



Environmental Review Mini Sessions: Enhancing Process Efficiencies and Incorporating New Environmental Criteria

Day 1, May 7, 2024
2:30 p.m.-4:00 p.m. CDT



**2024 CDBG-DR Problem Solving Clinic
May 7-9, 2024 | St. Louis, MO**

Presenters



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Learning Objectives

- Attendees will learn how to process Request for Release of Funds to avoid Choice Limiting Actions and processing delays.
- Attendees will identify projects eligible for environmental review adoption and how to successfully process them.
- Attendees will become acquainted with the newly established HUD Federal Flood Risk Management Standard (FFRMS).
- Attendees will recognize radon-related health risks and how to implement HUD's radon policy.
- Attendees will successfully consider and address the Environmental Assessment - Climate Change Impact Factor.

Agenda

- Process efficiencies
 - Request for Release of Funds (RROF) and Authority to Use Grant Funds (AUGF)
 - Environmental Review Adoption – Stafford Act
- New Environmental Review Criteria
 - Federal Flood Risk Management Standard (FFRMS)
 - Departmental Policy for Addressing Radon
 - Climate Change Impacts Factor
- Reducing administrative burden takeaways



Process Efficiencies: Request for Release of Funds (RROF) and Authority to Use Grant Funds (AUGF)

Reasons for Processing Request for Release of Funds (RROF)

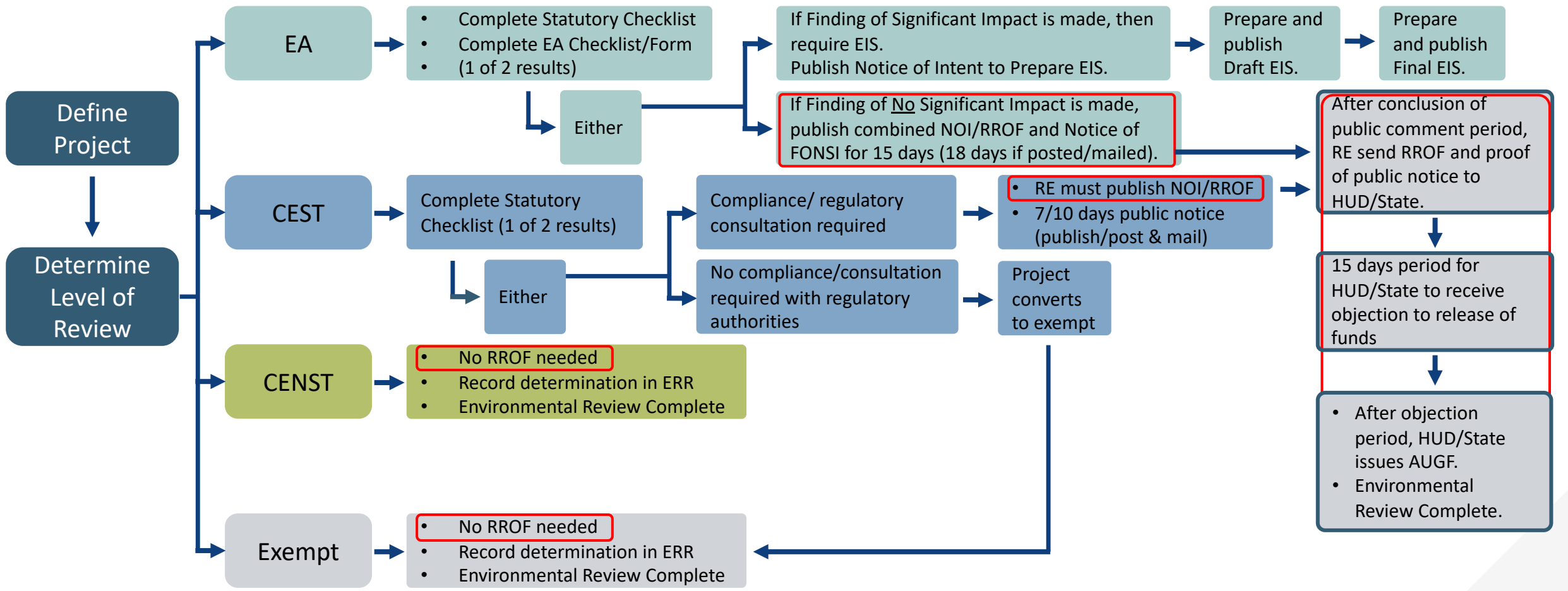
- Inform the public and allow for comment.
 - Two comment periods: local level and HUD 15-day objection period.
- Certification to HUD that environmental review responsibilities have been met by the responsible entity(RE).
- Required by statute and regulation.
 - 24 CFR 58.22(a)
 - Appendix B: Consolidated Notice, Section III.C.5. Obligation and expenditure of funds.
 - Project may not commence until Authorization to Use Grant Funds (AUGF) is received.

RE Certifying

- Fully carried out review, decision-making & action pertaining to project
- Complied with NEPA, §58.5, §58.6, and applicable state & local laws
- Determined that project does/does not require an Environmental Impact Statement (EIS)
- Mailed notices and published (newspaper) or posted & mailed notices in accordance with required timeframes & enclosed copies of notices with RROF
- Informed recipient of all required mitigating conditions



Environmental Review Process – Part 58





Summary of RROF Process

Categorically Excluded, Subject to §58.5 (CEST)

1. RE mails & publishes /posts NOI-RROF public notice.

2. RE observes 7/10-day comment period.

3. RE addresses any comments received.

4. RE signs RROF and submits to HUD, with proof of mailing, publication and/or posting.
• (If Recipient is not RE, Recipient signs, too.)

5. HUD observes 15-day objection period.

6. HUD issues “Authority to Use Grant Funds” (AUGF).

7. RE implements project, including any environmental conditions that apply.

Environmental Assessment (EA)

1. RE mails & publishes /posts FONSI/NOI-RROF (“Combined notice”).

2. RE observes 15/18-day comment period.

3. RE addresses any comments received.

4. RE signs RROF and submits to HUD, with proof of mailing, publication and/or posting.
• (If Recipient is not RE, Recipient signs, too.)

5. HUD observes 15-day objection period.

6. HUD issues “Authority to Use Grant Funds” (AUGF).

7. RE implements project, including any environmental conditions that apply.

Combined Notice (NOI/RROF & FONSI) Public Comment Period and Objection Period

August						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Notice published in newspaper.	2 First day of public comment period.	3	4	5	6
7	8	9	10	11	12	13
14	15	16 Last day of public comment period.	17 Earliest date that RROF can be signed & submitted.	18 HUD Objection Period begins if RROF received on 8/17.	19	20
21	22	23	24	25	26	27
28	29	30	31	Sept 1 Last day of HUD objection period.	Sept 2 Earliest day AUGF can be issued (assuming no objections).	

Note: When the AUGF issuance date is a weekend or holiday, the effective date is the next business day.

Common Errors with RROFs and Notice

- Public Notice (PN) comment period is too short.
- RROF or PN not signed by Certifying Officer, or no delegation letter on file.
- RROF signed before PN comment period ends.
- Project description on RROF is too vague or not consistent with PN.
- PN does not direct comments to RE and/or objections to HUD.
- NOI-RROF/FONSI PN does not follow HUD recommended template or does not include all the required language or information.
- NOI-RROF PN issued for EA, but no FONSI included in PN or issued separately.
- Unnecessary issuance of PN for NOI-RROF/FONSI (only required for EA).
- Unnecessary issuance of Public Notice for NOI-RROF (only required for CEST and EA).
- Unnecessary submittal of RROF to HUD (only required for CEST and EA).
- Missing RROF for HUD grants (each HUD grant associated with a project must have an individual RROF).

Note: If errors are found, HUD may ask for re-submission of RROF and/or republication of Public Notice.

Expedited Public Notice and Condensed Comment Periods

- During Presidentially declared disasters, 24 CFR 58.33 allows the RE to publish the combined Finding of No Significant Impact and Notice of Intent to Request Release of Funds (FONSI/NOI-RROF) simultaneously with the submission of the RROF to HUD.
- The notice must:
 - State that funds are needed on an emergency basis.
 - State that the public notice and objection periods have been combined into one 15-day period.
 - Indicate that all comments should be addressed to both the RE and HUD.



RROF/AUGF Resources



HUD Forms:

- Request for Release of Funds ([HUD Form 7015.15](#))
- Authority to Use Grant Funds HUD ([Form 7016.16](#))

Note: Federal forms should never be altered.

HUD Templates:

- [Template for NOI/RROF notice](#)
- [Template for NOI/RROF notice for Tiered Environmental Reviews](#)
- [Template for Combined NOI/RROF and FONSI notice](#)

Note: RE should use HUD-recommended template for public notice. It contains the minimum content required. REs may add language but cannot subtract.



HEROS Resources:

- [HUD Exchange: HEROS – HUD Environmental Review Online System](#)
- [HEROS Login](#)
- [HEROS User Guide](#)
- [HEROS How To Videos](#)
 - [Completing the RROF/C](#)
 - [AUGF – 7015.16](#)



Process Efficiencies: Environmental Review Adoption

Environmental Review Adoption – Stafford Act

- HUD grantees are permitted to adopt environmental reviews performed by other Federal Agencies when the grantee is providing supplemental assistance to actions performed under the Stafford Act – must be the same scope of work.
- Responsible Entity keeps the FEMA review on file and submits the Request for Release of Funds and Certification (RROF/C) to HUD, and HUD immediately issues the Authority to Use Grant Funds (AUGF).
- Immediate approval of AUGF for CEST Reviews upon receipt of the RROF/C.

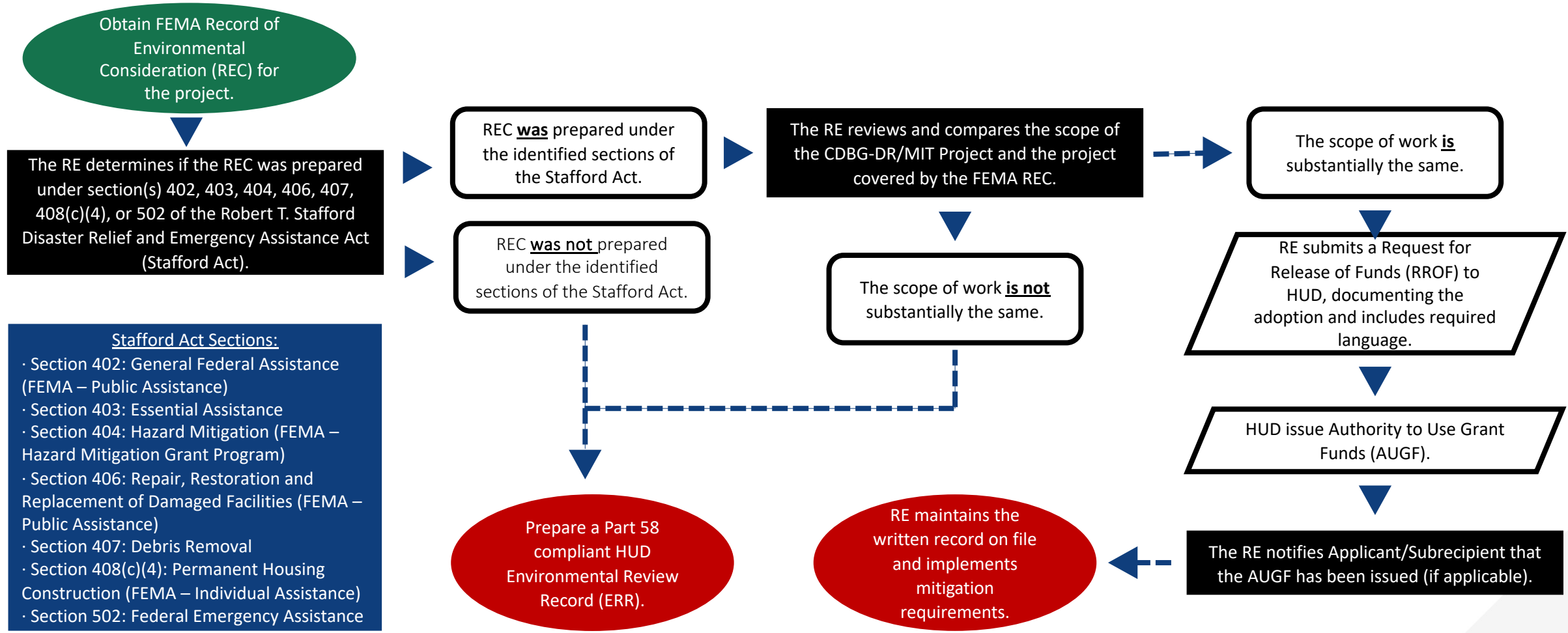


Reference Material

- HUD Memo: Adoption of FEMA and Other Federal Environmental Reviews and Processing for Hurricane Sandy Supplemental Appropriation Activities, March 4, 2013
- Appendix B: Consolidated Notice, Section IV.D.2. Adoption of another agency's environmental review



Environmental Review Adoption – Stafford Act Processing Flow Chart





New Environmental Criteria: Federal Flood Risk Management Standard (FFRMS)

Flooding Risk in the United States

From 1996-2019, **99%** of U.S. counties were impacted by a flooding event.

Since 2017, the U.S. has seen eight separate flooding events costing \$1 billion or more, which NOAA estimates to have cost in total over **\$30 billion dollars**.

While flooding and severe storms affect all communities, it is more difficult for socially vulnerable populations such as low-income and minority communities to recover from flooding impacts.

Both flood risk and flood disasters are expected to increase as climate change progresses.

FFRMS: Background

- Prior floodplain management regulations, at 24 CFR Part 55, based on E.O. 11988.
- President Obama issued E.O. 13690, on January 30, 2015, revising E.O. 11988 and proposed a new Federal Flood Risk Management Standard (FFRMS). It was established to address current and future flood risk, improve resiliency, and ensure that projects funded with taxpayer dollars last as long as intended.
- August 2017, E.O. 13690 rescinded previous E.O., but reinstated May 2021 by E.O. 14030.
- HUD's FFRMS final rule published April 23, 2024, [89 FR 30850](#).

FFRMS Final Rule Intent

The FFRMS rule modifies HUD's floodplain management regulations to better address flood risk.

- By adopting a future flood risk model, HUD will increase the Nation's resilience to flooding, particularly in low and moderate income communities, reduce the risk of flood losses, minimize the impact of floods on households across the country, and protect federal investments against future risk and increased harm.

This rule implements requirements found in **EO 13690** - Establishing a Federal Flood Risk Management Standard (2015) and **EO 14030** - Climate Related Financial Risk (2021) by updating:

- **Part 55**, Floodplain Management and Protection of Wetlands: Applies to all HUD Programs that trigger NEPA/environmental review requirements.
- **Part 200**, Minimum Property Standards: Applies to single-family housing under HUD mortgage insurance and public housing programs.

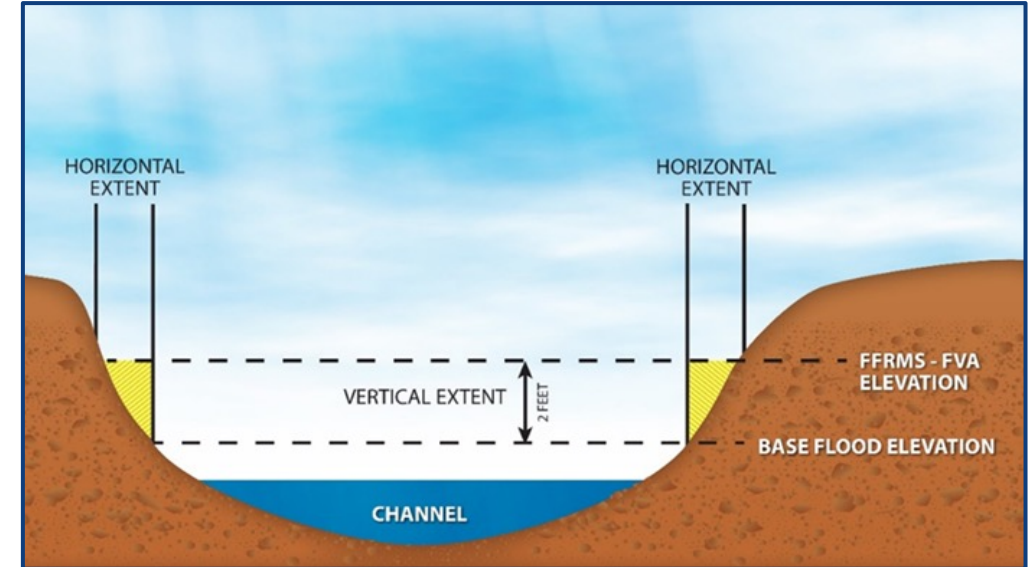
HUD is first, but several other agencies are pursuing FFRMS rules as well.

Major Improvements Under the Rule

- **Redefines the floodplain of concern:**
 - Regulates to a newly defined, expanded FFRMS Floodplain instead of the 100-year Floodplain to account for increased flood risk over time
 - Will increase the number of HUD actions that require compliance with Part 55 regulations
- **Increases the required elevation for new construction across all applicable programs and substantially improved structures** (for grant programs and multifamily FHA-insured projects)
- **Clarifies/strengthens public notice and flood insurance requirements** to increase awareness of flood risk to renters and homeowners
- **Incorporates flexibilities in allowing HUD assistance** for specific properties in floodways when specific criteria are met

Major Improvements Under the Rule

- Redefines the floodplain of concern
 - FFRMS Floodplain
 - No longer regulates to 100-year floodplain
 - Expands the area where Part 55 applies both vertically and horizontally
 - 8-step process required for projects in the newly defined FFRMS Floodplain
- Increases the required elevation for new construction and substantially improved structures



24 CFR 55.2(b)(10): Substantially improved includes any repair, reconstruction, modernization, or improvement of a structure, including manufactured housing that (A) costs equals or exceeds 50% of the market value of the structure (before improvements started or damage occurred) or (B) results in an increase of more than 20% in the number of dwelling units in a residential project or average peak number of customers and employees likely to be on-site at any one time for a commercial or industrial project.

Summary of Elevation and Floodproofing Requirements

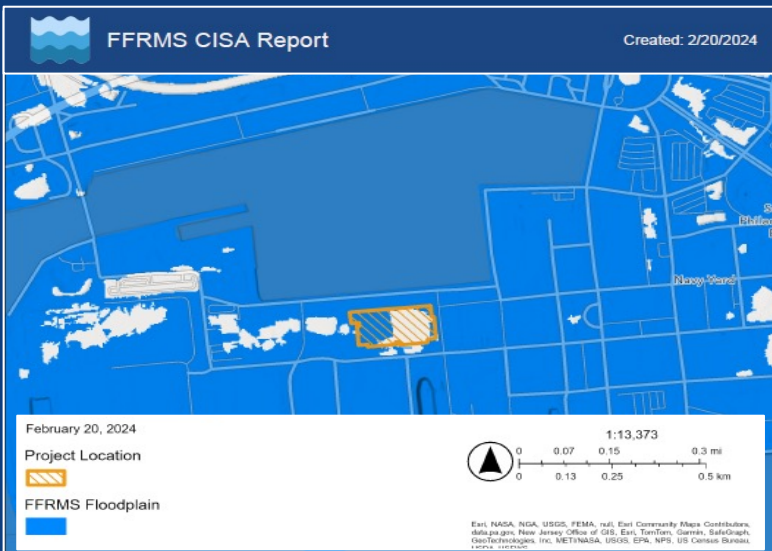
Property type	Activity	Elevation	Floodproofing alternative permitted
Residential*	New construction & Substantial improvement**	Required to the elevation of the FFRMS floodplain	Only for mixed-use buildings where all residential is elevated
	Minor improvements & other	Not required	N/A
Non-residential	New construction & Substantial improvement**	Required to the elevation of the FFRMS floodplain	Yes
	Minor improvements & other	Not required	N/A
FHA Single Family	New construction & Substantial improvement**	Required to BFE+2	No
	Minor improvements & other	Not required	N/A

*Except FHA Single Family **As defined in 24 CFR 55.2(b)(10). Any other repairs, rehabilitation, etc. not meeting this definition are considered minor.

FFRMS: Mapping

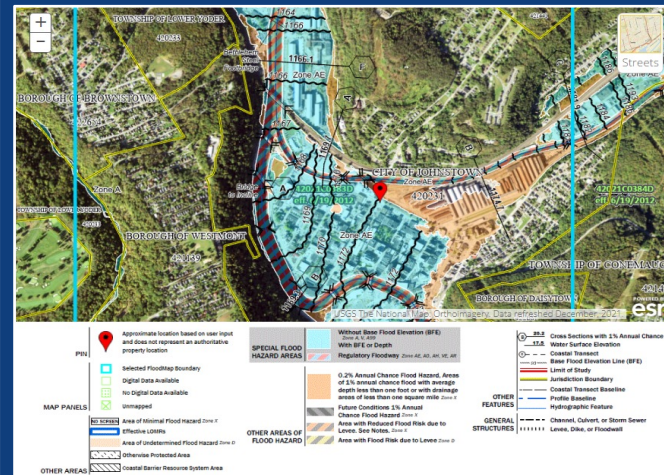
CISA: Climate Informed Science Approach

The elevation and flood hazard area resulting from using the best-available, actionable hydrologic data and methods that integrate current and future changes in flooding based on climate science.



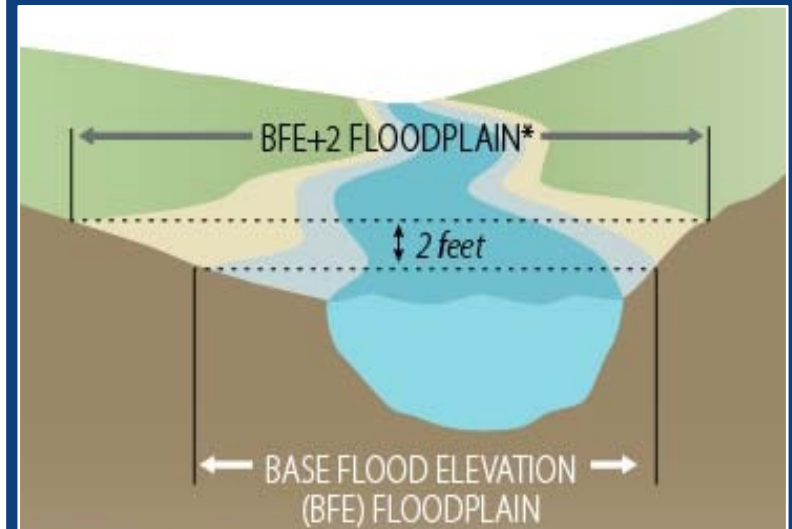
0.2PFA: 0.2 Percent-Annual-Chance Floodplain Approach

The building elevation must, at least, meet the 0.2 percent-annual-chance floodplain (500-year).



FVA: Freeboard Value Approach

The building, at least, must be 2 or 3 feet of elevation, depending on the criticality of the use, above the 100-year, or one percent-annual-chance, flood elevation.



FFRMS: Modernizing the Regulatory Floodplain

Floodplain of Concern (Former Part 55 Standard)

- Floodplain of concern was the 1% annual chance flood or 100-year floodplain.
- 8-step for projects in the 500-year floodplain was limited to critical actions only.
- Based on FEMA's Flood Insurance Rate Maps (FIRMs).
- FEMA maps do not take climate change or new development into account and maps may be outdated.

Appendix B: CDBG-DR Consolidated Notice

- Non-critical action elevation requirements
 - At least 2 feet above the 1 percent annual chance floodplain elevation.
- Critical action elevation requirements
 - Higher of the 500-year floodplain or 3 feet above the 100-year floodplain

FFRMS Floodplain (New Part 55 Requirements)

- 8-step and elevation requirements triggered for areas subject to flooding as determined using one of three methods:
 1. Climate Informed Science Approach (CISA)
 2. 0.2-percent-annual-chance Flood Approach (0.2PFA)
 3. Freeboard Value Approach (FVA)
- Designed to account for changes in risk over the projected life of a structure or facility, or to account for future risk
- Shift in focus from 'flood control and protection' to 'flood risk management'

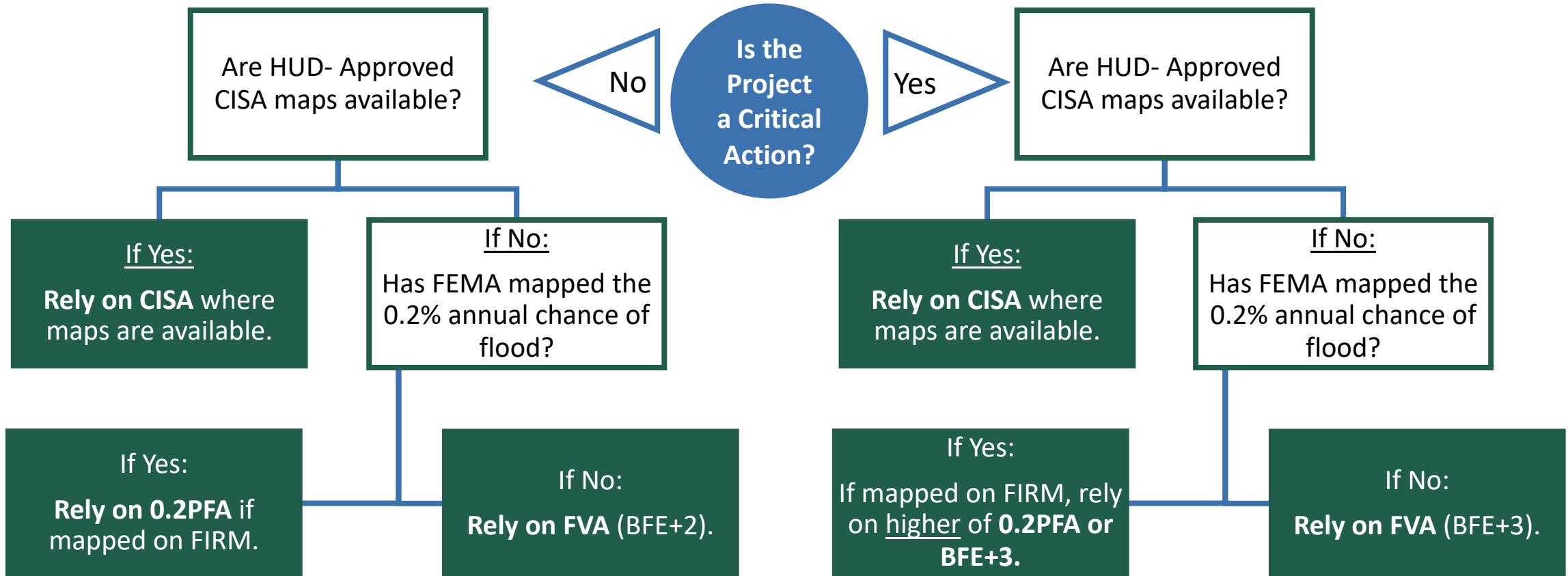
What is a Critical Action?

24 CFR 55.2(b)(3): Critical Actions are activities that create, maintain, or extend the useful life of these type structures or facilities for which any risk of flooding is too great.



- Facilities that produce, use or store highly volatile materials
- Community stormwater management infrastructure
- Water treatment plants
- Data storage centers
- Generating plants
- Principal utility lines
- Fire and police stations
- Emergency operations centers
- Roadways providing sole egress from flood-prone areas.
- Hospitals, nursing homes, convalescent homes, intermediate care facilities, retirement service centers

Identifying the FFRMS Floodplain

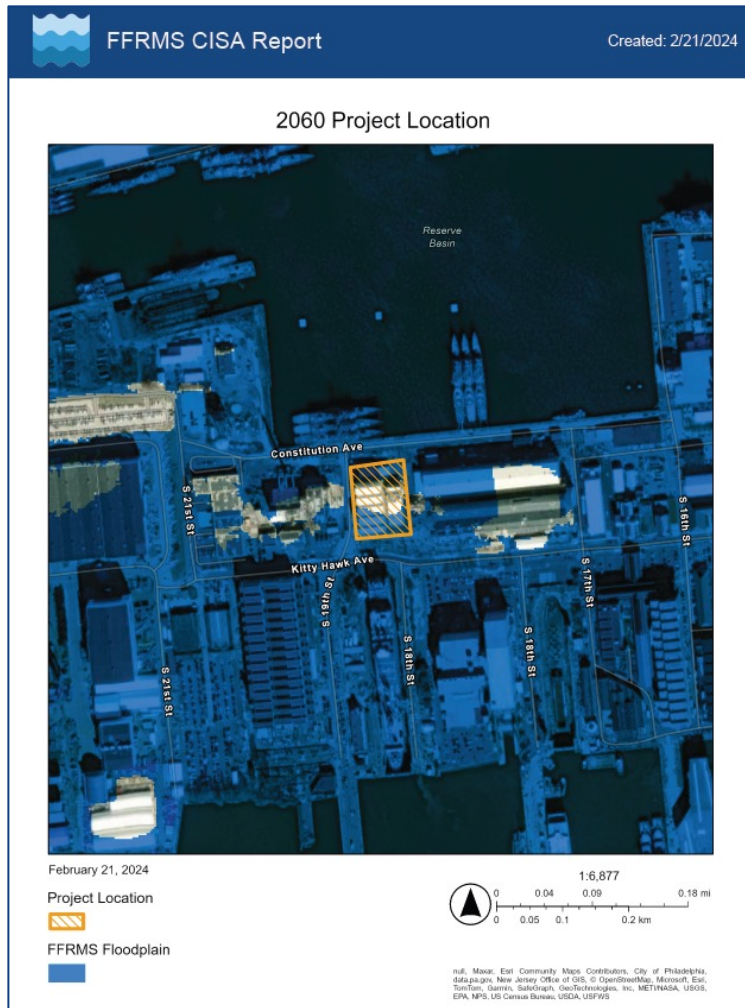


Identifying the FFRMS Floodplain – CISA Maps

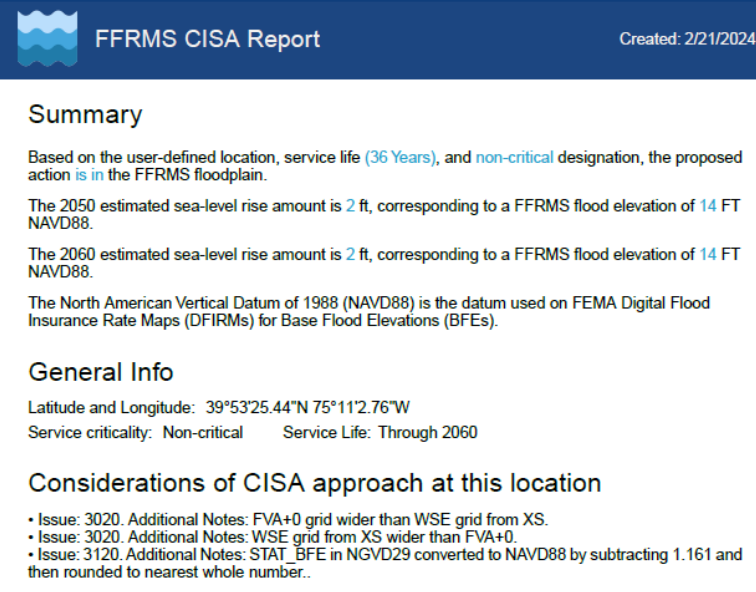
Using CISA Maps

- When the area contains available and actionable CISA data and includes:
 - Data that can be accessed via a tool, resource, or other process to define the floodplain using a CISA.
 - Required, **when** HUD has adopted the tool, resource, or other process through a Federal Register notice.
- Verify CISA floodplain and elevation.
 - Federal CISA data must be equal to or greater than base flood elevation (BFE) to use.
 - Local CISA data must be at least
 - Non-Critical Actions: as high as the lower of the 0.2PFA or FVA (BFE+2).
 - Critical Actions: equal to or greater than the higher of the 0.2PFA or FVA (BFE+3).
- If a project location is within the FFRMS floodplain, then the 8-step process is required.
- If the project involves new construction or substantial improvement, elevation requirements apply.
- If a project is located outside the FFRMS floodplain, then floodplain management compliance is complete.
- If CISA maps are not available for the project location, use 0.2 PFA.

Identifying the FFRMS Floodplain – CISA Maps



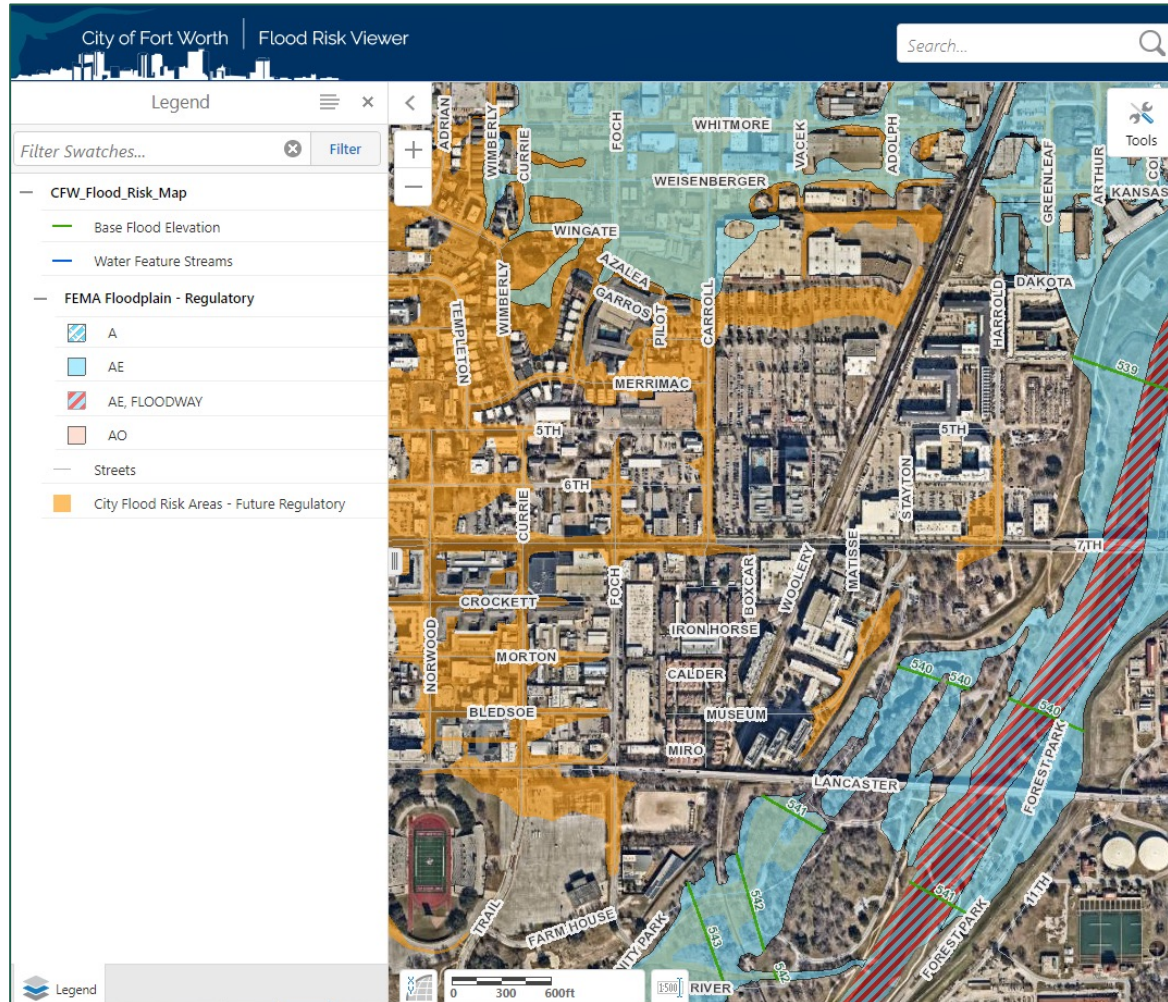
Federal Flood Standard Support Tool (FFSST)



NOTE: To date, HUD has not adopted the FFSST or any other CISA tool/resource in the Federal Register notice with comment.

- Developed by the National Climate Task Force's Flood Resilience Interagency Working Group (IWG) and co-led by:
 - White House Council on Environmental Quality (CEQ)
 - Office of Management and Budget (OMB)
 - Federal Emergency Management Agency (FEMA)
 - Flood Resilience IWG's Science Subgroup
 - White House Office of Science and Technology Policy (OSTP)
 - National Oceanic and Atmospheric Administration (NOAA)
 - U.S. Department of Housing and Urban Development (HUD)

Identifying the FFRMS Floodplain – CISA Maps



Local CISA Maps:

- RE to **voluntarily** define FFRMS floodplain utilizing CISA when state, tribal, or local government has formally adopted, through code or other formal adoption measures, a tool resource, or other written standards.
- HUD will permit use of local CISA data, when:
 - Non-Critical Actions: as high as the lower of the 0.2PFA or FVA (BFE+2).
 - Critical Actions: equal to or greater than 0.2PFA or FVA (BFE+3).

Identifying the FFRMS Floodplain – 0.2PFA

- Using FEMA Maps, [FEMA Map Service Center](#), locate project:
 - If project location is within the 500-year floodplain, then the 8-step process is required.

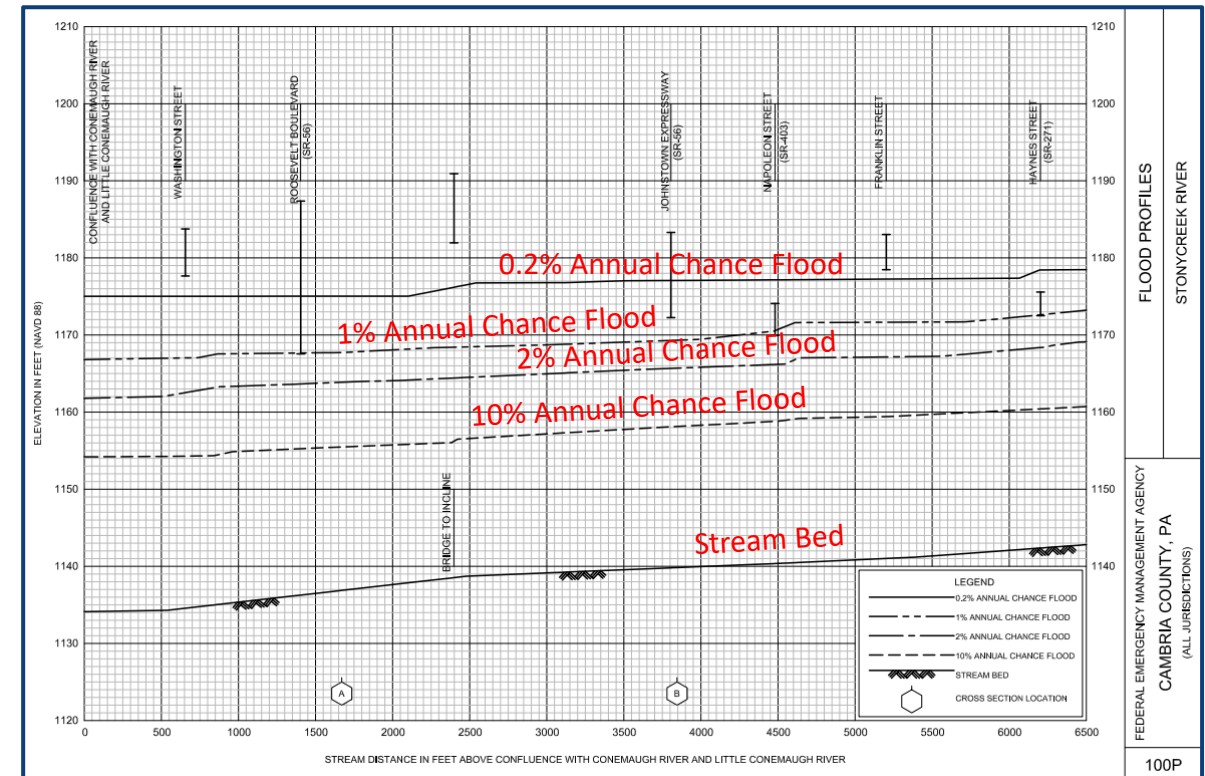
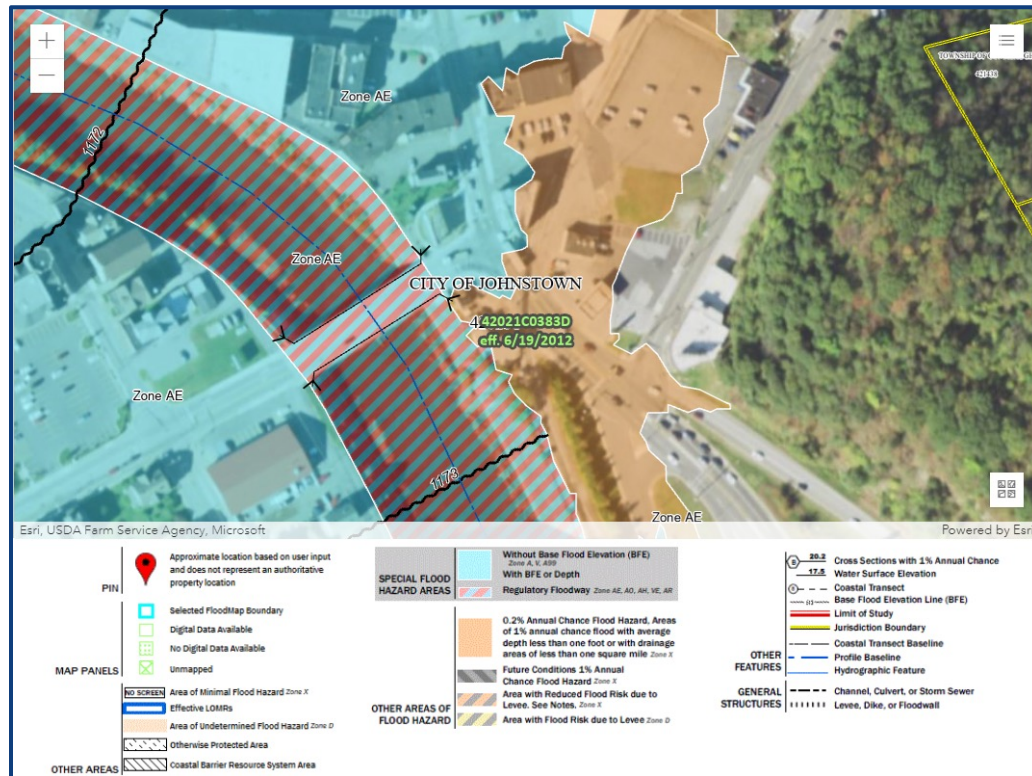
Non-Critical Actions

- If the project involves new construction or substantial improvement, elevation requirements apply.
- If project is outside of the 500-year floodplain, then floodplain management compliance is complete.
- If FEMA has not mapped the 500-year floodplain for the project area, use the FVA.

Critical Actions

- Compare 0.2PFA elevation to FVA (BFE+3).
- If the project involves new construction or substantial improvement, elevation requirements apply.
 - Higher of 0.2PFA and FVA (BFE+3)
- If project is located outside 0.2PFA and FVA (BFE +3), then floodplain management compliance is complete.
- If FEMA has not mapped the area, then use best available information.

Identifying the FFRMS Floodplain – 0.2PFA



Note: The 0.2PFA (500-year floodplain) elevation is not widely available on a FIRM but this approach may still be used to determine the horizontal extent of the FFRMS floodplain.

Flood Insurance Study (FIS) can further supplement the FIRM and indicate the 0.2PFA.

Identifying the FFRMS Floodplain – FVA

- Using FEMA Maps, [FEMA Map Service Center](#), locate project:
 - Identify the Base Flood Elevation (BFE) for project area.
 - If project location is within the FVA, then the 8-step process is required.
 - If FEMA has not mapped the project area, use the best available information.
- Federal Flood Standard Support Tool (FFSST) intended to include FVA (horizontal expansion)

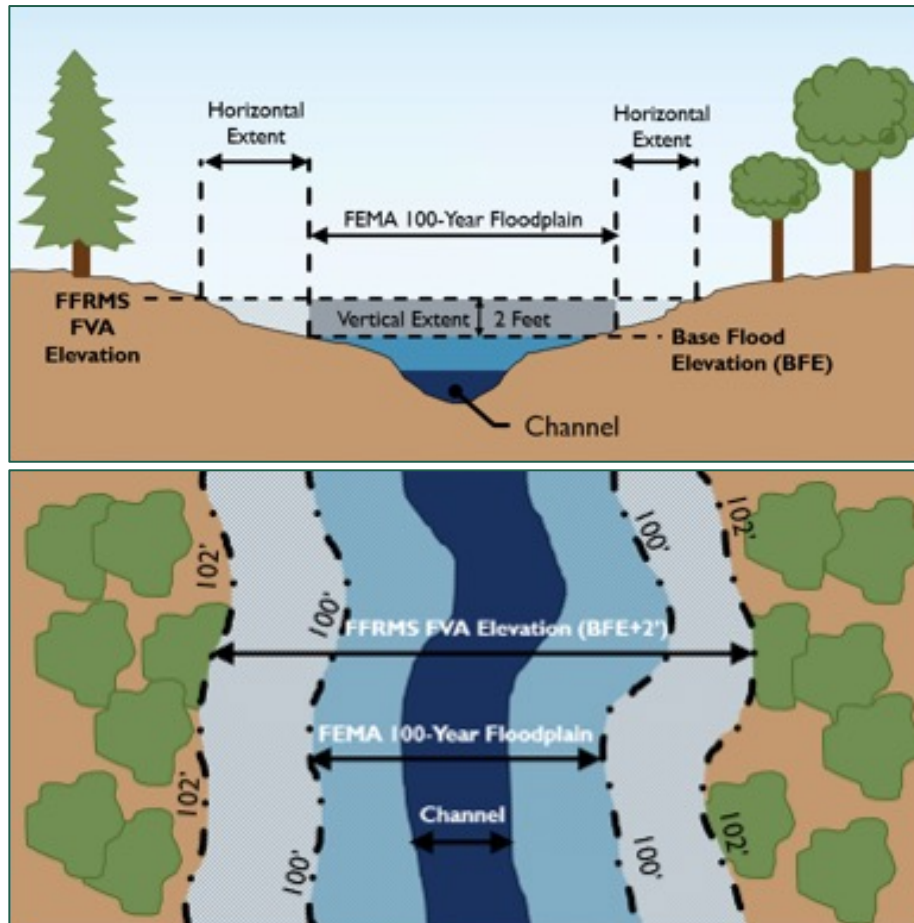
Non-Critical Actions

- $FVA = BFE + 2$
- If the project involves new construction or substantial improvement, elevation requirements apply.
- If project is outside of the FVA ($BFE + 2$) floodplain, then floodplain management compliance is complete.

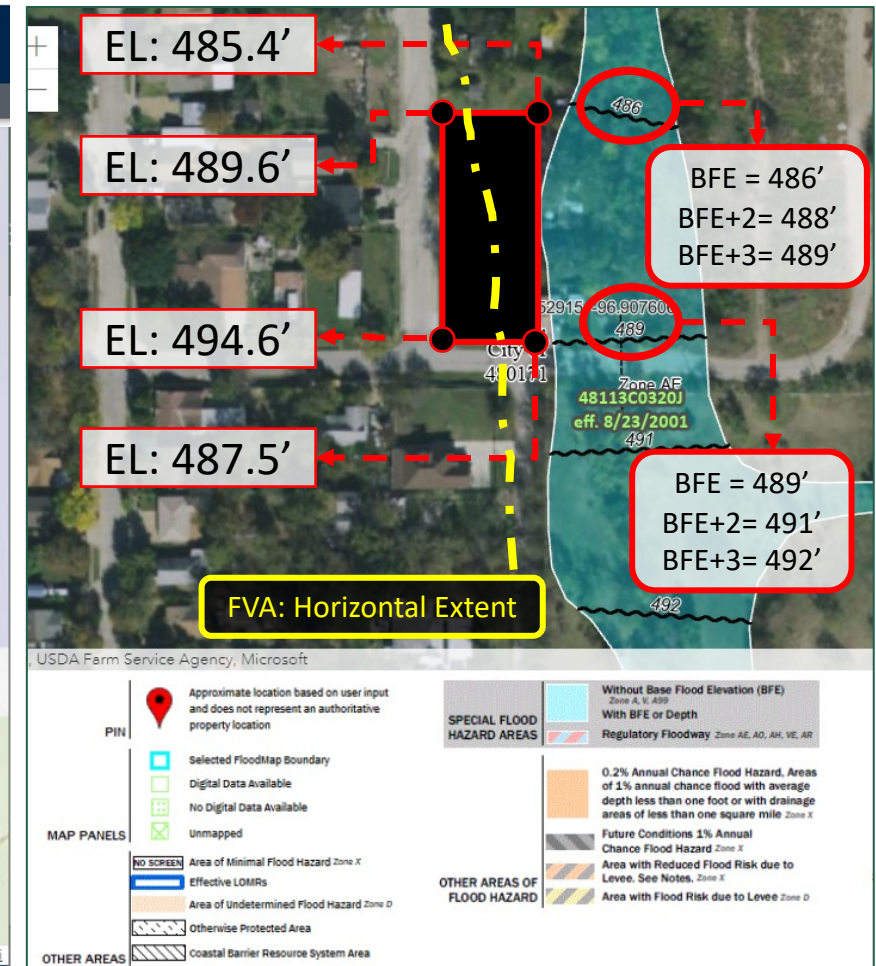
Critical Actions

- $FVA = BFE + 3$
- Compare 0.2PFA elevation to FVA ($BFE + 3$).
- If the project involves new construction or substantial improvement, elevation requirements apply.
 - Higher of 0.2PFA and FVA ($BFE + 3$)
- If project is located outside 0.2PFA and FVA ($BFE + 3$), then floodplain management compliance is complete.

Identifying the FFRMS Floodplain – FVA



Note: FVA Non-Critical Action Example



FFRMS Resources

- HUD FFRMS Final Rule: [89 FR 30850](#)
- [FEMA Map Service Center](#)
- [Federal Flood Standard Support Tool \(FFSST\)](#)
- [Register Today: FFRMS Final Rule Webinar Series](#)
 - Part 55 Overview and Compliance
 - Part 200 Overview, Protection of Wetlands, Flood Insurance, and Notifications

HUD FFRMS
Resources Available
Soon.





New Environmental Criteria: Department Policy for Addressing Radon

Radon and Health Effects

- Radioactive, odorless gas naturally found in nearly all soils.
- Forms when radium and certain other radioactive metals break down in rock, soil, and water.
- Radon gas moves through the soil to the air and into structures through areas of permeability.
- Common human exposure: radon inhalation indoors.

Non-Smokers
Leading Cause of
Lung Cancer

Smokers
Second Leading
Cause of Lung Cancer

No Safe Levels of Radon Exposure
EPA Recommendations
Radon Level $\geq 4\text{pCi/L}$: Fix Homes
Radon Level $< 4\text{pCi/L}$ but $\geq 2\text{pCi/L}$:
Consider Fixing Homes

Department Policy for Addressing Radon in the Environmental Review Process

- Radon policy:
 - “(i) Also, it is HUD policy that all properties that are being proposed for use in HUD programs be free of hazardous materials, contamination, toxic chemicals and gases, **and radioactive substances**, where a hazard could affect the health and safety of occupants or conflict with the intended utilization of the property.” (24 CFR 50.3(i) & 58.5(i)(2))
- “Contamination analysis” required to determine potential or known presence of contamination, at or near the site.

Notice: CPD-23-103

- Issued: January 11, 2024
- All non-tribal and recipients’ effective date: April 11, 2024
- Tribe, Tribally Designated Housing Entity, and Department of Hawaiian Homeland recipients’ effective date: January 11, 2026

Considering Radon Under the Policy Notice

- **Preferred, Best Practice:** American National Standards Institute (ANSI)/ American Association of Radon Scientists and Technologists (AARST) radon testing and mitigation standards
- **Alternative Strategies** (if testing not otherwise required by law/reg):
 - Do-It-Yourself (DIY) Testing: Use of individual DIY home radon test kits
 - Continuous Radon Monitoring Devices: For use by trained local government staff in remote areas
 - Review of science-based data: State or tribal geologic data, CDC radon test data

Indoor Radon Action Level:
 ≥ 4.0 pCi/L

Mitigation Plan:

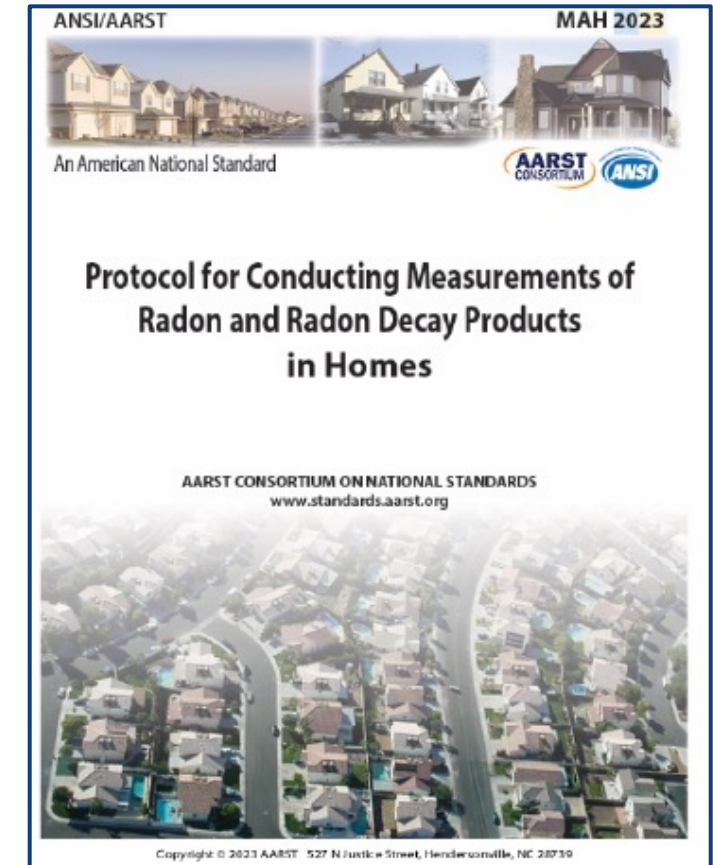
- Identify radon level
- Radon reduction system
- Ongoing maintenance plan
- Establish timeline
- Post-installation testing

Eligible Program Costs:

- Radon testing
- Mitigation measures

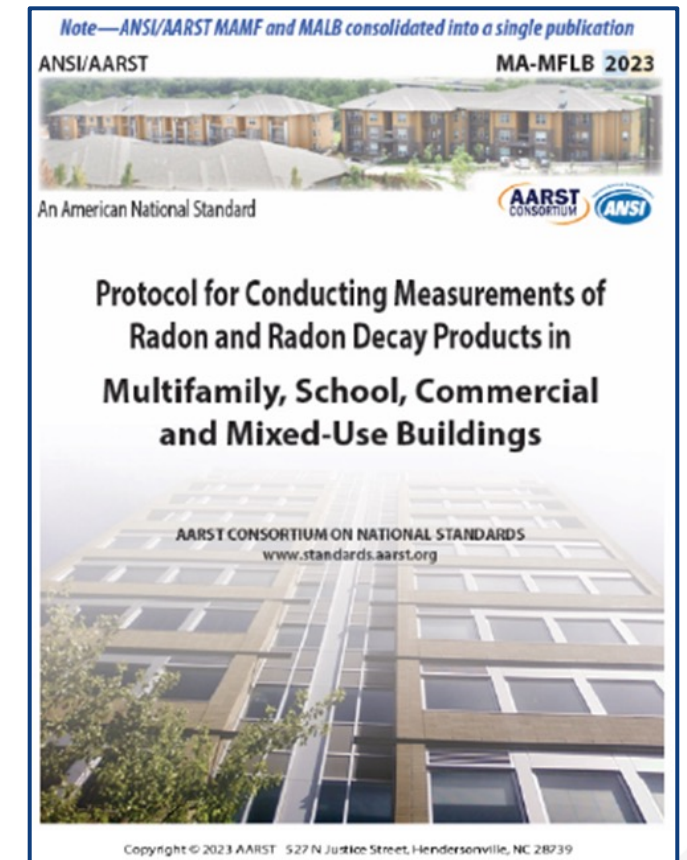
Preferred, Best Practice: ANSI/AARST Standards

- There is **no** national federal radon testing nor mitigation standards of practice.
- The ANSI and AARST have promulgated voluntary consensus standards for both radon testing and mitigation for a variety of situation (ANSI/AARST standards).
- These standards are the “industry standard” standards of practice for radon testing and mitigation in the U.S.
- Use of the relevant ANSI/AARST testing standard is HUD’s recommended best practice for consideration of radon.



Preferred, Best Practice: ANSI/AARST Standards

- Using this preferred approach involves complete compliance with the relevant ANSI/AARST testing protocol.
- The most recent, current version of the standards must be used (currently 2023).
- Two current protocols for testing:
 - ANSI/AARST MAH-2023: Protocol for Conducting Measurements of Radon and Radon Decay Products in Homes
 - ANSI/AARST MA-MFLB-2023: Protocol for Conducting Measurements of Radon and Radon Decay Products in Multifamily, School, Commercial and Mixed-Use Buildings
- All standards can be viewed online for free or purchased as PDFs from AARST website.





Alternative Strategies

Do-It-Yourself Testing

- Eligible for single family homes and 1–4 unit buildings
- No prior training needed
- Follow manufacturer instructions precisely
- Approved by National Radon Safety Board (NRSB) or the National Radon Proficiency Program (BRPP)
- Mailed to lab for analysis
- Cost: average \$15 - \$40

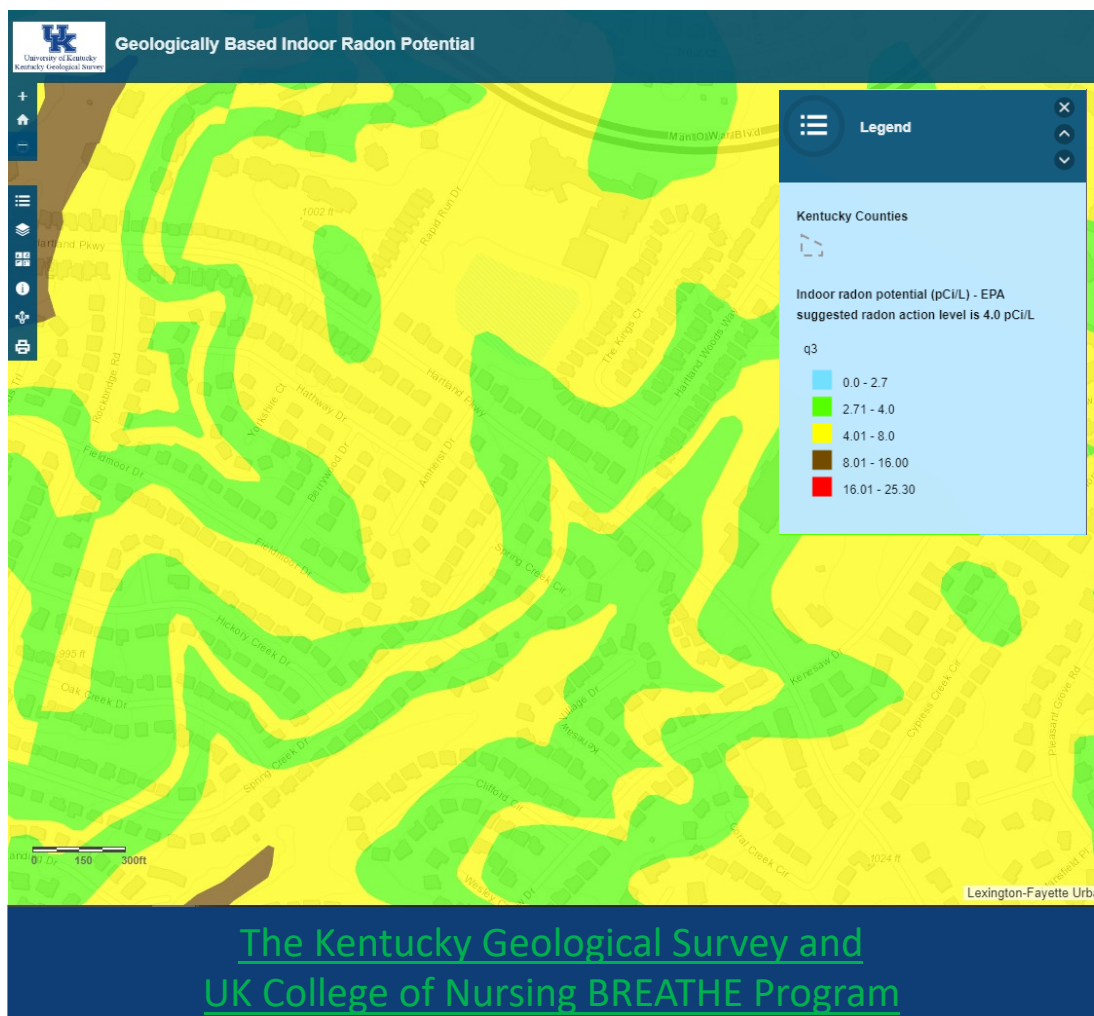
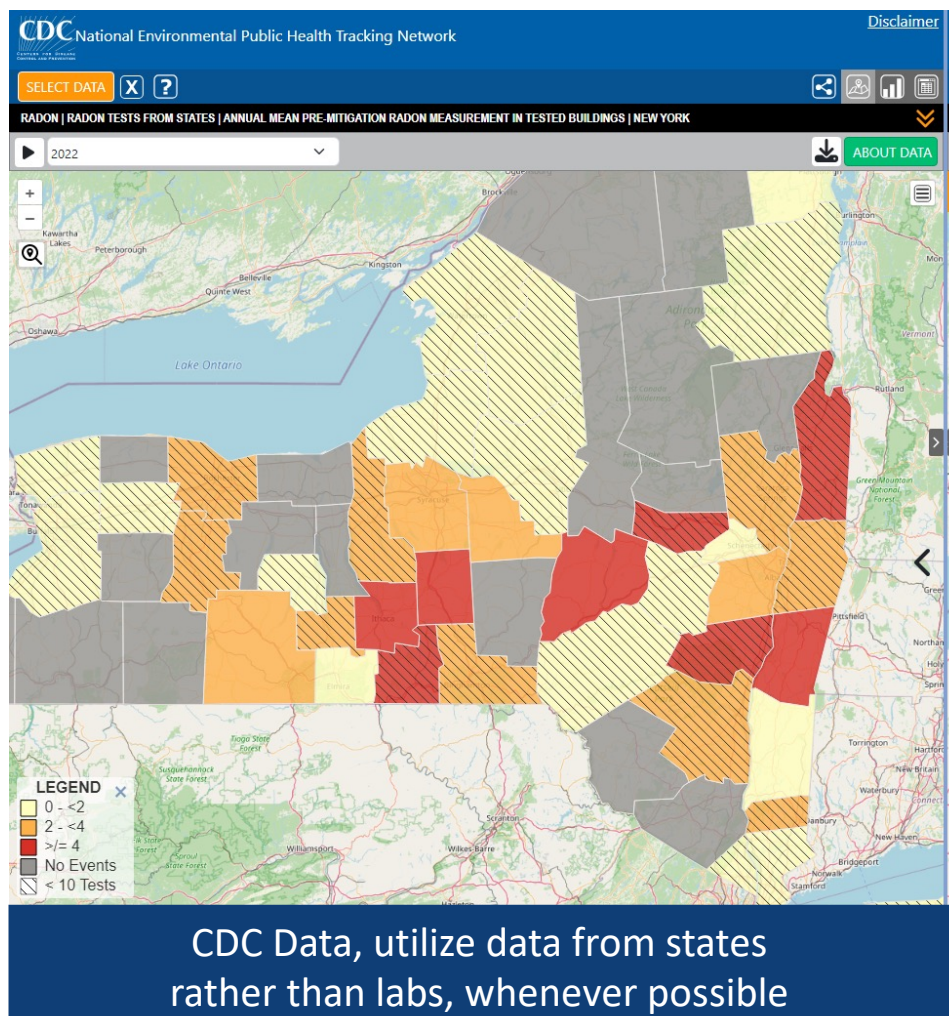
Continuous Radon Monitoring (CRM) Devices

- Remote areas where other types of testing is not possible/feasible
- Conducted by trained staff at local government (e.g., local health department)
- Monitors continuously, typically once an hour
- Ideally approved by NRSB or NRPP

Review of Science-Based Data

- Reputable sources:
 - State radon test databases
 - CDC National Environmental Public Health Tracking Radon Test Data
 - State/tribe radon measurement data or geological studies
- Avg pre-mitigation radon results
- Minimum tests: 10 results
- Maximum tests age: 10 years
- Largest geography: county
 - Smallest geographic area encouraged

Review of Science-Based Data: Examples



Insufficient Scientific Data and Testing is Infeasible or Impractical

- “Lack of Scientific Data.”
 - Less than 10 documented test results;
 - Over the previous 10 years;
 - For a given county; and
 - There is no other available science-based data.
- Testing is Infeasible or Impracticable.
 - RE reviews the cost of radon testing and determines the cost is infeasible for the small budget.
- RE must document in the Environmental Review Record (ERR) that there is both a **Lack of Scientific Data** and **Testing is Infeasible or Impracticable**.
 - No requirement to submit to HUD for review.

CDBG-DR
Eligible Program Costs:

- Radon testing
- Mitigation measures

Average DIY Radon
Test Kit: \$15-\$40

What is Not Subject to the Radon Policy Notice

- Non-HUD projects: Projects with no HUD nexus
- HUD projects not subject to HUD's contamination regulations:
 - Projects not subject to NEPA review (ex. issuance of single-family FHA mortgages)
 - Those at the "Categorically Excluded Not Subject To" (CENST) level of review
- Projects that don't involve structures that are occupied or are intended to be occupied at least 4 hours a day
- Buildings with no enclosed areas having ground contact; buildings that are not residential and will not be occupied for more than 4 hours per day; buildings with existing mitigation systems where radon levels are below 4 pCi/L
- Projects from "small public housing agencies" under \$100,000: statutorily exempted from environmental review

Radon Resources

- [Notice: CPD-23-103](#)
- [ANSI/AARST Standards](#)
- [CDC, National Environmental Public Health Tracking, Radon Testing](#)
- [HUD Exchange: Radon](#)
- For assistance with selecting a test or monitoring device, industry standards, and becoming certified in testing or mitigation, and other educational information, check out the [National Radon Program Services at Kansas State University](#)
- To find contacts for your state radon control program: [National Radon Program Service at Kansas State University – State Radon Programs Information](#)
- [EPA Tribal Indoor Air Funding Directory](#)





New Environmental Criteria: Climate Change Impact Factor

Overview

- Executive Order 14008 on Tackling the Climate Crisis at Home and Abroad
 - January 27, 2021
 - Federal policy to incorporate climate consideration into decision-making and build resilience against climate change
- HUD Compliance: Climate Change Impact Factor
 - Level of Environmental Review: Environmental Assessment (EA)
 - Consider potential climate impacts on residents' safety, wellbeing, and property

Frequency and Severity of Natural Hazards Affected by Climate Change:

- Flooding
- Sea Level Rise
- Hurricanes and Extreme Storms
- Drought
- Extreme Heat and Cold
- Wildfire
- Landslides

Climate Change Impacts on Site Suitability:

- Air Quality
- Urban Heat Island Effects
- Water Resources
 - Groundwater Availability
 - Storm Runoff and Flooding
 - Wastewater Control and Treatment Facilities

Important Considerations: Climate Impacts on the Project

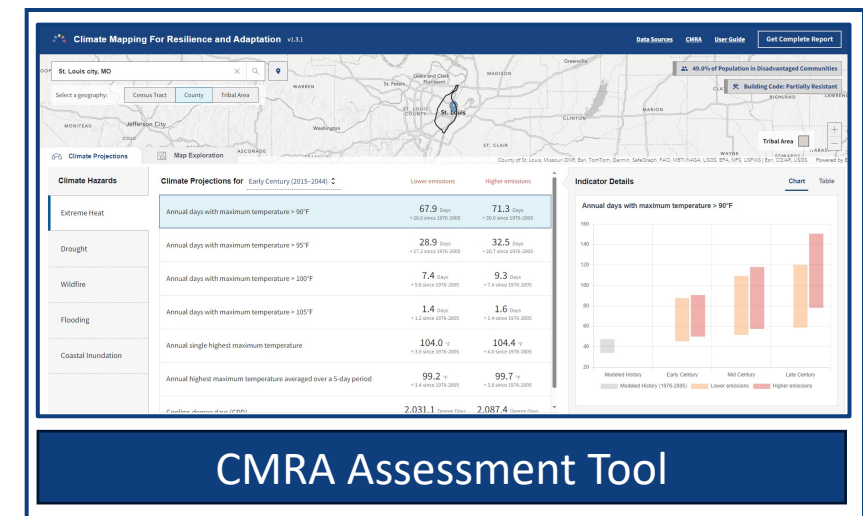
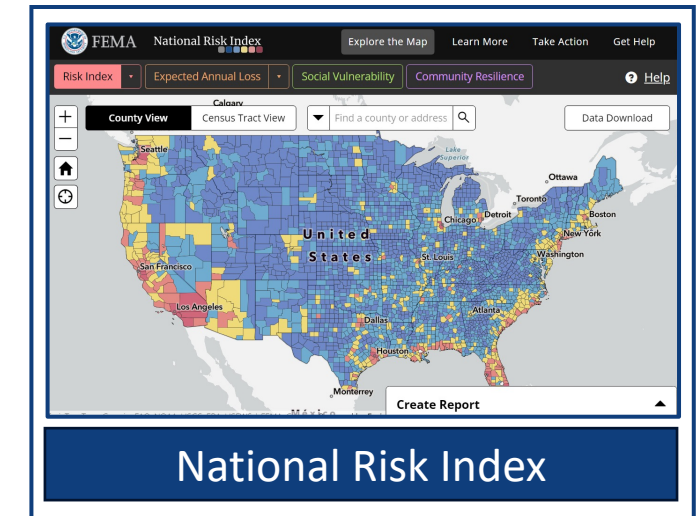
1. Is the project designed to withstand expected climate changes, for the useful life of the building?
2. How will increasingly frequent or severe natural disasters affect the proposed project?
3. What climate changes have been identified, and what measures will help mitigate impacts?
4. What factor of safety is included to account for margin of error in climate projections?
5. What are the impacts on existing infrastructure?
6. Does climate change influence any other EA factors (e.g., water resources, soil suitability, etc.)

Important Considerations: Project Contribution to Climate Change

1. How has the project plan reduced its direct contribution to climate change? (e.g., low-carbon building materials, use of existing buildings, etc.)
2. Has the project considered indirect contributions to climate change? (e.g., EV charging stations)
3. What greenhouse gas emissions level targets were the proposed project's sustainability tactics designed to meet?

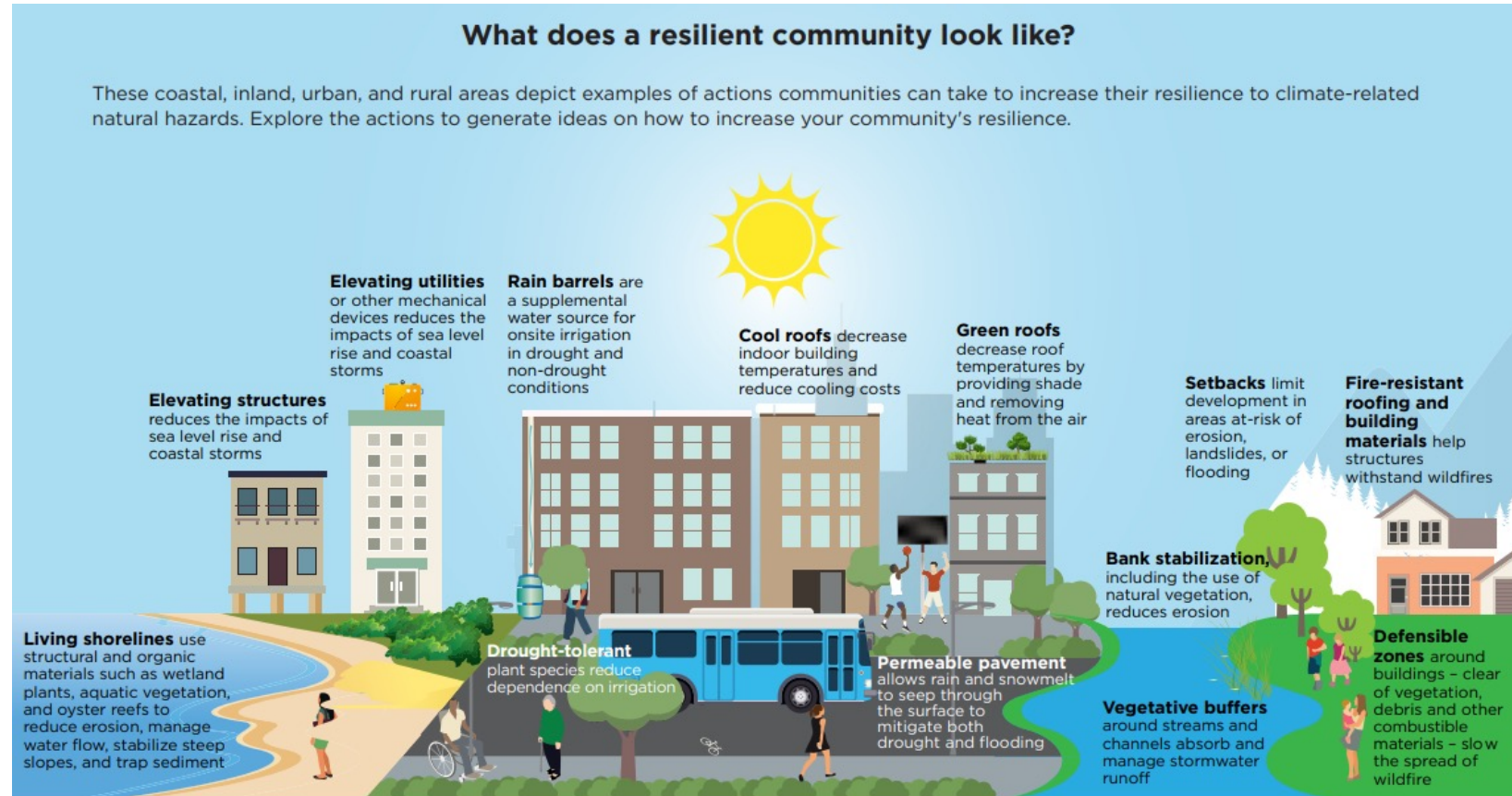
Analysis Techniques

- [U.S. Climate Resilience Toolkit](#)
- [Climate Change Adaptation Resource Center](#)
- [Climate Change and Social Vulnerability in the U.S.](#)
- [National Risk Index for Natural Hazards](#)
- [Climate Mapping for Resilience & Adaptation \(CMRA\)](#)
- [Heat.gov](#)
- State and local resources
- University studies



Mitigation Measures

- Consider direct and indirect measures
- [HUD Community Resilience Toolkit](#)
- [HUD Tribal Climate Resilience and Adaptation Resources](#)
- [HUD-Build for the Future](#)
- [HUD-Supporting Local Climate Action](#)



Reducing Administrative Burden Takeaways

- Avoid Choice Limiting Actions and process RROF/AUGF before Federal and non-Federal funds are expended or obligated.
- Understand common RROF errors to avoid delays.
- Utilize RROF streamlining opportunities when appropriate (e.g., adoption, condensed comment period).
- Become acquainted with the newly established HUD FFRMS floodplain and elevation requirements.
- Determine what radon resources are available in your community that can be utilized.
- Identify resources and partnerships to help identify climate change impacts and mitigation opportunities.

A photograph of the St. Louis skyline, including the Gateway Arch and the Old Courthouse, is framed within a white, irregular hexagonal shape on the left side of the slide. The background of the slide features green and blue geometric shapes.

Thank You!

If you have any questions, please feel free to send an email to ODR's Policy Division at ODRPolicyDivision@hud.gov.