

Technical Mapping Advisory Council (TMAC)

In-person/Virtual Hybrid Public Meeting Notes

September 19, 2023, 8AM - 5PM ET

TMAC Members

Stacey Archfield, *USGS, Department of the Interior Designee*

Doug Bellomo, *AECOM, Engineering Member, Chair*

Vince DiCamillo, *Stantec Consulting, Mapping Member, Vice Chair*

Scott Giberson, *CoreLogic Flood Services, Flood Hazards Determination Member*

Ataul Hannan, *Harris County Flood Control District, Local CTP Representative*

Maria Cox Lamm, *South Carolina Department of Natural Resources, NFIP Coordination Offices*

William Lehman, *USACE, USACE Designee*
Jamie Reinke, *Nebraska Department of Natural Resources, State CTP Representative*

Luis Rodriguez, *FEMA, FEMA Designee*
Brooke Seymour, *Mile High Flood District, Regional Flood and Storm Water Member*

Jonathan Smith, *Resource Inventory Division of Natural Resources Conservation Service, U.S. Dept. of Agriculture Designee*

Jeff Sparrow, *Moffatt & Nichol, Floodplain Management Member*

Liang Xu, *Santa Clara Valley Water District, Local CTP Representative*

Subject Matter Experts

Kim Dunn, *T&M Associates*

Salomon Miranda, *California Department of Water Resources*

Government Attendees

Sarah Abdelrahim, *FEMA, ADFO*

John Ebersole, *FEMA, Legal Counsel, ADFO*

Brian Koper, *FEMA, DFO*

David Rosa, *FEMA, ADFO*

Support Staff

Henry Cauley, *PM Support*

Sonia Clemens, *Compass PTS*

Kathryn Friedman, *ARC PTS*

Naeemah Islam, *PM Support*

Necolle Maccherone, *STARR II PTS*

Grace Morris, *STARR II PTS*

Sloan Oliver, *PM Support*

Molly Tuttle, *Compass PTS*

Jonah Vasquez, *ARC PTS*

Dora Szalai, *ARC PTS*

Other Attendees

Shabnum Amjad, *FEMA DHS*

David Conrad, *ASFPM*

Hamilton Dickey, *FEMA DHS*

Scott Edelman, *AECOM*

Emily Hatcher, *FEMA DHS*

Lori Mackenzie, *FEMA DHS*

Shilpa Mulik, *FEMA DHS*

Jon Paoli, *Iowa Homeland Security &
Emergency Management*

Austin Watkins, *FEMA DHS*

Purpose

The purpose of this meeting is to continue discussing the ongoing initial draft regarding recommendations on Special Flood Hazard Area (SFHA) and Fill.

Subcommittee Meeting

Technical Mapping Advisory Committee (TMAC) members optionally participated in subcommittee meetings for one hour to refresh and debrief on materials related to the topics being discussed during today's meeting. The TMAC then proceeded to the next agenda item.

Welcome, Roll Call, Administrative Items, and Opening Remarks

Ms. Sarah Abdelrahim, TMAC ADFO, introduced herself and welcomed everyone to the in-person and virtual public meetings. After the roll call, Ms. Abdelrahim explained the requirements and protocols associated with this public meeting compared to previous administrative meetings; she emphasized the procedures for public comments. She then handed it over to Mr. Doug Bellomo to review the agenda for the next two days. After no further comment or questions, the meeting transitioned to the next agenda item.

Subcommittee Discussion on SFHA and Fill

Ms. Mary Jo Mullen introduced the discussion on SFHA and Fill to the TMAC. She shared how the TMAC in previous administrative meetings discussed that the primary focus was tackling challenges related to the SFHA and Fill. She outlined a structured approach that the TMAC worked on which consisted of several phases. First, it emphasized the importance of understanding the objectives, the target audience, and the specific challenges associated with the SFHA. This phase also aimed to identify the core problem based on questions from FEMA. The phase then moved into generating solutions and creating a comprehensive plan to address the identified challenges. This involved brainstorming diverse options and drafting conceptual recommendations. Subsequently, it progressed to the prototyping phase, where subcommittees were formed to delve into the finer details of the plan and develop more thorough solutions. Finally, the next phase highlighted the significance of conducting listening sessions to engage with customers and stakeholders, sharing the proposed concepts, and gathering valuable feedback. This phase aimed to bridge the gap in understanding between different audience groups and refine the proposed solutions. Several challenges related to the SFHA and Fill within it were identified. These challenges included the dynamic nature of FEMA's priorities, the slow pace of data updates, the delicate balance between safety and economic growth at the community level, and the need for clear and standardized rules and definitions for all stakeholders involved in the process.

Ms. Christine Brittle, the listening sessions lead, shared how the listening sessions are going and how they are being conducted. The goal of the listening sessions was to gather input on the initial thinking of the full committee and the subcommittee. Seventeen virtual sessions were conducted with a total of 86 participants representing various stakeholder groups, including local government

officials, state government representatives, financial professionals, developers, interest groups, and other professionals. Broadly, there was support for the idea of having the Special Flood Hazard Area (SFHA) as a distinct layer with clear and binary definitions, especially for the lending community. There was also general agreement on maintaining the SFHA at a 1% or higher chance of flooding, although some suggested updating data sources for more accuracy.

The concept of a "current conditions" layer for informational purposes received mixed support. While many participants saw the value of additional information, some raised concerns about the complexity of having multiple layers and questioned the need for a separate layer only for informational purposes. Future conditions as a regulatory area garnered more support, especially due to the increasing occurrence of flood events outside the SFHA. However, regulating future conditions was seen as complex, with challenges related to model inputs, times, uncertainty, potential pushback, and resource constraints for some communities.

The topic of placement of Fill was contentious, with support varying by audience group. Interest groups and financial professionals generally favored the idea of not allowing Fill to exempt properties from mandatory purchase, while developers opposed it. There were concerns about the retroactive application of such a policy and whether Fill genuinely mitigated risk. Participants expressed a powerful desire for clear and up-to-date maps that accurately reflect ground conditions.

Additionally, participants expressed interest in various additional inputs for flood modeling, such as flow velocities, climate data, high-intensity events, future land use, and more. Clear communication and public understanding of flood risk were highlighted as crucial, with many people struggling to grasp the significance of probabilities and the need for clear, easily understandable risk information. Overall, the listening sessions provided valuable insights and highlighted the importance of clear communication, data accuracy, and addressing the complexities of flood risk management.

Mr. Will Lehman emphasized the importance of retaining the 1% SFHA designation on flood maps. He highlighted that the 1% SFHA serves as a critical demarcation line on flood maps to determine whether a home requires flood insurance. Mr. Lehman noted that this distinction is particularly important for lenders who face challenges in explaining to homeowners whether they are inside or outside the mandatory purchase zone. He suggested that simplifying the mandatory purchase requirement, following a model similar to Canada, where insurance is required for all properties, could eliminate the complexity of determining inclusion or exclusion from the SFHA. This, he argued, would make it easier to communicate flood risk to homeowners, as people tend to resist purchasing insurance when not compelled to do so. Mr. Lehman stressed the need for a clear and inclusive mandatory purchase zone to enhance the understanding of flood risk and insurance requirements.

Mr. Scott Giberson suggested that many lenders are more focused on increasing the coverage of flood insurance, whether that involves adopting a different definition of the SFHA or using a different approach within the current 1% framework. He emphasized that lenders are not necessarily tied to the 1% concept, as their primary goal is to reduce the occurrence of flooding events for homeowners outside the current regulatory zone. In essence, the message he heard from lenders is a desire to see more people covered by flood insurance to mitigate the fiscal impact of flooding.

Ms. Jamie Reinke highlighted the importance of using visual tools to communicate flood risk to the general public effectively. Ms. Reinke mentioned their experience working with flood risk products created through Risk MAP, emphasizing that when conducting open houses and interacting with people who may not have a strong understanding of flood risk, showing them the depth of potential flooding at their property makes the risk much clearer. For instance, demonstrating that their property could experience 6 inches of water with a certain probability over 30 years helps the public grasp the concept of risk more comprehensively. Mr. Bellomo responded to those concerns and stressed the need to acknowledge and communicate the uncertainty inherent in flood risk assessments and raised concerns about using future conditions in areas where scientific data may be inadequate to make accurate predictions. He also argued that failing to communicate the uncertainty could result in the public perceiving floodplain maps as incorrect when, in fact, the uncertainty is an inherent part of flood risk assessment. He highlighted the example of the 100-year flood, which can vary significantly in height depending on specific conditions. If people were aware of this variability, it might change the way they perceive flood risk and the accuracy of flood maps.

Ms. Brooke Seymour mentioned the idea of considering insurance for all as a potential solution to simplify flood risk management and enhance overall resilience in the country. She emphasized that implementing insurance for all could have a significant impact on social justice by providing coverage to a large number of people who cannot afford insurance, particularly those living in mandatory purchase zones. Ms. Seymour pointed out that many individuals in these high-risk areas are renters or low-income residents, and even a relatively low-cost insurance premium can be a burden for them. She suggested that if the cost of insurance were shared collectively, it would not be as financially burdensome for individuals. She also mentioned a potential Government Accountability Office (GAO) report on mandatory purchase requirements and questioned whether the committee could comment on it. She noted that there might be room for reasonable discussions on mandatory purchase requirements for everyone, acknowledging that it could be viewed as a form of taxation to cover flood-related costs. Mr. Bellomo and Mr. Giberson expressed doubts about TMAC's influence in achieving flood insurance for all, citing complexities within state-regulated insurance markets and the potential challenges of implementing such a policy in areas with negligible flood risk.

With no further questions or comments, the TMAC moved on to the next portion of the agenda.

Break

The TMAC adjourned for a 15-minute break.

Subcommittee Discussion on SFHA and Fill Continued

Mr. Bellomo introduced Mr. Scott Edelman, a previous TMAC member and the Senior Vice President for AECOM, to give a presentation on his experience working with the flood insurance program. He began by emphasizing the importance of considering the long lifespan of structures when making decisions related to flood risk and floodplain mapping. He highlighted that decisions made today can impact multiple generations in the future, making it crucial to address the issue correctly now.

Mr. Edelman discussed three historical items relevant to the TMAC's current discussions. First, he mentioned the 2015 and 2021 TMAC reports, which recommended incorporating uncertainty into

flood risk assessments and building designs. He emphasized the importance of using a comprehensive approach that considers various confidence levels, future conditions, and safety factors when defining flood risk.

Second, he touched upon the proposal for mandatory 500-year flood insurance in 2005, comparing fire risk and flood risk. He explained how changing the definition to 500-year flood risk could reduce the likelihood of flooding over a 30-year mortgage from 26% to 6% and mentioned the existing inventory of 500-year boundaries.

Finally, Mr. Edelman discussed FEMA's 2013 climate change report, which assessed the influence of climate change on the National Flood Insurance Program. He highlighted the report's findings, which indicated that floodplains were projected to grow by about 45% by 2100, with a sizable portion attributed to climate change.

Mr. Edelman concluded by encouraging alignment between engineering, insurance, and public perception of flood risk. He suggested adopting a rolling look ahead when making decisions and addressing previous TMAC recommendations in the new report to provide clarity and continuity in the discussion.

Mr. Hannan gave a presentation that dove into various critical aspects of flood risk assessment and mapping. Hydrology and hydraulics were also identified as key components that demand precision and confidence to prevent errors and misinterpretations in flood modeling. Furthermore, the presentation stressed the significance of a meticulous Geographic Information System (GIS) process, emphasizing consistency and accuracy as crucial factors in ensuring the reliability of flood maps. Additionally, the impact of intense rainfall events, especially shorter-duration storms, was highlighted as a significant factor influencing flooding, urging flood modelers to account for such events. Climate change and its potential influence on rainfall patterns were also brought into the discussion. The presentation also touched upon urban flooding challenges and the merits of transitioning from 1D to 2D flood modeling for a more comprehensive understanding of complex flooding patterns. Furthermore, the importance of assessing the effects of development on flooding was emphasized, particularly with the aid of 2D models.

Mr. Bellomo and Mr. Rodriguez's question revolved around the precision of numerical values in flood risk assessment, specifically inquiring whether values were being rounded to one decimal place or truncated, and expressing concern about the implications of displaying specific numbers that might lock them into certain values.

In response, Mr. Hannan emphasized the importance of precision in flood risk assessment and mapping. He clarified that the intention was not to round or shorten values to a single decimal place, but rather to provide accurate and precise data. He stressed that using rounded or truncated values can lead to inaccuracies and misunderstandings. Mr. Hannan highlighted the need for flexibility and the avoidance of fixed, rounded numbers like 0.00 to ensure that the assessment remains as accurate as possible over time.

With no further questions or comments, the TMAC moved on to the next portion of the agenda.

Presentation of Draft SFHA and Fill Recommendations

Mr. Bellomo transitioned the team to Mr. Sparrow's presentation of draft recommendations for SFHA and Fill. The recommendations included in the proposal are to develop two hazard areas: one for mandatory purchase requirements (SFHAs) and another for floodplain management (flood-prone areas). The discussion touched on addressing uncertainty and the possibility of moving to an

upper bound, possibly 95%, for determining thresholds. They considered incorporating future conditions, such as land use and climate change, in floodplain management. The role of local communities in floodplain management and their preferences were also highlighted, with an emphasis on establishing this during FEMA's discovery meetings. The recommendations encompassed meeting state and local requirements, modifying floodplain management rules concerning Fill placement, and exploring options like raising properties above special hazard areas and widening the floodway. Mr. Sparrow praised the subcommittee for their efforts and noted the complexity of the task at hand.

With no further questions or comments, the TMAC moved on to the next portion of the agenda.

Lunch

The TMAC adjourned for a 1-hour lunch.

SFHA and Fill Recommendations Continued Initial Straw Vote on Recommendations

Mr. Bellomo retook attendance for TMAC members after the lunch break and introduced the continued discussion on the SFHA and Fill recommendations that Mr. Sparrow presented before lunch. Ms. Seymour expressed concerns about adding complexity by mapping both the special flood hazard area (SFHA) and the flood-prone area. She questioned whether this added complexity was necessary and mentioned that within the Mile High Flood District, they already use future conditions for SFHA and mandatory purchases without complaints. Mr. Sparrow acknowledged the concern and highlighted the importance of having flood-prone areas based on future conditions to manage floodplains effectively and minimize future risks.

Mr. Giberson discussed various perspectives on the idea of using future conditions and broadening the scope of flood risk assessment. He acknowledged that there could be concerns among lenders about enforcing requirements based on what some might perceive as speculative future conditions. However, he viewed it as an additional safety factor and a way to bring more certainty into flood risk assessment, which is already characterized by considerable uncertainty. He mentioned that the banking industry is still grappling with the concept of climate risk and related regulations, noting that the U.S. is behind Europe in this regard. Mr. Giberson suggested that as banks become more familiar with the idea of assessing future risk for each loan transaction and collateral, they might find it reasonable to require flood insurance for anticipated future risks. He emphasized that having more insurance generally promotes safety and soundness in the financial sector.

Ms. Cox Lamm discussed two important aspects related to floodplain management. Firstly, she mentioned that required ordinance updates are necessary on the floodplain management side, particularly when there's a change in language or regulations. She highlighted that noncompliant ordinances could lead to exclusion from certain programs, which has implications for communities. Secondly, Ms. Cox Lamm noted that auto adoption, a process in which communities automatically adopt updated floodplain regulations, is not widespread across the country. She explained that many regions, including Region Four, have a mixed approach to auto adoption, and the enforcement of ordinance updates often involves coordination through state offices. This process can be challenging for some states with a large number of participating communities.

Mr. Bellomo emphasized the importance of addressing the issue of Fill in floodplain management. He expressed concern that some individuals or communities might exploit the system by raising their structures just above the Base Flood Elevation (BFE) to avoid mandatory buyouts. He suggested that an interim solution should be implemented to prevent this practice. He proposed that for the immediate term, mandatory buyouts should not be solely based on the BFE, but rather

include a minimum surcharge elevation to ensure that structures are adequately protected from flooding.

With no further questions or comments, the TMAC moved on to the next portion of the agenda.

Break

The TMAC adjourned for a 25-minute break.

Public Comment Period

Mr. Koper began the public comment period at 3:30 p.m. ET. As of the meeting date, there were no public comments formally submitted. Mr. Koper opened the forum for those who would like to make a public comment, and he explained the procedure for making a public comment.

David R. Conrad, Association of State Floodplain Managers verbally provided a comment. A written version of this comment is provided at the end of this document.

After no further comment, Mr. Koper adjourned the public comment period.

SFHA and Fill Recommendations Continued

After the public comment period, the conversation went back to discussing the SFHA and Fill Recommendations. In their conversation, Mr. Salomon Miranda expressed concerns about equity in affluent communities and the ability of less affluent communities to afford Hydrology and Hydraulics (H&H) analysis. He emphasized the need for the TMAC to consider these equity issues. He also raised a question about addressing the cumulative effect of Fill that is in communities and determining whose responsibility it should be to track and assess these impacts.

Mr. Bellomo responded by suggesting that the burden of conducting H&H analysis should fall on local jurisdictions rather than individual applicants. He argued that local authorities permitting the film should assess whether it meets minimum requirements. This approach would also help with processing Letters of Map Revision Based on Fill (LOMR-F) and tracking cumulative impacts at the local level. However, Mr. Salomon Miranda pointed out that smaller communities without technical staff might struggle with this responsibility, potentially leading to more equitable decisions to deny permits.

With no further questions or comments, the TMAC moved on to the next portion of the agenda.

Summary of Day

Mr. Bellomo moved the discussion to finalize the initial draft recommendations to give to FEMA. The TMAC drafted three recommendations for the definition of SFHA. The first is that FEMA should develop two flood hazard areas: Special Flood Hazard Area (SFHA); to be used for determining mandatory purchase requirements and Flood-Prone Area (FPA) to be used for floodplain management requirements. Both flood hazard areas should be based on the 1% annual chance flood 95% upper bound, not the mean as is currently done. The second is that the flood hazard areas developed for FPAs, for the application of floodplain management requirements, should be based on future conditions (including land use and climate change. The third is that FEMA should coordinate with communities at the Discovery meeting to determine the communities' preferred approach to establish the Flood-Prone Areas (no less than the 95% upper bound of the current 100-year 95% upper bound mean).

For Fill Placement, the TMAC drafted three recommendations to FEMA. The first is that FEMA should include in CFR 60.3 floodplain management requirements regarding the placement of Fill. Requirements to consider requiring as part of the minimum Federal requirements may include: no negative environmental impact, no adverse impact on other properties, engineered Fill, no placement in coastal areas, freeboard above the Flood-Prone Area (FPA) elevation, Fill placed for critical facilities should have additional requirements, evacuation concerns during a flood event, etc. The second is that FEMA should study whether Fill should be used as an elevation technique for residential structures and mixed-use structures. In addition, the study should examine the use of Fill to remove the mandatory purchase of flood insurance requirements. The third is that FEMA should require that all LOMR-Fs require H&H modeling to determine the impact of the Fill.

With no further questions or comments, the TMAC moved on to the next portion of the agenda.

Close Out and Adjourn

Mr. Bellomo thanked the TMAC, support team, and everyone who was on the call for their time. He thanked the public for their comments and reviewed the agenda for tomorrow. The meeting adjourned for the day at 5:00 PM ET.

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Welcome, Roll Call, Administrative Items, and Opening Remarks

Mr. Brian Koper, TMAC DFO, introduced himself and welcomed everyone to the in-person and virtual public meeting. After the roll call, Mr. Koper explained the requirements and protocols associated with this public meeting compared to previous administrative meetings; he emphasized the procedures for public comments. Mr. Doug Bellomo then reviewed the agenda. After no further comment or questions, the meeting transitioned to the next agenda item.

Continued Subcommittee Discussion on SFHA and Fill

Mr. Bellomo instructed the TMAC to further discuss the topics of Special Flood Hazard Area (SFHA) and Fill. Ms. Maria Cox Lamm discussed challenges related to Letter of Map Revision (LOMR) lines in coastal areas, where these lines can appear and disappear, confusing for floodplain managers. She mentioned that LOMR lines are non-regulatory and can vanish when they coincide with an actual zone designation. This inconsistency in depiction can lead to confusion at the local level. Ms. Cox Lamm expressed the need for improved labelling or education regarding these lines, as the current rules are not working effectively everywhere. She emphasized the importance of clarity and potential rule modifications to address these issues. Ms. Christine Brittle highlighted the confusion surrounding the current conditions layer in the listening sessions. She questioned the purpose of creating such a layer solely for informational purposes without apparent use. She also raised the question of why this layer wasn't being utilized for the SFHA. Ms. Brittle suggested that the resolution to this issue might involve incorporating all current conditions and ensuring updates into the layer designated for mandatory purchase. The central concern was the existence of a layer that appeared to serve no practical function, leading to confusion among stakeholders.

Mr. Will Lehman discussed the issue of defining floodplain boundaries. He pointed out that the current discussion revolved around defining floodplain boundaries based on a combination of Base Flood Elevation (BFE) and additional factors, and introducing a concept based on future conditions could deviate from this approach. Additionally, Mr. Lehman suggested three recommendations: one for separating definitions, one for defining SFHAs, and another for defining Floodplain Areas (FPA), which appeared to be the consensus reached during the discussion.

Mr. Bellomo discussed the challenges of dealing with multiple lines and coincident lines in digital mapping tools and the need for cleanup. He also pointed out the potential challenges of defining the 500-year floodplain, especially when considering future conditions and surcharges. Mr. Bellomo raised questions about what components should be included in the 500-year floodplain and whether the surcharge should be distinct from future conditions. He suggested that FEMA should promote the use of digital products and address challenges related to coincident lines in mapping tools. The discussion also touched on the need to clarify what goes into the 500-year floodplain and how to avoid confusion in mapping processes.

Mr. Salomon Miranda raised his concern regarding the discussion on flood-prone areas. He inquired whether the proposed recommendations would result in the creation of new flood designation zones or layers, particularly due to future conditions. He questioned whether the existing flood designation zones, such as AE and VE zones, could be utilized for this purpose. Mr. Bellomo responded by pointing out that these zones historically have been associated with insurance purposes and clarified that these zones also encompass development and elevation requirements, indicating specific rules linked to these designations.

Mr. Miranda shared insights on the differentiation between the SFHA and FPA. He emphasized that the SFHA is used to drive mandatory flood insurance purchase requirements, while the FPA is a discretionary area defined by FEMA for floodplain management purposes. Mr. Bellomo suggested that the FPA could retain the existing flood zone designations but with future conditions considered. For instance, future conditions such as sea level rise and changing land use would be used to determine the flood zones. This would result in larger floodplains and wider V zones. However, these changes would not be immediately visible on the map. The discussion highlighted the need to distinguish between the SFHA and the FPA and how future conditions should be considered when defining flood zones within the FPA for floodplain management purposes. Mr. Bellomo cautioned against overly specifying how FEMA should define these areas. He suggested a more simplified approach of having just two lines: a floodplain management zone that encompasses all components without detailed labeling, and a mandatory purchase line indicating where flood insurance is mandatory. This approach aims to avoid consumer confusion while still addressing the varying characteristics of flood risk areas. Additionally, he emphasized the importance of treating high-velocity zones differently in floodplain management.

Ms. Jamie Reinke noted that while the transition to digital flood hazard maps had changed the appearance of preliminary maps (prelims), the preliminary issuance phase remained crucial. She highlighted the considerable time it took, sometimes exceeding three years, to progress from preliminary to effective maps, especially considering factors like community meeting schedules. Her comments emphasized the challenges and time constraints associated with updating flood hazard maps, highlighting the importance of striving for up-to-date information while acknowledging the practical limitations of achieving this goal.

Ms. Shilpa Mulik expressed concerns about simplifying the flood hazard mapping process, emphasizing the challenge of managing it if overly simplified. She pointed out that the current

process involves various zones (A1 through A30, AE, etc.), each associated with specific flood-based depth and velocity references. These different zones also have varying regulations based on risk. While simplifying to just riverine, coastal, and shallow flooding zones might seem appealing, it would require converting all existing maps, making it an impractical option. Ms. Mulik highlighted the importance of retaining the zones for floodplain management purposes while considering alternative ways to distinguish between coastal and riverine areas for mandatory purchase requirements, such as the Letter of Map Amendment (LOMA) point.

Ms. Seymour expressed her agreement with the idea of considering future conditions in floodplain management but raised concerns about the practicality of implementing it uniformly across all communities. She pointed out that some communities might not have the resources or data to define future conditions accurately. Mr. Bellomo echoed Ms. Seymour's concerns and mentioned that certain communities, especially smaller ones with stagnant or decreasing populations, may not have significant development or construction to factor into future conditions. He emphasized the importance of flexibility in implementing future condition guidelines and not imposing a one-size-fits-all approach. Mr. Sparrow contributed to the discussion by highlighting the challenges of defining future conditions, especially in communities with limited growth. He suggested that future condition projections should consider land use patterns and community-specific circumstances. Mr. Sparrow advocated for having a conversation with each community during the discovery meeting to understand their unique needs for floodplain management.

Both Ms. Cox Lamm and Ms. Seymour emphasized the significance of effective floodplain management. Ms. Cox Lamm stressed the importance of ensuring floodplain maps are ahead of development to prevent issues arising from delayed mapping, especially in rural areas. On the other hand, Ms. Seymour focused on the distinction between future and existing flood conditions, highlighting that in areas with little expected growth, future conditions might closely resemble the present. She also suggested separating climate-related factors from land use factors in floodplain mapping. In summary, their insights underscored the need for accurate and timely floodplain mapping while approaching the topic from slightly different angles.

Mr. Lehman suggested FEMA include a statement of uncertainty in the SFHA maps. This would involve setting an upper bound at a confidence level greater than 50% and declaring it. By doing so, it would be understood that the SFHA doesn't encompass all 100-year floods, acknowledging the likelihood of some 1% of annual floods being missed. Additionally, he highlighted the need for FEMA to address floods beyond the 1% annual flood in their mapping. In essence, his proposal aims to improve communication by indicating the confidence level associated with SFHA mapping while leaving the specific level to FEMA's determination.

Mr. Scott Giberson emphasized the importance of improving communication regarding special flood hazard areas. He mentioned various touchpoints where consumers receive information about flood risk, such as the standard flood hazard determination form used by lenders. He suggested adding language about uncertainty in these forms to enhance understanding. Additionally, he proposed collaborating with lending regulators to develop a new disclosure

addressing uncertainty, emphasizing FEMA's control over the language in these disclosures. Mr. Giberson highlighted the need to consider social science aspects and past discussions on risk understanding to improve communication further.

TMAC members discussed the importance of incorporating uncertainty into flood risk communication. They noted that climate change could increase the variability of flood events, making it essential to address uncertainty. While it may not bring perfect alignment, considering uncertainty could improve communication between floodplain management and flood insurance. They discussed the challenge of explaining risk in terms of point estimates and suggested focusing on the confidence level to help people understand better. The goal is to convey that flood risk is not binary and can vary widely due to several factors. TMAC members also emphasized the need for effective communication with floodplain administrators who may not be well-versed in flood risk concepts and the challenges of predicting flood events accurately due to multiple variables.

With no further questions or comments, the TMAC moved on to the next portion of the agenda.

Lunch

The TMAC adjourned for a 1-hour lunch break.

Public Comment Period

Mr. Koper began the public comment period at 12:00 p.m. ET. As of the meeting date, there were no public comments formally submitted. Mr. Koper opened the forum for those who would like to make a public comment, and he explained the procedure for making a public comment.

David R. Conrad, Association of State Floodplain Managers verbally provided a comment. A written version of this comment is provided at the end of this document.

After no further comment, Mr. Koper adjourned the public comment period.

Subcommittee Discussion on SFHA and Fill Recommendations Continued

Mr. Bellomo thanked the public for their comments and shifted the TMAC towards a continued conversation regarding recommendations for SFHA and Fill. The TMAC had an extensive discussion on floodplain management and flood risk calculation. Key points included the consideration of future conditions when determining flood risk, specifically whether the 500-year floodplain should be based on current or future conditions. The TMAC emphasized the need to balance flood risk reduction with factors like serving disadvantaged populations and critical infrastructure needs. They also explored alternative approaches like using a freeboard method or the existing 500-year floodplain instead of future conditions calculations.

The TMAC stressed the complexity of flood risk assessment and the importance of thoughtful decision-making in floodplain management. They discussed the use of different flood risk metrics and the significance of having confidence in flood risk data. The suggestion of a 500-year flood level with a 95% confidence level was put forward to provide greater planning

certainty, even though there was recognition of potential changes in flood levels as more data became available.

The conversation acknowledged the challenges of using future conditions data and the complexities of accurately modeling future flood risks. There was a proposal to change the confidence level of current conditions (100-year flood) to make future development requirements more stringent, though this introduced complexity and potential confusion.

Mr. John Ebersole clarified statutory requirements, emphasizing that current flood definitions are based on present conditions, not future ones. He highlighted the need to prioritize mapping efforts in areas with existing populations.

The debate considered whether the approach should be labeled as future conditions or a safety factor, given concerns about the term "future." The TMAC proposed deferring the discussion on the 500-year floodplain or treating it as an additional layer to avoid confusion.

The conversation also delved into the language used in recommendations and discussed community-specific approaches to future flood risk. The challenges of modeling and the importance of aligning maps with community goals were highlighted throughout the discussion, emphasizing the need for clear and precise recommendations in floodplain management.

With no further questions or comments, the TMAC moved on to the next portion of the agenda.

Break

The TMAC adjourned for a 25-minute break.

SFHA and Fill Recommendations Continued Discussions

After the break, Mr. Bellomo welcomed everyone back and started the discussion about the third challenge, which was regarding Fill. The TMAC discussed FEMA's potential inclusion of certain requirements in CFR 60.3 regarding fill placement in floodplain management. This included factors like environmental impact, adverse effects on other properties, engineered fill, coastal area restrictions, and special considerations for critical facilities. They also explored the use of fill as an elevation technique for structures, aiming to potentially eliminate mandatory flood insurance requirements. Suggestions included amending FEMA regulations for hydrologic and hydraulic modeling and extending these requirements to various flood zones.

The TMAC addressed concerns about verifying engineered fill requirements, the need for stricter compliance, and challenges in assessing engineered fill. They emphasized the need to eliminate distinctions between natural ground and fill-in mapping, advocating for comprehensive mapping regardless of fill permission status.

Environmental and social issues were discussed, including concerns about endangered species protection, inconsistent enforcement, and incentives for fill placement in floodplains. The group discussed the need for clear floodplain management ordinances, assessing environmental and hazard impacts, and notifying relevant parties about potential consequences. They recommended clear guidance on environmental permits, addressing regulatory loopholes, and enforcing

compliance. Ms. Cox Lamm's contributions highlighted challenges with large developers, enforcement issues, and regulatory loopholes. She suggested a federal fund to support floodplain administrators and improve regulation enforcement.

The TMAC debated the necessity of requiring hydrologic and hydraulic modeling, considering whether notification alone might suffice for certain actions. They discussed the need for a high bar of environmental protection, potential exceptions, and aligning floodway regulations with a "no rise" floodway concept. The focus remained on thoroughly analyzing Section 60.3, emphasizing the prevention of flood level rise and negative environmental impacts. Alternative terms like "no impact" or "no adverse impacts" were considered. Concerns about addressing fill-related loopholes while avoiding legal challenges and the importance of thorough studies were also raised.

With no further questions or comments, the TMAC moved on to the next portion of the agenda.

Final Discussion and Vote

Ms. Necolle Maccherone introduced the straw vote and final vote for draft recommendations regarding SFHA and Fill.

The first issue to be voted on for SFHA is whether FEMA should create two distinct flood hazard areas: one being a Special Flood Hazard Area for mandatory purchase, and the other being a Flood Prone Area for floodplain management, which would also consider future conditions estimates. The vote was unanimously approved in the in-person room and virtual room.

The second issue to be voted on for SFHA is whether FEMA should develop Special Flood Hazard Areas for mandatory purchase, specifically based on the 1% annual chance of flood, but with estimates of uncertainty that include a confidence limit (e.g., 95% confidence) rather than just relying on the mean as is currently done for existing conditions. The vote was unanimously approved in the in-person room and in the virtual room.

The third issue to be voted on for SFHA is whether FEMA should develop the 0.2% chance flood (500-year flood) based on the same parameters as the 1% chance flood (100-year flood), including both existing and future conditions. The vote was unanimously approved in the in-person room and in the virtual room.

The fourth issue to be voted on for SFHA is whether FEMA should require the flood hazard area developed for flood-prone areas to be based on future conditions, including land use and climate change at the 95% confidence limit. This flood-prone area definition would encompass the mandatory purchase area plus a future condition element. The vote was unanimously approved in the in-person room and the virtual room with one abstained vote.

The first issue to be voted on regarding Fill is whether to initiate the inclusion of floodplain management requirements regarding the placement of Fill in CFR 60.3. This proposal suggests that all requirements related to how Fill is used in floodplains should be included in CFR 60.3. The vote was unanimously approved in the in-person room and the virtual room.

The second issue to be voted on for Fill proposes that as part of permitting duties before issuance, participating communities must quantify and document the impacts of proposed fill and other developments on flood stages and the environment. In cases where there are increases in flood elevations or potential negative environmental consequences that cannot be mitigated, property owners and relevant environmental agencies must be notified before the permit is issued. The vote was unanimously approved in the in-person room and the virtual room.

Ms. Maccherone asked if any members of the TMAC wanted to have a revote on any of the issues. With none, the TMAC then moved on to a discussion around delivering interim recommendations. The TMAC explored whether it would suffice to provide final recommendations with some context, acknowledging that the comprehensive 2023 report would come out in the spring and contain more details and context. They agreed that adding some context to the interim recommendations would be helpful, explaining the rationale behind each recommendation. FEMA's participation in the dialogue had been beneficial. They also discussed including the "why" for each recommendation to help understand the context and reasoning. The idea of adding a "TMAC Rationale" to support the recommendations was mentioned. The conversation concluded with an agreement not to continue further.

Mr. Bellomo then went over the 2023 report cycle schedule with the TMAC, focusing on the monthly objectives until report submission.

With no further questions or comments, the TMAC moved on to the next portion of the agenda.

Close Out and Adjourn

Mr. Bellomo thanked the TMAC, support team, and everyone who was on the call for their time. He thanked the public for their comments. The meeting adjourned at 4:16 p.m. ET.

Public Comments

Comments of David R. Conrad, Association of State Floodplain Managers, to the Technical Mapping Advisory Council, September 19, 2023

As the Water Resources Policy Advisor to the Association of State Floodplain Managers, I've been a participant in numerous Team Act public meetings over the past decade. I express gratitude to Team Act members for their expertise and commitment to enhancing the National Flood Insurance Program amid a changing environment with increasing complexity, population growth, and development.

While detailed comments are premature, the ongoing process, starting with focus groups, is commendable. I appreciate discussions on confidence intervals, consideration of future conditions, and the reassessment of assumptions in the risk mapping program. There's a need for more exploration on defining special flood hazard areas and floodplain management, and the Association plans to contribute further insights.

Encouraging bold action, I emphasize the rising threat of flooding to communities nationwide. Notably, the recent Supreme Court decision on the EPA's Section 404 authority under the Clean Water Act highlights the evolving landscape. FEMA's Risk MAP work may play a crucial role in managing fill in low-lying areas, especially with potential changes in jurisdiction.

In conclusion, I appreciate the opportunity to share these comments and extend immense thanks to the Council for their impactful work in this crucial annual report.

Public Comments

Comments of David R. Conrad, Association of State Floodplain Managers, to the Technical Mapping Advisory Council, September 20, 2023

I am the Water Resources Policy Advisor to the Association of State Floodplain Managers, and I appreciate the chance to provide comments to the Council.

Listening to the Council's discussions, I acknowledge the challenge of balancing authoritative mapping recommendations based on the best available science with effective communication to the public. In my previous statement, I urged the Council to be bold in prioritizing long-term risk reduction, emphasizing that the standards chosen for the program could endure for decades. I believe FEMA could benefit from the Council's guidance in making critical choices.

While recognizing political considerations and timing challenges, I encourage the Council to continue working through the details in subsequent meetings. The main point I wish to convey is the significance of seizing this rare opportunity to delve into the intricacies of mapping and the associated standards. Public engagement will present challenges, but given the limited chances for such exercises, organizations like the Association of State Floodplain Managers pledge to assist in communicating and amplifying the reasoning for a long-term perspective.