

January 27, 2012

Regulatory Affairs Division
Office of Chief Counsel
Federal Emergency Management Agency
500 C Street SW
Washington DC, 20472-3100

RE: Revised Analysis and Mapping Procedures for Non-Accredited Levees - Docket ID FEMA-2011-0025

The Northwest Regional Floodplain Management Association (NORFMA) appreciates the opportunity to comment on the proposed new procedures for floodplain mapping for non-accredited levees. NORFMA is a nonprofit organization with over a hundred members from the Pacific Northwest region, including Alaska, British Columbia, Idaho, Oregon and Washington. In addition to providing a forum for education and free exchange of information related to floodplain management, NORFMA works to increase public awareness of floodplain functions and supports programs to reduce future flood damages.

The NORFMA Board of Directors has solicited input from the organization's membership and provides the following comments on the proposed new mapping approach:

1. **Clarification of applicability of proposed approach** – While the approach specifically states that it is to be applied to “non-accredited levee systems”, the procedures outlined appear to contradict the definition of a levee. The definition of a levee states that it is a structure “designed and constructed in accordance with sound engineering practices”. Two of the procedures (structural-based inundation and natural valley) acknowledge that they can be used when there is insufficient data to demonstrate sound engineering design and construction practices. This seems inherently inconsistent.

Many of the levee systems in the Northwest have evolved over time from levees that were originally constructed as agricultural levees; the level of design that occurred prior to construction is often unknown and is unlikely to meet current standards for “sound engineering practices”. Clarification of the applicability of the new methods to these types of levee systems would resolve this apparent inconsistency.

There is also a lack of clarity in how non-levee embankments are to be analyzed. The public review document states that the proposed approach is not currently intended to be used for non-levee embankments and refers to PM 51, “Guidance for Mapping of Non-Levee Embankments Previously Identified as Accredited.” This document does not provide detailed technical guidance for analysis and is only intended for embankments that were previously identified as accredited.

2. **Lack of information on floodway mapping impacts** – The approach does not go into much detail on floodway mapping but states that, “Typically, FEMA will not map the regulatory floodway on the landward side of a levee,” and notes the exception for hydraulically insignificant levees where the natural valley procedure is used. This appears to be a major deviation from the principle reason a floodway is defined, to reserve adjacent lands in order to safely discharge the base flood. In many

situations, levees are adjacent to the channel and do not provide enough capacity to convey the base flood without causing a one foot surcharge. In agricultural areas, some levee segments are intentionally lower to enable floodwaters to access overflow corridors in a location with less potential to cause damage. This could occur in areas where both the overtopping and/or structural-based inundation procedure is most applicable. In these situations, it is appropriate to map a floodway on the landward side of a levee.

It should also be noted that FEMA's current mapping policy has been determined to cause jeopardy to listed species in the Puget Sound region. A consultation with NMFS should be made to determine if this new floodway policy that will result in reducing the floodways along many Northwest rivers could therefore have an adverse affect on listed species.

3. **Unacceptable delays in releasing and adopting new maps** -Communities in the Pacific Northwest have experienced lengthy delays in getting new mapping released and into the official map adoption process. Many of these communities are progressive in their floodplain management, participating as cooperating technical partners, and providing extensive data to FEMA for mapping updates, sometimes even regulating to draft maps because it represents best available data. Despite this FEMA has delayed releasing new maps, often for years. It appears FEMA has either severely under-resourced or under-prioritized releasing the updated mapping in favor of developing new programs like Risk Map or adopting new procedures such as this levee mapping approach. The measure of success of the map modernization process falls short by valuing the number of communities that have draft maps rather than communities that have adopted new maps. Failure to allow draft maps to become final has created confusion and potential for errors as the communities, citizens, financing banks, and FEMA look at two different sets of maps (the older effective map and the new draft maps) for information about risk. In addition, it postpones the benefits to citizens paying flood insurance when they are erroneously mapped within a special flood hazard area (SFHA), as well the notification to potential buyers who are considering acquiring floodplain properties that are not currently mapped in the SFHA, and reduces the ability of communities to obtain grants from Housing and Urban Development as projects are improperly designated as within the SFHA.

There is still considerable confusion as to whether a community can waive the use of the new levee mapping procedure to facilitate quicker adoption of draft maps that are on hold. In many communities there are multiple jurisdictions along the same river and unless those communities are in unison about whether to use the new procedure or not, the default appears to be putting the adoption process on hold. Some jurisdictions that are less progressive in floodplain management have an interest in postponing adoption of the draft maps as long as possible, not for engineering or accuracy reasons, but for political reasons as the draft maps will require more of their citizens to buy flood insurance. Therefore these less progressive communities along the river can dictate the timeline of the adoption of draft maps holding the more progressive communities hostage.

FEMA should recognize the adverse effects of delaying the adoption of better mapping and the negative consequences it has on reducing future flood losses. Communities that desire to use sound floodplain management policies by having updated maps utilized both for regulations as well as for flood insurance should have more influence on their map adoption timelines.

4. **Added cost, time and resources** – While we appreciate FEMA's interest in developing more accurate mapping methods and in engaging stakeholders throughout the mapping process, we are concerned about additional impacts to communities that these new processes will cause. In many cases, the new

procedures are not likely to change the final map significantly, but communities will be forced to spend additional resources to coordinate with FEMA and re-engage stakeholders who may already have been involved in a lengthy local process. Many communities do not have additional funding to allocate to this new approach and it is unclear if FEMA is going to bear the additional cost for using the new approach on all the studies currently underway. Without adequate funding, some maps may never be completed.

5. **Dynamic nature of Northwest rivers** - The new mapping procedures are intended to improve the accuracy of mapping risk behind levees. The procedures allow for a less conservative approach than currently is being used, and they portray a level of risk mapping accuracy that is not actually possible in many situations due to the dynamic nature of our rivers and floodplains. Many natural processes (such as channel migration, log and ice jam formation, channel aggradation) occur that affect flood elevations and the associated level of risk behind a levee. By allowing this less conservative approach there will be areas behind non-accredited levees that are no longer subject to restrictions on development and mandatory flood insurance. As these areas develop, the likelihood of future flood damages will increase as natural river processes change the existing conditions and subsequently the extent and risk of the flood hazard behind levees.
6. **Zone D designation behind non-accredited levees** – The intent to allow areas behind non-accredited levees to be mapped as Zone D and not be included as part of the SFHA seems to be moving floodplain policy in the wrong direction. While a Zone D designation recognizes the uncertainty in risk, excluding these areas from the SFHA sends the wrong message to the public. Members of the public do not typically understand that the chance of experiencing a 100-year or 1% flood event in 30-year mortgage is 26%. Our national policy should recognize that even sound levees can fail and that larger flood events can and do occur, and motivate floodplain residents to take measures to protect their lives and property. By taking areas behind non-accredited levees out of the SFHA, and mapping them as Zone D, FEMA would be discouraging residents from elevating or getting flood insurance as these actions would not be required and flood insurance premiums could be more expensive.

The National Committee for Levee Safety (NCLS) produced a comprehensive report recommending actions to provide a coherent national program for levee safety. Their report included a recommendation to require mandatory purchase of flood insurance for structures in areas protected by levees with risk based premiums.

The new mapping procedures should account for the dynamic nature of rivers and the possibility of larger floods and/or levee failures by requiring that any areas behind non-accredited levees continue to have restrictions on development and mandatory flood insurance so as to not perpetuate the cycle of building and then using public funds to mitigate.

7. **Structural-based inundation procedure** – We understand that the detailed guidance for the proposed approach is still being developed, but considerable ambiguity exists in how this particular procedure will be applied. Numerous assumptions regarding levee failures, sensitivity analysis and an extensive level of hydraulic modeling will be required. While this level of analysis may be justifiable in some situations, the procedure should allow for the use of engineering judgment to determine and apply a less sophisticated approach, if warranted by the situation, to evaluate levee failures. There is an inherent level of uncertainty in modeling levee failures (e.g., estimating time to breach, breach width, full formation time, determining the number and location of failures, etc.) and therefore a different, less detailed approach, but with a similar level of uncertainty, may be justified. For example, in many circumstances FEMA's former "without levee" methodology may have adequately identified the

potential flood hazard, even though the complete failure of an entire levee is not likely. Presumably agreement with the local Region would need to be reached over any modified approach.

8. **Rigor of FEMA review of remapping proposals from communities** – The draft policy implies that FEMA will be allowing communities to perform this mapping exercise with very little review by FEMA, instead trusting the stamp of the professional engineer doing the work. This could lead to communities making unsubstantiated assumptions which minimize the actual flood risk. The application of this policy will need thorough review by FEMA to assure it is applied consistently between communities.
9. **Hazard potential classification** – Table 3-2 presents a classification scheme for hazard potential that is to be considered when evaluating and selecting modeling and mapping options. There are communities within our area that have less than 1000 people potentially inundated but at depths greater than three feet. It is not clear what classification would be assigned in these cases.
10. **Consultation** – As previously noted, FEMA's current mapping policy has been determined to cause jeopardy to listed species in the Puget Sound region. A consultation with NMFS should be made to determine if this new policy will result in an adverse affect on listed species.

Sincerely,



Hans Hunger, P.E., CFM

Chair - NORFMA Board of Directors