Durham made a motion to submit the adopted *2015 TMAC Annual Report* and the Future Conditions Report with the summary documents to the FEMA Administrator. Mr. Edelman seconded the motion. Ms. Boyer announced that members of the public were invited to provide comments on the issues considered by the TMAC; no public comments were offered. Following the public comment period, Mr. Dorman called for a vote to submit the adopted *2015 TMAC Annual Report* and the Future Conditions Report with the summary documents to the FEMA Administrator, which the TMAC members unanimously approved. Mr. Dorman congratulated the Council on completing the 2015 reports.

### **Next Steps**

Mr. Dorman explained that the TMAC will be completing two reports in 2016. The first report will be a response to what FEMA defines as their flood mapping program description, known as the *2016 TMAC Technical Review Report*. The second report is the *2016 TMAC Annual Report*. Mr. Dorman asked the Council for potential topics to be covered in the *2016 TMAC Annual Report*. Ms. Shirley said that she would like the TMAC to expand on Letters of Map Change (LOMCs), particularly Letters of Map Revision (LOMRs) that reset everything to a new natural grade and to see if there is a way to preserve things that are not part of the natural grade. Mr. Edelman said that the TMAC should talk about the types of sequencing or prioritization it would recommend for TMAC's recommendations. Mr. Gale Fraser, TMAC member, said that there should be additional discussion on alluvial fans, as well as stormwater and how stormwater issues play out with mapping flood hazards.

Ms. Durham said that she would like the TMAC to examine inconsistency among FEMA divisions regarding the terms "floodplain management" and "flood mapping." She suggested that the TMAC to look at Hazus and determine the acceptable levels of Hazus to use for flood risk. Mr. Richard Butgereit, TMAC member, said the Council should explore FEMA's flood mapping program better leveraging state spatial data infrastructures and contributing further to national datasets and programs like 3DEP, National Address Database, and the NHD. Ms. Cheryl Small, TMAC member, suggested expanding on the discussion of other users, particularly in the area of ease of use. Mr. Rodriguez said that he wants the TMAC to discuss FEMA transitioning away from the maintenance of the accepted models list and what the future may look like. He also said that the FEMA Administrator would like the TMAC to give more consideration to an elevation data map for the Nation. Mr. Rodriguez said that this will lead to credible flood hazard information.

Mr. Edelman said that the TMAC should consider the best way to mass collect first floor elevation data for structures nationwide. Mr. Kunreuther said the Council should focus on the importance of risk communications and transparency with respect to risks, and the role insurance can play as a part of that, in order to provide information and encourage appropriate mitigation measures. Regarding prioritizing elevation data through 3DEP, Mr. Mark DeMulder, TMAC member, said that the TMAC should mention that this cannot be done without adequate funding and suggested recommending a nationwide initiative to fund 3DEP. Mr. Rodriguez said that it would be useful for the report to include that the ability for the Risk Mapping, Assessment and Planning (Risk MAP) program to advance on the TMAC's recommendations will depend on the resources available to the program, in order to help set expectations. Mr. David Mallory, TMAC member, suggested hearing from the Community Engagement Risk Communications (CERC) contractors with regards to communicating risk in a more effective way. Ms. Juliana Blackwell, TMAC member, said that the TMAC could discuss various pilot projects. Mr. Edelman wished to assess

how dams are being evaluated in order to show risk in the best possible way on the maps, following up from the issue of the dams that broke during flooding in South Carolina this past year.

Mr. Dorman said that the TMAC will continue to discuss potential topics at its January administrative meeting. He asked TMAC members to provide him with any topics they wish to consider in the *2016 TMAC Annual Report* by December 18, 2015. Following this, Mr. Dorman will distribute a survey to TMAC members to help determine topics for the *2016 TMAC Annual Report*. In addition, Council members asked that a copy of the 2016 meeting dates be distributed as soon as possible.

### **Adjournment**

Ms. Boyer thanked participants for their discussion and announced that the TMAC meeting will reconvene at 10:00 a.m. on December 10, 2015.

## **Day 2: December 10, 2015**

### **Welcome/ Call to Order/ Roll Call**

Ms. Boyer opened the second day of the virtual meeting by reintroducing her fellow designated officers and the support staff, taking a roll call of the members, and reminding participants of helpful tips for using Adobe Connect. She thanked members for their participation in the meeting today, and made a motion to convene the meeting, which Mr. Mallory seconded.

### **Meeting Objectives/ Logistics**

Mr. Dorman reviewed the meeting objectives and noted that the first two objectives, to hear the revisions made to the 2015 Future Conditions and *2015 TMAC Annual Report* and to review and adopt the associated report summaries, have been completed. He added that the TMAC will address the remaining two actions during the meeting, including: (1) Mr. David Bascom, FEMA, will brief the Council on the current status of the flood mapping program description; and (2) the Council will begin to discuss what items, recommendations and issues they should look at in the *2016 TMAC Annual Report*. Mr. Dorman reminded participants that a survey will be sent out on December 18, 2015, regarding potential items for the *2016 TMAC Annual Report*.

### **TMAC 2016 Report Requirements**

Mr. Dorman shared a graphic that shows the intersection between the work of TMAC and FEMA and reminded participants that the TMAC will be delivering a *2016 TMAC Technical Review Report* on FEMA's flood mapping program description. He said that the TMAC should deliver this report by mid-April 2016. Legislation for the 2017 reauthorization of the National Flood Insurance Program (NFIP) is likely underway, therefore FEMA needs the TMAC's review report as soon as possible, to begin discussions with Congress regarding reauthorization. Mr. Dorman said that the second item that is due is the *2016 TMAC Annual Report*, due in October 2016.

Mr. Dorman said that the Council will identify subcommittee chair and primary authors for each report, the *2016 TMAC Annual Report* and the *2016 TMAC Technical Review Report*. He explained that each Council member will be responsible for authoring a topic for the *2016 TMAC Annual Report* or for authoring a portion of the response to FEMA in the *2016 TMAC Technical Review Report*. Mr. Dorman noted that in 2015, several members sat on both subcommittees, but he suggested that members align themselves to only one report in 2016. He noted that a topic lead will be assigned for each report, and the topic lead will be responsible for identifying any presentation, subject matter expert (SME) or documentation that will be required in order to provide due diligence for writing that topic or recommendation. The topic lead will need to do this early on in order to set up the presentations.

Discussing the meeting schedule, Mr. Dorman suggested holding TMAC meetings once a month, including three face-to-face meetings and six virtual meetings. On a monthly basis, the topic leads will report out to the Council on the status of their topic and receive input, with members providing ongoing feedback, comments, suggestions and assistance if necessary. Ms. McConkey expressed concern and stated that the Council's strength is that the members bring different expertise to the table; siloing people into certain channels for the reports will limit the cross-pollination of ideas. Mr. Dorman responded that there will be no subcommittee breakout sessions during full TMAC meetings, therefore the full Council will be able to spend time discussing the reports during the meetings. Mr. Kunreuther noted that having individual Council members focus on particular areas is a positive step and that others will be able to critique appropriately. He inquired as to how long the monthly meetings were going to be, as once a month is a big time commitment. Mr. Dorman responded that the meeting length will depend on the number of focus areas or topics the Council decides on for 2016. Mr. Rodriguez commented that, for clarification, the intention of the approach is that whenever content is written, it is opened up to the entire Council and therefore an avenue for the entire Council to share their expertise. Mr. Dorman reminded the Council that they will still use the TMAC SharePoint so that members can work on their reports and other members can provide comments and feedback between meetings.

Mr. Dorman said that if the Council holds a meeting in January, they can vet potential topics for the *2016 TMAC Annual Report*. Mr. Fraser commented that the Council will need to see the FEMA description first and determine what that will take in terms of effort before they can determine how many topics to cover in the *2016 TMAC Annual Report*. The Council can talk about what they want to address in the next three to four years and create a roadmap for the Council. Mr. Chris Jones, TMAC member, noted that the Council did not spend enough time discussing the issues last year, and if the January meeting is going to be a discussion and prioritization of topics, it should be held in person. Mr. Edelman agreed and said that the Council should not attempt to cover too many topics.

Mr. Dorman announced that FEMA has asked the Council to prioritize its recommendations from the *2015 TMAC Annual Report* and *TMAC Future Conditions Risk Assessment and Modeling Report*, because there is a limited amount of funding. If the Council does prioritize the topics, it might help the Council to determine which topics the Council needs to provide more structure for in regards to standards, guidelines and best practices for the next year. Mr. Rodriguez commented that FEMA's initial assessment of effort and impacts for the TMAC recommendations will be included in the flood mapping program description. Mr. Kunreuther suggested that it might be useful if FEMA was part of the discussion and gave insight on where they would like to see the program to go. They could distribute material in advance of the meeting so members have an opportunity to comment. He inquired as to the feasibility of FEMA attending the meeting in January so that the Council can set out an agenda for what they will cover over the course of the year that reflects FEMA comments as well as the Council's own topics. Mr. Rodriguez noted that FEMA will do its best to provide materials in advance to the TMAC.

Mr. Fraser cautioned the Council, and stated that it may be problematic to prioritize recommendations since the report did not originally prioritize them and suggested that FEMA prioritize the recommendations themselves. Mr. Jones countered that the Council should work with FEMA to prioritize the recommendations. Ms. Blackwell inquired as to the timeline for the lifespan of the TMAC and Mr. Rodriguez said that from his understanding the TMAC intersects with the reauthorization of the NFIP, and the program is authorized until 2017; however, its lifespan might be addressed in reauthorization.

Mr. Rodriguez noted that vectoring would be useful to aim for with the prioritization of the TMAC recommendations. The Council should look at prioritization in terms of what they think for the sequencing of recommendations, not necessarily an ordered list. He added that FEMA wants to know if there is a subset of a specific area that should be prioritized. Mr. Rodriguez said that FEMA views the recommendations in buckets. Some recommendations can be implemented through policy in the six month cycles, but others will take more time, effort and resources. Mr. Edelman commented that some of the recommendations are specific and some are transformational. The Council should identify which are transformational and would lead to a fundamental change. Ms. Shirley added that there may be recommendations that the TMAC has made that FEMA does not see as easy or necessary, and the Council should weigh in on what they think is needed. Mr. Ferryman commented that he would like to

hear from FEMA on what resources it will take to implement the recommendations before the Council prioritizes them. Mr. Fraser warned that since the Council will be giving recommendations on an annual basis, they need to be careful about addressing comments for the reports because once they do that, they will be setting a precedent and have to do that every year. Mr. Butgereit noted it is unknown what the Council will be up against until FEMA delivers its description to the Council and as much as they might want to set a direction, they might find themselves in response mode instead of moving forward with their own agenda.

Mr. Crowell noted that the earliest the TMAC can meet and discuss substantive issues, as opposed to an administrative meeting, would be the week of January 25, 2016. He reminded members that the topics to be discussed must stay within the bounds of what is required by BW-12 and HFIAA and also that the TMAC will terminate once the Council provides what is required in the law. Mr. Dorman agreed to send a list of items to be discussed in an administrative meeting so that Mr. Crowell can check with the Department of Homeland Security (DHS) Committee Management Office and ensure that a virtual meeting for planning purposes would not require a Federal Register Notice. He added that the Council would like to hold an administrative meeting in January and an in-person public meeting in February.

Ms. Grassi said that subcommittees allowed the Council to be more nimble and set clear milestones for the Council. Mr. Dorman responded that there will be a lead for each report so they will be able to call together the authors to meet outside of the full TMAC meetings.

### **Public Comment**

Ms. Boyer announced that, per FACA, members of the public are provided the opportunity to provide oral and written comments on the issues to be considered by the TMAC. Ms. Boyer requested that speakers limit their public comments to no more than two minutes and said that the public comment period will not exceed 20 minutes. While the public was offered the opportunity to speak, no comments were received.

### **TMAC 2016 Strategic Planning**

Mr. Fraser asked if the future Annual Reports will include the status of the previous reports and the status of FEMA's implementation of the recommendations. Ms. McConkey supported Mr. Fraser's idea and said that it should be part of the ongoing reporting. Mr. Dorman commented to Mr. Rodriguez that FEMA should anticipate being asked to provide updates throughout the year. Mr. Fraser suggested that the TMAC meet during the Association of State Floodplain Managers (ASFPM) conference as many members will be in attendance.

### **FEMA Flood Mapping Program Review**

Mr. Dorman introduced Mr. Bascom to present on FEMA's flood mapping program description and noted that much of what the TMAC will do in 2016 will hinge on his comments. Mr. Bascom informed the members that he will be briefing them on what to expect of the National Flood Mapping Program Description, what FEMA is looking for from the TMAC, and what the path ahead looks like for FEMA. While a lot of work has gone into this document, it is still in draft form. FEMA would like an opportunity to review the complete 2015 Annual and Future Conditions reports, which provide valuable context to the recommendations that were issued with the interim reports. FEMA would also like to obtain initial feedback from the TMAC on the report and make any necessary adjustments or clarifications, before submitting the final report to TMAC.

Mr. Bascom reminded members that Section 17 of the HFIAA requires the FEMA Administrator to certify the flood mapping program results in technically credible flood hazard data after the TMAC's review. He emphasized that the report highlights what standards are already in place, and it is not only about the credibility already in effect, but what FEMA is going to deliver. Mr. Bascom discussed how the work of the TMAC and FEMA are interrelated. The recommendations made by the TMAC will guide the future of the flood mapping program and the review by the TMAC will enable the Administrator to have an independent assessment to certify the program to Congress. Mr. Bascom noted that when he briefed the TMAC in

June 2015, he heard from the Council that they wanted to ensure that the TMAC recommendations were accounted for in the program description. As a result, the flood mapping Integrated Project Team (IPT) has merged their efforts for the legislation with the general themes and goals that FEMA has interpreted from the TMAC recommendations thus far, and will continue to do so as they receive the full reports. That will enable FEMA to give the TMAC the program description. He noted that he intends to send a draft of the description to the TMAC in December 2015, and will deliver and brief the Council on an updated description in January 2016. Members can review and request that additional information or clarifications be incorporated in the description at the next TMAC public meeting.

Mr. Bascom said that in order to enable an effective and targeted review of the flood mapping program, FEMA has developed a National Flood Mapping Program Description. The document was designed to be concise and high-level in order to support a manageable review by the TMAC. It describes the current program's foundation of technical credibility, as well as FEMA's approach and progress to implementing program enhancements to address legislative requirements of BW-12 and HFIAA. It also includes an initial assessment and reflects FEMA's concurrence with the TMAC recommendations and describes how FEMA's progress and priorities relate to the fiscal year 2016 (FY16) budget. It also provides an overview of the semi-annual guidelines and standards process and how this process will be leveraged for program enhancements resulting from reform and the TMAC recommendations. It includes examples of recent enhancements to flood risk products and efforts that have been made to improve the efficiency and effectiveness of the CTP program. It also describes a new governance structure which will be rolled out in 2016 known as "FIMA Next".

Since technical credibility is the primary reason for the review, Mr. Bascom said that the description provides numerous ways that FEMA feels technical credibility is demonstrated in its products, processes, and policies. FEMA believes that the Administrator's certification of the program is imperative to NFIP reauthorization efforts in order to attain the resources and support necessary to pursue transformational changes that FEMA is taking from the recommendations received from the TMAC. The timing and timeliness of the TMAC's review are critical to enabling the Administrator to certify, prior to the NFIP reauthorization, scheduled for late summer or early fall of 2016. Mr. Bascom approved of Mr. Dorman's timeline to deliver the *2016 TMAC Technical Review Report*, mid-April 2016, noting that a mid-April delivery would allow FEMA time to work with the Administrator towards certification.

Mr. Bascom reminded the TMAC that FEMA established a baseline of how far the current program meets the requirements, and developed high level strategies for operations, products, and processes to address the requirements in the legislation not currently met. The May 2016 Guidance and Standards cycle will address numerous legislative requirements through new or updated FEMA guidance and standards. Mr. Bascom anticipates that FEMA will begin to address TMAC recommendations in the November 2016 Guidance and Standards cycle.

Mr. Bascom said that the legislative requirements crosswalk that will be delivered as an appendix of the program description offers greater detail about the implementation plans for each legislative requirement. FEMA has evaluated the context of the TMAC goals and used the same general parameters for how it evaluated the legislation. FEMA tried to draw out what is consistent, such as having better products that are more usable and accessible for its users, as well as more credible and oriented around risk rather than hazard. Mr. Bascom said that FEMA is doing everything it can to get the program where it needs to go. He added that because the TMAC recommendations have relevance to Divisions and Programs outside of the mapping program, the Risk Analysis Division convened representatives from across FIMA for a full day work session to evaluate the recommendations and assess opportunities and impacts.

Mr. Bascom said that fundamentally, FEMA agrees with all of the TMAC's recommendations and acknowledges consistency in the direction of the recommendations, with the direction of the law. Once FEMA has received the full reports to ensure full context of the recommendations, FEMA will conduct a broader, more comprehensive assessment and will develop a formal response that will be delivered to the TMAC, to Congress, and to the Office of Management and Budget (OMB). To optimize efforts, FEMA will align program enhancements resulting from NFIP reform and the TMAC recommendations with the NFIP Customer Experience roadmap and the NFIP affordability framework, where possible and practical.

Mr. Bascom reiterated that FEMA believes the current program has a technically credible foundation and that it is designed to evolve efficiently. A positive review by the TMAC will best enable the Administrator to certify the program, which is critical as FEMA goes into the NFIP reauthorization effort, in order to attain the resources and support necessary to do the transformational changes that the TMAC has recommended. He said that FEMA will continue to make progress implementing legislative requirements and in November, will begin to implement enhancements resulting from TMAC recommendations. Mr. Bascom stated that FEMA looks forward to continuing participation in TMAC discussions, and looks forward to additional guidance and recommendations in 2016.

Mr. Kunreuther asked if the report will discuss FEMA's relationship with its mapping partners. Mr. Bascom replied that the report will appropriately identify avenues that they have for engagement currently and ways they can improve those relationships. Mr. Rodriguez noted three specific efforts for engagement with mapping partners. The first is the public engagement effort that is undertaken every time FEMA updates its standards or guidance so that the public is aware of changes that are coming down the pike. The second is the engagement with the CTP program, where FEMA stood up a community of practice and steering committee in order to provide an opportunity to vet and share the changes happening and gather input from that particular stakeholder group. The third group is FEMA's Operating Partners meeting that is in place now and allows FEMA to share and discuss potential changes for the short and long term. Mr. DeMulder asked if the report will attempt to cost any of the changes that are proposed or that FEMA is adopting from the TMAC recommendations. Mr. Bascom noted that the report will not include cost information on a granular level, but it includes high, medium, low estimates for cost.

Ms. Grassi asked about the transition to risk based representation of flooding. She noted that the TMAC could not comment on the subsequent transformation of pricing and that aspect of the transition in their report, and asked Mr. Bascom if the program description will outline the relationship between the two programs and how changes in mapping might affect the change in insurance pricing. Mr. Bascom responded that the intent of the deliverable is to show the credibility of the mapping program, so it will not include those detailed connections to insurance as it talks about the foundations of credibly delivering that type of risk informed data. That transition is going to be a long shift from the 1-percent-annual-chance-flood to a more risk based approach, so FEMA will have to talk about the investments needed now in order to have better lidar, models, and a digital database such that there are credible foundational elements from the flood mapping program that can be used to inform those longer term changes on the risk insurance side. He said that it will not be included in the report, because it relates to longer term, cross-FIMA related changes that will be made in the future.

Ms. McConkey added that the TMAC does not make recommendations on how to make flood insurance rates, but that the Council wants to ensure they are providing the people in insurance what they need to to best serve those users. The Council is trying to find out what is needed to do a better job in setting flood insurance rates. Mr. Bascom responded that FEMA has identified that as a big need, to find out what FEMA's users need from the products they generate and are going to generate. He said that the topic was at the forefront of the discussion held at the FIMA-wide assessment of the TMAC recommendations. FEMA has an opportunity to have a clear direction on transforming towards more risk oriented products and engaging users from the start as FEMA begins to identify those products. This will help FEMA start with the right understanding of what investments need to be made in flood risk studies so FEMA can better serve their actuaries and floodplain managers.

Mr. Jones asked if the possible offering of private flood insurance in many States could affect the work of the Council and the depiction of risk. He questioned if the Council should discuss mapping and risk estimation needs with stakeholders that up to now have not been part of the discussion. He asked if the NFIP maps have a new user and should the Council prepare for that. Mr. Bascom replied that as FEMA talks about longer term strategic changes, they will ensure to obtain the appropriate input. Mr. Kunreuther asked if the topic of affordability will be brought into any of the discussion, and if FEMA will provide the Council with guidance on affordability of flood insurance. Mr. Bascom responded that the topic of affordability will be something that FEMA engages TMAC in 2016. He informed participants that there is a working group dedicated to working on affordability currently, but there is little that Mr. Bascom can share

at the moment. Mr. Rodriguez noted that the National Academy of Sciences (NAS) is due to deliver the second report of the affordability of flood insurance on December 11, 2015, therefore there is a lot to be done in terms of getting outputs for what an affordability framework would look like. Mr. Bascom said that the NAS report does not establish those outputs so there is a lot to be done, and the mapping division will have to stay turned to see what needs there are related to the mapping program.

Mr. Dorman commented that the Council is trying to understand what it needs to report back to FEMA, and asked if there is any sequencing or prioritization of the TMAC recommendations that will be in the report. Mr. Bascom said that the intent is to group the recommendations appropriately in terms of changes they need to make in the program and identify what FEMA can first accomplish through policy, starting with the November 2014 guidance and standards cycle. The report will talk about investments being made currently and the efforts FEMA intends to undertake that demonstrate larger investments FEMA needs to make. The recommendations are addressed and sequenced in that fashion. Mr. Dorman noted that it would be helpful to know what TMAC recommendations are inhibitors and what the Council might be able to help FEMA accomplish by fleshing out the recommendations that have obstacles, for focus on in the *2016 TMAC Annual Report*. Mr. Bascom noted that the conversations and messaging that help inform the TMAC technical review of the mapping program will need to highlight the constraints and obstacles that exist to achieve the larger vision and effectively convey what FEMA can do now and what limitations there are, so there is an opportunity for stakeholders to help resonate some of those messages. He said that as FEMA looks towards reauthorization, it will have more confidence that what FEMA communicates is being reflected by various stakeholders.

Mr. Dorman thanked Mr. Bascom for his presentation and said that the Council looks forward to working with him and others on rolling out the proposed TMAC recommendations.

### **Next Steps**

Mr. Dorman outlined the following items as action items and next steps for the Council:

- Members will submit potential 2016 areas of focus / topics by December 16, 2015.
- Survey opens for Council members on December 18, 2015.
- Survey closes on January 5, 2016.
- Await the Program Description from FEMA.
- Send out meeting dates for Council meetings (virtual / in-person).
- Poll Council members on February 2016 in-person meeting dates.
- Work with FEMA to set up a virtual administrative meeting in January 2016 and an in-person meeting in February 2016.

Ms. Shirley suggested that members include a short description of why they are submitting the topic for consideration in the *2016 TMAC Annual Report* so that other members can better evaluate the options. She also requested the Council looks at the list of administrative topics that Ms. McConkey shared with the group for consideration in the January 2016 administrative meeting.

### **Adjournment**

Mr. Dorman thanked the members for their participation. Ms. Boyer called for a motion to adjourn the meeting, which was seconded by Mr. Edelman. The meeting was adjourned.

### **Action Items**

- TMAC members will provide Mr. Dorman with any topics they wish to consider in the *2016 TMAC Annual Report* by December 18, 2015.
- Mr. Dorman will distribute a survey to TMAC members by December 18, 2015, to help determine topics for the *2016 TMAC Annual Report*, and members will have until January 5, 2016, to complete to survey.

- Mr. Dorman to send a list of items to be discussed in the administrative meeting so that Mr. Crowell can check with the Department of Homeland Security (DHS) Committee Management office and ensure that a virtual meeting for planning purposes would not require a Federal Register Notice.
- Mr. Dorman to send out meetings dates for Council meetings, both virtual and in-person.
- Mr. Dorman will poll the Council members on the February 2016 in-person meeting.

**Certification**

*I hereby certify that, to the best of my knowledge, the foregoing minutes are accurate and complete.*

A handwritten signature in black ink that reads "John Dorman". The signature is written in a cursive style with a large, prominent "J" and "D".

John Dorman  
TMAC Chair