

October 21, 2016

Regulatory Affairs Division
Office of the General Counsel
Federal Emergency Management Agency
500 C Street SW, Room 8NE
Washington, DC 20472-3100

Re: Docket FEMA-2015-0006

Dear Sir or Madam:

Thank you for the opportunity to submit comments on The Federal Emergency Management Agency's (FEMA) notice of proposed rulemaking to amend regulations and implement Executive Order 13690 (the Order), which established the Federal Flood Risk Management Standard (FFRMS).

From 1980 to 2013, flooding caused more than \$260 billion in damage in the U.S.,¹ making it the costliest and most common disaster threat in the nation.² Thoughtful application of the FFRMS will help to stop this costly cycle of flooding and rebuilding, protect people and property, and promote the conservation and restoration of resources that can act as natural defenses to flood-related disasters.

The Pew Charitable Trusts strongly supports both the FFRMS and FEMA's commitment to implementation, as conveyed in our previous comments on the Revised Guidelines.³

We read the proposal as an attempt to craft a common-sense, flexible approach for using the best-available information to protect FEMA's investments from future flood risk without overburdening project proponents with excessive new data collection.

We commend and support implementation of the following proposal components:

- Language that underscores the long-standing preference for locating projects outside of flood hazard areas;
- Elimination of the use of the often-misinterpreted terms "100-year" and "500-year" floodplain;
- FEMA's commitment to requiring the consideration of nature-based solutions to floodplain management as alternatives where possible, and calling for selection of such alternatives to the fullest extent practicable, as called for in the Order; and

¹ See, for example, White House Fact Sheet, "Taking Action to Protect Communities and Reduce the Cost of Future Flood Disasters," January 30, 2015.

² See, for example, Federal Emergency Management Agency, National Flood Insurance Program, "Resources: Flood Facts," last updated May 9, 2016.

³ See comments submitted by The Pew Charitable Trusts, May 6, 2015, <https://www.regulations.gov/document?D=FEMA-2015-0006-0112>

- Commitment to adhering to more stringent state and local floodplain standards, including additional freeboard requirements and more comprehensive local regulations regarding substantial damage and substantial improvement.

Below are recommendations aimed at strengthening key aspects of the proposal.

FEMA should commit to using the best available information to consider future flood risk, including data on sea-level rise in coastal areas.

The Order and the revised implementing guidelines are premised on the need to consider and plan for future flood risk beyond the 1 percent annual chance floodplain areas. This update allows for flood risk to be viewed in the frame of a 0.2 percent annual chance flood or with 2-to 3-foot freeboard allowances, but favors a Climate-Informed Science Approach (CISA). While the FEMA proposal notes this preference, it opts for the freeboard approach in most instances. There are situations when freeboard may be a reasonable option, but we believe that the proposal should recognize and utilize the advances in flood prediction that will allow for a more sophisticated and protective methodology. CISA can and should be the preferred approach in many instances.

We agree that there are current limitations on the availability of finely-scaled data and models on future climate scenarios. We also understand that the Agency does not expect each applicant to bear the responsibility of conducting extensive literature searches and scientific reviews to find the most up-to-date and appropriate technical and scientific data to project future flood risk. The Agency can do more, however, to assure that currently available information on climate change and future risk begins to be integrated into the required FFRMS reviews and the nation's floodplain management policies.

Congress in 2012 directed FEMA's Technical Mapping Advisory Council (TMAC) to develop recommendations regarding how future risk should be factored into the FEMA mapping program. Among the many recommendations made by TMAC last year,⁴ the Council calls on the Agency to use global mean sea-level rise scenarios adjusted to reflect local and regional conditions to determine future coastal flood hazard estimates within two years of the December 2015 report's completion. The report discusses the complexity of looking at water level predictions for the Great Lakes and the current difficulties in using "a single, nationwide method for determining future riverine flood risk boundaries based on projected future changes to the watershed due to geomorphological or climate changes." It does not, however, suggest that these unsettled issues should delay FEMA's use of sea-level rise scenarios in coastal zones.

TMAC also recommends that FEMA work with partners, including the National Oceanic and Atmospheric Administration, the U.S. Army Corps of Engineers, the U.S. Geological Survey, the U.S. Global Change Research Program, and the National Ocean Council, to provide a set of regional sea-level rise scenarios for coastal regions of the United States. Again, this recommendation is one the Council urges the Agency to implement in the short term.

⁴ Technical Mapping Advisory Council, "Future Conditions Risk Assessment and Modeling," December 2015, https://www.fema.gov/media-library-data/1454954261186-c348aa9b1768298c9eb66f84366f836e/TMAC_2015_Future_Conditions_Risk_Assessment_and_Modeling_Report.pdf

FEMA should carefully consider the TMAC recommendations and require the use of CISA for certain coastal regions of the U.S. We believe CISA can be applied without significant delay.

As recommended by TMAC, the Agency could use the scenarios set out in the U.S. National Climate Assessment⁵ for coastal regions of the United States for future coastal flood hazard estimation. Working with other entities FEMA could move quickly to identify the existing data sets and models appropriate for down-scaling these scenarios within each specific coastal region, except the Great Lakes. This information could then be made available to potential project applicants through several possible approaches: updates provided through FEMA's Map Service Center, through the Agency's required annual FFRMS reviews, or special expedited analyses following major flood events in certain regions. This information, along with any locally developed information regarding future land use scenarios, could then be applied to project submittals.

Where detailed site-specific data on sea-level rise is not readily available for specific projects in coastal zones, we believe that the regional data would nonetheless provide useful context for a review, allowing project reviewers and proponents to have an informed perspective on the likely range of future flood risks.

FEMA should directly address deficiencies with current flood maps.

Because FEMA is the primary author of the flood hazard area maps, it is imperative that FEMA take a leadership position promoting the use of the best available science to plan for and mitigate against future flood risk. In addition, since the majority of projects that FEMA is likely to review and fund will involve new construction or rebuilding post-disaster in areas that have already been shown to be at risk for flooding, it is critically important for the Agency to be rigorous in its efforts to help communities rebuild in ways that will strengthen their capacity to withstand future floods while being good stewards of taxpayer dollars.

However, as the notice states, many communities lack maps that indicate the extent of the 0.2 percent annual chance floodplain. Some Flood Insurance Rate Maps (FIRMs) even lack detail on the base flood elevation for the 1 percent annual chance flood event, and others are based on hydrologic studies that do not meet current standards or have been rendered insufficient by local development changes. The maps simply must be improved. They are the basic building block for decisions about flood readiness in order to comply with the goals of the FFRMS.

While addressing these problems across the board will require additional resources, it may be possible to selectively target map improvements and decision-making changes to improve project reviews.

We urge the Agency to carefully examine the age and the "New, Valid, or Updated Engineering" (NVUE) status of any maps used as the basis for project reviews and to make a specific determination regarding the adequacy of the relevant FIRMs before proceeding further with the 8-step process. Where existing FIRMs are found to be inadequate—by virtue of the age, methodology employed, changed circumstances, such as significant upstream development, dramatic loss of wetlands, high levels of coastal erosion, or other factors that may affect future flood risk significantly—FEMA should work with the project

⁵ U.S. Global Change Research Program, U.S. National Climate Assessment, 2014, <http://nca2014.globalchange.gov/>

applicant and any other agencies participating in a review to provide reasonable supplementary information.

This approach, which would also guard against concerns about freeboard simply substituting for map updates, is consistent with efforts the Agency has made before in certain post-disaster situations, such as in the Gulf Coast after Hurricane Katrina when advisory base flood elevations (ABFEs) were provided to guide rebuilds and recovery.⁶

In addition, we recommend that FEMA headquarters and the regions track any map shortcomings identified in project reviews and work with the states, localities, and other federal agencies to prioritize map updates for the affected communities.

FEMA should help project applicants meet the requirement to consider nature and nature-based alternatives wherever possible and to select those options wherever practicable.

Existing FEMA rules include important goals of avoiding long- and short-term impacts associated with the occupancy and modification of floodplains and wetlands, as well as restoring and preserving natural floodplain and wetlands values. This proposal would add to the current definition of “natural values of floodplains and wetlands,” a new definition on “nature-based approaches.” We consider this language helpful but recommend that FEMA do more to comply with the Order’s emphasis on the use of natural systems, ecosystem processes, and nature-based approaches to floodplain management.

Our recommendation is for more explicit language that such approaches are considered upfront when all project alternatives are being developed—not simply as an afterthought as various alternatives are eliminated. FEMA could provide guidance and technical assistance to project applicants, perhaps relying on a regional approach, on the options for conserving and restoring natural and nature-based systems that can best assist in maintaining or enhancing flood resilience capacity in a given area. The approach that FEMA’s mitigation programs have taken with recent notices on the Pre-Disaster Mitigation grant availabilities may provide a useful model, with particular “green infrastructure” or ecosystem-based approaches cited as potential funding priorities and information shared via written materials and webinars.

Such an approach might also prove useful in assuring that project reviews consider cumulative effects, as required by Executive Order 11988.⁷ The Agency should consider allowing for a broader watershed- or ecosystem-based review of multiple projects equipping reviewers to carefully evaluate the cumulative impacts of fill and other alterations to a floodplain. This will allow for compensatory water storage, restoration of wetlands, or other approaches that will help protect a community from further flood damage. A multi-project review might be particularly suited for post-disaster recovery programs submitted by states that include multiple individual restoration and construction projects.

FEMA must take special care to protect both the structure and the function of critical facilities.

⁶ See, for example, “Helping the Gulf Coast Rebuild Stronger and Smarter,” presentation at the 60th Annual Interdepartmental Hurricane Conference, Mobile, Alabama, March 2006, <http://www.ofcm.gov/ihc06/Presentations/00%20opening/05-Buckley-FEMA.pdf> and FEMA WYO Clearinghouse memorandum to Write Your Own (WYO) Principal Coordinators and the NFIP Servicing Agent, dated March 14, 2007, <http://bsa.nfipstat.fema.gov/wyobull/2007/w-07019.pdf>

⁷ See Executive Order 11988: Floodplain Management, May 24, 1977, <https://www.archives.gov/federal-register/codification/executive-order/11988.html>

As recognized by the original Executive Order and long-recognized by FEMA's own rules, flood protection for certain categories of facilities should incorporate an additional level of safety. For critical facilities, such as hospitals and nursing homes, community centers that will serve as flood shelters, emergency response centers, or buildings which house toxic or explosive materials, even a slight chance of flooding can be too great and may lead to significant threats to life and property. It is important that the standards for constructing or reconstructing such structures meet a more rigorous standard.

We support, as an absolute minimum, the use of the 3-foot freeboard above the base flood elevation of the 1 percent annual chance floodplain, the 0.2 percent annual chance floodplain, or the CISA-derived floodplain, whichever provides the highest level of protection. We believe that the importance of such facilities necessitates this more thorough review and an enhanced safety factor.

Reliance on the highest of these three is particularly important given the discussion of coastal hazards in Appendix B of the Guidelines. This document notes that in some cases where the 0.2 percent floodplain has been determined, that determination may not have included a wave height. In those instances, the 0.2 percent annual chance floodplain level may actually be lower than the 1 percent ABFE plus freeboard and, in these cases, not sufficiently protective. We recommend that the Agency guard against this problem by adding a special section on critical actions to the rule and by more clearly distinguishing the FFRMS floodplain for critical facilities [Section 9.11, Subsection (d)(3) (ii)] from the FFRMS floodplain for non-critical actions [Section 9.11, Subsection (d)(3) (i)].

In addition, the Agency should incorporate into the review of such projects a more expansive and detailed consideration of siting, design and mitigation actions that can guard against the loss of function that can occur when flooding hampers access to or power for such facilities. In the case of a hospital or nursing facility, for example, it is insufficient to simply protect the structure and those inside from flood inundation. Major functions such as accessibility, delivery of supplies, water and utilities, as well as patient and staff needs, must be considered by reviewers.

FEMA should track investments in specific properties.

While we would support FEMA's adoption of a definition of "substantial damage" or "substantial improvement" that incorporates a consideration of cumulative value, we understand that FEMA does not currently maintain the data needed for this approach. To work towards that, we recommend that the Agency begin tracking and sharing this information for all new FEMA-funded projects, including public infrastructure or others receiving Public Assistance, Pre-Disaster Mitigation, or Hazard Mitigation Grants. The information will equip the Agency to identify areas with repeated, unaddressed flooding problems, set priorities for enhanced protection standards, and make solid recommendations for mitigation spending priorities.

In closing, we underscore the need for strong FEMA leadership on FFRMS implementation. The proposal is an important step in enhancing floodplain management and reducing our nation's exposure to future flood risk, while spending smarter. FEMA's proposal to implement the updated standard is particularly important as other agencies develop their own strategies for how to assure that their investments in new projects look at future flood risks. Thus, we urge FEMA to set a strong example, aiming for a rigorous and effective approach that will help project applicants and other federal agencies meet the highest standards of flood preparedness.

We commend FEMA for its initiative and believe that implementation of this long-overdue FFRMS offers an investment strategy for taxpayer dollars that will pay long-term benefits, especially as the population grows and concentrates near riverine and coastal flood hazard areas.⁸ We appreciate the opportunity to comment and look forward to FEMA's adoption of a final rule.

Sincerely,

A handwritten signature in black ink, appearing to read "Velma M. Smith". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

Velma M. Smith
Officer, Government Relations
The Pew Charitable Trusts

⁸ See "The Impact of Climate Change and Population Growth on the National Flood Insurance Program through 2100," prepared by AECOM for the Federal Emergency Management Agency, June 2013, p. ES-7. By 2100, the population within riverine and coastal Severe Flood Hazard Areas (SFHAs) is projected to increase by 130-155 percent. The total number of policyholders in the National Flood Insurance Program (NFIP) may increase approximately 100 percent cumulatively through the year 2100.