

## **Agenda**

- Executive Order 13690
   and Federal Flood Risk
   Management Standard
   (FFRMS) Overview
- FEMA Approach
- HUD Approach
- DOD Approach



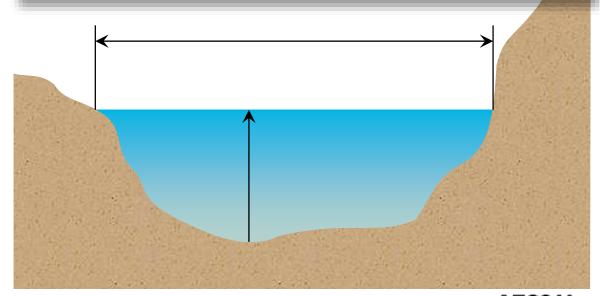
Administration of Barack Obama, 2015

Executive Order 13690—Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input

January 30, 2015

By the authority vested in me as President by the Constitution and the laws of the United States of America, and in order to improve the Nation's resilience to current and future flood risk, I hereby direct the following:

Section 1. Policy. It is the policy of the United States to improve the resilience of communities and Federal assets against the impacts of flooding. These impacts are anticipated to increase over time due to the effects of climate change and other threats. Losses caused by flooding affect the environment, our economic prosperity, and public health and safety, each of which affects our national security.



EO 13690 and FFRMS Page 2 AECOM

## Storytime



## Global Warming? Climate Change? Recurrent Flooding?

JULIET: "What's in a name? That which we call a rose, By any other name would smell as sweet."

—Romeo and Juliet (1594-1596)

THE DUDE: "Yeah, well, you know, that's just, like, your opinion, man."

— The Big Lebowski (1998)



Word Cloud from 2007 IPCC Report from http://gk12glacier.bu.edu/wordpress/pasquarella/data-sets/ipcc-report-word-clouds/

EO 13690 and FFRMS Page 4



## Language Development: How we do describe "it"?



EO 13690 and FFRMS Page 5

## What color is "Climate Change" like?



## How do we use plain language to describe our topic?

# Make

When activities are being done

lt

To certain types of structures

Last

What standards should we use to minimize damages from flooding

Executive Order 13690 and Federal Flood Risk Management Standard (FFRMS)



### **Executive Order 11988 (1977)**

 Issued May 1977 by President Carter governing federal "actions" in the floodplains



AP/White House

What does EO 11988 cover?

**MAKE:** Acquiring, managing, and disposing of...

IT: Federal lands and facilities (including federally undertaken, financed, or assisted construction and improvements) within...

LAST: 1% annual chance floodplain (Base Flood Event)

 Take action to reduce the risk of flood loss; minimize the impact of floods on human safety, health and welfare; and restore and preserve the natural and beneficial values served by floodplains

EO 13690 and FFRMS Page 9

## **Executive Order 13690 and Federal Flood Risk Management Standard (FFRMS) (2015)**

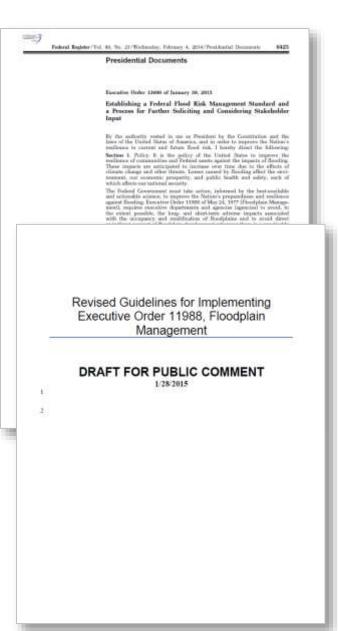
- Issued January 2015 by President Obama,
   EO 13690 amends EO 11988 and
   establishes the Federal Flood Risk
   Management Standard (FFRMS)
- What does EO 13690 cover?
   MAKE: Acquiring, managing, and disposing of...
  - IT: Federal lands and facilities (including federally undertaken, financed, or assisted construction and improvements) within...
  - LAST: Floodplains as defined by FFRMS options (higher vertical elevation and corresponding horizontal floodplain than current Base Flood Elevation)



EO 13690 and FFRMS Page 10 AECOM

## **FFRMS Components**

- On February 5, 2017, FEMA, published a draft of revisions to the 1978 Floodplain Management Guidelines. The draft Guidelines contain the basic interpretation of Executive Order 11988, as amended by EO 13690 and the FFRMS.
- EO13690 also requires agencies to develop Implementation Plans describing how each agency will update its existing policies, procedures and/or regulations to comply with the new requirements.
- Different approaches for Critical vs. Non-Critical Actions
- Three different approaches to determine a construction or Design Flood Elevation (DFE) (and corresponding horizontal floodplain extent)



EO 13690 and FFRMS Page 11 A

### FFRMS: Critical vs. Non-Critical

EO 13690 says, "A critical action is any activity for which even a slight chance of flooding is too great."

 Similar to, but not identical, to the Flood Design Classes 3 and 4 from ASCE 24-14

#### – Non-critical:

- Flood Design Class 1: Temporary structures, accessory and minor storage
- Flood Design Class 2: Most residential, commercial, and industrial structures not in Class 3 or 4

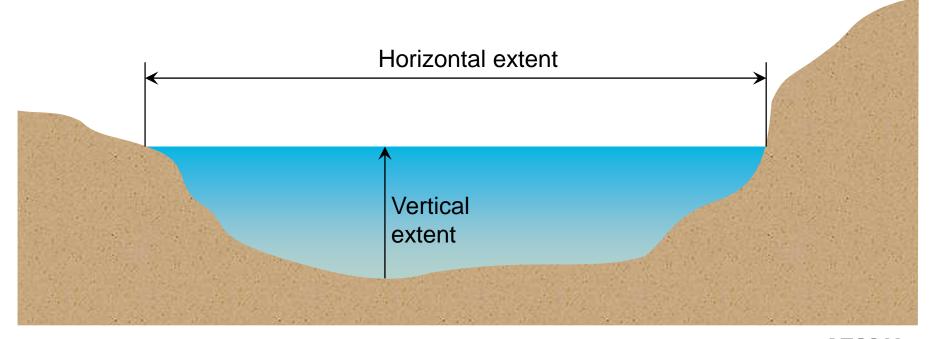
#### – Critical:

- Flood Design Class 3: Buildings with large number of people, schools, jails, smaller healthcare, smaller power generation, minor hazardous materials
- Flood Design Class 4: Essential facilities for emergency response and recovery, hospital, fire, police, EMT, shelters, EOCs, major power generation, aviation facilities, major hazardous materials

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## FFRMS: **Construction or Design Flood Elevation Approaches**

- Climate-Informed Science Approach (CISA)
- Freeboard Value Approach (FVA): 100-year (1%-annual-chance) flood elevation plus freeboard of 2 or 3 feet (building criticality)
- The 0.2-percent-annual-chance Flood Approach (0.2PFA): 500-year (0.2%-annual-chance) flood elevation



AECOM

## FEMA Approach



## FEMA's Approach to EO 13690 and FFRMS

- Issued Federal Register Notice in August 2016 for Proposed Rule to Implement EO 13690 and FFRMS
- What does FEMA propose?
   MAKE: FEMA projects that include acquiring, managing, and

disposing of...

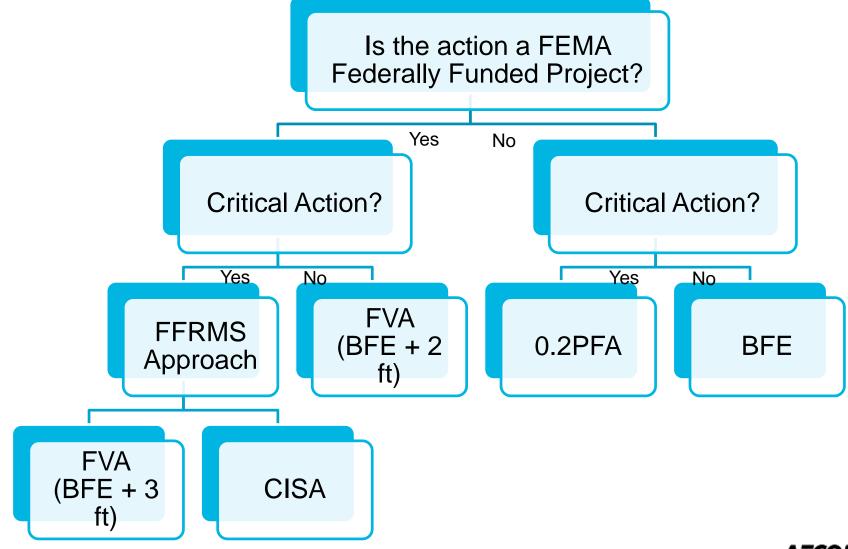
IT: Critical and Non-Critical Actions (and FEMA funded projects) within...

LAST: FFRMS floodplains (with different options based on critically)



EO 13690 and FFRMS Page 15 **AECOM** 

### **FEMA Approaches**



## **Comparison of ASCE 24-14 Requirements** with FFRMS FVA

FLOOD DESIGN CLASS	CRITICAL OR NON-CRITICAL ACTION	ZONE A (OTHER THAN COASTAL A)		COASTAL HIGH HAZARD AND COASTAL ZONE A	
		ASCE 24-14	FFRMS FVA	ASCE 24-14	FFRMS FVA
1	Non-critical	DFE	BFE+2ft	BFE or DFE	BFE+2ft
2	Non-critical	BFE+1ft or DFE	BFE+2ft	BFE+1ft or DFE	BFE+2ft
3	Mostly critical	BFE+1ft or DFE	BFE+2ft or BFE+3ft	BFE+2ft or DFE	BFE+2ft or BFE+3ft
4	Critical	BFE+2ft or DFE, or 500-year	BFE+3ft	BFE+2ft or DFE, or 500-year	BFE+3ft

EO 13690 and FFRMS Page 17 **AECOM** 

### **ASFPM Comments**

- Develop action plan for CISA usage for both coastal and riverine locations
- Should use the Highest of CISA, FVA, or 0.2PFA for critical facilities
- Keep guidance to not allow critical action in 0.2PFA if there is a suitable site outside of 0.2PFA floodplain
- Concerns that critical facilities are allowed in Coastal High Hazard Areas
- Removal requirement for no new construction in floodways and coastal high hazard areas
- Concerns about exceptions



#### ASSOCIATION OF STATE FLOODPLAIN MANAGERS, INC. 573 D'Chiefrio Dvive, Suite 200, Madison, Wisconsin 53719 www.floods.org Phone. 608-828-3000 | Fax. 608-828-6319 | astjum@floods.org | www.floods.org

Executive Director Claid M. Berginnis, CFM Deputy Director Ingrid D. Wadsworth, CFM Director Emerition Larry A. Lamon, P.E., CFM

#### ASFPM's FINAL COMMENTS ON FEMA PROPOSED RULE ON FFRMS DOCKET FEMA-2015-0006 Oct, 21, 2016

ASFPM is pleased to submit comments on FEMA's proposed rule to implement the Federal Flood Risk Management Standard as required by Executive Order 13690. ASFPM, a professional non-profit, represents 36 chapters and more than 17,000 state and local officials, as well as the private sector and other professionals engaged in all aspects of floodplain management and flood hazard mitigation. All ASFPM members are concerned with reducing our nation's flood-related losses. For more information on the association, its 14 policy committees and 36 state chapters, visit www.floods.org.

ASFPM previously submitted comments on October 3\* and those comments are included here along with our more detailed comments developed since that time:

ASFPM applauds the Federal Emergency Management Agency for producing a draft document that lays out how the FFRMS will be applied to FEMA actions. FEMA is showing leadership among federal agencies to protect taxpayer investments from repeat and future damage from flooding. We hope that ASFPM comments contained herein will be useful to advance wise floodplain management and improve community resilience throughout the nation.

#### Overall Impressions

ASFPM expresses strong overall support of the FEMA action to move ahead in implementation of FFRMS. This action is very important to protect taxpayer investments in taxpayer-funded disaster costs and mitigation actions. This is especially important in light of more intense storms and changing conditions that are leading to more intensive flooding and damages from extreme events such as those we have seen in the past 12 months in lows, Minnesota, Texas, South Carolina, Wisconsin, West Virginia, Louisiana, North Carolina and elsewhere. Approaches to reverse or stop the increase in damage are needed to reverse the loss of lives we are seeing when we do not plan for these increasing flood events.

Make a statement to reflect that the guidance says this is a resiliency standard, Use PA/roads/bridges as an example, show how that gives flexibility and support (to counter AASHTO arguments).

#### Development and Eventual Use of CISA

It is important that the federal government begins now to plan for and take the necessary actions to allow for the use of OSA. FEMA over the past decade has embraced a risk management approach. The reason why OSA

Dedicated to reducing flood risk and losses in the nation.

Chair Cell C. Straum, CFM State Ploodylain Manager MN Dept Natural Testaturas ass. 294-3715 Vice Chair Maria Cox Laure, CFM State Coordinator SC Dept. Natural Sessession 803-734-3672 Treasurer Leslie Ducham, F.E. Chief, Floodplain, Management Al, Water Resources 354-245-350s Secretary Karen McHugh, CFM Finedylain Management Officer MO Entergency Mgint, Agency 575-526-929

EO 13690 and FFRMS Page 18



## **HUD** Approach



## **HUD's Approach to EO 13690 and FFRMS**

- Issued Federal Register Notice in October 2016 for Proposed Rule to Implement EO 13690 and FFRMS
- What does HUD propose?
   MAKE: HUD assisted or financed project (new construction or substantial improvement) for
   IT: Critical and Non-Critical Actions (and HUD funded projects) within
   LAST: FFRMS floodplains (with different options based on critically)
- Also revise HUD Minimum Property Standards for one-to-four unit housing under HUD mortgage insurance and low-rent public housing programs to FVA (BFE + 2 ft).



Federal Register/Vol. 81, No. 209/Friday, October 28, 2016/Proposed Rules

1967

Logal Information: Carine L. Hoselia. 12023 485-6892

SUPPLEMENTARY WE COMMITCH: On September 3, 2016, the Department published a cotice of Proposed ratemating (NPEMI, to arrest requirements for accreditation of squeries and approval of partners to provide adoption, survivers. Size #11 FE 62322, 17th xPFM provided a community period of 60 days, which suprise on Newmalter 2, 2010.

In response to a request for extension, the Department extends the comment period until Nevember 22, 2018. This will provide 75 days for the public to sudenit comments on this rule. Further information, including the tool of the Purposed rule, can be found in the NASA.

#### Dated Conder 18, 2018. Theodore E. Coley.

Acting Deputy Assistant Secretary, Overnoon Chinen Services, Burson of Gannahr Affeirs, U.S. Department of States (U.S. Department of States (U.S. Department of States (U.S. Department of States) (U

#### DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

24 CFR Parts 50, 55, 58, and 200

[Docket No. FR-5717-P-01]

Floodplain Management and Protection of Wetlands: Minimum Property Standards for Flood Hazard Exposure: Suikling to the Federal Flood Flish Management Standard

AGENCY: Office of the Assistant Socretary for Community Plenning and Development, HUD. ACTOR: Proposed rule.

SUMMAY: This proposed rule would not be HLPs registations governity floodylain management to require, as part of the decision studies peaces as stabilished in remain compliance with Executive rodes in Floodylain Management and Federal Pland Rich Management at HLPs assisted in Management at HLPs assisted in financial finaling medicages insurance project involving new sandouslinian excellent in a stability of the stability of floodylain as determined by best available in

The proposed rate would also revise HUD's Minimum Property Standards for one-to-four unit housing under HUD unergage incurance and lare over public housing programs. Building to the proposed standards will, considered with the Ecocutive orders, increase seatlinery to flooding, notion the risk of flood loss, minimize the impact of floods on human safety, booth, and welfare, and personde second, cartainable, found-one phenoing instrumed by a rarea excurate ovaluation of flood risk that takes into account possible we loved rise and intermeddevelopment associated with population growth.

This document alon proposes to revise a categorical excitation weilable when HUD performs the environmental service when HUD performs the environmental service with the Pataronal Environmental Policy Act PMEM, and maleted Federal Irace by enabling it consistent which changes to a similar consistent which changes to a similar cotegorical exclusion that is available to HUD parabox or other responsible satistics when they perform those miximum rational reviews. This change will make the review standard identical segardless of whether HUD or a grantesia is performing the review.

OATES: Greenword Durt Deter December 27, 2010.

ADDRESSES: Interested persons are involved in salarait communits magaciting this proposed field to the Regulations Direction, Offices of General Creamed, Department of Hausing and Union Development, 45: 7th Sinne SW., Rosen EGZ, Washington, Dr. 29400-6690. Cameraminations must refer to the above methods for submitting public comments. All submitted public comments. All submitted to the submitted public comments. All submitted to the submitted public comments. All submitted to the submitted public comments.

 Submission of Communit by Mail. Communits may be submissed by mail to the Bagulations Division, Office of General Coursel. Department of Housing and Urban Development, 453 7th Street SW, Moore 10276, Washington, DC 20410–0000.

2: Electronic Submission of Guernests Interested persons may solomic comments electronically through the Federal offulomiking Portal at www.regolistions.gov. HLD strangly entroprages commenters to salural comments electrosically. Electronic inflammation of community allows the commenter maximum time to proper and submit a comment, maurea timely receipt by HED, and enables HUD to make these immediately available to the public. Commerts submitted electronically through the wrest regulations gow Web site can be viewed by other commenters and interested members of the public Commenters should follow the

instructions provided on that site to subpair comments electronically.

subsuit comments electronically.

Note: To receive controlleration as justific comments, comments must be submitted through one of the two methods specified above. Again, all submissions must refer to the docket number and title of the role.

No Facsimile Comments, Eucsimile (FAX) comments are not acceptable.

Public Jaspertion of Public Comments: All properly submitted comments and communications submitted to HUD will be available for public inspection and copying between \$ 4.m. and 5 p.m. workdays at the above address. Due to security measures at the HUD Hendquarters building, enappointment to review the publimeants must be achedoled in advance by calling the Regulations Division at 202-768-3055 (this is not a to II-free auroberj. Individuals with speech or hearing impairments may cess this munder via TTY by calling the Federal Relay Service at 600-877-E339. Copies of all comments submitted are available for inspection and downloading at sever regulations are FOR FURTHER INFORMATION CONTACT: Denielle Schopp, Director, Office of Environment and Energy, Office of Community Planning and Development Department of Housing and Urban Development, 451 7th Street SW., Woods 7250, Washington, DC 20410-8000. telephone member 202-402-4442. For inquiry by phone or equal, contact Elizabeth Zepada, Environmental Review Division. Office of Environment and Energy, Office of Community Planning and Development, at 202-402-3986 (this is not a toll-free number), or enail to: Elizabeth G.Zepedolihud.gov. For questions regarding the Minimum Property Standards, Robert L. Frazier. Hetaing Program Policy Specialist. Office of Housing, Home Valuation Division, 202-708-2121. Persons with bearing or speech impairments may secons this number through TTY by calling the tell-fron Federal Relay Service at 800-877-8000. SUPPLEMENTALLY INFORMATION:

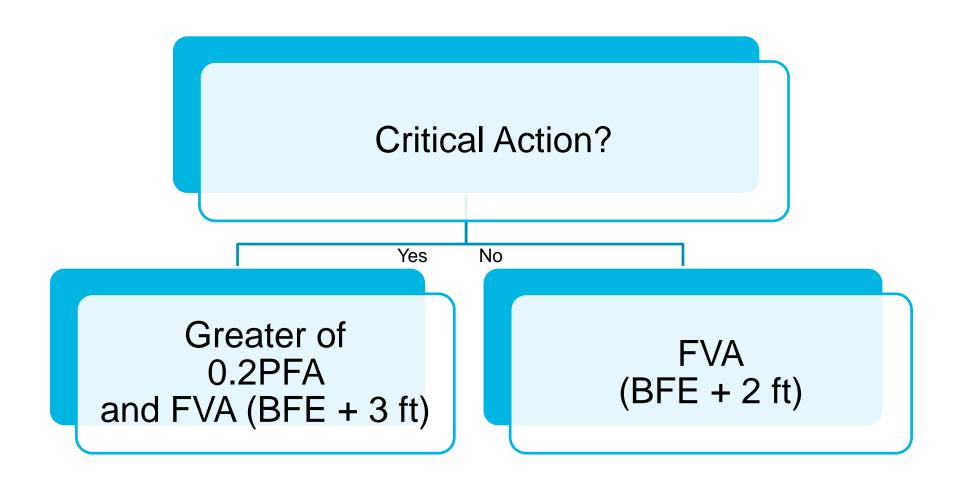
#### I. Background

In the United States, floods caused, which deaths from 1869 to 2005. With climate change and associated see-level rise, flooding risks have increased over time, and are articipated to cardinate increasing. The National Climate Association I Dalay 2018 (6, for coumple,

EO 13690 and FFRMS Page 20 AECOM

<sup>\*\*</sup>Placed Dakalima in the United States.\*\* Sharini T. Andrey and Welliet S. Andrey, Jeannel of Applied Melmorrholy and Cheminings: Annihila et. 24(p.17) journals annihim mychini/pol/10.14 Th/ 2007/AMC3617.1

## **HUD Approach**



### **ASFPM Comments**

- Strong support of revision of Minimum
   Property Standards to FVA (BFE + 2 ft.)
- Concerns that Minimum Property
   Standard only addresses vertical
   elevation, not expanded horizontal
   extent of FFRMS floodplain
- Concerns with no action plan to include CISA in the future
- Concerns with categorical exclusion for structure footprint increase
- Concerns that proposed rule does not include manufactured housing
- Should use the Highest of CISA, FVA, or 0.2PFA for critical facilities



#### ASSOCIATION OF STATE FLOODPLAIN MANAGERS, INC. 575 D Onofino Drive, State 200, Madison, Wisconsin 57719 news floods and

Phone: 608-818-1000 | Fax: 608-818-6119 | aufpmilifloods.org | www.floods.org

Chall M. Berginsis, CEM

Director Emeritor

Larry A. Larren, P.E. CPA

ASFPM's FINAL COMMENTS ON HUD PROPOSED RULE ON Floodplain Management and Protection of Wetlands DOCKET FR-5717-P-01 Doc 27, 2016

ASPPM is pleased to submit comments on HUD's proposed rule to implement the Federal Flood Risk Management Standard (FFRMS) as required by Executive Order 13690. ASPPM, a professional non-profit, represents 36 chapters and more than 17,000 state and local officials, as well as the private sector and other professionals engaged in all aspects of flood risk management and flood hazard mitigation. All ASPPM members are concerned with reducing our nation's flood-related losses. For more information on the association, its 34 Policy Committees and 38 state chapters, visit <a href="https://www.floods.org/">www.floods.org/</a>.

ASFPM applicads HUD for producing a draft document that lays out how the federal investment protections will be applied to HUD actions. HUD is showing feedership among federal agencies to protect taxpayer investments from ropeat and future damage from flooding. We hope that ASFPM comments contained herein will be useful to advance wise floodplain management and improve community economic and social resilience throughout the nation.

#### Overall Impressions

ASFPM expresses strong overall support of the HUD action to move ahead in implementation of improved flood risk protection. This is expression in very important to protect targetier investments in targetier-funded diseaser costs and mitigation actions. This is especially important in light of more intense storms and changing conditions that are leading to more intense elements such as those we have seen in the past 12 months in lows, Minnesota, Texas, South Carolina, Wisconsin, West Virginia, Louisiana, North Carolina and elsewhere. Approaches to reverse or stop the increase in damage are needed to reverse the loss of lines we are seeing when we do not plan for these increasing flood events. Increasingly, Congress is focking to HUD to help with community recovery from floods and other natural disasters. In reviewing disaster-specific spending by 17 federal agencies from fiscal years 2005 through 2014, GAO found that HUO's obligations accounted for nearly a quarter of the overall disaster-specific spending, coming in at \$30.7 billion, second only to the Department of Homeland Security.

Current practice only requires HUD -financed action to be elevated to the height of the 1% chance flood (which has a 26% chance of occurring over a 30-year mortgage period) if it is not practicable to locate outside the floodplain. Presently, over 11,000 HUD taxpayer funded public housing units are located in the 1% chance.

Dedicated to reducing flood risk and losses in the nation.

Chair
Cold C. Steaner, CPM
State Ploodylain Menager
MN Doyt, Natural Recovers
631-239-5713
cell of pain-State and un

Vice Chair
Maria Coc Lamin, CPM
State Coordinator
SC Dept. Natural Farming
303-754-3672
completes or see

Treatmen
Leslie Durhaus, F.E.
Chest. Poodpilets Manager
AL Water Resources
334-342-306

Secretary Kaum McHagh, CFM Floodylan Managament Officer MO Emergency Mgmt. Agency 575-526-9129

EO 13690 and FFRMS Page 22



# DOD Approach: USACE and NAVFAC



## USACE's Approach to EO 13690 and FFRMS

- Issued Federal Register Notice in December 2016 for Proposed Rule to Implement EO 13690 and FFRMS
- What does USACE propose through a new draft Engineer Circular (EC)?
  - Make: USACE elements with Civil Works responsibility for
  - It: Critical and Non-Critical Actions within
  - Last: FFRMS floodplains (CISA approach unless justification for other FFMRS approaches)



91150

Federal Register/Vol. 81, No. 242/Friday, December 16, 2016/Noticon

(viii) Date Report Delivered to Gorgross: Documber 7, 2016. " as defined in Section 4706) of the Arms Export Control Act.

#### POLICY RUSTIFICATION

Generation of Manacco-Badio Frequency (RF) TOW 2A, Badio Frequency (RF) Minile (RGM-71-4F-RF) and Support)

The Government of Morocco has required a possible subs of one in the summer for should of (2.00) TOW 2.4, Rodio Frequency (87) Missibes (Richard Townson) Townson (1.00) Missibes (Richard Townson) 1.41 TOW 2.4. Bodio Frequency (87) Missibes (Projection of the Control of the Co

This proposed sale will contribute to the foreign policy and national security of the United States by helping to improve the security of a Major Non-NATO Alby flut sentimes to be an important faces for the profitcal statistics and economic progress in North Africa. This proposed sale directly supports Momeon and serves the interests of the Momeon pupils and the United States.

The proposed usin of TOW 2A Monitor and tochnical support will advance Monocro's efforts to develop an integrated ground defense capability. Morecus well have no difficulty absorbing this equipment into its armed

forcess.
The proposed sale of this equipment and support will not alter the basic military balance in the region.

The principal contractors involved in this program are: Raythern Missile Systems, Tucson, Arianus. There are an known offset agreements proposed in compection with this potential sale.

Implementation of this proposed sale will require the U.S. Government or contractor representatives to travel to Morseon.

There will be no selvener impact on U.S. defense readiness as a result of this proposed sale.

Transmittal No. 16-52

Notice of Proposed Issuance of Letter of Office Pursuant to Section 360(d1) of the Arms Export Control Act, as Azsimbol Assess.

Barn No. vii

(vii) Sensitivity of Technology: 1. The Radio Frequency (RF) TOW 2A. Missile (BCM-71E-48-RF) is designed to delical sensored volucios, reinforced.

other such targets. TOW missiles are fired from a variety of TCW Jaunchers in the U.S. Army, USMC, and PMS oustomer forces. The TOW 2A RF missile can be lausahed from the same horselve oldform as the existing wireguided TOW 2A mimile without modification to the launcher. The TOW ZA missile (both wire & RF) contains two trackers for the leanther to track. and mids the missile in flight. Guidance community from the hone/ser are provided to the missile by a RF link. contained within the missile case. The hardware, software, and technical publications provided with the sale thereof use UNCLASSIFIED. However, the system itself contains essestive technology that instructs the system on how to operate in the presence of

2. The highest lored of classified information that must be disclosed in training to see the end them is UNILASSPIED. The highest level of classified information that must be disclosed in minimum that must be disclosed in minimum to of the end them is UNILASSPIED. The highest level of classified informations that could be disclosed by subo of the end them is SEJERT. The highest level of classified information that could be trighted that the subordinary in the su

engineering of the end item is MEGRT.

If a technologically advanced authorises were to obtain hambelogic of the specific horizons and authorise elements, in information could be used to develop countermeasures that might neduce weapon system effectiveness or to be used in the development of a system with entitle or authorise countermeasures.

 All defense articles and services listed in this transmittal have been authorized for release and export to the Government of Merocco.

\$787.5 to 2016-20229 Filed \$2-55-56; \$465 and \$20.086 0005 some #

#### DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

Implementation of Executive Orders on Floodplain Management and Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input

AGENCY: U.S. Army Corps of Engineers Dol).

ACTION: Notice.

SUMMARY: The U.S. Army Corps of Engineery (USACE) has developed shuft internal agency implementation guidanos for the Essentive Order on Phondplain Management to incorporate the new requirements of the Executive Order on Establishing a Federal Flood Rink Management Standard and a Considering Stakeholder Input, USACE is seeking feedback from partners, other hosminesvor-and nun-aveniment etaksholders, Tribes, and members of the general public on the proposed druft goldance that has been developed. DATES: Community must be automitted on or before January 36, 2017.

or before January 39, 2017, ADDRESSES: Errori: USACE-BOTTONING

assex, army, mil and include "Implementation Communits", in the subject lim of the message. Most HQ, U.S. Army Corps of Engineers, ATTN: EXTENSIVER:W-HS: KOR, 441 G Street NW, Washington.

DC 20014-1000. Hand Delwey/Courier: Due to security requirements, we cannot receive comments by hand delivery or rourier.

FOR FURTHER INFORMATION CONTACT: Ib. Stephanic Bray, Headquarters, Office of Horneland Security, Washington, DC at 2007, 502, 4027.

SUPPLEMENTARY MODRATION: Supporting Chebr 1986. Floodpains Management, the chebr 1986. Floodpains Management, were insued in 1977 and directed against in the same the life of the chebr the long and distributed possible the long and distributed approximation and mentional with the occupancy and mentional and indirect support of floodpains development wherever there is a practicable allermatics. SCI 1980 applied to Federal agencies sarrying said in returnabilities for

 Acquiring, managing, and disposing of Solomal lands and Solimbon
 Providing Solomily-imbortaken, financed, or assisted construction and

improvements:

• Conducting lederal activities and programs affecting lend use, including but not limited to scater and related land resources planning, regulation, and

Sconing activities. It required agencies performing Schoul actions in the base Scoophinis (Scotphain associated with the 1 percent annual chance (also known as 1 percent annual exceedance probability)

Bood) he do the following:

1. Determine if a proposed action is in the base floodylain (that area which has a meepsteent or greater shatce of flooding in any great year).

Combat oarly public review, including public notice.

EO 13690 and FFRMS Page 24 AECOM

### **ASFPM Comments**

- Strong support of CISA as primary approach and commitment to develop processes for both coastal and riverine areas
- Support of use of natural systems as development alternatives where possible
- Should add statement to use more restrictive state or local standards.
- Concerns about exempting infrastructures such as levees, dunes, beaches, and seawalls from FFRMS approaches.



#### ASSOCIATION OF STATE FLOODPLAIN MANAGERS, INC. 575 D'Onnfrio Drive; Suite 200, Madison, Wiscomin 53719 www floods org. Photo: 008-838-3000 | Fax: 008-828-6319 | author/differeds org | www.floods.org

Executive Director

Deputy Director. Chad M. Bergmus, CFM Ingrid D. Wadsworth, CFM Director Ementus Larry A. Larson, P.E., CFM

1-27-17

Dr. Stephanie Bray HQ, USACE 441 G Street NW

Washington DC, 20314-1000

Subject: Implementation of Executive Orders on Floodplain Management Draft Engineer Circular (EC) 1165-2-217

The Association of State Floodplain Managers (ASFPM) is a national professional organization representing 17,000 members at the local, state, regional and private sector who are dedicated to managing flood risk to reduce flood damages and taxpayer costs from flood disasters. We support Executive Order (EO) 13690 (amending EO 11988) and the Federal Flood Risk Management Standard (FFRMS), which have the commendable objectives of protecting Iwes, preserving floodplain values, and ensuring that projects funded with taxpayer deliats do not have to be rebuilt time and again as we deal with increased rainfall and storm events. We commend the U.S. Army Corps of Engineers (USACE) for developing draft policy for implementing EO 13690. Our comments reflect the review guidance suggested by USACE. ASFPM appreciates the opportunity to provide feedback on this Engineer Circular (EC) and hopes that the following suggestions will strengthen USACE's approach to protecting taxpayer investments.

The economic costs to the nation's taxpayers associated with flooding are clearly increasing and are unstainable, even if rainfall and storms were not verifiably increasing. Based on NOAA and CoreLogic analysis, the overall flood loss in 2016, driven by six, extreme rain events, was approximately \$17 billion, which is six times greater than the overall flood damage experienced in 2015.

- 1. We strongly support this USACE action to implement the Federal Flood Risk Management Standard and urge USACE to finalize and implement the subject EC.
- 2. ASFPM strongly supports the USACE statement that the Climate Informed Science Approach (CISA) will be the primary approach to determining the FFRMS floodplain. While consensus on CISA for future conditions in coastal areas has more data (sea Level rise), we must start to use CISA in riverine areas also and there are a number of urban areas with projections of future hydrology exist. USACE indicates it will work with other federal, state and locals agencies to develop CISA. This is exactly what must happen so we have uniform application of CISA to protect taxpayer investments.
- 3. ASFPM supports the USACE approach to use natural systems in development of alternatives, where
- 4. Wherever the EC directs an impact analysis the USACE should do a cumulative analysis of this and similar actions in the hydraulic reach to ensure that neither flood levels nor velocity are affected on any other property. If there is an impact on other property, whether developed or not, those property owners must agree to the impact through whatever compensation is necessary. These criteria of flood level and velocity impact and appropriate mitigation must be applied whenever there is an impact,
- 5. We urge that the EC contain a statement that USACE will use more restrictive state or local standards

Dedicated to reducing flood risk and losses in the nation.

Cod C. Strater, CFM State Floodylain Manage MN Dept. Natural Resources. 631-259-5713

Maria Con Latron, CPM State Coordinator SC Dept. Natural Entergree 803-734-3672

Leche Durbam, P.E. Chief, Floodplain Management Al. Water Enumerous 154-242-5506

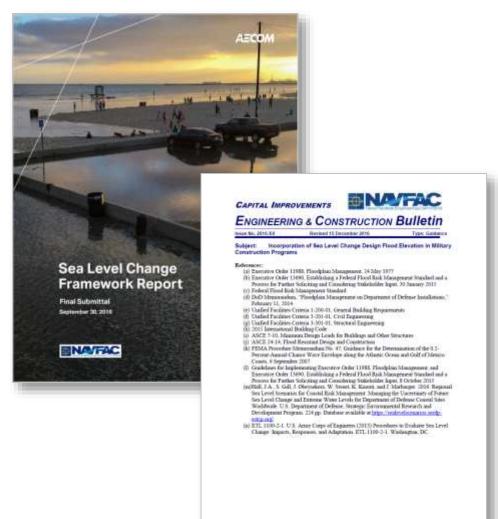
Secretary: Kapin McHingh, CFM Floodislain Management Offices MO Emergency Migart. Agency 573-526-9129

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## What would CISA Approach look like? NAVFAC example:

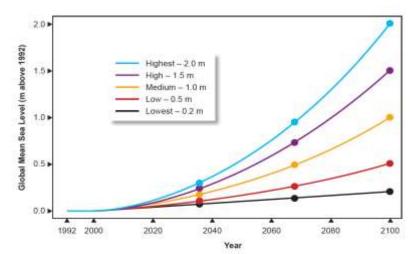
- Task order with National Institute of Building Services (NIBS) and AECOM to develop Sea Level Change (SLC) Framework Report and draft EC Bulletin
- How to incorporate SLC into process of calculating Design Flood Elevation (DFE) from Building Code, DOD Unified Facilities Criteria (UFC) Guidance, and support Ecs
- Address EO 13690 and FFRMS

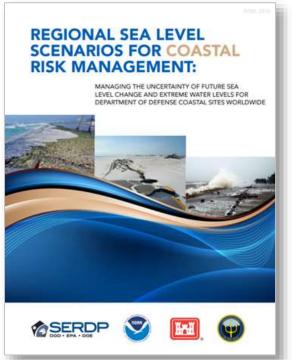


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## **Sea Level Change Data**

- Coastal Assessment Regional Scenario Working Group (CARSWG)
- 1774 sites globally
- Global SLC values and local adjustments
- Three time periods: 2035, 2065, 2100
- Five scenarios: lowest, low, medium, high, highest
- Some sites include extreme water level data
- Data available to authorized users
- https://sealevelscenarios.serdp-estcp.org/





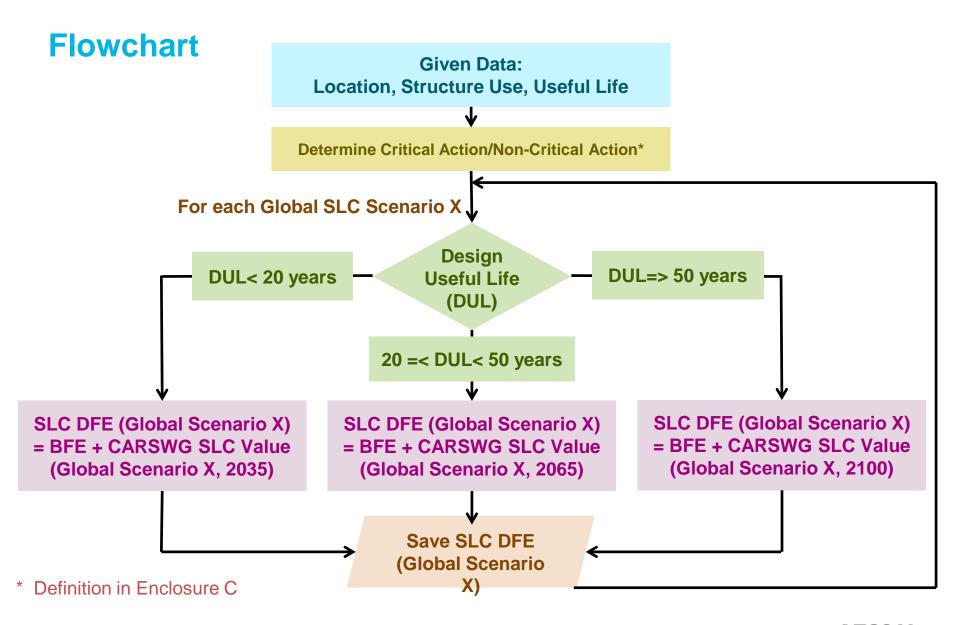
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## Suggested Approach (from draft EC)

- C. Determine project location, use/occupancy, and design useful life (DUL)
- D. Determine minimum flood elevation based on UFC and IBC
- E. Determine if Critical or Non-Critical Action
- F. Determine SLC DFE using CARSWG data for Climate Informed Science Approach (CISA)

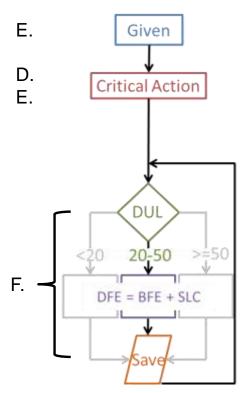
- G. Determine DFE for Freeboard Value Approach (FVA)
- H. Determine DFE for 0.2% Flood Approach (0.2FPA)
- I. Compare all DFEs
- J. Select final DFE
- K. If SLC DFE > all others, consider re-evaluating horizontal extent of floodplain

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## **Example: Administration Building**



Norfolk Naval Shipyard Administration Building, DUL=35 years

Moderate risk to public (non-critical action)  $\rightarrow$  Flood Design Class 2 Minimum Elevation (Class 2) = BFE + 1 foot = 8 + 1 = 9 feet NAVD88

**UFC Risk Category = II** → **Calculate SLC for all 5 Global Scenarios** 

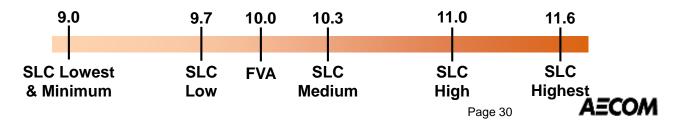
**Design Useful Life = 35 years** → use 2065 scenario

Global Scenario - 2065	FEMA BFE	CARSWG SLC Value	SLC DFE
Lowest		1.0 feet	9.0 feet NAVD88
Low	8 feet	1.7 feet	9.7 feet NAVD88
Medium	NAVD88	2.3 feet	10.3 feet NAVD88
High	NAVDOO	3.0 feet	11.0 feet NAVD88
Highest		3.6 feet	11.6 feet NAVD88

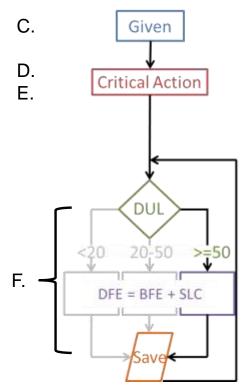
G. H.

١.

FVA DFE (non-critical) = BFE (Zone AE) + 2ft = 10 feet NAVD88 0.2% FPA DFE = not available



### **Example: Fire Station**



Norfolk Naval Shipyard Fire Station, DUL=75 years

Essential/critical to public (critical action) → Flood Design Class 4 Minimum Elevation (Class 4) = BFE + 2 foot = 8 + 2 = 10 feet NAVD88

**UFC Risk Category = V** → **Calculate SLC 3 highest Global Scenarios** 

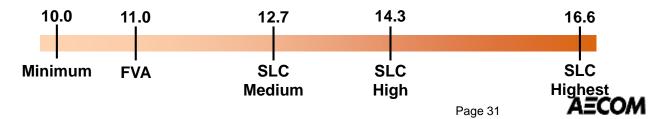
**Design Useful Life = 75 years** → **use 2100 scenario** 

Global Scenario - 2100	FEMA BFE	CARSWG SLC Value	SLC DFE
Medium	8 feet	4.7 feet	12.7 feet NAVD88
High	NAVD88	6.3 feet	14.3 feet NAVD88
Highest	NAVDOO	8.6 feet	16.6 feet NAVD88

G. H.

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FVA DFE (critical) = BFE (Zone AE) + 3ft = <u>11 feet NAVD88</u> 0.2% FPA DFE = not available



### Now what do we do?

MACBETH: "Life's but a walking shadow, a poor player, That struts and frets his hour upon the stage, And then is heard no more. It is a tale, Told by an idiot, full of sound and fury, Signifying nothing.."

—Macbeth (1606)

THE DUDE: "This is a very complicated case, Maude. You know, a lotta ins, a lotta outs, a lotta whathave-yous. And, uh, a lotta strands to keep in my head, man. Lotta strands in old Duder's head."

—The Big Lebowski (1998)



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## In plain language?

Make Yes
It We
Last Can



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