2015

E.O. 11988 and E.O. 13690 Implementing Guidelines Comment Response Document October 8, 2015

PRODUCED BY THE MITIGATION FRAMEWORK LEADERSHIP GROUP

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Introduction

On January 30, 2015, the President signed Executive Order (E.O.) 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, which amended E.O. 11988, Floodplain Management, issued in 1977. Once implemented by Federal agencies, the Federal Flood Risk Management Standard (FFRMS) and E.O. 11988, as amended by E.O. 13690, (hereinafter, E.O. 11988) will reduce the risk and cost of future flood disasters.

On February 5, 2015, the Administration released for public comment a draft Revised Guidelines for Implementing Executive Order 11988, Floodplain Management (Guidelines) (dated January 28, 2015). These interagency Guidelines have provided and will continue to provide a consistent framework for implementing E.O. 11988 across Federal agencies. The original Guidelines have been revised to correct outdated references and provisions and to address the changes resulting from E.O. 13690.

The comment period seeking input on the revised Guidelines started on February 5, 2015, and ended on May 6, 2015. Comments were submitted through the following mechanisms:

- Written comments received at a series of 8 listening sessions across the country (135 submissions)
- Verbal comments shared during the public comment periods of these same listening sessions (74 commenters)
- Comments submitted through the FFRMS email address (20 submissions)
- Comments submitted through regulations.gov (326 submissions)
- Petition of support (1 submission)

There was some overlap and duplication in the submissions, so the numbers above do not necessarily represent the total number of commenters.

This document provides an overview of the comments received and a summary of major themes that emerged from these comments. Within each theme, there are questions (in bold) that capture key concerns followed by further explanation of the issue and/ the response to the question or comment. Where appropriate, the response includes an explanation of any changes to the Guidelines (*italicized text*).

Overview of Comments Received

These submissions were broken down into more than 2700 individual, issue-specific comments. Of those comments, about 75 were referred to individual agencies to address in their implementing procedures; about 25 expressed basic opposition to E.O. 11988 or the FFRMS; more than 150 expressed concerns about the way that the FFRMS or E.O. 13690 were developed; and approximately 80 expressed either general support or support for some specific aspect of E.O. 13690, E.O. 11988 or the FFRMS (in addition to the 9,321 signatures on the petition of support, noted above).

The remaining comments were reviewed, discussed, and addressed by a Federal Interagency Workgroup reporting to the Mitigation Framework Leadership Group (MitFLG). These remaining comments spanned many topics. Some of the major topics included the following:

- Scope and applicability of E.O. 11988 and the FFRMS and the associated implications for implementation
- The concept of best-available data and information, especially as it relates to the Climate-informed Science Approach and mapping information available to determine the floodplain
- Questions about the impact of E.O. 13690 on the National Flood Insurance Program (NFIP) and other Federal Emergency Management Agency (FEMA) programs
- Concerns about consistency in implementation across Federal agencies
- Requests for clarification or additional information on critical actions and nature-based approaches
- Suggestions and questions about the development of agency-specific guidelines and implementation plans
- Questions and suggestions about how other levels of government should be involved in the process and, in particular, how state, local, tribal, or territorial standards will be addressed
- Clarification on how E.O. 13690 applies to leveed areas

Clarifications

The following list of clarifying statements addresses some common misperceptions regarding the E.O.s and their implementation.

- Scope of E.O. 11988
    - The requirements of E.O. 11988 apply only to Federal actions.[1] They have not and will not apply to purely private activities – i.e., those activities that do not involve any Federal action.
    - A private entity would not seek an exemption or exception to the requirements of E.O. 11988 from a Federal agency. Rather, a Federal agency would apply an exemption or an exception based on its procedures and the specific Federal action being taken.
    - The terms "agency" or "agencies" in E.O. 11988 and E.O. 13690 refer to Federal agencies consistent with the definition of agency that appeared in the 1977 version of E.O. 11988. *The definition of the term "agency" is being clarified in the Guidelines.*
    - Agencies that apply the national security exception to an action only except that action from the new approaches for determining the floodplain in E.O. 13690 Sec. 2(i). Such actions are not excepted from the other requirements of E.O. 11988, E.O. 13690, and the FFRMS.

[1] "Action" is defined in the Guidelines as any of the following Federal activities: (1) acquiring, managing, and disposing of Federal lands and facilities; (2) providing federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

    - The requirements of E.O. 11988 can apply to structures or facilities. Structures are defined as "a walled and roofed building, including a gas or liquid storage tank, that is principally aboveground, as well as a manufactured home." Facilities are defined as "any man-made or man-placed item other than a structure." Facilities can include but are not limited to transportation infrastructure such as bridges and roads.
- The Guidelines
    - The Guidelines are advisory. They do not create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States. The use of any mandatory language in the Guidelines is intended to capture elements of E.O. 11988 and E.O. 13690. The Guidelines provide broad guidance in the implementation of these Executive Orders and offer a common point of reference so that each agency can issue or amend their E.O. 11988 regulations and procedures, as appropriate.
    - The eight-step decision-making process described in Part II of the Guidelines was originally derived from language in Section 2(a) of the 1977 version of E.O. 11988. Agencies have adapted this eight-step process to integrate with their other decision-making processes and to address the nature of the Federal action.
    - The Guidelines are meant to be flexible and national in scope, so they do not include references to regional-specific situations, prescriptive approaches for carrying out the requirements of E.O. 11988, or references to laws or regulations that could limit implementation. Examples included are meant to be illustrative, not exhaustive.
- The FFRMS Approaches
    - The FFRMS requires agencies to determine both the **vertical** flood elevation AND corresponding **horizontal floodplain** when implementing the decision-making process for federally funded projects.
    - The approaches to establish the higher vertical flood elevation and corresponding horizontal floodplain included in the FFRMS will not be applied retroactively to existing or ongoing projects. Agency-specific procedures will describe how and when the new standards will be implemented for agency projects and programs.
- Mapping
    - Agencies will not necessarily map all new floodplains determined through the approaches described in the FFRMS, nor will these new floodplain boundaries be included on FEMA Flood Insurance Rate Maps (FIRMs). To the extent that agencies choose to map the FFRMS floodplain, such maps would only need to extend to the area relevant to the action.
- Enforcement
    - Section 5 of E.O. 11988 states that "the Water Resources Council shall periodically evaluate agency procedures and their effectiveness" but does not otherwise create a mechanism for enforcing E.O. 11988.

Scope and Applicability of E.O. 11988, E.O. 13690, and the FFRMS

A significant number of comments received from stakeholders (over 600) pertained to the scope and applicability of E.O. 11988 and E.O. 13690. In particular, stakeholders were confused by some of the

language that was included in the Policy Section of E.O. 13690 that referenced higher standards for Federal investments and federally funded projects. This confusion prompted questions and comments about both the scope of E.O. 11988 and the actions to which the FFRMS applies. Below are some questions and comments that capture these key concerns.

Do the approaches for determining the vertical flood elevation and corresponding horizontal floodplain in the FFRMS apply to all Federal actions or just federally funded projects as indicated by Section 1 of E.O. 13690?

E.O. 11988 continues to apply to Federal actions as defined in E.O. 11988 Section 1. The higher vertical flood elevation and corresponding horizontal floodplain as determined through the FFRMS referenced in E.O. 13690 must be used for federally funded projects – actions where Federal funds are used for new construction, substantial improvement, or to address substantial damage to structures and facilities. For all other Federal actions, agencies are still required to use, at a minimum, the base (1-percent-annual-chance) flood elevation and floodplain. Agencies should use the 0.2-percent-annual-chance flood elevation and floodplain for critical actions. Agencies would need to explain in agency-specific procedures whether and how the higher standard of the FFRMS would apply to other types of Federal actions. The remainder of the amendments and updates to E.O. 11988 that are called out in E.O. 13690 (e.g., the need to consider natural and nature-based approaches, etc.) apply to all Federal actions.

How will the FFRMS approaches affect post-disaster recovery funding?

Where post-disaster recovery funding is used for new construction, substantial improvement or to address substantial damage to structures and facilities, the approaches in the FFRMS must be used to determine the vertical flood elevation and corresponding horizontal floodplain. How an agency applies E.O. 11988 to its projects and programs will be described in agency-specific procedures. Agencies involved in post-disaster activities are encouraged to coordinate under the Unified Federal Review program as they develop their agency-specific procedures to ensure that they can quickly take coordinated action following a flood event. “Emergency work," which is essential to save lives and protect property and public health and safety, is still exempt from the requirements of E.O. 11988 per Section 8.

How does the FFRMS apply to federally insured or guaranteed loans and federally backed mortgages?

E.O. 11988 continues to apply to Federal loan programs as described in E.O. 11988 Section 2(c). The language in this section was not changed by E.O. 13690. For actions that use Federal funds for new construction, substantial improvement, or to address substantial damage to structures and facilities, the approaches in the FFRMS must be used to determine the vertical flood elevation and corresponding horizontal floodplain that applies to the action. How an agency applies E.O. 11988 to its programs will be documented in agency-specific procedures. For example, the Department of Housing and Urban Development (HUD) recently released a statement indicating it will not be applying the new approaches for determining the floodplain in the FFRMS to *“*single-family home mortgages for acquisition or refinancing of existing homes under the Federal Housing Administration or any other program. As a result, the FFRMS would have no effect on the vast majority of privately owned homes and businesses.

The new standard would be incorporated into the existing review process for mortgage insurance, so the elevation or floodproofing component would not apply unless new construction or substantial improvement to an existing structure in a floodplain is proposed with Federal funds."

Must the FFRMS be applied to Community Development Block Grant (CDBG) and funds?

E.O. 11988 continues to apply to Federal grant funding as described in E.O. 11988 Section 2(c). The language in this section was not amended by E.O. 13690. Where CDBG funds are used for new construction, substantial improvement, or to address substantial damage to structures and facilities, the approaches in the FFRMS must be used to determine the vertical flood elevation and corresponding horizontal floodplain that applies to the action.

Will the FFRMS apply to Federal direct loan programs?

E.O. 11988 continues to apply to loan programs as described in Section 2(c). The language in this section was not changed by E.O. 13690. Where direct loans made by an agency are used by the recipient for new construction, substantial improvement, or to address substantial damage of structures and facilities, the approaches in the FFRMS must be used to determine the vertical flood elevation and corresponding horizontal floodplain that applies to the action. How an agency applies E.O. 11988 to its programs will be documented in agency-specific procedures.

How will the approaches for determining the floodplain in the FFRMS affect insurance premiums and other requirements of the NFIP?

The approaches for determining the floodplain included in the FFRMS will not change the minimum floodplain management criteria that communities must adopt in order to participate in the NFIP nor will it alter FEMA's flood mapping standards or the rating and claims practices of the NFIP. In addition, the approaches in the FFRMS will not impact a flood insurance policy's Increased Cost of Compliance (ICC) coverage. ICC coverage is considered a part of the Standard Flood Insurance Policy and is not a financial transaction subject to FFRMS floodplain determination requirements.

Are permits subject to the requirements of E.O. 11988 and the floodplain determination approaches in the FFRMS?

E.O. 11988 continues to apply to Federal permit programs as described in E.O. 11988 Section 2(c). The language in this section was not changed by the amendments in E.O. 13690. Stakeholders should consult agency-specific procedures to address questions they may have about specific permit programs.

The vertical flood elevation and corresponding horizontal floodplain as determined through the FFRMS must apply to federally funded projects – actions that use Federal funding for new construction, substantial improvement, or to address substantial damage to structures and facilities. All other Federal actions are still required to use, at a minimum, the base flood and floodplain when complying with the requirements of E.O. 11988. Agencies should use the 0.2-percent-annual-chance flood and floodplain for critical actions. Agencies would need to provide explanation in their agency-specific procedures if they apply the higher standard of the FFRMS to other types of Federal actions such as permits. The U.S. Army

Corps of Engineers recently issued a statement in regard to the applicability of E.O. 11988 to USACE Regulatory Program permitting activities. According to the fact sheet, the USACE Regulatory Program will continue to review applications by applying the area subject to the "base flood" as the relevant "floodplain" as defined in E.O. 11988 and under 33 CFR 320.4.

What effect does the new definition of floodplain in E.O. 11988 have on the Waters of the U.S. rule?

The finalized Clean Water Rule (CWR) clarifying protection under the Clean Water Act for "waters of the U.S." (WOTUS) is a separate regulation and is not affected by the expanded definition of floodplain found in E.O. 11988 as amended by E.O. 13690. In addition, the agencies have revised the definition of "adjacent" under the CWR, in particular the definition of "neighboring," from the proposed rule language. The CWR no longer includes a provision defining "neighboring" with all waters within "floodplains" as "adjacent." Instead, the CWR now provides specific distance limits and the base floodplain for determining "neighboring" WOTUS. The CWR provides that the base floodplain is identified as "the area that will be inundated by the flood event having a one percent chance of being equaled or exceeded in any given year." The basis for these revisions to the proposed rule is discussed in the preamble to the final CWR. Therefore, E.O. 11988 as amended by E.O. 13690 does not affect the determination of “adjacent” waters for purposes of the Clean Water Act.

Which agencies and programs must comply with amended E.O. 11988?

It is not possible to provide a comprehensive list of programs to which the requirements of amended E.O. 11988 will apply. Agency-specific procedures will provide more information on the types of programs and activities that are affected.

Every Federal agency as defined in E.O. 11988 must comply with the requirements of the Order, although some agencies may not undertake the types of actions that would require compliance with E.O. 11988. Stakeholders should contact any agency if they have questions regarding existing E.O. 11988 implementing procedures and an agency’s plans to update these procedures. The list of agencies below have been requested to submit Implementation Plans to the National Security Council that describe their time frame and process for updating their implementing procedures for E.O. 11988. Some procedures may be developed at an organizational level below the agency level.

- Department of Agriculture
- Department of Commerce
- Department of Defense
- Department of Education
- Department of Energy
- Department of Health and Human Services
- Department of Homeland Security
- Department of Housing and Urban Development
- Department of the Interior
- Department of Justice
- Department of Labor
- Department of State
- Office of the Director of National Intelligence
- Environmental Protection Agency
- Federal Energy Regulatory Commission
- Office of Personnel Management
- National Aeronautics and Space Administration
- Small Business Administration
- National Science Foundation
- General Services Administration
- Millennium Challenge Corporation
- Social Security Administration
- National Capital Planning Commission
- Federal Communications Commission

- Department of Transportation
- Department of the Treasury
- Department of Veterans Affairs
- Farm Credit Administration
- Nuclear Regulatory Commission
- Tennessee Valley Authority

Consistency Across Federal Agencies

E.O. 11988 and the FFRMS include at least three approaches for determining a higher vertical elevation and corresponding horizontal floodplain for projects that use Federal funding for new construction, substantial improvement, or to address substantial damage to structures and facilities. These approaches require the listed types of Federal actions to meet a higher level of resilience than the previous base (1-percent-annual-chance) floodplain included in the 1977 version of E.O. 11988 to accommodate anticipated impacts of climate change and other factors. Climate change impacts will vary by location, so E.O. 11988 and the FFRMS provide the flexibility necessary to apply the level of resilience most appropriate for a Federal project in a particular location. The comments and questions below reflect those received through public and stakeholder comments.

The three approaches for determining the higher vertical flood elevation and corresponding horizontal floodplain in the FFRMS may cause inconsistencies across agencies implementing E.O. 11988 especially where multiple agencies are involved in a particular project.

There were over 100 individual comments pertaining to consistent implementation of the revised E.O. 11988 across Federal agencies, largely because of the new options for defining the floodplain included in E.O. 13690 for actions that use Federal funding for new construction, substantial improvement, or to address substantial damage to structures and facilities. Commenters felt that these potential inconsistencies could result in delays in project implementation and confusion for non-Federal partners and stakeholders. The three approaches for determining the expanded floodplain included in the FFRMS are meant to provide flexibility for agencies to use the most appropriate approach based on the location of the action, the agency's mission, the best-available data and information, and other factors. Agencies acknowledge that these new approaches for determining the floodplain represent a change from the 1977 version of E.O. 11988 and inject a new dimension of potential variability as it relates to federally funded projects.

Federal agencies have been coordinating on implementation of E.O. 11988 since it was issued in 1977. To comply with E.O. 11988, the Guidelines specifically direct agencies to coordinate early in the process of selecting the most appropriate approach for determining the vertical flood elevation and corresponding horizontal floodplain that will apply to the project, especially for those actions subject to the higher vertical flood elevation and corresponding horizontal floodplain described in the FFRMS.

In some cases, coordination is documented formally. In other cases, it happens less formally. The specific mechanism for coordination is typically determined on a project-specific basis and/or will be described in an agency's implementing procedures. *Some language has been added to the Guidelines to describe these coordination mechanisms. For post-disaster situations in particular, agencies will be encouraged to coordinate through the Unified Federal Review process – both in the development of their agency-specific procedures and in carrying out the requirements of E.O. 11988.*

How will conflicts among agencies be resolved when implementing E.O. 11988, especially if agencies disagree about which approach to use when determining the floodplain or when determining critical actions?

As with all project coordination issues, agencies will determine the most appropriate path to resolution for a particular issue related to determining the floodplain. For example, some agencies may defer to a particular agency that may have the lead on the project. Other agencies may define an escalation process through memoranda of understanding or other interagency agreements governing certain sectors of Federal activity, such as the Unified Federal Review that governs Disaster Recovery Projects. *Clarifying language has been added to the Guidelines to further describe agency coordination.*

How will State, tribal, local or territorial governments be involved in the process for complying with E.O. 11988, and what sort of process may be available to appeal decisions and determinations made by Federal agencies?

Stakeholders expressed concern that representatives at other levels of government closer to the project may have insights, information, and existing standards that could inform agency decisions. Federal agencies have been working with State, local, tribal, territorial governments, private-sector entities, and the public when implementing E.O. 11988 since it was issued in 1977. Section 2(a)(2-3) of E.O. 11988 calls for agencies to circulate a notice about the action early in the project planning process. The process for notice and engagement is called out in more detail in the Guidelines at Part II, Steps 2 and 7 of the eight-step decision making process. For some types of projects, this coordination process may be governed by other requirements. For example, Federal Consistency and intergovernmental coordination is called out in Section 307 of the Coastal Zone Management Act (CZMA) of 1972 (16 U.S.C. §1456). The CZMA describes the process for ensuring coordination and promoting consistency across coastal zone management programs and regulations. Non-Federal entities are encouraged to refer to agency-specific procedures to determine how agencies have interpreted these notice and engagement requirements for specific actions and raise concerns and questions where appropriate. *The Guidelines have been expanded to make it clear that (1) references to "public" notice or engagement includes engagement and notice of other government entities and stakeholders, and (2) that input provided by these entities after a Federal agency has made a determination of the floodplain can be used by agencies to revisit their floodplain determination.*

Cost of Implementation

How will any increased project costs be paid when agencies must comply with the higher flood risk management standards in the FFRMS?

Projects that are required to apply the approaches in the FFRMS may have higher initial costs than those projects not subject to these new requirements. However, it is likely that future costs will be reduced, because these projects will be more resilient to future flooding. Where the project involves only Federal funds, the agency implementing that project will incorporate sufficient funding into their project budgets to accommodate the appropriate level of resilience. In cost-share situations, the Federal agency will not cover the entire cost of complying with the new requirements of E.O. 11988 as a result of E.O.

13690 and the FFRMS. Rather, these costs will be shared in the same manner as other project costs, so non-Federal entities could incur additional initial project costs. Where an action involves a Federal loan, to the extent that the loan program is subject to the new FFRMS requirements, the additional costs for complying with the FFRMS may be paid by the individuals requesting the loan, consistent with agency-specific procedures. For example, for Small Business Administration (SBA) disaster loans, the borrower may be required to take out additional loan funds (up to the maximum loan amount allowed by SBA regulations) to meet the resilience requirements of the FFRMS. Because borrowers would need to continue to satisfy repayment ability requirements, if the additional cost to elevate would make the loan unaffordable, SBA may have to decline the loan. Again, E.O. 13690 anticipates that these additional investments will result in future savings because of the reduction in future flood losses. *No specific changes were made to the Guidelines as a result of these comments.*

Critical Actions

Prior to issuance of E.O. 13690, critical actions were referenced in the 1978 Guidelines. While critical actions were not specifically referenced in the 1977 version of E.O. 11988, the 1978 Guidelines for Implementing E.O. 11988 defined the floodplain for critical actions as the 500-year floodplain, or the 0.2-percent-annual chance floodplain. As a result, many agencies incorporated the concept of critical actions into their agency-specific procedures and have been using the definition and description of critical actions to guide their implementation for nearly 40 years. The amendments in E.O. 13690 elevate this important concept to the language of E.O. 11988. There were over 80 comments or questions related to critical actions.

The definition and description of critical action is too broad and should be made more specific – it may contribute to inconsistency across Federal agencies.

The definition of critical action has been in use by agencies since 1978. The definition allows for flexibility across agencies, and the sample questions in Part I Section 6 of the Guidelines provide further considerations that help agencies distinguish critical actions from other Federal actions. Because many agency actions are unique and in support of agency-specific missions, it is not possible to provide a complete list of all possible critical actions. *While the definition of critical action has not been changed, the Guidelines will clarify that critical actions can include actions that are not related to a facility or structure.*

Because critical actions are now part of E.O. 11988 there is expected to be increased consistency across agencies as to how they are determined and applied. When a specific action involves multiple agencies, consistency will also be achieved through early agency coordination as mentioned previously.

Part I, Section 6 of the Guidelines includes a reference to the FFRMS stating that the FFRMS encourages agencies to use higher flood elevations when appropriate based on the criticality of the action and the other flood characteristics. The Guidelines do not include criteria for how agencies will decide when to use these higher elevations.

E.O. 11988 and the FFRMS requirements provide a baseline for agency actions. In implementing E.O. 11988 since 1977, agencies have always had the flexibility to choose higher or more stringent standards

based on the criticality of the action and flood characteristics. However, the language that appeared at lines 808-812 of the revised draft Guidelines (January 28, 2015) may lead to confusion, especially the term "encourages." *The Guidelines were clarified to reflect that agencies "may" use higher standards.*

Who determines if an action is a critical action?

The Federal agency taking the action has always been responsible for determining whether an action is a critical action or not. This process will continue. The eight-step decision-making process provides opportunities for Federal agencies to engage with other levels of government and the public. Non-Federal entities are encouraged to raise concerns and questions at the appropriate points in the process.

For critical actions that must use the higher vertical flood elevation and corresponding horizontal floodplain included in the FFRMS, it appears that the new vertical flood elevation may represent a decrease from the earlier requirement of the 0.2-percent-annual-chance flood elevation for critical actions, depending on which FFRMS approach is selected.

The FFRMS is designed to provide flexibility to determine the most appropriate approach for determining the floodplain for federally funded projects based on best-available information. This could mean that the flood elevation for critical actions could be lower than the 0.2-percent-annual-chance flood elevation called out in the 1978 Guidelines. It also could be higher. This ability of an agency to choose among the approaches rather than being required to choose the higher could be revisited when the standard is evaluated in coming years. *No change was made to the Guidelines regarding this matter.*

Climate-informed Science Approach

Over 150 comments were received about the Climate-informed Science Approach – one of the three methods for determining the higher vertical flood elevation and corresponding horizontal floodplain in the FFRMS. With this approach, agencies are encouraged to use the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate and related science when determining the vertical flood elevation and corresponding horizontal floodplain for those projects subject to the FFRMS. The comments received primarily focused on requesting more clarity around the use of this approach, especially what is meant by available and actionable data, how data might evolve over time, and how consistency will be promoted across Federal agencies.

What are best-available and actionable data and methods as referred to in the Climate-informed Science Approach?

The interagency workgroup developed criteria to assist agencies in evaluating whether specific data and information could be considered "best available" and "actionable" as part of the revised *Guidelines.* While not exhaustive or exclusive, these criteria provide additional clarity on the kinds of information the public and other stakeholders can expect to see used. In addition, a technical appendix has been developed that provides additional information about data, information and resources to support the Climate-informed Science Approach. That appendix will be updated periodically as the FFRMS is

reassessed (as required by Section 4 of E.O. 13690) and as new resources and information become available.

How will Federal agencies consider climate and related data and information available from State, local, tribal, or territorial governments or other entities in the decision-making process?

Federal agencies that take action in or affecting floodplains will be responsible for identifying best-available and actionable data. Agencies will draw on common, publically available resources, such as data and information developed under the *National Climate Assessment* or tools published via the *Climate Resilience Toolkit*, which will help promote consistency. Further, the *Guidelines* now include criteria to assist agencies in evaluating whether data and information from other sources could be considered "best available" and "actionable." Additionally, as described in the new technical appendix, agencies may use regional or local scenarios or other climate information developed by or in partnership with non-Federal agencies, academia, nongovernmental organizations, or other partners. These other entities may provide additional data and information for agency consideration during the decision-making process (e.g., Step 2 of the eight-step process described in the Guidelines). Although this information would be provided after the agency has determined the vertical flood elevation and corresponding horizontal floodplain, this new information could be used to revisit that determination provided the information is actionable and relevant to the Federal action and is consistent with the agency's mission and mandates. *The Guidelines were revised to clarify these points.*

How will consistency be promoted across Federal agencies using the Climate-informed Science Approach?

Federal agencies taking an action that is a federally funded project will be responsible for identifying best-available and actionable data under the Climate-informed Science Approach. Agencies will draw on common, publically available resources as well as other information, which will help promote consistency. Further, the *Guidelines* now include criteria to assist agencies in evaluating whether data and information from other sources could be considered "best available" and "actionable." Where there are multiple agencies involved in an action, agencies will coordinate early in the planning process to work out how consistency will be handled throughout implementation, including in the determination of the vertical flood elevation and corresponding horizontal floodplain using best-available and actionable data and information.

The definition of the Climate-informed Science Approach refers to the use of "climate science." Will data and information other than climate science be used as part of the floodplain determination for this approach?

As indicated in Section 1 of E.O. 13690 and in the FFRMS itself, this approach was intended to include other factors that could influence flood risk. The data and information that might be considered could include changes in watershed characteristics (e.g., build-out conditions, erosion, subsidence), in addition to climate impacts. *The Guidelines were revised and a technical appendix has been developed that includes these references and provides further explanation.*

Climate-related science is evolving rapidly. Will the floodplain/flood elevation information change at a pace that makes it difficult for local agencies to adjust? Also, for phased projects, when are answers using the Climate-informed Science Approach to be considered "final"?

Generally speaking, flood hazards and our understanding of them continue to evolve. As a result, the guidance provided under the Climate-informed Science Approach is meant to be dynamic to allow incorporation of updated climate information, including new findings in the *National Climate Assessment*. Agencies will determine how they will address the potential for evolving flood hazard information in their agency-specific implementing procedures.

There is too much uncertainty to use climate-related science to inform flood risk management decisions.

Some level of uncertainty exists in any analysis of flood hazards, including available studies that consider only current conditions. Our scientific and engineering capacity to model the physical processes controlling flood hazards and climate-related impacts will continue to evolve over time. As is described in the technical appendix, one of the ways to deal with these sources of uncertainty is to apply a scenario approach to flood hazard identification and risk management. Even with the uncertainty inherent in available flood hazard data (both current and future conditions), many Federal agencies have been applying climate information to their projects and programs for years. E.O. 13690 is simply the latest directive that requires agencies to account for climate impacts in their missions and operations.

Flexibility in Applying the FFRMS

There were over 30 comments that expressed concern about the flexibility of the approaches in the FFRMS, primarily to address local and regional concerns or conditions. Many of these comments expressed concern that the Federal government was enforcing a "one-size fits all" approach that did not take into consideration local or regional variations. The approaches in the FFRMS are intended to be flexible by providing options that agencies can use to determine the appropriate vertical flood elevation and corresponding horizontal floodplain and the associated level of resilience for an action that uses Federal funds for new construction, substantial improvement, or to address substantial damage to structures and facilities. This flexibility enables agencies to choose the most appropriate approach for site-specific conditions, recognizing that the most appropriate techniques may vary depending on the Federal action being undertaken. The eight-step decision making process also incorporates flexibility by allowing other levels of government, private entities, members of the public, and other stakeholders to provide input to the decision-making process. This is especially valuable early in the process (such as in Step 2 of the eight-step process).

Natural and Nature-Based Approaches

Section 2(a)(2) of E.O. 11988 was amended to state that agencies, where possible, shall use natural systems, ecosystem processes, and nature-based approaches when developing alternatives for an action. This new reference to natural systems and nature-based approaches represents a growing recognition that these types of approaches provide numerous benefits, including flood and climate

regulation. There were about 50 comments submitted on this topic, 10 of which expressed strong support. The remainder of the comments pertained to two key topics as noted below.

Provide more information to explain what natural and nature-based approaches are and what benefits they provide.

The Guidelines include some examples of natural and nature-based approaches to flood risk management. However, these examples are meant to be illustrative and not exhaustive. The Guidelines will be supplemented with additional information and resources concerning relevant approaches. In terms of metrics related to benefits of natural and nature-based approaches, some information does exist and references will be included in an updated appendix. However, this is a growing field, and the information about these approaches will continue to evolve. As agencies pursue these approaches, more information will be generated and made available either through updated appendices or through other vehicles.

Does this requirement to use natural and nature-based approaches, where possible, preclude the use of structural approaches for flood risk management?

E.O. 11988, as amended by E.O. 13690, states agencies, where possible, shall use natural systems, ecosystem processes, or nature-based approaches when developing alternatives. Nothing in E.O. 11988 precludes an agency from ultimately using structural approaches to flood risk management, either alone or in concert with a natural or nature-based project component. E.O. 11988 also does not advocate that existing structural solutions to flood risk management be removed or converted to natural or nature-based solutions.

Avoidance

The first reference to avoidance appears in the Introduction to E.O. 11988 in reference to its purpose, which is "to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative . . ." The concept of avoidance is reinforced in Section 2(a)(2), which states: "If an agency has determined to, or proposes to, conduct, support, or allow an action to be located in a floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplain." These references were not changed as result of E.O. 13690. There were over 20 comments that expressed either questions or concerns regarding the idea of avoiding actions in the floodplain or avoiding the direct or indirect support of floodplain development.

There is no requirement under E.O. 11988 to avoid the floodplain, and the reference in the Introduction to the Guidelines to avoidance as the "preferred method" for addressing Federal actions in the floodplain goes beyond the requirements of E.O. 11988.

As noted above, both the introduction to E.O. 11988 and Section 2(a)(2) reference the concept of avoidance, and these references have not changed since E.O. 11988 was issued in 1977. E.O. 11988 has always required agencies to seek practicable alternatives to locating in the floodplain when considering an action, in an effort to avoid impacts associated with the occupancy and modification of floodplains

and direct or indirect support of floodplain development. *The Guidelines were edited to change the reference to avoidance as a "preferred method." Rather, it was noted that avoiding sites in the floodplain may be the simplest way to satisfy the requirements of E.O. 11988.*

The reference to avoiding direct or indirect development seems to prohibit all development in the floodplain.

It is not the intent of E.O. 11988 to prohibit all Federal actions in the floodplain, but rather to create a consistent policy for the evaluation of such development, as stated clearly in the Introduction of the Guidelines. In carrying out the objectives of E.O. 11988,each agency has a responsibility to evaluate the potential effects of any action it may take in a floodplain, and this includes actions that may promote direct or indirect development in the floodplain as noted in the its Introduction. *No change is being made to the Guidelines regarding this concern as language is already included.*

The guidelines appear to be imposing a culture of retreat inland and abandoning remaining unprotected areas.

Neither E.O. 11988 nor E.O. 13690 advocate a policy of abandoning existing structures, or necessarily prohibit actions or investments related to existing structures in "unprotected" areas. As stated previously, the Guidelines clearly state that it is not the intent of E.O. 11988 to prohibit all actions in the floodplain. While the simplest way to reduce flood risk is to site actions farther away from potential flood hazards, E.O. 11988 recognizes that this is not always feasible. *The Guidelines were clarified to also remind agencies that it does not discourage the use of structural and nonstructural methods for flood protection where actions must be taken in a floodplain.*

Best-available Information for Determining the Floodplain

Section 2(a)(1) of E.O. 11988 as amended by E.O. 13690 calls for agencies to use best-available information when determining the floodplain based on the FFRMS approaches. When selecting from among the three different approaches in the FFRMS, Part II, Section 1.B. of the Guidelines describes how best-available data helps agencies decide which approach to use. In this context, best-available data and information refers to "*available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate and related science"* as per the description of the FFRMS in E.O. 11988, Section 6(c)(1) (E.O. 13690 Sec 2(h)(1)). When using either the Freeboard Value Approach or the 0.2-percent-annual-chance Flood Approach, two of the three approaches identified in the FFRMS, agencies still must use the best-available information when determining the floodplain. *The Guidelines were revised to provide agencies with additional information what constitutes best-available information, which is often (but not always) the FEMA FIRMs or Flood Insurance Studies (FIS).*

There were over 40 comments received related to "best-available data" or "best-available information." Best-available data in the context of the Climate-informed Science Approach is addressed elsewhere in this document. The comments below primarily pertain to best-available information used to determine the floodplain when agencies are not using the Climate-informed Science Approach.

The Guidelines indicate that agencies can use information other than the FEMA FIRMs for determining the elevation and extent of the base flood. It seems that allowing this flexibility will cause inconsistencies.

Federal agencies taking an action are responsible for identifying the best-available information for determining the floodplain under E.O. 11988. Agencies have always been able to go beyond the FEMA FIRMs when determining the elevation and the extent of the base flood. This flexibility is necessary because agencies may have more current information than what is available on the FIRM and more detailed information about a particular location. For example, a different Federal agency may have data based on prior FFRMS analysis in the same area. Agencies are encouraged to share their more current or more accurate information with FEMA for its use. *The Guidelines were revised with clarifying language to enhance the description of best-available information from a mapping context.*

How are data provided by other entities such as state, local, tribal or territorial governments considered when assessing best-available data and information?

Agencies that take action in or affecting floodplains will be responsible for identifying best-available data. They will draw on common, publically available resources as well as other information, which will help promote consistency. Other entities may provide additional data and information for consideration during the decision-making process (e.g., Step 2 of the eight-step process noted in the Guidelines). Whether this information is considered by an agency as best available will depend on data quality, relevance to the action, and consistency with the agency mission and mandates. *Some clarifying language was added to the Guidelines to help make this process more explicit.*

Will Federal agencies use State, local, tribal or territorial flood risk management standards when determining the floodplain and resilience approach for an action if these standards are more stringent than the standards in the FFRMS?

The elevation standards of the FFRMS are not intended to supplant applicable State, tribal, territorial, or local floodplain protection standards. A Federal agency will consider State, tribal, territorial, and local laws and regulations to determine whether their floodplain management standards exceed the FFRMS. If such standards exceed the FFRMS, the Federal agency should apply such standards if the agency determines the application of the standards is reasonable in light of the goals of E.O. 11988 and any amending Executive Orders. A modification of Federal action to meet such State, tribal, territorial, or local standards does not necessarily mandate an increase of the Federal financial investment in the action, particularly where State, tribal, territorial, or local entities have non-Federal cost-sharing requirements. (See the Guidelines, Part II, Introduction, for a description of how State and local government standards are addressed in the NFIP and under the CZMA.)

It should be noted that this relationship between the FFRMS and State, local, tribal, or territorial standards is different than the relationship between NFIP requirements and State and local communities for the purposes of 44 CFR 60.1(d). The NFIP regulatory standards are minimum requirements. Therefore, any participating community is encouraged to enact more restrictive requirements where needed to better protect people and property based on knowledge of local

conditions. E.O. 13690 and the FFRMS do not mandate that a higher local standard will prevail and take precedence given the varying range of Federal projects, agency missions, and authorities.

Impact of the Higher Vertical Elevation and Corresponding Horizontal Floodplain in the FFRMS on Flood Risk Management Infrastructure and Leveed Areas

There were over 75 comments from stakeholders raising questions about how the vertical flood elevation and corresponding horizontal floodplain as described the FFRMS will affect flood risk management infrastructure and areas behind this flood risk management infrastructure.

How will the FFRMS affect levee accreditation?

Levee accreditation is tied to the NFIP, the requirements of which are not changing as a result of E.O. 13690 or the FFRMS. Therefore, the analyses used to determine whether a levee should be accredited for the purposes of the NFIP will not be modified to evaluate the FFRMS-magnitude flood event. *A Factsheet has been issued by FEMA that elaborate on the impact of the FFRMS on the NFIP. No change was made to the Guidelines.*

How will the FFRMS affect the construction of levees and other flood risk management infrastructure?

There were many questions about the impact of the FFRMS on the design and construction of flood risk management systems. Many specifically requested clarification as to how the U.S. Army Corps of Engineers (USACE), the primary Federal agency responsible for design and construction of flood risk management systems, would implement the FFRMS. It is important to note that the approaches in the FFRMS for determining the vertical flood elevation and corresponding horizontal floodplain for an action is not a prescriptive design or construction standard. The FFRMS provides flexibility to determine the most appropriate approach for determining the floodplain for federally funded projects based on best-available information. Agency-specific procedures will provide details as to how the approaches in the FFRMS will be applied to Federal investment decisions related to flood risk management infrastructure. Related to levee systems, for example, USACE has had and continues to have a major role in the planning, design, and construction of many levee systems throughout the Nation. USACE has made many improvements to its processes related to levee systems over the last 10 years. Through its Levee Safety Program, USACE assesses the risk associated with levee systems and works with levee sponsors and other stakeholders on solutions to best manage these risks. USACE uses best practices, best-available science, and risk-informed processes to evaluate, prioritize, and support investment decisions for levee systems. USACE's use of risk-informed approaches provides a transparent decision-making framework that considers all factors related to the hazard and consequences in making decisions on the appropriate risk management options. In many cases, the most effective risk management options will be a combination of measures and would consider more than just a levee system. USACE will continue to plan, design and construct flood risk management systems that are resilient to current and future flooding, consistent with the intent of the FFRMS and E.O. 13690 to improve the nation's resilience to changes in climate and flood risks. *Additional clarifying language was added to the Guidelines to address this point.*

How will areas behind flood risk management infrastructure be considered when applying the higher vertical flood elevations and corresponding horizontal floodplain in the FFRMS to an action?

For Federally funded projects that will be located in areas impacted by flood risk management infrastructure and that are subject to the higher vertical flood elevation and corresponding horizontal floodplain specified in the FFRMS, there are a variety of factors to consider when determining how the presence of these structures might impact implementation of E.O. 11988. *A new section was added to the Guidelines that describes how actions behind flood risk reduction infrastructure will be handled.*

Substantial Improvement

There were about 30 comments received seeking clarification of references to substantial improvement referred to in Part I, Section 3 of E.O. 11988 and the Guidelines.

Is the threshold for substantial improvement always 50% of the market value as referenced in the Guidelines?

Valuation of structures and facilities is determined by each Federal agency. For example, 50% of the market value is a standard utilized by FEMA for the NFIP. Under that standard, improvements and repairs can be combined. However, other facilities or structures may not have a clear "market value," so replacement costs may be used instead. Agencies will determine what the threshold is for a "major improvement." *This section of the Guidelines was clarified to reflect this concept.*

Are agencies required to consider cumulative improvement costs over the life of a facility or structure when determining whether the substantial improvement threshold has been met?

The FFRMS refers to the concept of assessing substantial improvement to a structure or facility using the cumulative costs of improvements to that structure or facility over its life. This type of calculation would be difficult to do for structures or facilities that are not directly owned and operated by a Federal agency. As a result, agencies have the discretion to employ a cumulative approach to determining substantial improvement costs, but utilizing such an approach is not a requirement. Agencies will describe their approaches for determining substantial improvement costs in their agency-specific procedures. *Clarifying language was added to the Guidelines to address any confusion that may arise as a result of the language in the FFRMS.*