TESTIMONY of

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before

The United States Senate

Committee on Banking, Housing, and Urban Affairs

September 13, 2016

Chairman Shelby, Ranking Member Brown, and members of the Committee on Banking, Housing, and Urban Affairs; good morning and thank you for the opportunity to appear before you and provide my perspective on the 2015 Technical Mapping Advisory Council (TMAC) recommendations. I am John Dorman, North Carolina Assistant State Emergency Management Director for Risk Management, and Director of the North Carolina Flood Risk Management Program. I am currently serving as the Chair on the Technical Mapping Advisory Council.

The English proverb "Necessity is the mother of all innovation" speaks well to the overall tenet of TMAC recommendations. FEMA has diligently overseen the generation of current flood hazard focused data and products. However, transformative strategies must be implemented to address needs of the program: insurance rates that reflect structure anticipated flood loss; communication focused on financial loss as opposed to an "in or out" focus; and, homeowner's understanding of and confidence in the data used for flood hazard determination and insurance premiums.

For North Carolina, Hurricanes Floyd, Francis, Ivan and Irene all demonstrated and compelled the need to implement these transformative strategies. Thus, North Carolina has successfully implemented the ability to generate structure based flood probability; structure based risk assessments; real-time structure based flood impact and alert; and, structure-specific risk based insurance rating. Recent events across the Country have again shown a lack of

accuracy and awareness of structure specific flood risks that both large storms and more localized flash flooding can present. With these needs ever apparent, I believe TMAC has constructed recommendations that, if implemented, will transform the program and improve our Nation's resiliency to flooding. Below are four recommendations of the TMAC that I believe are key to transformative improvements:

First, fundamental to accurate flood hazard identification and risk assessment, is accurate, high-resolution ground elevation data. Recent developments in data collection technologies offer the more accurate and efficient collection of ground elevation data. Technology like the Geiger LiDAR sensors collect data at both a higher altitude and higher accuracy allowing for faster acquisition time and reduced costs of acquiring and processing LiDAR data. This higher resolution data also allows the opportunity to meet the needs of other stakeholders so that cost sharing objectives can be achieved.

Second, the transition from a 100-year floodplain delineation and flood elevation to a structure-specific annual chance flood frequency is critical to raise awareness that every property has some level of flood risk – 26% of flood damages are on properties outside the 100-year floodplain delineation. The recent events in Louisiana demonstrate the importance of altering our Nation's mentality that one is safe if they live outside of the line depicted on a map and raise awareness of flood probability at the structure level.

Third, the transitioning focus to structure based risk assessment. This increased level of detail that calculates structure specific per cent annual chance of flooding and estimated annualized damage calculations can inform mitigation decisions and create more accurate risk based insurance premiums. This will directly result in mitigation actions to reduce losses, lessen the financial burden on the federal government to help communities recover from disasters and create a more fiscally sound FIMA.

Finally, we must transition to a dynamic, queried display of data, models, maps and risk assessments. The way we communicate as a nation is changing, and we need to create a more robust database that enables data to be dynamically queried and displayed on a webpage. Floodplain modeling and mapping is an ever changing science, based largely on statistics and changes in land use and topography. We need to create an efficient method to quickly and

efficiently update flood hazard and risk information and provide that information at the fingertips of end users on all types of digital devices.

It is important to note that all or some of the four transformative recommendations have been successfully implemented in four states. These recommendations are not just ideas but proven concepts in production today.

Thank you again for the opportunity to address this Committee on this important topic. I am honored to be able to provide testimony based on our experience with the FEMA and with the NFIP as the Committee considers the most efficient methods to prevent or reduce flooding losses.

I would be happy to answer any questions that you may have.

TMAC 2015 Goal & Recommendation
Implementation Framework

Goal 1: Accurate data, models, and risk assessments

- **Recommendation 2:** Develop National program 5-year plan
- **Recommendation 3:** Develop National program goals and metrics
- **Recommendation 4:** Work with partners to ensure topo data is collected to Federal standards
- **Recommendation 5:** Document H:V accuracy of topo data
- **Recommendation 6:** Review updated statistical models (Bulletin 17C)
- **Recommendation 7:** Develop guidance for selection and use of riverine and coastal models
- **Recommendation 8:** Develop guidance related to coastal 2D storm surge modeling
- **Recommendation 9:** Update coastal event-based erosion methods

- **Future Condition 1:** Provide future conditions flood risk products using standardized timeframes
- **Future Condition 2:** Identify and quantify accuracy and uncertainty of data
- **Future Condition 3:** Provide flood hazard products for coastal areas that includes erosion and SLR using scenario approach
- **Future Condition 4:** Provide flood hazard products for riverine areas that includes future conditions
- **Future Condition 5:** Generate future conditions data to frame and communicate messages
- **Future Condition 6:** Perform demonstration projects
- **Future Condition 7:** Future conditions should be consistent with existing conditions analysis and future conditions scenarios

Goal 2: Time and cost efficient generation of data

- **Recommendation 11:** Update MIP to add greater flexibility
- **Recommendation 12:** Determine cost impact due to new program requirements
- **Recommendation 13:** Integrate process for mass LiDAR-based LOMA

Goal 3: Utilization of efficient technologies

- **Recommendation 16:** Transition to database-derived, digital display environment

Goal 4: Integrated flood risk management framework

- **Recommendation 10:** Transition to structure-specific flood frequency determination
- **Recommendation 14:** Transition to structure-specific risk assessment

Goal 5: Awareness of flood hazard and risk data

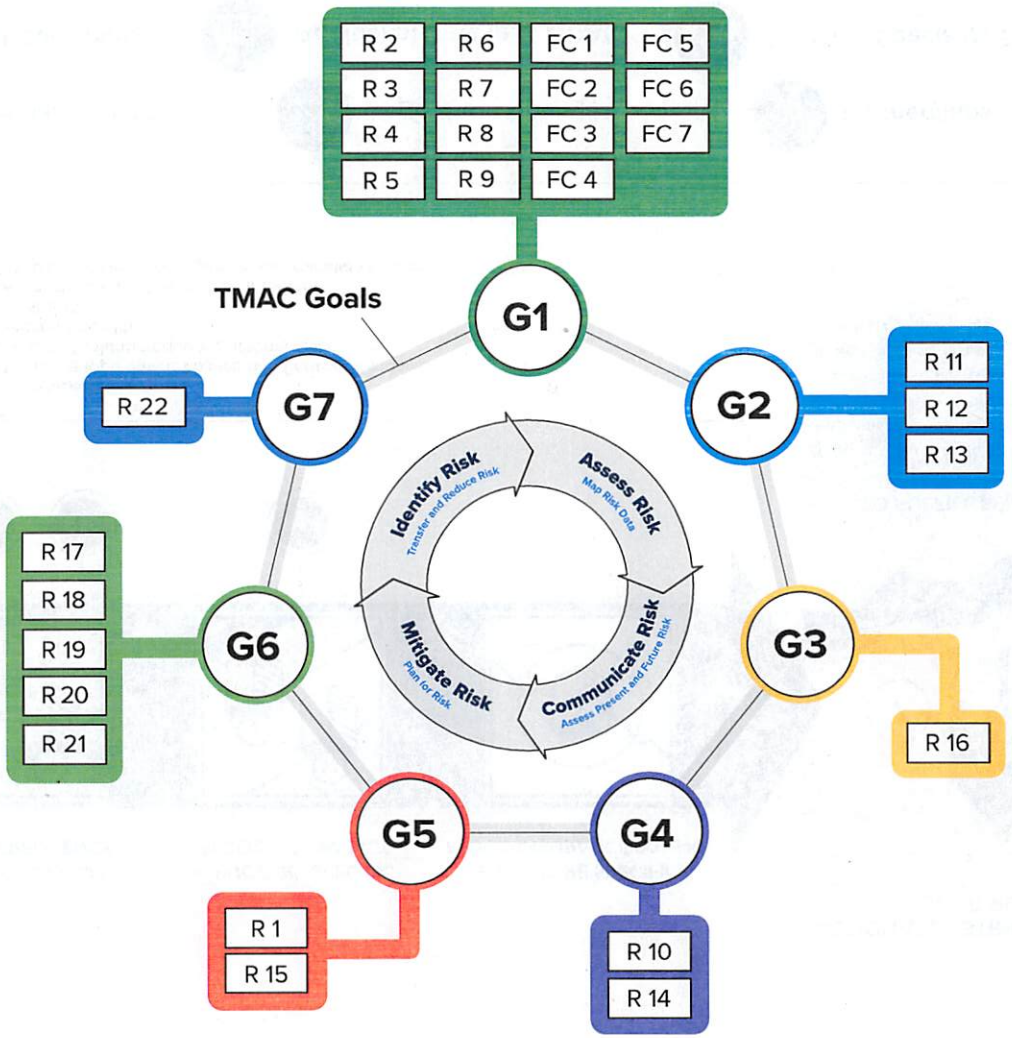
- **Recommendation 1:** Implement process to assess needs of users
- **Recommendation 15:** Communicate messages that consider long-term resilience strategies

Goal 6: Added value partnering and leveraging

- **Recommendation 17:** Consider NAPA recommendations on agency cooperation and federation
- **Recommendation 18:** Partner to ensure availability of accurate water level and stream flow data and enhance the NHD
- **Recommendation 19:** Implement strategies to incentivize stakeholders to increase partnerships
- **Recommendation 20:** Develop measures to evaluate CTP capabilities and competencies, and increase responsibilities
- **Recommendation 21:** Establish National Flood Hazard Risk Management Coordination Committee

Goal 7: Permanent, substantial program funding

- **Recommendation 22:** Define financial needs to implement recommendations



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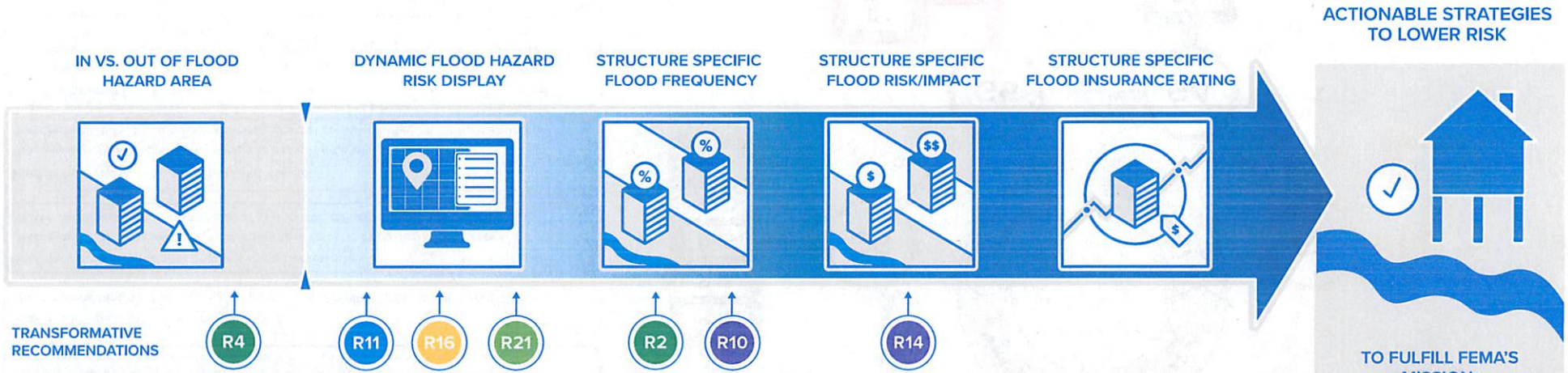
Recommendation Timeline

Implementation of transformative recommendations will result in credible products, efficient production, stakeholder awareness as well as acceptance, effective leveraging and financial stability.



CHALLENGE OF TODAY

Does not account for risk associated with flood events other than the 1% annual chance frequency, which may lead to miscalculating the risk and related insurance premium based on expected damage from more frequent flood events, flood events greater than the 1% annual chance frequency or unique floodplain flooding characteristics.

TRANSFORMATIVE RECOMMENDATIONS

- Recommendation 2: Develop National program 5-year plan
- Recommendation 4: Work with partners to ensure topo data is collected to Federal Standards
- Recommendation 10: Transition to structure-specific flood frequency determination
- Recommendation 11: Update MIP to add greater flexibility
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- Recommendation 16: Transition to database-derived, digital display environment
- Recommendation 21: Establish National Flood Hazard Risk Management Coordination Committee

ANTICIPATED NEEDS

- Executive-Level Sponsorship
- Technology Enhancements
- Legislation Changes
- Partnerships
- Program Resources
- Management-Level Ownership
- Additional Data (e.g. LiDAR)
- Program Specialist Support