



Association of State Floodplain Managers, Inc.

8301 Excelsior Drive, Madison, WI 53717

Phone: 608-828-3000 | Email: asfpm@floods.org | Website: www.floods.org

FEMA Guidance Public Review Fall 2020 Guidance and Standards Review of Policy Changes Comments from ASFPM / Mapping & Engineering Standards Committee September 4, 2020

Floodway Analysis and Mapping – November 2020 Draft

Section 2.2 The Regulatory Floodway

The first paragraph – p. 3 includes the sentence: *“The allowable one-foot rise in flood stage or surcharge is a compromise intended to balance the rights of the property owner to develop their property against the need to protect adjacent and upstream property owners from increased flood heights and increased flood damages.”*

There is no legal basis for this statement. Property owners have no legal right to develop their property if that development will increase flooding on adjacent and upstream property owners. If anything the violation of the property rights of adjacent and upstream property owners impacted by the floodway surcharge will be the result and therefore should be highlighted.

The paragraph also includes the statement: *“If FEMA did not allow for some increase in flood stage when designating a floodway, the floodway could comprise most of the floodplain and development in the floodplain would be severely limited.”*

This is a common belief, but the CFR specifically has a method for changing the designation with no restriction on the actual surcharge. You are only required to go through the designated process. 65.6 and 65.7. This sentence should be deleted.

Fig. 2 is a commonly used graphic, but there is no requirement to raise encroachments in the floodway fringe above the BFE. The graphic should identify the elevation of the BFE so that it is clear that the surcharge is not added to the BFE. In addition, the encroachments shown in the flood fringe areas should only be shown to the height of the BFE to correspond with usual practice and make it clear that the surcharge will extend into the floodway fringe and beyond the extent of the SFHA. The graphics included in this guidance document have led to a major misunderstanding regarding the impact of a floodway surcharge. It is not limited to the floodway and impacts new development built to the height of the BFE in the floodway fringe and new and existing development outside the SFHA. ASFPM provided comments to FEMA in July regarding the November 2019 Floodway guidance in which an alternative graphic developed by the USACE for FEMA in the 1980s was provided. Including graphics from an authoritative source that accurately shows the impact of floodway surcharge is preferred instead of graphics for which no source is provided.

The legislative intent of the NFIA is to, as stated in 42 USC 4102(c), "...develop comprehensive criteria designed to encourage, where necessary, the adoption of adequate state and local measures which, to the maximum extent feasible, will: (1) constrict the development of land which is exposed to flood damage where appropriate, (2) guide the development of proposed construction away from locations which are threatened by flood hazards."

Limiting development in the floodplain is one of the goals of the NFIA. Including the current sentence that is restated above implies that FEMA is promoting development in the floodplain when of course the opposite should be the case. Four states (WI, Ill, IN, and MI) limit surcharge to a measurable amount in order to minimize flood damages. These standards have not successfully been challenged. FEMA should promote zero-surcharge floodways and not by default provide floodways with a surcharge that results in increased flood damages.

Section 2.6.7 Community Rating System

The link is bad

Section 4: Hydrology

Why the reference to 17B when 17C was published March 29, 2018?

Section 5.1 Floodway Analysis

The first two sentences in the second paragraph of this section state:

"The purpose of encroaching based on equitable consideration is to ensure that like-situated properties are treated equally. This does not mean that that the floodway will be an equal width on both sides of the stream."

The floodway does not occur on both sides of the stream. we believe that the intent is regarding the width of the floodway fringe therefore we suggest that the word fringe be inserted after the word floodway in the second sentence.

The term "equitable consideration" can be interpreted to mean the floodway can (or should) be optimized based on land values. It should be clear that any "equitable consideration" should be based on physical considerations exclusively.

Section 5.1.2 Two Dimensional Floodway Analysis

ASFPM has concerns about how the two dimensional floodway analysis is presented in this document. There does not seem to be great detail on how to compute floodways for these models, nor how to evaluate projects. Much is left to interpretation, leaving a great deal of burden on states and communities to implement these guidelines, exposing them to liability based on unclear guidance.

Furthermore, this will lead to different interpretation throughout the nation, when this is supposed to be a national program. Mistakes we are now making in developing the averaging techniques and evaluation lines will reverberate well into the future. We suggest additional pilot programs and rigorous testing of various scenarios before the implementation of these guidelines.

The guidance in this document relating to 2D Floodway analysis is scattered throughout and hard to interpret clearly. We suggest that FEMA develops this guidance as a separate, stand-alone document, rather than try to merge it with the 1D guidelines.

Section 5.2.4 Negative Surcharge Values

The new standard proposed in August did not make a distinction between 1D and 2D analysis for allowing negative surcharges. In areas with .1 foot surcharge limits for floodways, negative surcharge values are unavoidable.

Section 5.3.2 Two-Dimensional Unsteady Floodway Analysis

Suggest that the following be added at the end of the second paragraph:

This is the only situation where floodway surcharge averaging should be allowed. New floodways developed with 2D modeling should not use surcharge averaging. The evaluation lines can be used for no-rise analysis if approved by the community.

Initial Encroachment Screening Approaches – p. 26

The paragraph that begins with “Australian Flood Hazard Curves approach ...” includes the following sentence:

“For instance, a project area only traveled by vehicles would consider a specific hazard level higher than a municipal park area where small children could be present.”

Areas traveled by vehicles can result in vehicles being incapacitated by floodwaters. People with children or limited mobility may need to abandon their vehicles. The vast majority of deaths from flooding are the result of driving into flood water.

This sentence should be deleted. The DxV issue needs further vetting and including suggestions that areas traveled by vehicles have a higher threshold is premature. How would such areas be identified and it seems unlikely that there will be areas only traveled by vehicles.

Section 6.0 Floodway Coordination

The following should be included after the first sentence in this section.

Title 44 CFR Part 60, Section 60.3 states:

... the community shall

60.3 (d) (2) **Select** and adopt a regulatory floodway based on the principle that the area chosen for the regulatory floodway must be designed to carry the waters of the base flood, **without increasing the water surface elevation of that flood more than one foot** at any point; This section is related to the amount of surcharge. Due to concerns about encroachments impacting existing development some communities may opt for floodways with no surcharge or a less amount than the one-foot minimum standard.

Section 11.2.6 – providing an example of destruction of a Natural and Beneficial Function of a floodplain (floodplain forest) as a method to resolve a FEMA floodway violation is extremely unwise public policy. Please consider another example to illustrate this concept.

Section 14.5 -- This gives the wrong impression on what is actually credited – only natural channels or their replacements. NOT storm sewers, or ditches. See Activity 540 in the 2018 CRS Coordinators Manual.

Flood Depth and Analysis Guidance – November 2020

Section 3.4 Floodway Depth Rasters

Since the floodway surcharge is not added to the BFE unless the floodway is constrained by levees on both sides this surcharge will extend beyond the floodway into the floodway fringe and beyond the edge of the SFHA. Therefore, since this grid is a future conditions data layer it should be provided to the community as a floodway surcharge future conditions raster data set. This data set should be provided during discussions with the community regarding the community selection of the floodway (amount of surcharge) for the community.

When developing Floodway Surcharge Depth Rasters using 1D modeling, it is necessary to extend cross sections to determine how far beyond the SFHA the floodway surcharge will extend.

It is recognized that floods are a volume issue and that the flood height associated with a floodway surcharge will be reduced as it propagates into the floodway fringe and beyond the SFHA. However, this is offset by the fact that most floodway modeling does not address loss of flood storage and therefore floodway surcharges actually can cause increased flood heights greater than the one-foot allowed in the CFR.

Section 8.0 Flood Severity Raster – P. 36

It is suggested that the US Bureau of Reclamation ACER Technical Memorandum No. 11 graph be included instead of the Australian graph because it was the basis for the Pierce County, WA depth/velocity supplemental floodway mapping that has been in place for more than a decade. It also provides more detail on protections - specifically for children and vulnerable populations. It also is what Harris County Flood Control District is using as the basis for their updated floodway mapping using 2D modeling.

Section 9.0 Dataset Spatial Extents – P. 39

After the following sentence at the bottom of p. 39: *“There should not be multiple 1-percent-annual-chance depth rasters delivered by individual flooding sources, or as several groups of flooding sources.”*

The following sentence should be added:

The exception is related to the floodway surcharge future conditions dataset. This dataset shows the impact of the floodway surcharge as the floodway fringe is developed and is needed for communities to make an informed decision when selecting the appropriate floodway surcharge for their community.

Flood Profiles Guidance

Consideration should be given to the fact that in 2D analyses, the backwater is not always static.

These are the ASFPM review comments of the standards previous provided to FEMA. Many of these concerns are also in the guidelines, and will need to be addressed there also.

FEMA Standards Public Review

Fall 2002 Guidance and Standards Review of Policy Changes

Comments from ASFPM / Mapping & Engineering Standards Committee

July 31, 2020

The following comments are with respect to specific standards referenced in the document:

SID 73: The term “equitable consideration” can be interpreted to include property and land value in the consideration of the floodway. It is important that any consideration of “equitable” is defined by hydraulics exclusively.

SID 256: The standard says “5 Standard Flood Events”, but lists 6 in parenthesis

SID 415: There is no program for updating gridded data products for LOMR's, no defined way to process legacy data for gridded data products, overall maintenance of gridded data products has not been considered in this program.

SID 628: The lack of updates to the DVT result in numerous “bypasses”, which negates the intent of this standard, and causes needless work. FEMA needs to commit to timely updates to the DVT. This will be especially critical as the automatic mapping applications come to fruition.

SID 643: The Great Lakes are non-tidal, but states in that region have CZM programs. We assume that you meant to include those states in this standard. Consider using another term.

The following comments are with respect to the concepts of computing Floodways with a 2-D hydraulic model, and with the proposed establishment of “Evaluation Lines”, as mentioned in a number of the proposed standards.

The FEMA whitepaper - *2D Models and Floodways: Challenges, Benefits, and Considerations – August 2019.*

This document makes the statement that:

“Case studies and examples show that 2D analyses generally produce wider floodways, often with minimal encroachment achieved when compared to their 1D counterpart. This results in less potential for development, but the results are more representative of real world conditions and therefore real world risk.”

The quantitative impact of how much wider has not been documented and/or published. The introduction of evaluation lines is intended be used to average surcharge determinations in order to produce narrower floodways and allow more encroachment into the nature’s floodway.

Title 44 CFR Part 60, Section 60.3 states:

... the community shall

60.3 (d) (2) **Select** and adopt a regulatory floodway based on the principle that the area chosen for the regulatory floodway must be designed to carry the waters of the base flood, **without increasing the water surface elevation of that flood more than one foot** at any point;

Using an averaging technique to calculate the amount of surcharge appears to be in conflict with the intent of the CFR which limits the amount of surcharge to one foot. If 2D modeling shows that 1D modeling underestimates the impact and that 2D modeling represents real-world conditions, an artificial manipulation of the results to more closely replicate 1D results appears to violate the intent of the CFR and puts more people and property at risk.

The adoption of the evaluation line concept as a standard (SID # 75) should not be effective immediately. The standard should not become effective until additional case study development is completed and analyzed to quantify the impact. The case studies should compare the widths of the floodway with 1D steady state modeling and 2D steady state modeling with and without surcharge averaging using evaluation lines. While it is indicated that the averaging technique will result in narrower floodways – the amount of reduction has not been documented and made available to the user community. In addition, FEMA legal counsel should be involved to ensure that the modification of the 2D modeling results is acceptable within the context of 44 CFR Part 60, Section 60.3

Additionally, with review of the guidance specifically tied to many of these standards to occur after this initial review, there may be need to reconsider some of the proposed standards as part of the review of the guidelines.