



NATURAL RESOURCES DEFENSE COUNCIL



January 30, 2017

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RE: Public Comments on U.S. Army Corps of Engineers' Proposed Implementation of Executive Order (E.O.) 11988, as amended by E.O. 13690; EC 1165-2-217

To Whom it May Concern:

American Rivers, the Natural Resources Defense Council (NRDC), and the National Wildlife Federation appreciate the opportunity to provide comments on the U.S. Army Corps of Engineers' (USACE) proposed Engineering Circular (EC) to implement Executive Order (E.O.) 11988, Floodplain Management, as amended by E.O. 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input.

American Rivers protects wild rivers, restores damaged rivers, and conserves clean water for people and nature. Since 1973, American Rivers has protected and restored more than 150,000 miles of rivers through advocacy efforts, on-the-ground projects, and an annual America's Most Endangered Rivers[®] Campaign. Headquartered in Washington, DC, American Rivers has offices across the country and more than 250,000 members, supporters, and volunteers.

NRDC is an international nonprofit environmental organization with more than 2 million members and online activists. Our organization works to safeguard the earth—its people, its plants and animals, and the natural systems on which all life depends. Our organizational goals include curbing global warming, safeguarding human health, and ensuring safe and sufficient water for people and the environment.

The National Wildlife Federation (NWF) is the nation's largest conservation education and advocacy organization. NWF has almost six million members and supporters and conservation affiliate organizations in forty-nine states and territories. NWF has a long history of working to modernize federal water resources planning and of advocating for the protection, restoration, and ecologically sound management of the nation's waters.

Please consider our General and Specific Comments offered below:

General Comments:

American Rivers, NRDC, and NWF support the USACE's proposed Engineering Circular 1165-2-217 and believe it is a critical document to ensure USACE projects are implemented in a manner that will ensure public safety and protect and restore natural floodplains. In particular we applaud the USACE for incorporating guidance on the three primary changes included in E.O. 13690:

- 1) Expansion of the base flood elevation to a higher vertical elevation and corresponding horizontal floodplain;
- 2) Use of higher standards for critical actions; and
- 3) Use of natural systems, ecosystem processes, and nature-based approaches in the development of alternatives.

We strongly encourage the USACE to proceed with finalizing this EC and ensuring its implementation as quickly as possible. Climate change is exacerbating our nation's susceptibility to disastrous flood events. The conventional approach to disaster preparation is no longer sufficient. The storms of our past are no longer reliable indicators of the storms of our future. Extreme precipitation events will become more common. Coupled with sea level rise, which is projected to be between two and six feet by the end of the century, flooding will become frequent and severe for many parts of the country. As a nation, we must account for these future climate impacts in the way we design and build our publicly-funded infrastructure—like our bridges, schools, and wastewater treatments plants—to avoid placing people and property in harm's way, and to save taxpayer dollars.

Even if climate change were not contributing to increasing flood risk, the economic costs to the nation associated with flood related damages are undeniable, unsustainable, and must be addressed. From 1998 to 2014, \$48.6 billion in FEMA Public Assistance Grants were spent on flood-related disasters¹. According to the National Oceanographic and Atmospheric Administration, 2016 was the 2nd highest year for the number of U.S. billion dollar disasters, with 15 events resulting in 138 fatalities and \$46 billion in direct costs. While tropical storms continue to cause significant flood damages, inland flooding events causing billions of dollars in damage have increased in the U.S. in recent years, with four in 2016 alone.² We cannot

¹ *The Need for Flood Protection Standards*, NRDC, <http://www.nrdc.org/water/fema-assistance-grants.asp> (last visited Oct. 15, 2016).

² NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2017). <https://www.ncdc.noaa.gov/billions/> (last visited Jan. 25, 2017)

continue this trend. Executive Order 13690 and the Federal Flood Risk Management Standard (FFRMS), if implemented faithfully, are an effective means by which to address this dilemma.

Specific Comments:

While we generally support the EC, we offer specific comments and recommendations that would help add clarity, or would otherwise strengthen the implementation of the FFRMS.

Page 5, lines 165-186:

We support use of the FFRMS floodplain for all options included here. However, it is unclear how the FFRMS will be applied for USACE programs that do not directly result in construction activities, but influence actions that occur in the floodplain, for instance the National Levee Safety Program. This program is charged with activities such as providing technical assistance and developing a comprehensive set of guidelines and standards, activities which we believe the FFRMS should apply to.

In addition, it is not clear whether the FFRMS will apply to activities implemented under P.L. 84-99. We strongly believe that the FFRMS should be used in the decision processes that result in activities under P.L. 84-99. For instance, when rebuilding levees damaged by floods, the USACE and non-federal sponsors should seek to make repairs that will accommodate increased flood conveyance, using natural and nature-based approaches whenever possible. Furthermore, the Water Infrastructure Improvements for the Nation Act, S.612 Section 1176, was intended to do just that. It clarifies that restoration approaches are included in the definition of “nonstructural alternatives” and allows for an increase in the level of protection provided by a flood control system. We strongly encourage the USACE to develop guidance on Section 1176 in the spirit of E.O. 13690.

Page 5, lines 199-204:

This section refers readers to “the most current guidance on requests pursuant to 33 CFR Section 408.” This is unclear. Is new guidance under development?

Page 6, lines 218-219

We generally agree that the FFRMS need not apply to routine operations and maintenance (O&M) activities on an individual basis when they do not impact or change the floodplain. However, the FFRMS should be applied where O&M activities will affect the floodplain, and where O&M activities involve construction such as with the USACE Middle Mississippi Regulating Works Program. Moreover, we believe the FFRMS should be applied to projects or systems when it is determined that cumulative impacts of O&M activities have an impact or change the floodplain or have an impact on flood hydrology. In order to assess this impact, the USACE should conduct cumulative impact analysis on a regular basis, such as every 5 years, in order to adapt operations plans and O&M plans to incorporate the FFRMS. For instance, routine O&M activities on the Middle Mississippi River, including placement and maintenance of river training structures have been shown by independent researchers to

increase flood heights. Thus, future plans for O&M involving river training structures, or other activities that have the potential to increase flood heights should be subject to the EC.³

Page 6, line 233-245

We support the USACE's efforts to coordinate early when working on a project with other federal agencies. However, we have some concerns about how this coordination will play out when working with other agencies that utilize a different approach to implement the FFRMS than USACE. For instance, the Department of Housing and Urban Development has opted not to implement the requirement to define the horizontal extent of the floodplain. We encourage the Corps to provide some clarity on the process that will be used to overcome policy differences on the FFRMS.

In addition, we recommend that the USACE also seek to coordinate early with the relevant state agencies when determining the vertical and horizontal floodplain for an activity.

Page 7, lines 252-263.

In general, we find this section unclear. It states that the USACE will use the vertical flood elevation in evaluating and formulating alternatives and selecting an alternative, however it will not use it as a design standard. This makes absolutely no sense to us. The purpose of the FFRMS is to improve resilience to current and future flood risk, why would the USACE determine the increased floodplain but opt not to actually design projects that are resilient to the increased flood risk? Does the USACE intend to alert communities to their increased flood risk, but not design projects that will provide that level of protection? We strongly recommend reassessing this approach, or at the very least providing some criteria for exempting projects from using the design standards.

Page 7, lines 265-272:

We strongly support the consideration of natural and nature-based approaches in the initial array of alternatives. We are pleased that the USACE plans to produce additional guidance on this topic in the future and look forward to evaluating it. We recommend that the USACE develop this guidance in partnership with natural resource agencies in order to maximize coordination across the federal family. We also recommend that the USACE consult with state agencies that have experience implementing natural and nature-based approaches, such as Washington State's, Department of Ecology's Floodplains by Design Program, or Vermont

³ See Robert E. Criss, Mingming Luo, *River Management and Flooding: The Lesson of December 2015–January 2016, Central USA*, *Journal of Earth Science*, Vol. 27, No. 1, p. 117–122, February 2016 ISSN 1674-487X (DOI: 10.1007/s12583-016-0639-y); Pinter, N., A.A. Jemberie, J.W.F. Remo, R.A. Heine, and B.A. Ickes, 2010. Empirical modeling of hydrologic response to river engineering, Mississippi and Lower Missouri Rivers. *River Research and Applications*, 26: 546-571; Remo, J.W.F., N. Pinter, and R.A. Heine, 2009. The use of retro- and scenario- modeling to assess effects of 100+ years river engineering and land cover change on Middle and Lower Mississippi River flood stages. *Journal of Hydrology*, 376: 403-416; Comments on the Regulating Works Project Draft Supplemental Environmental Impact Statement (November 2016) submitted by National Wildlife Federation, American Rivers, Missouri Coalition for the Environment, Prairie Rivers Network dated January 18, 2017.

Department of Environmental Conservation's Rivers Program, in order to promote consistency with successful state programs. Further, we recommend drawing on the expertise of the NGO community and the resources that have been developed on this topic⁴.

In addition, development of further guidance on this topic should be undertaken in tandem with implementation of Section 1184, Consideration of Measures, of S.612, the Water Infrastructure Improvements for the Nation Act. This section requires the USACE to consider natural features, nature-based features, nonstructural measures, and structural measures when developing feasibility studies for flood risk management, hurricane and storm damage reduction, and ecosystem restoration.

Finally, we would like to emphasize the need for additional guidance on the application of natural and nature-based approaches to incorporate these approaches in riverine systems. While the USACE has made progress on the use of, and guidance on, these approaches in coastal systems particularly during implementation of the North Atlantic Coastal Study, we have been disappointed that the same level of attention and guidance have not been provided for the use of natural processes and nature-based approaches in riverine systems.

Page 8, lines 320-329:

We are concerned that the USACE has not provided adequate information on how the agency will apply CISA to riverine flood hazards. The EC states that "All Corps actions subject to the FFRMS will utilize the [Climate Informed Science Approach (CISA)] approach, unless compelling justification for using one of the other approaches is developed". The EC goes on to refer readers seeking more information on CISA to Appendix H of the Implementing Guidelines and Engineering Regulation 1100-2-8162, Incorporating Sea Level Change in Civil Works Programs. Appendix H states "No approach analogous to the [sea level rise approach] has yet been developed to account for uncertainties due to climate change with respect to projected future precipitation and associated riverine flooding." It appears the USACE plans to utilize the CISA in riverine conditions, but Appendix H and ER1100-2-8162 do not provide adequate information on a methodology for riverine systems. We support the USACE's efforts to develop and use a methodology for using CISA to determine riverine flood hazards, but we recommend developing additional guidance on the methodology.

Page 10, lines 384-391:

We support the USACE's intent to consider natural and nature-based approaches in the initial array of alternatives of the decision-making process as stated on page 7, line 270. The development of the initial array of alternatives occurs in Step 3 of the decision making process. However, the description of Step 3 on page 10, lines 384-391 does not specifically mention that natural and nature-based approaches should be included. We strongly urge the USACE to specify that natural and nature-based approaches should be developed in the description of

⁴ Loos, Jonathon and Eileen Shader. Reconnecting Rivers to Floodplains. American Rivers. Spring 2016. http://s3.amazonaws.com/american-rivers-website/wp-content/uploads/2016/06/17194413/ReconnectingFloodplains_WP_Final.pdf (last visited 1/25/16)

Step 3. Without stating it here, and in project planning guidance, there is a risk of this requirement being overlooked or forgotten. This has potential to cause unnecessary delay if the public demands consideration of natural and nature-based approaches later in the process.

Page 12, line 465-487:

Generally we support the “Restore and Preserve” section. As recommended above, we believe the USACE should develop additional guidance on the use of natural and nature-based approaches which should provide more information on methods of enhancing or maintaining the natural and beneficial values of floodplains. We recommend adding a sentence to this section that refers to that pending guidance. We also recommend that the section be amended to state that whenever possible, restoration and preservation methods should not be over-engineered, and should be designed to be self-maintaining without a reliance on long-term operations and maintenance.

Thank you again for developing guidance on implementation of the Federal Flood Risk Management Standard within the USACE’s activities and the opportunity to provide comments. We urge the USACE to finalize and begin implementation as quickly as possible.

Thank you,



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