

TMAC

Technical Mapping Advisory Council Meeting Virtual Administrative Meeting December 15-16, 2021

TMAC Members

Doug Bellomo, *AECOM, Chair*
Ed Clark, *NOAA, NOAA Representative (Day 2)*
Maria Cox Lamm, *South Carolina Department of Natural Resources, State NFIP Representative*
Vince DiCamillo, *Stantec Consulting, Mapping Member (Day 2)*
Scott Giberson, *CoreLogic Flood Services, Flood Hazards Determination Member*
David Guignet, *Maryland Department of the Environment, State CTP Representative*
David Love, *Mecklenburg County Storm Water Services, Local CTP Representative (Day 1)*
Robert Mason, *USGS, DOI Designee*

James Nadeau, *Nadeau Land Surveys, Surveying Member (Day 2)*
Jon Paoli, *Iowa Homeland Security & Emergency Management, GIS Representative (Day 1)*
Luis Rodriguez, *FEMA, FEMA Designee*
Jonathan Smith, *Natural Resources Conservation Service, USDA Designee*
Jeff Sparrow, *Moffatt & Nichol, Chair*
Joshua Stuckey, *Texas Public Infrastructure, Regional Flood and Stormwater Management Member (Day 1)*
Michael Tischler, *USGS, USGS Representative*
Liang Xu, *Santa Clara Valley Water District, State CTP Representative, (Day 1)*

Subject Matter Experts

Stephen Aichele, *USGS, Future Conditions Subcommittee (Day 1)*
Will Lehman, *USACE, Enterprise Risk Management Subcommittee*
Doug Marcy, *Future Conditions*
Salomon Miranda, *Future Conditions*

Leonard Shabman, *Resources for the Future, Enterprise Risk Management Subcommittee (Day 1)*
Charles Yoe, *Notre Dame of Maryland University, Enterprise Risk Management (Day 1)*

Government Attendees

John Ebersole, *FEMA, Legal Advisor*
Brian Koper, *FEMA DFO*

Support Staff

Henry Cauley, *Team Deloitte*
Milani Chatterjilen, *AECOM*
Jen Marcy, *Atkins Global*
Phetmano Phannavong, *Atkins Global*

Ann Terranova, *AECOM*
Molly Tuttle, *AECOM*
Sarah Vining, *Team Deloitte*

Purpose

The purpose of the virtual Technical Mapping Advisory Council Administrative Meeting was to: (1) receive an update on the stakeholder engagement data analysis, (2) receive updates from each subcommittee regarding their progress towards completing their chapters for the 2021 TMAC Annual Report, and (3) develop a timeline for the subcommittees to complete drafts of their chapters for the report.

Welcome, Roll Call, and Administrative Items

Mr. Brian Koper, TMAC DFO, welcomed everyone to the first day of the December 15-16 virtual TMAC Administrative Meeting. Mr. Koper noted that the meeting had originally been planned to be a Public Meeting; however, it was changed to an administrative meeting due to the current status of the draft 2021 TMAC Annual Report. Mr. Koper also commented that the meeting was originally to be held via Zoom but was switched to Microsoft Teams due to technological issues.

Mr. Doug Bellomo thanked Mr. Koper for the welcome and thanked the TMAC members for attending the meeting today. Mr. Bellomo noted that Mr. Carey Johnson was responding to the recent tornado event in Kentucky and wouldn't be at the meeting. He added that flooding isn't the only natural disaster that affects our communities. Mr. Bellomo also shared his and the TMAC's condolences with those affected by these disasters. He then stated that he had reviewed each chapter of the report in detail and had shared those comments with each of the subcommittees.

Chapter 3 – Enterprise Risk Management

Mr. Dave Guignet began the subcommittee briefing by noting that the subcommittee would need Mr. Will Lehman to be a part of the conversation, but that Mr. Lehman was not currently present at the meeting. Mr. Lehman replied that he was able to join the meeting and Mr. Bellomo then shared his screen to show the comments he had provided to the subcommittee. Mr. Bellomo expressed his understanding of the subcommittee's approach, which was that FEMA should implement ERM via baby steps, rather than all at once. Mr. Bellomo then shared his comments on the separation of risks versus opportunities, adding that it sounds like not all practitioners of ERM take this approach. Mr. Bellomo mentioned that the assumptions of risk tolerance made him nervous, adding that he does not want readers to think that the TMAC is stating that FEMA's risk tolerance should be a specific level. Mr. Bellomo finished the overview of his comments by stating that he had provided a write-up of the risk treatments to help provide a better understanding for the reader.

Mr. Lehman stated that the subcommittee felt it was important to identify all the key concepts in the opening section of the chapter as many of the concepts being discussed will be new to readers. Mr. Bellomo replied that he became confused with the risk informed decision making, but that if the subcommittee felt it is important to explain these terms he will defer to them. Mr.

Bellomo stressed the need to be clear in these different definitions as some have overlapping meanings, especially risk informed decision making.

Mr. Charlie Yoe stated that OMB has instructed all Federal agencies to implement a robust ERM strategy, as opposed to a simplified strategy. However, a more simplified approach allows for a better chance of success for a large organization implementing ERM for the first time. Mr. Len Shabman suggested explaining the simplified version of ERM, but then also providing an example of a more complex ERM approach later in the chapter. Mr. Bellomo commented that the risk matrix could be confusing to interpret. Mr. Josh Stuckey questioned how enterprise was being defined, and whether this should mean FIMA or if it could mean the entirety of the National Flood Insurance Program. Mr. Shabman replied that he was unsure. Mr. Bellomo stated that FIMA is the correct enterprise level. Mr. Stuckey recommended explaining why the TMAC is recommending a simplified version to FIMA, as it is part of a larger organization in FEMA, and Mr. Lehman agreed.

Mr. Bellomo then shifted the conversation to discuss the three-step approach taken by the subcommittee. Mr. Lehman replied that this approach fulfills the ask of the Tasking Memo. Mr. Yoe commented that he appreciated Mr. Bellomo's recommendations in this section but that more information would be needed before understanding if the TMAC could implement any of these suggestions, as much of this work has been speculative. Mr. Shabman stressed that the subcommittee is not trying to tell FIMA to use specific risk treatments but instead just illustrate a process; however, as the section becomes more refined it seems as though the TMAC is recommending an endpoint instead.

The TMAC then discussed their concerns that the editing process has resulted in this chapter stating something that was not intended by the subcommittee. Mr. Bellomo clarified that he did not believe that the editing team deliberately changed the direction of the chapter but agreed that as it is currently written it does not describe what the subcommittee was intending. Mr. Shabman added that the editors were not equipped with the right information to make the necessary edits, and Mr. Guignet recommended using visuals or other graphics to help provide an explanation for the different graphics, rather than rewriting the section.

Mr. Lehman noted that the stated issues are non-trivial and that the TMAC is already operating on a tight timeline, so the subcommittee should salvage what it can from this section. Mr. Bellomo agreed that the level of effort to address these issues needs to be realistic given the limited timeline for publishing the report and suggested using more explicit language, especially around risks and opportunities. Mr. Bellomo also suggested using section 3.1.2.2 to introduce the matrix, describe how important it is, and how it is used in ERM, while not getting into too many details about how the risks and opportunities were identified. Mr. Lehman replied that the risk profile is very important and should not be lost. Mr. Lehman added that the TMAC does not want to go beyond what is requested in the tasking memo and Mr. Bellomo offered to help address the issues identified with this chapter given the likely heavy lift.

Mr. Yoe then provided an overview of what next steps in this section would look like from an ERM perspective. Mr. Yoe suggested adding a “what’s next” example that dummies up a risk treatment plan to show what it might look like. Mr. Bellomo noted there were only 10 minutes left in the allotted time for this subcommittee update and that the other sections of the chapter have not yet been discussed, although those other sections are also more straight forward. Mr. Bellomo stated that he would further flush out the language in these sections and then return them to the subcommittee, keeping in mind the level of effort needed to complete the chapter. Mr. Bellomo encouraged the subcommittee to be critical of his comments. Mr. Lehman agreed to develop an updated outline for Mr. Bellomo to review, and then the subcommittee can react to Mr. Bellomo’s comments and move forward from there. Mr. Lehman added that some of the editing team graphics were better than others. Mr. Shabman noted that version control has been one of the challenges that has led to the current editing issues. Mr. Bellomo replied that they will move forward using his version and that once Mr. Lehman incorporates his outline it can be shared with the rest of the subcommittee. Mr. Bellomo was clear that the current editor version would no longer be used.

Mr. Bellomo then discussed the timeline for these updates to occur and Mr. Lehman stated he would get the outline to Mr. Bellomo later this week. Mr. Bellomo replied that he would then work on the next version of the chapter the following week and hopes to have a version to share with the subcommittee by the first week of January. The subcommittee would then be able to review the chapter for the rest of January to understand whether it will be ready for public review in February. Mr. Bellomo stated that the idea of a TMAC meeting in January is no longer possible, so the TMAC should target mid to late February and do everything possible to stick to this timeline. Mr. Lehman replied that the subcommittee should know fairly quickly, once Mr. Bellomo’s comments are received, how long it should take to complete the chapter. Mr. Bellomo added that FEMA needs 30 days to prepare and post the Federal Register Notice for the next TMAC meeting.

Mr. Bellomo then offered a brief summary of the next steps and timeline for this chapter and thanked everyone for all of their hard work. Mr. Bellomo stated the TMAC would take a brief break before returning to discuss the Future Conditions chapter.

Chapter 4 – Future Conditions

Mr. Bellomo welcomed everyone back and noted that he would follow a similar process as the last chapter by providing his comments first, then discussing each subsection individually, before wrapping up with next steps. Mr. Bellomo began by noting that section 4.2.1 needs some help, and that it needs to make clear that flood hazard and flood risk are different. Mr. Bellomo then stated that the summary and analysis matrix in 4.4.1 is the heart of the chapter and that it would be good to also show the recommendations and any proposed updates to the recommendations here as well. Mr. Jonathan Smith expressed concern that this would be too late in the chapter to mention the recommendations.

Ms. Anne Terranova noted that the subcommittee has already reviewed and incorporated some of Mr. Bellomo's recommended changes into the chapter, and Mr. David Love acknowledged the need to identify the recommendations, what has changed with them, and why. However, the subcommittee felt each recommendation needed to be reviewed and discussed individually and then could be grouped together based on the proposed changes, and why. Mr. Robert Mason noted the subcommittee had not considered using icons as part of the recommendation discussion but liked the idea. Mr. Mason added that everyone agrees on the need to group the recommendations at a high level, but that, given all of the work, the recommendations should each be discussed individually as well. Mr. Bellomo clarified that he was not suggesting any changes to the content, only to the overall organization.

Mr. Rodriguez suggested a simplified middle ground to group the recommendations into two groups, changed and unchanged. Mr. Bellomo concurred with this approach, noting the fatigue he felt when reading each of the recommendations individually. Mr. Mason agreed that it was asking a lot of the reader to work through each recommendation and that the subcommittee agreed last week that they need to settle on a single approach. Ms. Terranova noted that in the most recent version of the report, efforts were made to standardize the outline of each of the recommendations to include an overview, identification of any changes, and discussion of those changes. Mr. Bellomo recommended that the subcommittee use icons as part of their explanations of the recommendations.

Mr. Bellomo then provided a summary of his notes on the rest of the chapter, noting that he would share these with the subcommittee as they are quite extensive and can likely help with determining the different groupings of the recommendations. Mr. Bellomo asked if the subcommittee had thought about ways to discuss social inequality and flood risk. Mr. Mason stated the subcommittee is aware of the need to address these topics but that nothing has been written yet.

Mr. Bellomo noted that time was up for the day and the conversation would be continued tomorrow.

Closing Remarks

Mr. Bellomo summarized the discussion and next steps for the day, reiterating the outline for the ERM subcommittee to complete their chapter. Mr. Mason added that late January may be difficult for some members of the TMAC to develop additional report content. Mr. Smith noted that the Future Conditions subcommittee would also work on the same timeline as the ERM subcommittee. The TMAC then concluded the meeting for the day.

Day 2

Welcome, Roll Call, and Administrative Items

Mr. Brian Koper, TMAC DFO, welcomed everyone back for the second day of the TMAC Administrative Meeting. Mr. Bellomo provided a summary of the first day of the meeting, noting the great discussion on chapters 3 and 4, and that he had sent several follow up emails after the meeting. Mr. Bellomo stated that there was a path forward for both chapters and that FEMA would spend some time today talking with the TMAC about their approach to unmapped areas. Mr. Bellomo added that the conversation today would focus on the remaining sections of the report.

Chapter 1 – Acknowledgments and Executive Summary

Mr. Bellomo shared his screen and provided an overview of the acknowledgments section, which thanks everyone who has contributed to the report. Mr. Bellomo continued into the Executive Summary, which reiterates that flooding remains a major risk and discusses the tasking for 2021. This section will also include the key conclusions and formal recommendations that are developed by the TMAC. Following this section was the Table of Contents. Mr. Bellomo paused and asked for any questions so far. No questions were presented.

Mr. Bellomo moved into the first chapter of the report, which includes information on the history and purpose of the TMAC. Ms. Molly Tuttle noted that in the 2020 TMAC Annual Report, Chapter 1 included a section on key concepts and assumptions, which allowed the TMAC to level set with the reader. Ms. Tuttle suggested a similar section be included in the 2021 report before the introduction and provided an overview of what would be included. Mr. Bellomo asked if a description of the NFIP should be included here and the TMAC did not have an opinion either way. Ms. Tuttle asked that members of the TMAC email her if they have opinions on this section. Mr. Bellomo recommended that the section be included in a similar format to the previous report.

Mr. Bellomo asked whether there were any additional ideas or concepts that needed to be included in this section that are currently missing. Mr. Mason recommended defining the terms “future conditions” and “uncertainty”. Mr. Bellomo agreed that it doesn’t hurt to have a more exhaustive list at this point in the report development process. Mr. Michael Tischler stressed the need to review prior reports to make sure all definitions match. Mr. Tischler added that another section of the report has several paragraphs on uncertainty that were very well done. Mr. Scott Giberson commented that NFIP may not need to be included in this section, and Ms. Tuttle confirmed that NFIP was already discussed elsewhere in Chapter 1.

Mr. Bellomo asked the ERM subcommittee if language needs to be included that makes it clear that the ERM chapter is not a formal recommendation. Mr. Lehman replied it would be good to mention this in the Executive Summary. Mr. Bellomo requested that if there are further thoughts on this section, to send them to him via email. Ms. Terranova noted that a number of these concepts are included in the Future Conditions chapter and should be checked to make sure they are aligned. Mr. Mason agreed. No other comments were made on Chapter 1.

Chapter 2 - Stakeholder Engagement

Mr. Bellomo expressed a desire to put emphasis on trend analysis of the data, as this was the second year of significant stakeholder outreach. Mr. Bellomo also suggested putting language in this section of the report that would help to guide and encourage continued stakeholder engagement work in the years to come. Mr. Bellomo asked if the stakeholder engagement findings should all be in this chapter, and if icons should be used in other parts of the report to point readers back to this section. Mr. Giberson noted that he agreed with Ms. Tuttle that each chapter would reference the stakeholder engagement chapter, but that most of the writing would occur in Chapters 3 and 4. Mr. Lehman noted that the ERM Subcommittee did conduct a separate stakeholder engagement survey but was unsure how this might impact the rest of the stakeholder engagement chapter. Mr. Phetmano Phannavong replied that the current ERM chapter tracks closely with the ask of the Tasking Memo, so as the chapter evolves it may become more obvious where the survey should be included.

Mr. Bellomo then asked if the ERM work should be introduced before the future conditions work, regardless of the order it was presented in the Tasking Memo. Mr. Guignet noted that the ERM chapter leaves open the possibility for more work in the future and suggested that it be referenced after the future conditions chapter. Mr. Bellomo agreed on switching the order of the chapters, making future conditions chapter 3 and ERM chapter 4. Mr. Bellomo requested that the editing team let the TMAC know if this presents significant problems.

Mr. Bellomo asked if the stakeholder engagement chapter should set itself up for another survey next year. Mr. James Nadeau agreed that this was a good idea, and that the survey needs to extend to additional stakeholder groups. Mr. Bellomo had to step away and Ms. Tuttle took over, asking if there were any other comments on Chapter 2. No other comments on Chapter 2 were put forward.

Chapter 5 – Recommendations

Mr. Bellomo began by questioning whether a Chapter 5 was needed, or if the Executive Summary provided enough information and recommendations that it was unnecessary. Mr. Bellomo added that traditionally, this chapter captures all the recommendations and findings and goes deeper than the Executive Summary. Mr. Rodriguez stated it made sense to include this chapter in the report, and Mr. Mason agreed. Mr. Bellomo added that the future conditions chapter has one “big r” recommendation and lots of “little r” recommendations, and that this chapter might serve to provide a summary of this. Mr. Mason noted the need to include an overview of “big r” versus “little r” at the beginning of the report.

Mr. Rodriguez questioned whether there was a risk of being repetitive with the language of the report in Chapter 5. Mr. Bellomo replied that the purpose of the chapter is to be somewhat redundant, and that the editors would need to ensure consistency across all the content. Mr. Vince DiCamillo also supported including Chapter 5 and suggested referencing back to the other

chapters in order to reduce the length of the chapter. Mr. Bellomo noted no opposition to keeping Chapter 5 and so, ultimately, the decision was made to include the chapter in the report.

Mr. Bellomo stated there was no need to review the glossary section and the TMAC went into a break.

Summarize Next Steps

Mr. Bellomo welcomed everyone back from break and provided an overview of where things currently stand with the 2021 report and the next steps for the TMAC. Mr. Bellomo provided an overview of the discussion earlier in the day, including adding the key concepts and assumptions at the beginning of the report. Mr. Bellomo added it will be interesting to see what the write up of “big r” versus “little r” in this section ends up looking like. Mr. Bellomo continued on the importance of the TMAC communicating to the readers the existence and purpose of this “big r” versus “little r” distinction. Mr. Bellomo added that there was consensus to put as much information as possible in the Stakeholder Engagement chapter, and that the other chapters would use icons to link back to this chapter when appropriate. Section 2.4 of this chapter will also be used to “prime the pump” for next year’s stakeholder engagement work, and members of the TMAC should share any thoughts on this section with Ms. Tuttle as soon as possible.

Mr. Bellomo then provided the same overview as the day prior regarding the next steps and changes for both the ERM and Future Conditions chapters. Mr. Bellomo added that he had already provided follow up notes to both subcommittees after yesterday’s conversations. Mr. Bellomo stated that some readers will be interested in all the recommendations in the Future Conditions chapter, and some will only be interested in those that were changed, and so the concept of grouping by changed versus not changed was a good idea. Mr. Bellomo concluded the summary by reiterating the purpose of Chapter 5 and the decision to include it in the report.

Mr. Bellomo shared a quick recap of the timing for completing the report. The subcommittees will work to have their chapters finalized by late January or early February, and then the TMAC will hold a public meeting in late February or early March. Mr. Bellomo stressed the importance of not rubber stamping the document and that all of the comments put forward should be considered by the TMAC. Mr. Bellomo also asked whether the final report should be in landscape or portrait orientation. Mr. Bellomo stated that the ERM chapter has several large tables that are better suited for landscape, but that portrait is easier to print and is consistent with prior reports. Mrs. Terranova noted it was not a dealbreaker if the report was done in landscape, as some pages may need to be in landscape either way. Mr. Koper suggested publishing the report in both modes. Mr. Jeff Sparrow mentioned that orientation matters more for printing purposes, and that many people are reviewing documents digitally these days.

Mr. Bellomo suggested following Mr. Koper’s suggestion of publishing the report both ways. Mr. Koper then suggested sharing the report with stakeholders prior to the public meeting. Mr. Love suggested sharing the draft report with stakeholders who have commonly commented

during the public comment periods during public meetings in the past. Mr. Bellomo thanked Mr. Love and thought this was a good idea.

Ms. Laura Algeo of FEMA then presented on unmapped areas.

Unmapped Areas by FEMA

Ms. Algeo began by noting that FEMA has been hearing from stakeholders for quite some time to look at the mapping inventory that has not been updated. Ms. Algeo added that both the House and Senate committees have expressed concern that the current mapping portfolio only represents one third of the total riverine inventory in the country and have asked FEMA to explore this further. Ms. Algeo continued that FEMA has conducted an assessment and determined that roughly 1.1 million miles have already been mapped by FEMA, 1.1 million miles are on federal land and do not need to be mapped, and 1.3 million miles remain unmapped.

Ms. Algeo then shared FEMA's response to Congress, which is a three-phase approach. First, FEMA will collect stakeholder engagement. Second, FEMA will develop a mapping needs tool to aggregate data types and analyze needs for data prioritization. Third, FEMA will develop a plan that highlights the steps taken and the steps that still need to be taken, and present this to Congress. Ms. Algeo added there are two outstanding questions: 1) where to map, and 2) how to map. If the mapping is solely about miles, then there will need to be a discussion on prioritization since it has taken nearly 50 years to only do 1/3 of the total mapping inventory. Additionally, a strong technical decision is needed as to whether this additional mapping is done as an alternative expansion or a regulatory expansion. Ms. Algeo then paused for comments.

Mr. Guignet noted the importance of two-dimensional modeling and the need for FEMA to understand storm water management and floodplains. Mr. Bellomo asked what the maintenance plan would be for something that is not regulatory and if FEMA would maintain the alternative expansion data differently. Mr. DiCamillo noted that most communities look to an official regularly product to stand behind in their local ordinance decisions and that a Federal regulatory product makes it easy to say yes or no. Mr. Bellomo agreed and noted that FEMA may need to develop some guidance that shows when people can or cannot have a choice between regulatory and non-regulatory FEMA data. Mr. Salomon Miranda agreed with Mr. DiCamillo that if a product is not regulatory, local communities will look the other way.

Mr. Bellomo stressed the importance for the TMAC to think about and consider the future, and that there could be momentum building to support a non-regulatory product in decision making. Mr. Miranda stated it could be nice to see a pilot project nationwide, and Ms. Algeo replied that FEMA is exploring an interim viewer that can be used to share pre-FIRM data. Mr. Bellomo questioned whether having a national viewer of non-FIRM data fills a gap for local officials so that they can use it, or does it have to be a regulatory product. Mr. Miranda noted he has seen it both ways and that there are some progressive communities out there making decisions with non-

regulatory data. Mr. Miranda added that local officials have a responsibility to release data once they have it, and Mr. Guignet agreed.

Mr. Rodriguez noted that FEMA does have congressional support to tackle unmapped areas, but that there are questions about how you measure the return on investment. There is a need for a strategic, national approach for a regulatory and non-regulatory program. Mr. Guignet again expressed the importance of developing 2D understanding of flood risks in communities, and Ms. Maria Cox Lamm noted that not all communities, and especially underserved communities, may be able to use 2D modeling. The TMAC then asked if the presentation materials would be made available and Ms. Algeo confirmed they would be.

Closing and Next Steps

Mr. Bellomo thanked everyone for their participation the last two days and provided an overview of the next steps. The subcommittees will work on their respective chapters so that the final draft report is ready by the first week of February. A public meeting will then be held towards the end of February. A Doodle Poll will be sent out the coming day for the third week of February. Mr. Tischler added that he recently heard from the 3DEP Team and that, since 2016, over 2 million miles of Lidar have been added, which is about 67% of the country. Mr. Tischler will share the coverage map with Ms. Terranova.

Mr. Bellomo reiterate his thanks to everyone and wished everyone a safe holiday break.