



FEMA

# TMAC

Technical Mapping Advisory Council Meeting  
March 10-11, 2015

## TMAC Members

Doug Bellomo  
Juliana Blackwell  
Nancy Blyler  
Richard Butgereit  
Mark DeMulder  
John Dorman  
Leslie Durham  
Scott Edelman  
Steve Ferryman  
Carrie Grassi

Chris Jones  
Howard Kunreuther  
Wendy Lathrop  
David Mallory  
Robert Mason  
Sally McConkey  
Javier Ruiz  
Christine Shirley  
Cheryl Small

## Subcommittee Members

Ken Ashe, State of North Carolina  
Dwayne Bourgeois, North Lafourche Conservation,  
Levee, and Drainage District

Maria Honeycutt, USGS  
Doug Marcy, NOAA  
Kate White, U.S. Army Corps of Engineers  
Patrick Sacbibit, FEMA

## Speakers and Briefers

Andy Neal, FEMA  
Dave Stearrett, FEMA

Mike Talbot, Harris County Flood Control District

## Government Attendees

Kathleen Boyer, FEMA, TMAC ADFO  
Mark Crowell, FEMA, TMAC DFO  
Victoria Fresenko, DHS

Michael Godesky, FEMA, TMAC ADFO  
Jonathan Westcott, FEMA

## Registered Public Attendees

Krista Bethune, AECOM  
David Conrad, no affiliation  
Jessica Cox, CBEI  
Christine Gallagher, NOAA  
Clayton Hobbs, Woodpert  
Merrie Inderfurth, ASFPM

Gilbert Jones, Dewberry  
Tim McCormick, Dewberry  
Mohan Rajasekar, Syndeste  
Velma Smith, Pew  
Jeff Sparrow, Baker  
Milver Valenzuela, Syndeste

## Support Staff

Angela Bidnick, Booz Allen Hamilton  
Kirsten Folkedal, Booz Allen Hamilton  
Laura Karnas, Booz Allen Hamilton  
Michelle McQueeney, J-M Global

Allison Skeer, Booz Allen Hamilton  
Adam Warfield, Booz Allen Hamilton  
Melissa Zientek, Booz Allen Hamilton

## Purpose

The purpose of the meeting was to allow the Technical Mapping Advisory Council (TMAC) members to discuss the TMAC vision statement, reporting requirements, and subcommittee progress, in addition to receiving briefings on: (1) how the Federal Emergency Management Agency (FEMA) uses flood risk to calculate insurance ratings; (2) floodplain management and the Flood Insurance Advocate; and (3) state and local cooperating technical partner (CTP) models.

**March 10, 2015**

**Administrative Session**

**Welcome**

Mr. Crowell, TMAC Designated Federal Officer (DFO), welcomed members to the administrative session. He introduced Mr. Mike Godesky, FEMA, and Ms. Kathleen Boyer, FEMA, who serve as the TMAC's alternate DFOs (ADFO). He also acknowledged Mr. Javier Ruiz, U.S. Department of Agriculture, who was participating as a member of the TMAC for the first time. Mr. Crowell provided an overview of the facility and proceeded with a roll call of TMAC members and subcommittee members.

Mr. John Dorman, TMAC chair, said that he hopes the TMAC can finalize its vision and approach for its future direction. He lauded the subcommittees' progress to date, noting the value of their discussions.

**Federal Advisory Committee Act Briefing**

Mr. Dorman introduced Ms. Vicki Fresenko, Department of Homeland Security, to provide an overview of the *Federal Advisory Committee Act* (FACA). Ms. Fresenko said that FACA has two purposes: (1) to lend openness and transparency to Federal advisory committee operations; and (2) reduce expenditures across the Government. She explained that advisory bodies are authorized in different ways, either through statute, executive order or Presidential action, or at the discretion of a department of agency. Ms. Fresenko said an advisory committee can be defined as a task force, board, subcommittee, or working group. Each committee needs to be chartered and the charter must be renewed every two years. Committee members may also include both representative and special government employees. Additionally, each committee is required to have an annual FACA training session.

Ms. Fresenko explained that violating the provisions of FACA can have serious consequences, as it would result in a committee's recommendations being discredited and deemed ineligible. Violations may include failure to adhere to open meeting requirements or providing adequate public notice; she continued that meetings may typically only be closed if the discussion will potentially involve national security information. Additionally, a committee cannot meet without the presence of a DFO or alternate DFO. While violations are not common, there are typically a few cases of questionable activity each year across the Federal Government.

**Process towards Recommendations and Report**

Mr. Dorman provided an overview of the TMAC's current status of the Future Conditions and Annual Report Subcommittees. He reminded members that the TMAC cannot yet comment on the new mapping program, as requested in *Biggert-Waters Flood Insurance Reform Act of 2012* (BW-12), as FEMA has not yet developed it.

Mr. Dorman introduced Mr. Scott Edelman, TMAC member, to provide an overview of the report process. Mr. Edelman stated that the TMAC Executive Committee consists of the TMAC chair and the subcommittee chairs, including Ms. Sally McConkey, Ms. Leslie Durham, and himself. The Executive Committee will periodically coordinate to ensure that the subcommittees are not examining duplicative or contradictory topics.

Mr. Edelman provided an overview of a proposed process that the TMAC can use to develop its reports, which he previously discussed at the December 2014 TMAC meeting. He began by discussing the subject matter expert (SME) briefings in the information gathering phase of the process, and noted that briefings to the TMAC will be recorded; he will send the links to the recordings to TMAC members and subcommittee members. In the event that a member has not received the briefing recordings by March

27, 2015, they should please contact Mr. Edelman. Mr. Dorman also noted that all TMAC and subcommittee members would be invited to attend any subcommittee's briefings.

Mr. Edelman said the report development process has been used successfully in the past to compile large-scale working group reports and tries to eliminate any last-minute directional changes. He said the process challenges authors to: (1) decide their goals; (2) maintain clarity throughout the process; (3) question their assumptions; (4) project forward; (5) determine why an objective is desired; and (6) periodically review progress. Mr. Edelman also said that these considerations will help the TMAC be strategic.

Mr. Edelman continued that the process has five steps: (1) hold the kickoff meeting (accomplished in December 2014); (2) develop a strategic plan of what the TMAC wishes to accomplish; (3) conduct information gathering, leveraging outside expertise if needed; (4) develop a report, beginning as a detailed table of contents with page allocations, writing assignments and potential graphics; and (5) develop report drafts and the final submission.

Regarding the schedule, Mr. Edelman said that the TMAC is in the information gathering phase. He displayed a detailed report schedule and a series of templates to help subcommittees and the TMAC organize itself, including ways to address risk management, quality management, process efficiencies, and geopolitical strategies. He said that information gathering will occur through the end of March 2015 (possibly into April 2015) and, during this time, it would be critical for all members to have access to materials via the TMAC SharePoint site. The subcommittees will begin deliberating on the report text and recommendations in July 2015.

Several members agreed with Mr. Edelman's process and noted that it would be important to adhere to a schedule to meet the required deadlines. Mr. Doug Bellomo, TMAC member, asked if there was a sample template available to review so that he could get a better understanding of the types of information that should be included. Mr. Edelman said that he would fill out a sample form on a representative issue; Mr. Dorman agreed to assist. Several other members expressed concern that the process was too restrictive and does not allow TMAC members enough opportunity to converse with one another in an open setting. Mr. Dorman replied that the agenda for this meeting allowed for discussion at the end of the second day. Mr. Edelman also commented that the intent of the process is to help identify the important issues before the TMAC members convene in person so that their time is spent as effectively as possible.

### **Breakout Sessions**

Mr. Dorman then explained that the TMAC would break out into subcommittee meetings. While the Future Conditions Subcommittee which is focused on formulating recommendations to be included in the Future Conditions Report, would continue to meet separate of the other subcommittees, the other two groups (Flood Hazard and Risk Generation and Dissemination Subcommittee and Operations, Leveraging and Coordinating subcommittee) would combine to integrate the potential topics and recommendations that would go into the TMAC's annual report.

## **Public Session**

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

Mr. Crowell, Federal Insurance and Mitigation Administration and TMAC DFO, opened the meeting and welcomed members. Mr. Crowell introduced the ADFOs, Mr. Godesky and Ms. Boyer, as well as additional support staff.

Mr. Crowell discussed the meeting operations and said that there is a public docket for the meeting. He noted that copies of meeting materials and the public comments are available on regulations.gov under the docket number listed in the Federal Register notice. Discussing the public comment period, Mr.

Crowell said if public participants are interested in providing a comment, they should register at the registration desk. He also noted that, per FACA, staff will prepare a meeting summary that includes a description of the matters discussed and the conclusions reached by the TMAC. The summary will be available to the public through regulations.gov and the TMAC website.

Mr. Crowell took roll call of TMAC members and then introduced Mr. Dorman.

### **Vision Statement/Reports**

Mr. Dorman shared the TMAC's mission statement, which is "to provide counsel to FEMA on the most optimal strategies towards the identification, assessment and management of flood hazards." He asked that as members participate in subcommittee breakout sessions, that they consider the mission statement during their discussions. He also outlined the council's deliverables, noting that the TMAC is currently developing its Annual Report and Future Conditions Report. Mr. Dorman shared the draft vision statement for the future state of the mapping program, based on the mission and feedback at previous TMAC meetings, which should enable, "a Nation more resilient to flood hazards through the effective identification and communication of flood hazards risk." He also discussed the TMAC's long-term goals, including, "precise, accurate, comprehensive data, models, displays and risk assessments associated with present and future flood hazards," and "time- and cost-efficient generation and process management of flood hazard risk data, models, assessments and displays," among others. Members discussed the draft vision statement and offered several comments to modify the draft language. Mr. Dorman said that members would have an opportunity to make further revisions to and approve the vision statement and goals on March 11, 2015.

### **Viability of TMAC Recommendations**

Mr. Dorman stated that Mr. Bellomo would provide an overview of the TMAC recommendations in relation to the Risk MAP Program and FEMA's implementation of section 216 of BW-12, which establishes the parameters and visions for a new national mapping program. Mr. Bellomo shared a notional timeline of how the TMAC's activities relate to FEMA's activities to establish the new mapping program; specifically, FEMA anticipates completing the new program's framework in Fall 2015 and he noted that TMAC's technical review of the program will be due in 2016. To establish the program, FEMA created an Integrated Project Team (IPT) to examine the requirements from Section 216, determine where the current program already complies with the requirements, and identify additional activities that need to be incorporated. The IPT will develop a national mapping program description, with crosswalks of the legislative requirements and FEMA's existing program and standards. The IPT also has some key milestones as it relates to the TMAC to ensure that the council can complete the review requirement so the FEMA Administrator may certify the new mapping program in 2016.

Mr. Bellomo said that the IPT is planning to provide a first draft of the new program to the TMAC in early summer 2015 to solicit initial feedback. The IPT will also continue to stay abreast of discussions occurring in the TMAC and its subcommittees so that it can consider any significant points or draft recommendations as it finalizes the program. The IPT will also review the TMAC's Future Conditions Report and Annual Report upon completion. Once the new program is completed, the TMAC will perform a technical review and produce its Technical Review Report, which will also inform the TMAC's 2016 Annual Report. Mr. Bellomo provided graphics of how the TMAC, FEMA, and Congress' activities impact and inform one another. While discussing the graphics, he noted that there are finite resources available to address all of the activities and that FEMA is making decisions on how to best invest those resources. He encouraged the TMAC to keep the diagram in mind as it continues its deliberations; to the extent that the TMAC's recommendations align with Congress's direction to FEMA, those will be the easiest and most practical for FEMA to invest in and implement.

Mr. Dorman asked that FEMA periodically update the TMAC on the status of the program while it is being developed; Mr. Bellomo agreed that the IPT could share information with the TMAC during program development. Ms. Durham asked when the 2016 Technical Review Report is due. Mr. Bellomo stated

that he didn't believe a deadline had been set in statute, but acknowledged that the earlier the report is received, the more likely it will be that FEMA can make changes to the program based on TMAC's input. Several other members said that it may be beneficial to develop some high-level goals and objectives the new program should incorporate, as well as any activities that the TMAC believes would discredit the program.

### **Flood Risk to Insurance Rating**

Mr. Dorman introduced Mr. Andy Neal, FEMA, to provide a briefing that explains actuarial rates and how the current National Flood Insurance Program (NFIP) sets insurance rates. Mr. Neal provided an overview of the four principles of ratemaking, specifically that: (1) a rate is an estimate of the expected value of future costs; (2) a rate provides for all costs associated with the transfer of risk; (3) a rate provides for the costs associated with an individual risk transfer; and (4) a rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially-sound estimate of the expected value of all future costs associated with an individual risk transfer. He said that catastrophe risk insurance premiums are comprised of a contingency load, an expense load, and an annual expected loss.

Mr. Neal explained the differences in how rates are calculated prior to and after BW-12. Previously, he said that rate models were very precise, new construction was required to build to base flood elevation (BFE), and legacy structures could be grandfathered in at rates that did not accurately reflect their risk. Under BW-12, the rates were set to discourage occupation of risk areas, so subsidies were removed to reflect the current risk, and existing rate setting methods were applied to negative elevation differences. He continued that setting rates requires insurers to balance complexity against accuracy and precision. The challenges in setting rates include risk classification (e.g., shallow versus deep floodplains, coastal versus riverine) and risk pricing (e.g. pricing for classes versus structures). Additionally, historical data may vary widely and so be relatively useless when calculating rates, and BFE itself does not give any indication of flooding frequency. When one multiplies frequency with severity, Mr. Neal said that it results in expected paid losses. Mr. Neal also noted how a sample rate premium is broken down, including not only damage to the structure, but also agent commission, state taxes, and reserve fund fees, among others. Mr. Neal concluded by describing several challenges to calculating ratings, including shallow versus deep floodplains, noting that the frequency of flooding can be below the mapped BFE.

Mr. Kunreuther asked about how BW-12 treats risk mitigation to encourage loss reduction. Mr. Neal replied that prior to BW-12, the Government offered subsidies for new construction only and that there was no incentive for homeowners to mitigate or address their risk. Under BW-12, however, there are measures in place to ensure that people understand their risk and are more willing to take mitigation steps. Ms. Grassi asked what types of products and data would be helpful to calculate rates. Mr. Neal prefer to have. Mr. Neal replied he needs to have an estimate of the full expected depth. The National Academy of Sciences is currently supporting a project to examine risks and products.

When asked if he sees repetitive losses on the same structures in low risk areas, Mr. Neal replied that he typically does not.

### **Floodplain Management and the Flood Insurance Advocate**

Mr. Dorman introduced Mr. Dave Stearrett, FEMA, to provide an overview of the Federal Flood Risk Management Standard (FFRMS) and the timeline and steps to finalize the guidelines for agency implementation. Mr. Stearrett described the past and future flood risks in the United States, noting that between 1980 and 2013, there were over \$260 billion of flood-related damages and that flooding accounted for approximately 85% of disaster declarations. In the future, he speculated that flood risks will increase given climate change and other threats, which will have significant impacts on our nation's critical infrastructure.

To update flood risk standards, Mr. Stearrett stated that the President issued his *Climate Action Plan* in June 2013, which directed Federal departments and agencies to update their flood risk reduction standards. The purpose of the FFRMS is to help ensure that federally-funded buildings and infrastructure are constructed to withstand the impacts of flooding, improve community resilience, and protect Federal investments. He also noted that the President signed Executive Order 13690 in January 2015, which amends EO 11988 and establishes the FFRMS and requires agencies to develop implementation plans describing how it will comply with the new requirements. The standard will have an impact on multiple Federal agency grant programs that fund construction of new infrastructure in a floodplain. Mr. Stearrett noted, however, that the standard does not prevent new construction in floodplains, apply to private investments, or affect flood insurance premiums or participation requirements of the NFIP. The standard does have several new requirements, including that agencies must use natural systems, ecosystem processes, and nature-based approaches when developing alternatives for consideration.

Mr. Stearrett said that FEMA will collect feedback on the proposed guidelines from now until April 6, 2015, and will present the feedback to the Mitigation Framework Leadership Group (MitFLG), a group composed of agencies with programs and authorities designed to mitigate the impacts of disasters on communities. He explained how comments can be submitted (through the Federal eRulemaking Portal or by mail), and remarked that the MitigFLG will provide recommendations on the FFRMS to the President's Water Resources Council for finalization. Agencies are required to submit their implementation plans to the White House within 30 days of the end of the public comment period.

Mr. Stearrett also provided an update on the establishment of the Flood Insurance Advocate, which is designed to help citizens navigate and understand the floodplain management and grants process. The office is involved in three primary activities—analysis, advocacy, and policy—and will perform a limited amount of case management. He noted, however, that the role of the Advocate is not to overturn FEMA's decisions, but to ensure that all appropriate guidelines were followed and provide citizens an outlet for additional assistance. Additionally, in establishing the office, Congress sent FEMA a clear message that the NFIP needs a greater consumer focus.

Mr. Stearrett said that there are five FEMA staff detailed to the Advocate's interim office. The Advocate's founding legislation calls for the organization to undertake several activities, but due to funding constraints, efforts are focused around the following activities: (1) educating property owners; (2) assisting property owners to appeal Flood Insurance Rate Maps (FIRMs); and (3) coordinating with local officials on flood rates. Currently, the office is working to identify issues affecting multiple consumers and ensure that senior leadership is aware of the issues and can address them through updated policy. Over the next several months, Mr. Stearrett noted that the interim office of the Advocate is working to establish a 1-800 number, create a case tracking system, and develop an operational staffing plan.

Members asked about the Advocate's role in the mapping appeal process. Mr. Stearrett replied that Congress anticipates that the Advocate would have some type of capacity to be involved in the delivery of risk map products and letters of map revision (LOMR). Additionally, he said that one regional office informed the Advocate about the need to develop better outreach materials, as FEMA does not currently have any standardized materials across all regions. Finally, Mr. Stearrett informed members that the interim office of the Advocate has a website, found at <https://www.fema.gov/safer-stronger-protected-homes-communities/interim-office-flood-insurance-advocate>.

### **Public Comment Period**

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

1. *Source: Jean Public*

*Date: February 23, 2015*

*Subject: Fw: public comment on federal register your maps are at least 50 years out of date - flow is ten times higher than your maps show*

*Comment: FEMA maps are very much out dated. They seem to have not been updated in the past 50 years. Much development has increased river flow and climate change has added 6 ft to the ocean flooding. Your maps are critically important to update. More than these meeting where you only work 5 hours. Why can't you work a full day in the public's interest? This comment is for the public record. Please receipt.*

2. *Source: Jean Public*

*Date: February 26, 2015*

*Subject: Fw: Public Comment on Federal Register: your maps are at least 50 years out of date - flow is ten times higher than your maps show*

*Comment: ALL MAPS USED BY FEMA NEED TO BE UPDATED. THEY ARE ALL SO COMPLETELY OUTDATED ON FLOW NUMBERS. THIS COMMENT IS FOR THE PUBLIC RECORD. YOU CAN'T DO YOUR J OB IF YOU ARE USING 50 YEAR OLD INFORMAITON ON BUILDINGS ON IMPERMEABLE SOIL. THIS COMMENT IS FOR THE RECORD. PLEASE RECEIPT. JEAN PUBLIC JEANPUBLIC1@YAHOO.COM, IN ADDITION. THOSE WHO LIVE BY FLOODING SOURCES SHOULD BE GETTING ONLY ONE TIME HELP. ONCE THEY RECOGNIZE THEY HAVE FLOODING PROBLEMS, WE CANNOT KEEP REPLACING THIER HOMES 2, 3, AND 4 TIMES.*

3. *Source: Mohan Rajasekar, Founder of Syndeste LLC*

*Date: March 6, 2015*

*Subject: None*

*Comment: Will the TMAC consider incorporating an uncertainty based approach to flood modeling, mapping, map amendment, risk quantification and insurance premium determinations?*

*Flood risk for a property is currently being assessed by comparing a Base Flood Elevation often calculated with a hydrology error of about 30% to 45% (as also referenced by Mr. Chang of NCDOT), with a measurement of a property's Lowest Floor Elevation (LFE) or Lowest Adjacent Grade (LAG), captured with a precision to the tenth of a foot.*

*For the sake of illustration, a building with a LAG of 9.6 ft, compared to a 9 ft. BFE could apply for a LOMA and be granted one. However, if the estimated uncertainty in the BFE is +/- 3ft, and it is accounted for in LOMA determinations, then this LOMA may not have been granted.*

Mr. Crowell called for additional public comments. Mr. David Conrad offered the following comment:

*I am speaking as a member of the public. I wanted to make a comment about the use of Federal flood risk management standards. That was not an issue when the council was first put together but, I just wanted to emphasize that, this being a fairly new initiative on the part of the Administration, it should be founded on FEMA flood maps. It would be important for the council to consider providing some counsel to FEMA on how to ease or implement standards in relation to maps for a lot of those situations that you all just described.*

### **Cooperating Technical Partner**

*Mike Talbot, Harris County, Texas, Flood Control District (HCFCD)*

Mr. Talbot provided an overview of his district's geography, demographics, and flood characteristics, stating that Harris County has 4.3 million population, 2,500 miles of channels, 144 FIRM panels, and 22 separate watersheds. There are five types of floodplains within the county, specifically valley floodplains, river floodplains, shallow floodplains, coastal floodplains, and ponding floodplains. He also stated that

there are 175,000 structures in floodplains, included 9,500 repetitive loss structures and 1,567 validated severe repetitive loss structures.

Mr. Talbot explained that Harris County has a partnership with the USACE and supports several ongoing projects, some with as long as a 20 year implementation. Harris County also became a CTP in 2000 and is currently jointly supporting the Tropical Storm Allison Recovery Project, valued at \$32 million. Mr. Talbot said that HCFCD's goals of its partnership is to protect investments, foster a partnership between HCFCD, FEMA, and floodplain administrators, and facilitate and expedite model and data distribution, among others. Some challenges they face include balancing the differing objectives of all parties involved, recognizing the financial and technical limitations of some communities, and determining how all partners maintain the models and supporting data.

Mr. Talbot said that HCFCD supports a Model & Map Management System, an interactive tool that helps manage the changes FEMA makes to Harris County floodplain models. He said that the system helps distribute FEMA effective models to the public, track how development projects may impact the models, and assist HCFCD in the review process (as LOMR delegates). Additionally, HCFCD has a flood education mapping tool, which has the ability to apply many data layers to understanding flooding risks. The benefits to Harris County's program include that the most current and accurate models and supporting data come directly from HCFCD and that HCFCD, FEMA and local communities are all in the same datum. He also discussed several specific projects in Harris County, such as the Sims Bayou Watershed and a recent coastal project.

Mr. Dorman asked if there were any delegated responsibilities that HCFCD does not currently have but would like to have. Mr. Talbot replied that Harris County officials are satisfied as a CTP and as a grant recipient, though he noted that there may be an opportunity to expedite the timeline of map production; specifically, if Harris County could take a more active role in refining the products before they are released, it would expedite implementation.

*Leslie Durham, State of Alabama*

Ms. Durham said that Alabama's Floodplain Management Office serves as the state's CTP, the state NFIP coordinator, and LOMR delegate. She discussed her state's geography and flood characteristics, stating that it has 37,000 miles of mapped streams, 295 miles of coastline, and encompasses 4,400 FIRM panels. Additionally, it has digitally updated all 67 counties during map modernization. She said that Alabama has been a CTP since 2002 and has since performed 110 LOMRs and 24 CLOMRs.

Ms. Durham highlighted several of the State's past and current goals, including to reduce age of current flood maps, capture accurate elevation data, update flood studies in mapped communities, produce maps for unmapped communities, create a Statewide clearinghouse for all flood hazard and risk data, and expand utilization of AL FRIS and all digital vision. She noted several of the state's accomplishments, specifically that all 67 counties have digital maps, it supports multiple LIDAR partnerships, has strong community engagement, and offers a significant amount of training for its partners. She noted that the level of customized training for planners, GIS staff, engineers, community officials, and emergency managers has been especially instrumental in the state's success. Furthermore, several of the program's additional strengths as a CTP include a strong relationship with Insurance Commissioner and ties to agents, as well as the ability to tailor work to meet specific community needs.

Ms. Durham concluded by covering lessons learned on activities that negatively impacted the Alabama Floodplain Management Office's ability to perform its work. She noted that frequent modifications to the process, inconsistent funding, requiring structured meeting formats for community engagement, and a significant time lapse between discovery and project commencement all delay or impede project progress.

*David Mallory, Urban Drainage and Flood Control District (UDFCD)*

Mr. Mallory discussed his organization's geography and flood characteristics, stating that it encompasses seven counties for 1,608 square miles, has 1,600 miles of mapped streams, and receives 14.5 inches of

rain annually. He said that there are four district programs: master planning; floodplain management flood warning program; and design, construction, and maintenance (DCM) program. He emphasized that UDFCD does not have land use authority, which lies almost exclusively with the Government; instead, his organization is trying to influence development near stream systems.

He provided background on his organization, stating that it was created after a major flood in 1965 that caused 21 deaths and \$3 billion in damages. In 1971, UDFCD mapped the area's watersheds through the Renewing the Environment through Urban Systems Engineering study and discovered that 25% of stream miles had already been adversely impacted. This led to a two-pronged approach: preservation and mitigation.

Mr. Mallory remarked that UDFCD became a CTP in 1999 and also signed a Task Agreement #1, Hydrologic & Hydraulic Data Preparation and Review, at the same time. He discussed the stipulations of the Task Agreement #1, including the 130% rule that if future conditions hydrology is within 130% of existing conditions hydrology FEMA will allow the future conditions hydrology to be used to determine BFEs for FIRMs. Additionally, if future conditions hydrology is greater than 130% of existing conditions hydrology the District will determine BFEs based on existing conditions hydrology to be used in FIRMs. UDFCD also signed Task Agreement #3, which provides LOMR delegation in 2001. Mr. Mallory also provided an overview of the lessons learned in mapping projects and LOMR reviews, and the benefits of conducting local reviews, and shared several studies that UDFCD is currently supporting, including flood hazard area delineation studies and outfall system plan studies. Despite the capabilities, he said that UDFCD is still lacking risk assessment capabilities, and that FEMA Region VIII staff provide risk assessment support. Mr. Mallory concluded by stressing that effective partnerships are critical to successfully updating FIRMs.

One member asked what resources UDFCD dedicates to process letters of map change (LOMC). Mr. Mallory replied that UDFCD generally outsources LOMC activities to consultants, which it pays for with grant funding.

### **Committee Comments and Adjournment**

Mr. Dorman thanked participants for the discussion and said that the meeting would resume at 8:00 a.m. on March 11, 2015.

## **Day Two**

### **Administrative Session**

#### **Administrative Items**

Mr. Crowell opened the meeting, provided an overview of the facility, and took roll call of TMAC members. He then introduced Mr. Dorman to facilitate the remainder of the day. Mr. Dorman reviewed the agenda and the goals of the subcommittee sessions, then turned the meeting over to Mr. Bellomo to discuss the President's revised budget.

Mr. Bellomo said that the *President's Climate Action Plan* was released and it included the United States Geological Survey (USGS) 3D Elevation Program (3DEP). He said that if FEMA receives all \$400 million in the request, then FEMA would have to fundamentally change its current approach to the program. He listed four ways to use the funding, including: (1) transformative technologies; (2) investments in innovative technologies; (3) community building; and (4) expanding FEMA's current work on NFIP reforms. Mr. Mark DeMulder, TMAC member, asked if the TMAC could influence the budget process. Mr. Bellomo recommended that the TMAC keep the FEMA Administrator informed of its recommendations as they are being developed so that adjustments to the budget can be made. He said that if the TMAC wishes to provide recommendations related to one of the four ways to use the funding,

then it could set up an improved and informed debate about the fiscal year 2016 budget. Mr. DeMulder said that it will be important for the TMAC to align its recommendations with the four areas.

Mr. Bellomo discussed understanding how to use mapping data. He said that the National Academy of Sciences recently stated that it is important to have good terrain information, which is a gap in FEMA's capabilities. Mr. Bellomo suggested that FEMA should develop technologies and ensure they are operating correctly to obtain good data.

Ms. McConkey said that when organizations purchase information it has a shelf life and can expire before communities have the funds or methodology to use the data. By the time maps are rolled out, they may be appealed because there is new LIDAR data. Mr. Bellomo noted that if States and local governments knew that the Federal Government was purchasing LIDAR data, those localities might not purchase it in the near future. Ms. McConkey noted that with discovery, outreach, quality reviews, and litigation actions, it can take years to produce maps. Mr. Dorman said that using digital maps may shorten the production time. Participants agreed and Mr. Butgereit, TMAC member, said that the maps should not be recreated constantly, but that updates should focus on smaller areas that have rapid growth and be modified after the base level map is developed. He also discussed a USGS program where State and local partners were invited to compete for matching funds to acquire high resolution digital data. He explained that 72 pre-proposals were received, totaling over \$75 million. Of those, 33 applicants were invited to submit full proposals and 29 proposals were awarded, totaling \$9.4 million. In total, USGS funded the acquisition of high resolution data for 94,115 square miles.

Participants questioned if they could make recommendations regarding funding. Mr. Crowell will verify if the TMAC can make funding related recommendations. He will also verify if the TMAC can endorse the President's budget.

### **Breakout Sessions**

Mr. Dorman then explained that the TMAC would break out into subcommittee meetings. While the Future Conditions Subcommittee would continue to meet separate of the other subcommittees, the other two groups would combine to discuss the topics that would go into the TMAC's annual report.

## **Public Session**

### **Call to Order**

Mr. Crowell opened the meeting, provided an overview of the facilities, and took roll call of TMAC members. He then introduced Mr. Dorman to facilitate the remainder of the day.

Mr. Dorman introduced the new TMAC member, Mr. Javier Ruiz. Mr. Ruiz provided a brief background about himself. In addition, Mr. Dorman mentioned that several SMEs have been added to the subcommittees. Mr. Crowell will ask the SMEs to develop a brief biography that will be posted on the SharePoint site. He also reminded participants that when they are speaking about the TMAC outside of an official TMAC meeting, they cannot speak on behalf of the council or FEMA, but rather on their personal experience. Mr. Crowell will also obtain more information from the FEMA attorneys and Ms. Fresenko on the information that members may release to their organizations.

### **SharePoint Site Overview**

Mr. Dorman announced that FEMA recently transitioned the TMAC SharePoint site to FEMA. Ms. Kirsten Folkedal, Booz Allen Hamilton, provided an overview of the site for members, including how to log in, site organization, and how to check out and edit documents. She announced that the slides will be available for reference on the SharePoint site. Several members asked how the documents on the site can be tagged and filed to allow for quick and accurate searching; Ms. Folkedal will work with Mr. Crowell to

ensure such functionality requests are addressed. Mr. Jones asked if alerts can be sent to members when new items are added; Ms. Folkedal said that she will send out guidance on how members can modify their individual account alert settings.

### **Vision Statement - Adoption**

Mr. Dorman asked subcommittee members to review and comment on the mission statement that was updated based on the TMAC's comments on March 10, 2015. Participants revised the mission statement to read: "To provide counsel to FEMA on strategies and actions that will efficiently and effectively advance the identification, assessment, and management of flood hazards risk."

Participants discussed the Council deliverables, including:

- Provide the FEMA Administrator with an annual report with specific recommendations to improve the effectiveness of NFIP risk management processes and products.
- Provide FEMA with a review of the NFIP process and procedures and recommendations that are needed for the Administrator to certify the NFIP mapping program.
- Provide the FEMA Administrator by the October 1, 2015, with a report containing recommendations for future conditions risk assessment and modeling.

The TMAC members discussed the guiding principles that should underpin the future of the program and revised them to read: credible products; efficient implementation; stakeholder acceptance; effective leveraging; and financial stability. In addition, participants revised their long-term goals to:

1. Accurate, comprehensive data, models, displays and risk assessments associated with present and future flood hazards.
2. Time- and cost-efficient generation and process management of flood hazard risk data, models, assessments and displays.
3. Effective utilization of efficient technologies for acquisition, storage, generation, display, and communication of data, models, displays and risk.
4. Integrated flood risk management framework of hazard identification, risk assessment, mitigation, and monitoring.
5. Strong confidence, understanding, awareness and acceptance of flood hazard risk data, models, displays, assessments, and process by the public and program stakeholders.
6. Robust added value coordination, leveraging and partnering with local, state, federal, and private sector organizations.
7. Permanent, substantial funding that supports all program resource requirements.

The TMAC discussed the vision statement and revised it to read: "A Nation more resilient to flood hazards through the effective identification and communication of flood hazards risk."

Following the deliberations, Mr. Dorman called for a vote on the mission statement, long term goals, and vision statement, which the TMAC members unanimously approved.

### **Report Out by Subcommittees**

#### *Future Conditions Subcommittee*

Mr. Edelman reviewed the sections of BW-12 that relate to the future conditions risk assessment and modeling report. He noted that the subcommittee is discussing how to incorporate climate change. Next, Mr. Edelman reviewed the draft report table of contents, noting the subcommittee's focus on the current science and impacts regarding future conditions. Mr. Bellomo reminded participants that the

subcommittee is focused on future conditions and changes in flood risk. Mr. Edelman said that when examining flood risk and how flood and environmental characteristics are changing, one cannot rely on a period of record for historical data. He also noted the importance of addressing uncertainty with existing conditions, as well as identifying other uncertainties. Several SMEs will be briefing the subcommittee on error versus uncertainty during the March 20, 2015 subcommittee meeting.

Mr. Edelman asked Ms. Durham and Ms. McConkey if they are addressing uncertainty in the 2015 Annual Report. Ms. McConkey noted that accuracy and uncertainty is highlighted in the annual report. Mr. Jones noted two issues that Future Conditions Subcommittee should consider: (1) is the mapping value adequate; and (2) how do we address future conditions. Ms. Grassi said that, with respect to design flood elevation, there is uncertainty in the 100 year floodplain model and asked if it is supposed to account for uncertainty in maps or future conditions. Mr. Jones said that this is something that should be addressed in the annual report. Mr. Bellomo said that if the user wants to be confident that they will avoid flooding, then they should not use BFE, but rather standard elevation +2.

Mr. Edelman said that is important to discuss base maps and existing records and models. He asked if the annual report would cover these topics. Ms. McConkey said that while this is in the list of topics, the subcommittee may not have the time to address it this year. She continued that the majority of models she sees in Illinois are based on 100 year rainfall. She noted that you may get a different number with 100 year rainfall than you would with a statistical analysis of 100 year discharge.

Mr. Edelman discussed another item for the annual report may be measuring change and community adoption. Ms. Lathrop said that it is important to have a scorecard for all items that the TMAC addresses as a way for the TMAC to see how FEMA is incorporating recommendations.

Mr. Dorman noted that there appears to be common themes between the Future Conditions Report and the 2015 Annual Report. Mr. Edelman said that the issue of how to get community adoption belongs in the annual report and that the Future Conditions Report should focus on risk and how to calculate it rather than communications.

Mr. Edelman said that the subcommittee has discussed recommending that FEMA leverage the National Academy of Sciences for future study. Participants discussed several other recommendations, including:

- Mr. Bellomo said that FEMA has been successful with future land use for riverine and it may be addressable in the report.
- Ms. McConkey suggested recommending that someone monitor the research and someone advise National Oceanic and Atmospheric Administration and the National Academy of Sciences about useful science that they can perform.
- Mr. Jones said that the TMAC could recommend performing sensitivity studies, which may help inform modeling.
- Mr. Doug Marcy, NOAA and Future Conditions Subcommittee member, suggested that a community may want determine what they would examine in terms of future conditions.

*Flood Hazards and Operations Subcommittees*

Ms. Durham and Ms. McConkey discussed the 2015 Annual Report and mentioned that they have temporarily combined their subcommittees in an effort to develop a single integrated table of contents for the report. They reviewed the charges of both subcommittees and noted that they are trying to develop overarching recommendations.

Mr. Butgereit reminded participants that the recommendations should align to the legislation and that the TMAC should have traceability. Ms. Wendy Lathrop, TMAC member, agreed; however, she said that the TMAC does not have to meet every requirement in the legislation in the first year. Mr. Bellomo recommended that the report acknowledge items that will be included in future reports. Ms. McConkey explained that the subcommittee mapped each section in the outline to the legislation and that the report will mention all aspects of the legislation but explain that the TMAC needs additional time to study several items.

The TMAC reviewed and revised the subcommittee's six overarching recommendations and several additional recommendations that align to each overarching recommendation, including:

1. Go Digital
  - Single, comprehensive database that addresses the needs of end users
  - Future FEMA topographic data acquisition consistent with 3DEP standards
  - FEMA work with partners to develop a strategy for digital flood hazard identification and production of digital flood themes
  - Leverage other digital data sets
  - FEMA enforce requirements that community boundaries are updated
  - Consider opportunities to reduce length of study/project time
2. Deliver Reliable Water Surface Elevations
  - Coastal modeling- technically appropriate model choice
  - Future FEMA topographic data acquisition consistent with 3DEP standards
  - No flood study without high resolution topo/bathymetry
3. Relate Hazards to Property to Understand Risk
  - CRS points for locals for detailed GIS data (e.g., building footprint data)
  - Move toward individual structure level risk assessments
4. Enhance State, tribal, and local community engagement in flood study production
  - Expanding CTPs / build state and local capability
  - FEMA work with partners to develop a strategy for digital flood hazard identification and production of digital flood themes
  - CRS points for locals for detailed GIS data (e.g., building footprint data)
  - Improved local engagement early on for quality products
  - Recommend establishment of a flood risk management group
5. Orient standardized products and services to end users' needs
  - Identify and engage users to determine needs and establish requirements
6. Anticipate and adapt to changing conditions and technologies

Participants noted that when a project is well scoped and funded, it is implemented quickly. Ms. McConkey questioned when a project officially starts and noted that it is important to look at the impact of a community taking a long time to obtain data. She suggested strengthening the adoption phase and looking at different timelines to ensure there are as many efficiencies as possible.

Mr. Edelman asked how the recommendations could be linked to transformation. He noted that most of them are incremental and that the annual report should include something regarding transformation. He said that if a community gets a policy, the person who makes the land use decision does not suffer the consequences of the decision and that it is risk transfer to the Federal Government (e.g., if a house floods, the community does not pay the homeowner, the Government does). Mr. Edelman questioned if the TMAC should recommend aligning those who make the land use decisions as those who pay the policy premiums.

Mr. Bellomo said that when actuaries discuss rates they are using a cost per hundred charges that is kept equal across classes. Participants discussed having different rates for different cities, and Mr. Bellomo said that there will not be equity across the Nation. He said that the TMAC does not currently have the ability to write policies but said that the National Academy of Sciences is studying several related insurance questions.

Mr. Edelman said that it is difficult for local communities to do anything without funding and asked how to enable the communities to help themselves. Mr. Steve Ferryman, TMAC member, said that he likes community based flood insurance. He said that everyone should pay for flood insurance whether they live in a zone or not. Mr. Bellomo said that this concept has become a discussion of appropriations. Ms. Cheryl Small, TMAC member, said that there are many factors in homeowners insurance and there could be different rates or surcharges for communities. She suggested looking at the individual risk basis. Participants also said that in the short term there could be a mandatory insurance purchase recommendation. Mr. Bellomo said it can get complicated when everyone is required to have insurance. Participants noted that the United Kingdom was thinking of eliminating its flood insurance program and instead spending funds on mitigation.

Mr. Edelman recommended having a gradient for insurance purposes. He also said that fraud can be a huge problem with flood insurance however if the Nation goes to a community based policy then the mayor would be the one held accountable. Ms. Small said that a community may experience significant growth and be underinsured. Mr. Edelman noted that if the Nation uses a community based approach, people are automatically covered and the risk profile decreases. Mr. Bellomo said that the TMAC could establish a baseline that would allow the lender community to see a different product.

Mr. Jones said that some States are contemplating private flood insurance. He questioned if they would use NFIP maps. Ms. Small said that some residential insurance companies are looking at applications and talking about the proximity to flood map. If the person is within a certain proximity they will be required to have a flood insurance policy in order to write a homeowners insurance policy. Commercial insurers are also using this type of information as one tool in the underwriting criteria. Mr. Edelman noted that if different companies treat risk differently, the rates may vary greatly and that, typically, a person would purchase the lowest priced insurance. He said that this will not change unless the entire marketplace treats risk in the same manner.

Ms. Grassi said that there is a National Research Council workshop on March 30, 2015, focused on community-based flood insurance. She said that the National Academy of Sciences is developing a report that is scheduled to be released on June 30, 2015. Ms. Grassi will send TMAC members information regarding the National Research Council workshop.

Mr. Dorman also said that the TMAC could recommend that FEMA perform a survey of all users and stakeholders and complete a survey of their risk communication needs.

Mr. Edelman noted that the TMAC must identify the users and clearly define the products of how to communicate risk. He questioned what happens once the products are released and if there is a grey area. If the TMAC examines the grey area it will help them define the products.

## **Public Comment Period**

Mr. Crowell announced that per FACA, members of the public are provided an opportunity to comment on the issues to be considered by the TMAC. He requested that speakers limit their comments to no more than three minutes and said that the public comment period will not exceed 30 minutes. While the public was offered the opportunity to speak, no comments were received.

### **TMAC Member Discussion, Next Steps**

Participants discussed the date of the next meeting and determined that it would likely be May 12-13, 2015. Mr. Dorman will send out a poll for potential meeting dates in July 2015. He said that the focus at the next full TMAC meeting would be to finalize the table of contents for both the 2015 Annual Report and the Future Conditions Report. Ms. Lathrop asked about resources to assist with report production and revisions, to which Mr. Crowell replied that Booz Allen Hamilton support will be available to perform a technical edit of the completed reports.

Mr. Jones recommended capturing any unfinished action items. Mr. Edelman suggested that the Council utilize the action tab in SharePoint to track the open items. Ms. Small also recommended adding action items to the meeting agenda. Mr. Dorman agreed with the suggestions.

### **Adjournment**

Mr. Dorman and Mr. Crowell thanked members and Mr. Crowell adjourned the TMAC meeting.

### **Action Items**

- Mr. Edelman will send the recordings of SME presentations to all TMAC members and subcommittee members. In the event that a member has not received the briefing recordings by March 27, 2015, they should please contact Mr. Edelman.
- Mr. Edelman said that he would fill out a sample subcommittee issue form on a representative issue; Mr. Dorman agreed to assist.
- Mr. Crowell will verify if the TMAC can make funding related recommendations. He will also verify if the TMAC can endorse the President's budget.
- Mr. Crowell will ask the new subcommittee members to develop a brief biography that will be posted on the SharePoint site.
- Mr. Crowell will obtain more information from the FEMA attorneys and Ms. Fresenko on the information that members may release to their organizations.
- Ms. Folkedal and Mr. Crowell will modify the TMAC Sharepoint site to ensure quick and accurate searching functionalities and send members guidance on how they can modify their individual account alert settings.
- Ms. Grassi will send TMAC members information regarding the National Research Council workshop.
- Mr. Dorman will send out a poll for potential meeting dates in July 2015.

### **Appendices**

- TMAC Meeting Agenda

- TMAC Meeting Presentation Deck

**Certification**

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

  
John Dorman  
TMAC Chair      4/13/15