



FEMA

# TMAC

## Technical Mapping Advisory Council Meeting September 9, 2015

### **TMAC Members**

Juliana Blackwell  
Nancy Blyler  
Richard Butgereit  
Mark DeMulder  
John Dorman  
Leslie Durham  
Scott Edelman  
Steve Ferryman  
Gale Fraser

Carrie Grassi  
Howard Kunreuther  
Wendy Lathrop  
David Mallory  
Robert Mason  
Sally McConkey  
Luis Rodriguez  
Cheryl Small

### **Subcommittee Members**

Laura Algeo, FEMA  
Doug Marcy, NOAA  
Andy Neal, FEMA

Paul Rooney, FEMA  
Jonathan Westcott, FEMA

### **Government Attendees**

Kathleen Boyer, FEMA, TMAC ADFO  
Mark Crowell, FEMA, TMAC DFO  
Marvin Fell, DHS

Michael Godesky, FEMA, TMAC ADFO  
Victoria Hill, DHS

### **Registered Public Attendees**

Chad Berginnis, ASFP  
Russ Dubinsky, No affiliation  
Amanda Flegel, ASFP  
John Hair, NAMIC

Merrie Inderfurth, ASFP  
Joel Scata, No affiliation  
Jeff Sparrow, Michael Baker International  
Loren Wobig, ASFP

### **Support Staff**

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

Krista Bethune Melnar, AECOM  
Diane Pancoska, Booz Allen Hamilton  
Adam Warfield, Booz Allen Hamilton

### **Purpose**

The purpose of the meeting was to allow the Technical Mapping Advisory Council (TMAC) members to (1) present and deliberate on draft narrative and recommendations concerning the future conditions methods and considerations to be incorporated into both the 2015 Annual Report and the Future Conditions Report; and (2) identify and coordinate next steps of the TMAC report development.

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

Mr. Mike Godesky, TMAC Alternate Designated Federal Officer (ADFO), welcomed members to the meeting. He then introduced Mr. Mark Crowell, Federal Emergency Management Agency (FEMA), and Ms. Kathleen Boyer, FEMA, who serve as the TMAC DFO and ADFO, respectively. Mr. Godesky proceeded with a roll call of TMAC members and provided an overview of the Adobe Connect functions.

Mr. Godesky reminded everyone of the *Federal Advisory Committee Act (FACA)* compliance provisions. Following his remarks, Mr. Godesky made a motion to convene the meeting, which members seconded.

### **Process Schedule/Meeting Objectives**

Mr. John Dorman, TMAC Chair, provided an overview of the agenda and discussed the meeting's objectives, including: (1) discuss, deliberate any issues associated with draft recommendations; (2) provide suggested feedback and suggestions to the authors of the draft recommendations; and (3) communicate resource needs to complete draft recommendations. He reviewed the virtual meeting procedures and encouraged participants to suggest modifications to any draft recommendations.

Mr. Dorman also reviewed the status of previous action items from the August 2015 TMAC Meeting and noted that four items were still outstanding:

1. Annual Report draft recommendation topic authors will continue to refine the Annual Report draft Recommendation regarding how to frame risk messages;
2. Annual Report Subcommittee authors will contact Ms. Durham if they need a graphic in their section of the Annual Report.
3. Future Conditions Subcommittee members will draft a proposed recommendation regarding residual risk to bring back to the full Council for deliberation at the next public meeting.
4. Mr. Gale Fraser, TMAC member, will work with the section authors to further develop the Annual Report draft recommendation regarding map modernization and identifying flood hazards in unmapped areas.

### **2015 Annual Report: Draft Recommendations, Narratives, and Executive Summary**

Ms. Leslie Durham, Annual Report Subcommittee Chair, thanked subcommittee members for their contributions and noted that the topic leads have worked to ensure the recommendations are consolidated and actionable.

Next, TMAC members reviewed the 2015 Annual Report draft recommendations.

**Draft Recommendation 3:** *FEMA should establish and implement a process to assess the present and anticipated requirements of flood hazard and flood risk products to meet the needs of the various users. As part of this process, FEMA should routinely:*

- *Conduct a systematic evaluation of current regulatory and non-regulatory products (data, maps, reports, etc.) to determine if these products are valued by users, eliminating products which do not cost effectively meet needs;*
- *Consider user requirements prior to any updates or changes to data format, applications, standards products or practices as implemented; and*
- *Proactively seek to provide authoritative, easy-to-access and use, timely, and informative products and tools.*

Mr. Dorman said that he is pleased with this recommendation. Mr. Luis Rodriguez, TMAC member, asked for specific information regarding the term "authoritative" in the third bullet. Ms. Sally McConkey, TMAC member, said that the text discusses what is meant by authoritative; however she will provide greater clarification if needed. Mr. Howard Kunreuther, TMAC member, said that if "authoritative" is already defined in an earlier section, it does not need to be clarified here.

**Draft Recommendation 16:** *FEMA should develop national program goals for Risk MAP that include flexible metrics for maintaining the inventory of unverified, unknown and expiring miles and addressing the un-modernized areas of the nation and unmapped miles. Metrics for how these goals will be measured should be developed and incorporated into the national flood mapping program.*

Mr. Dorman questioned if the TMAC was defining changes to Risk MAP or if they should avoid speaking to a specific program. Ms. Durham said that the subcommittee has discussed revising the recommendation to reference the national flood mapping program to be consistent with the *Biggert-Waters Flood Insurance Reform Act of 2012* (BW-12). Mr. Rodriguez noted that the current inventory is a fixed inventory; however, mapping the unmapped miles would expand this inventory. Mr. Dorman suggested revising the recommendation to capture the volume of miles that the TMAC is discussing.

Mr. Kunreuther said that identifying mitigation action should not be the primary goal and recommended that the TMAC be specific on the primary goal. Mr. David Mallory, TMAC member, agreed, noting that it would be beneficial for the TMAC to discuss the purpose. He also said that the mapping product does not appear to be the end product for Risk MAP, instead, the desired outcome is driving action that increases resilience and reduces risk.

Mr. Robert Mason, TMAC member, suggested removing “flexible” from the draft recommendation. Mr. Rodriguez noted that the narrative provides context on the need for flexibility; however, the term may not be needed in the recommendation. Mr. Edelman said that it is important to have clear metrics and that the focus should be on more easily understood and simple metrics. Participants agreed to add the term “quantifiable” to the recommendation.

Mr. Rodriguez said that portions of the narrative focus on flood hazard identification and that some of the narrative will not lead to easily understandable metrics. He recommended that the TMAC revise the narrative so that it leads to easily understandable metrics.

**Draft Recommendation 6:** *FEMA should develop a national 5-year mapping and maintenance plan and prioritization process that aligns with program goals and metrics (See Recommendation #16). The Plan should be a rolling 5-year plan to include the maintenance of existing studies and a long term plan to address the unmapped areas. The priorities should be updated annually with input from stakeholders (e.g., Multi-year Flood Hazard Identification Plan (MHIP)). Plan should be published and available to stakeholders.*

Ms. Carrie Grassi, TMAC member, asked for clarity on what is meant by maintenance of existing studies. She asked if this recommendation was intended to be about the creation of new studies and updates to studies rather than just maintenance. Ms. Grassi continued that if it is intended to be about new studies then it should be explicitly stated in the text. Participants agreed with Ms. Grassi’s assertion.

Mr. Dorman suggested that the TMAC incorporate next steps after identification. He advocated that the Council include risk in the discussion of any sort of plan. Participants agreed that a risk should be part of the discussion. Mr. Dorman added that it is important that the Council is consistent with its terminology. He added that it is important to include a discussion on where a risk assessment would fall into a plan and incorporate language into the recommendation noting that it would be needed for both new and existing studies.

**Draft Recommendation 25:** *FEMA should promote, and require where federally funded, data collected and maintained according to federal standards to ensure accurate, consistent information for the National Flood Mapping Program.*

- *FEMA should work with federal, state, and local partners to collect and maintain data to federal standards for the flood mapping program*
- *Future FEMA topographic and bathymetric lidar acquisition should be consistent with 3DEP (currently QL2) and Interagency Working Group on Ocean and Coastal Mapping standards.*
- *FEMA should require all geospatial and water level gauge data for the flood mapping program are referenced to current national datums and that National Spatial Reference System.*

Mr. Mason said that the sub-bullets may overlap and need further distinction. Mr. Mason said that some of the information from the sub-bullets could be placed in the overarching recommendation. Participants agreed that this recommendation needs to be refined and revised to avoid overlap in the sub-bullets. Ms. Blackwell, Mr. Mason, Ms. Durham, and Mr. Dorman will revise and refine this recommendation.

**Draft Recommendation 37:** *FEMA should document the horizontal and vertical accuracy of topographic data input to flood study models and the horizontal and vertical accuracy of topographic data used to delineate the boundaries of the flood themes. These data should be readily available to users and clearly reported with products.*

Mr. Rodriguez asked if this recommendation was about increasing awareness. Ms. McConkey said that when new topographic data becomes available, there will be a new study on topography. This new topographic data will differ from the data that was used to derive the study. She explained that this is about having transparency about the sources of data in order to track the age of the models and topography.

Mr. Edelman said that the Future Conditions report discusses uncertainty; however, he noted that this topic will not be thoroughly addressed until the 2016 Annual Report. He said that the 2016 Annual Report should contain a comprehensive description of what the TMAC wants to show across all products as opposed to discussing a small aspect of it in the 2015 Annual Report. Ms. Lathrop disagreed and said that the TMAC should introduce the idea that there is a difference between horizontal and vertical accuracy in the 2015 report. She continued that the TMAC could add language that future reports will contain specific recommendations on the issue. Ms. McConkey agreed, noting that it was important to document it in this year's report.

Mr. Paul Rooney, TMAC Subject Matter Expert (SME), explained that there is a horizontal accuracy for the base map and a vertical accuracy for topography. Mr. Edelman said that it is important to document what topography is used for models and what topography is used for mapping. He added that it is also important to know the source of the data. Ms. McConkey said that for physical map revisions, some request that an old model be mapped on new topography. Participants agreed to leave this aspect of the recommendation in the report. Mr. Dorman said that the intent of the recommendation is that the public has access to the information. Ms. Lathrop will revise the recommendation.

**Draft Recommendation 30:** *FEMA should periodically review publically available riverine and coastal hydrologic and hydraulic models for flood hazard identification. FEMA should coordinate with other partners to:*

1. *Develop guidelines, standards and best practices for selection and use of models appropriate for certain geographic, hydrologic and hydraulic conditions;*
2. *Support comparative analysis of the models and dissemination of appropriate parameter ranges, and;*
3. *Develop quality assurance protocols.*

Mr. Rodriguez said that the current program is already doing this and evaluating available data at all levels. He questioned if there was an issue with the current process that led to this recommendation or how it is an enhancement over what the program currently does.

Mr. Mason said that the recommendation is about the process for identifying the models that have been accepted that might be more appropriate than others. Mr. Rodriguez said that FEMA is trying to move away from maintaining the accepted models list. He added that there are regulatory models that will remain; however FEMA would like to be more reliant on meeting regulatory requirements as

opposed to maintaining an acceptable models list. Ms. McConkey will revise the recommendation to make it more specific.

**Draft Recommendation 28:** *FEMA should develop standards and best practices related to coastal 2D storm surge modeling in order to expand the utility of the data and more effectively perform coastal flood studies.* **Draft Recommendation 29:** *Review and update existing coastal event-based erosion methods for open coasts, and develop erosion methods for other coastal geomorphic settings.*

Ms. Lathrop said that recommendation 29 should be revised to ensure that it is a complete thought.

**Draft Recommendation 12:** *FEMA should transition from identifying the one-percent annual chance floodplain and associated base flood elevation as the source for insurance determinations to a structure specific flood frequency determination and associated base flood elevation.*

Mr. Edelman stated that this is a transformational recommendation.

Mr. Kunreuther said that the key point is to move away from the one-percent annual chance floodplain. He explained that there are reasons for having the one-percent for environmental aspects; however when dealing with insurance determinations a different model should be used (e.g., 10-year floodplain).

Mr. Mallory said that structure-based risk assessments and insurance determinations are different things. He also said that in the past FEMA used flood hazard factors to try to provide gradation. FEMA moved away from this practice because it was difficult to write into the insurance policy.

Ms. McConkey said that there is an opportunity for the TMAC to emphasize that FEMA is identifying multi-frequency flood hazards. She suggested having a recommendation stating that FEMA should push to have multi-frequency flood hazard identification.

Ms. Lathrop said that it may not be necessary or appropriate for every user's needs to identify hazards and risks at the same flood frequency. She noted that, if implemented, hazard and risk assessments should be completed by using guidelines.

Mr. Mason asked if this recommendation, with regards to single structure, could be completed by FEMA now or if it would require a change in law. Mr. Rodriguez suggested speaking with the FEMA lawyers regarding this issue. Mr. Edelman said that when the TMAC refers to structure-specific, it is referring to everything that is required on an elevation certificate. Mr. Kunreuther noted that Mr. Edelman's thoughts regarding the elevation certificate will be critical when setting insurance premiums. Mr. Ferryman said FEMA should do more than what is on the elevation certificate, including different recurrent intervals.

Participants agreed with the concept of the recommendation but determined that it is important to revise and clarify the recommendation.

**Draft Recommendation 10:** *FEMA should set a goal to transition the National Flood Mapping Program from a flood hazard identification focus to a structure-specific flood risk assessment focus. Towards this transition:*

- *FEMA should establish an Implementation Plan for Structure-Specific Flood Risk Assessments;*
- *FEMA should initiative dialogue with risk assessment stakeholders to define structure-specific risk assessment products, displays, standards, and data management.*
- *FEMA should draw from and leverage partners and programs successfully performing risk assessment.*
- *Where data exists or can be leveraged from partners, FEMA should accommodate and support structure-based risk assessments.*

Ms. Lathrop said that the overarching recommendation overlooks environmental and land use applications of mapping and that hazards need to be identified. She also suggested that the TMAC remove the word “transition” from the recommendation and state that “FEMA should adopt a policy.” Mr. Edelman disagreed and recommended leaving the term “transition” in the recommendation. Ms. Lathrop also asked if it was preferable to say “FEMA” or “FEMA and its partners.” She suggested alternative language for consideration.

Mr. Mason expressed concern with performing a risk analysis at the regional level. Mr. Dorman said that this recommendation is about defining risk at a specific building location. Ms. McConkey said that she disagreed with the recommendation and said that FEMA should be focused on identifying the hazard. She continued that there may be many users and uses of flood hazard data and others that could do assessments. Mr. Edelman supported the recommendation, stating that if FEMA is in the flood insurance business, it is important to know the risk. Mr. Dorman conducted a poll and the majority of participants agreed with the concept of the recommendation.

### **2015 Future Conditions Report**

Mr. Edelman announced that the Future Conditions Report will be finalized at the September 29, 2015, TMAC Meeting. Mr. Edelman proceeded to review Chapter 7, *Summary of Recommendations*, and reminded TMAC members of the seven primary recommendations and their supporting sub-recommendations. The seven primary recommendations include: (1) digital future conditions information; (2) uncertainty; (3) future conditions for coastal; (4) future conditions for riverine environment; (5) risk communications for future events; (6) timing and prioritization of studies; and (7) data. Mr. Edelman described the organization of the sub-comments, indicating the timing and type of change required. He noted that the draft recommendations labeled “short-term” indicate implementation up to two years’ time and “long-term” indicates implementation greater than two years’ time. Mr. Edelman stated that a sub-recommendation that is a regulatory or a legislative change is a long-term goal while a sub-recommendation that is a policy change could be either a short-term or a long-term goal.

**Draft Recommendation 1:** *Provide future conditions flood risk products and information for coastal, Great Lakes, and riverine areas. The projected future conditions should use standardized timeframes and methodologies wherever possible to encourage consistency and should be adapted as actionable science evolves.*

Mr. Edelman recognized that this recommendation is a reaffirmation that future conditions products and information should be produced and, as science becomes better, the TMAC should update its process. Members discussed and agreed that the information was limited to riverine, Great Lakes, and coastal areas, but did not include other flood hazards, such as alluvial fans, and further definition might be needed. Mr. Edelman informed the members that riverine areas will include other flood hazards such as sheet flow, alluvial fans and anything else that is not considered to be coastal. The additional riverine flood hazards will be included in the report’s glossary. Mr. Rodriguez stated that the language in the legislation asks the TMAC to identify how FEMA can best incorporate future sea level rise as part of the Flood Insurance Rate Maps (FIRM) or whether the information should be incorporated separately in a non-regulatory product. The TMAC has not taken a stand on whether future sea level rise should be a line on the FIRM. Members agreed that it should be included on the FIRMs. Mr. Edelman will look at whether the information should be included on the FIRM or produced as digital information that can be turned on and off on the maps available online. Mr. Kunreuther mentioned that this topic was discussed to some extent regarding whether flood insurance rates will reflect risk, which is important for the maps.

**Draft Recommendation 2:** *Identify and quantify accuracy and uncertainty of data and analyses used to produce future flood risk information and products.*

Mr. Kunreuther mentioned uncertainty will be discussed in more detail in the 2016 Annual Report. Participants discussed sub-recommendation 3-7, *Building designs should be based on future hazard conditions delineated in flood hazard maps that should be updated frequently. They should exceed minimum code requirements, where necessary, to reduce direct and economic losses associated with future hazards.* Mr. Fraser questioned the use of “delineated in flood hazard maps” and asked if future conditions should be on the maps or as a separate layer. Ms. McConkey remarked that FEMA does not have authority over building design and that the wording of the sub-recommendation needs to be changed. Mr. Rodriguez noticed references to “maps” that should be referenced as “data” or “future flood conditions”. Mr. Edelman agreed and stated that the change can be incorporated.

**Draft Recommendation 3:** *Provide flood risk products and information for coastal and Great Lakes areas that include the future effects of long-term erosion and sea/lake level rise. Major elements are:*

- *Incorporate local relative sea/lake level rise scenarios and long-term shoreline erosion into coastal flood hazard analyses.*
- *Consider the range of potential future coastal changes, such as inundation and coastal erosion.*
- *Provide guidance and standards for the development of future conditions coastal flood risk products*

Ms. McConkey suggested changing “flood risk products” to “flood hazard products.” Mr. Crowell suggested replacing “coastal erosion” with “shoreline erosion.” Mr. Rodriguez disagreed with Ms. McConkey’s comment regarding hazard versus risk because the language in the legislation requires assessing flood risk. Mr. Edelman noted that the terminology needs to be consistent across both the 2015 Annual Report and the Future Conditions Report. Mr. Edelman and Ms. Durham will work to ensure consistent definitions across both reports.

**Draft Recommendation 4:** *Provide future conditions flood risk products and information for riverine areas that include the impacts of: future development, land use change, erosion, and climate change, as actionable science becomes available. Major elements are:*

- *Future land use change impacts on hydrology and hydraulics can and should be modeled with land use plans and projections, using current science and existing conditions study methods where data are available.*
- *No actionable science exists at the current time to address climate change impacts to watershed hydrology and hydraulics. If undertaken, interim efforts to incorporate climate change impacts in flood risk products and information should be based on existing methods, informed by historical trends, and incorporate uncertainty based upon sensitivity analyses.*
- *Where sufficient data and knowledge exist, incorporate future riverine erosion (channel migration) into flood risk products and information.*
- *Provide guidance and standards for the development of future conditions riverine flood risk products.*

Mr. Mallory requested that members consider including encroachment impacts on discharge rates. Mr. Edelman asked if anyone was against incorporating the impacts of floodplain storage. Mr. Mason noted that he was unsure if encroachment impacts increased discharge rates, but elevation does. Ms. McConkey questioned the meaning of “existing methods,” as there are currently no existing methods, and requested clarification. Mr. Fraser questioned the need for Recommendation #7, and members agreed that draft recommendations 4 and 7 could potentially be combined. Mr. Rodriguez commented on assessing conditions at a watershed scale and recommended the TMAC define “watershed scale”. He also suggested the recommendations need to be consistent across both reports. Members discussed if watershed scale should be included in both reports. Mr. Mason commented that a smaller scale is suitable for land use change, but climate issues require a larger scale. Members agreed that it is difficult to drive a climate model on a small scale.

**Draft Recommendation 5:** *Frame data on flood maps in ways that accurately reflect risk so stakeholders are aware of the hazards they face and can make better informed decisions on ways to reduce future flood-related losses.*

Members agreed that it is important to include “accurately reflect risk” in the recommendation’s language. Members decided further discussion is needed regarding what is meant by risk, as in dollar cost, as opposed to hazard (chance of being flooded, 10-year line, etc.). Members agreed that “hazard” is a better word. Ms. McConkey indicated that “accurately” could have a different meaning depending on the context (e.g., “accurately” could refer to level of precision). Members agreed that “more accurately” is better. Mr. Rodriguez suggested revisiting the legislation to ensure the TMAC is following the legislative requirements for risk. Members agreed to communicate the difference so that people can make informed decisions but to make the recommendation shorter.

**Draft Recommendation 6:** *Perform demonstration projects to develop future conditions data for representative coastal and riverine areas across the nation to evaluate the costs and benefits of different methodologies or identify/address methodological gaps that affect the generation of future conditions data.*

Members agreed demonstration projects are needed.

**Draft Recommendation 7:** *Data and analysis used for future conditions flood risk information and products should be consistent with standardized data and analysis used to determine existing conditions flood risk (currently defined in the NFIP Guidelines and Specifications for Flood Hazard Mapping Partners), but also should include additional future conditions data, such as climate data, sea level rise information, long-term erosion monitoring, land use planning data, planned restoration projects, planned civil works projects, as appropriate, that would impact future flood risk.*

Mr. Fraser suggested that future conditions should not include future structures.

### **Public Comment Period**

Mr. Godesky announced that, per FACA, members of the public were invited to provide written comments on the issues to be considered by the TMAC. One comment was provided, displayed as received below:

Mr. Chad Berginnis, ASFPM, provided the following comment:

*Thank you. First let me congratulate you all by getting to this point. I am encouraged by listening to the debate among the committee members. I hope that you can find effective ways to accommodate consensus and dissenting viewpoints – our national effort depends on your input and expertise. I want to make comments in three areas.*

*First, I would like to request that more time be given between the Federal Register notice and the date by which public input is due. With this past notice, I believe the public had only four days to provide comments. This is not acceptable. At least for the August meeting, there were 10 days. I would hope have at least 15 days, if not a full 30 days between the notice and deadline. Second, there are some good recommendations in the annual report! I want to highlight one of the core elements of Recommendation 16 and am pleased to see mapping unidentified and unmodernized as a co-equal with maintaining the existing inventory.*

*I noted the debate within the TMAC revolving around recommendations #10 and #12 and I think the root issue is more of a philosophical debate on the role and prominence of risk assessment for individual structures and flood hazard identification. I suggest that this isn’t an either/or proposition, rather that they are complimentary and both need to be included going forward. I want to recall the three primary responsibilities of the Administrator as defined in law under the National Flood Mapping Program: (1) Identify, review, update, maintain and publish National Flood Insurance*

*Program rate maps with respect to all populated areas and areas of possible population growth within the 100 and 500 year floodplains, areas of residual risk as protected by flood control structures, and areas of inundation due to failure of such structures, (2) Establish or update flood risk zone data in all such areas and make estimates with respect to the rates of probable flood caused loss for the various risk zones for each area; and (3) Use the most accurate topography and elevation data available. While there are a lot more mapping elements identified, including standards and even communication and outreach – wherein much of the risk assessment work would logically be done, all of these other aspects are predicated on having effective risk identification. So I become very concerned when I see recommendations that would imply any transition away from hazard identification. The law further elaborates on TMAC’s role in regard to these parameters by stating that the Administrator in coordination with TMAC shall establish an ongoing program in accordance with this section (these specifications). I urge TMAC, when deciding on where the balance point should exist between hazard identification and risk assessment on a structure by structure basis, keep the overall program requirements in mind. ASPFM fully supports an ongoing hazard identification program, as required under the National Flood Mapping Program to ultimately achieve comprehensive flood mapping in the nation.*

*Third, I want to comment on the future conditions report and a set of sub recommendations that I quickly saw as you were scrolling through, that surprisingly got little discussion. I am concerned about the entire class of recommendations that focus on land use standards. Not that ASPFM doesn’t desire advancement in this area (we do); rather, I question whether such recommendations are appropriately under the purview of TMAC. I cannot see where TMAC is to be providing these types of recommendation and my bigger concern is TMAC becoming a political target because it is wading into a very hot button issue of land use management and control. Again, I want to state that this is not a matter of disagreement with some of the recommendations put forward, rather something that could lead to unintended consequences for the National Flood Mapping Program.*

*Thank you.*

Mr. Godesky asked for additional public comments and none were received.

### **Open Discussion on Reports**

Mr. Dorman said that this session could be used to discuss recommendations from either report.

Mr. Kunreuther noted that there are no recommendations related to section 5.1.6, *Flood Risk Mitigation*, in the 2015 Annual Report. He said that this section could contain recommendations that participants thought may not belong in the Future Conditions Report. Participants continued to discuss the Annual Report.

Ms. Durham noted that there are two versions of draft recommendation 15, regarding a database derived digital environment. Mr. Edelman said that it might be useful to clarify what is meant by “fully digital.” Ms. Durham also noted that some of the details that are outlined in the sub-recommendations are captured in other recommendations. Participants agreed that FEMA should move towards a database derived environment. Mr. Dorman said that the recommendation will be revised and it will be inserted into the data management section. Participants agreed to use the second version of the recommendation.

Ms. McConkey and Mr. Mason will revise recommendation 15.

Next, participants discussed draft recommendation 5 from the Future Conditions Report. Mr. Kunreuther said that many of the sub-recommendations could be placed in the Annual Report, such as sections 3.4 and 3.5. Mr. Ferryman asked if a mitigation section would be included in the 2015 Annual Report, or if it would be included in the 2016 report. Mr. Kunreuther stated that mitigation and risk reduction need to be highlighted. The members agreed that flood insurance premiums are tied to mapping and should be included in the recommendation. Ms. McConkey said that the Annual Report contains information in the community for users section regarding how the information is used and the needs of the users. She noted that there is a need for a good communication strategy. Ms. Durham added that there are a lot of users and uses of flood maps within the section and that much of the information will be included in the

2016 Annual Report. Mr. Dorman asked Mr. Ferryman and Mr. Kunreuther to review the community of users section to determine if there is enough information to fully develop the section in the 2016 Annual Report.

### **New Business**

Mr. Dorman asked if TMAC members had any new business to discuss. Participants had no additional comments.

### **Next Steps**

Mr. Dorman said that the TMAC will hold its next meeting on September 29, 2015, and an additional in person meeting on October 20-21, 2015. He stated that he will send out a Doodle poll regarding if funding should be included in the 2015 Annual Report.

### **Adjournment**

Mr. Dorman thanked the members for their participation. Mr. Godesky called for a motion to adjourn the meeting, which members unanimously approved.

## **Action Items**

- Annual Report recommendation topic authors will continue to refine the Annual Report draft Recommendation regarding how to frame risk messages;
- Annual Report Subcommittee authors will contact Ms. Durham if they need a graphic in their section of the Annual Report.
- Future Conditions Subcommittee members will draft a proposed recommendation regarding residual risk to bring back to the full Council for deliberation at the next public meeting.
- Mr. Fraser will work with the section authors to further develop the Annual Report draft recommendation regarding map modernization and identifying flood hazards in unmapped areas.
- Mr. Mason and Ms. Blackwell will revise the recommendation regarding FEMA promoting data collected and maintained according to Federal standards.
- Mr. Edelman will determine if the TMAC should recommend if future condition should be part of FIRM or a digital layer that can be turned on and off.
- Ms. Durham and Mr. Edelman will ensure consistency in terminology between the Future Conditions and 2015 Annual Report.
- Mr. Edelman and Mr. Mason will come to an understanding on elevation versus discharge in future conditions draft recommendation 4 regarding providing future conditions flood risk products and information for riverine areas.
- Mr. Edelman and Mr. Rodriguez will further discuss FEMA's use of HUC-8 regarding watershed scale.

**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 initial "J".

John Dorman  
TMAC Chair