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November 6, 2014

Webinar Attendees
October 22, 2014, 10:00 AM

Dear Webinar Attendees:

SUBJECT: Michigan Department of Environmental Quality (MDEQ)
Understanding NFIP / Building Code Requirements at the Local Level

The following list of questions from the October 22, 2014 webinar attendees and their corresponding answers prepared by the MDEQ. This question and answer list contains the most pertinent questions that were asked during the webinar, some of which were not answered at that time due to time constraints. It is not a complete listing of every question that was asked during the webinar as some were duplications and/or more of a general comment than a question. Only minor spelling corrections have been made to the original text of the questions to make them easier to understand.

1. *Q: I note that the slide indicates that the surcharge within the floodway should not exceed 0.1'....is this the DEQ criteria used in permitting for activities proposed within the floodway?*

A: For the development of the floodway limits using hydraulic modeling, equal and opposite simulated encroachments are added to the model until a 0.10 foot surcharge is realized. This is the State of Michigan standard and is more conservative than the typical FEMA method of simulated encroachment addition until a 1.0 foot surcharge is seen in the model.

2. *Q: Your slide discusses a "Hydrologic" Analysis. Is this a typical Hydraulic model or something different*

A: The slide was trying to illustrate the use of the floodway fringe for the storage of flood waters, similar to a bathtub. The Hydrologic analysis referred to under this concept would be a HEC HMS model that evaluates the loss of storage via channel routing. If the loss of storage resulted in an increased flow, then the new flow would be put into a HEC RAS model to see what stage increases may be expected.

3. *Q: Does the NFIP Program pay for flood Damage outside the floodplain*

A: Yes, a property owner can purchase flood insurance through the NFIP even if they are located outside of the mapped floodplain or are in an unmapped area. This would only be possible if the local community where that property owner is located is a participant in the NFIP.

4. *Q: what specific happens if the building official refuses to sign the requested change cert.*

A: In order for a LOMR to be processed by FEMA the Community Acknowledgement Form (CAF) must be provided with the submitted documentation. If the local community

does not agree with the LOMR application they can exercise the right to not sign the CAF and that would likely be the end of that particular LOMR application. This process can have the benefit of allowing the local community to retain some control over floodplain development within their jurisdiction.

5. *Q: are there ce's available for building officials who attended this program?*

A: Unfortunately no, this will be offered if possible on future webinars though.

6. *Q: When doing an elevation certificate for a private home owner should we as professional surveyors and engineers send a copy of the Elevation Certificate along with any LOMA determinations to the local community or is that the home owners responsibility?*

A: It is technically the homeowner's responsibility, but it would be a very good idea to do so as the certifying professional of the elevation certificate. We strongly recommend that private surveying and consulting firms consider making this their standard operating procedure for elevation certificates.

7. *Q: If administered improperly by a local unit, is that unit liable if flooding occurs in a designated floodplain in which they improperly allowed development?*

A: There is always some liability for a local community government is mismanaging a program they are tasked with adhering to. This would really depend on the specific circumstances and/or the degree of negligence on the part of the local community.

8. *Q: Require other buildings to be elevated or flood proofed. Is this in reference to existing buildings in floodplain? So if a building is in the floodplain when a local jurisdiction adopts the ordinance does this trigger existing buildings to be raised?*

A: This would really depend on the date the building was constructed. Any building that was built before the adoption of the FIRM would be exempt unless or until it becomes "substantially damaged" or there is a proposal to make "substantial improvements" to the structure. This is triggered when the repair for any type of damage or improvements to the structure is estimated to be greater than 50% of the market value of the structure alone (not the property). This would apply to both the elevation of existing residential and commercial buildings and the floodproofing of existing commercial buildings. For any new structures in the SFHA the regulations concerning proper elevation or floodproofing (commercial only) under the building code and the NFIP must be adhered to.

9. *Q: If the State of Michigan issues building permits in a local jurisdiction, are they then responsible. For example land use permits for zoning are issued by a township, but building permits are issued by the State. Who is responsible?*

A: If the local community has given the authority to issue local building and zoning permits over to the State of Michigan, then yes, the State would then hold responsibility for permit and zoning decisions.

10. *Q: Should your LOMA be attached to the deed at the county?*

A: This is not a State of Michigan or NFIP requirement, but it is a very good idea and

would serve the property owner well in the future. This would be especially beneficial if/when the property owner decides to sell the property.

11. Q: *The 2012 Michigan Rehabilitation Code for Existing Buildings went into effect October 9th.*

A: This is a true statement and any future webinar and training offered by the MDEQ will reflect that. The timing of this webinar precluded us from fully incorporating the 2012 building code.

12. Q: *I have had 25 LOMA letters of approval removing structures from the floodplain based on surveyors elevations and have never been asked to sign the letter you are talking about.*

A: A community acknowledgement form is only required when fill is involved. For LOMA's the property owner and their surveyor are indicating that the natural ground is above the base flood elevation and no fill has been placed. The local unit of government therefore does not need to sign the LOMA form.

13. Q: *Rewording my last question: Are ALL communities supposed to require Elevation Certs (when near or in a Flood Zone) with new construction...prior to and at the time of completion. Are ALL participating communities?*

A: Yes, the building code requires certification of a new structure's finished floor elevation. This is typically done after the foundation and maybe the floor framing is in, but before the vertical walls are constructed. The FEMA elevation certificate form is not required for non-participating communities, but it must be utilized in communities that participate.

14. Q: *When a LOMR-F has been completed, fill has been placed and approved. Upon completion of the area being removed from the flood zone, can a residential home then build a home with a basement?*

A: Yes, if the LOMR-F process is properly adhered to, and the local building official allows it, a basement could be built on fill that was placed to elevate a site above the base flood elevation. Under the State's Part 31 floodplain permitting process there is a three step process to allow basements in the filled portion of the floodplain. First the applicant applies to fill in the floodplain. At this point no basement is allowed. Secondly the applicant would apply for a revision to the original permit to allow for a basement (this should occur after the applicant has obtained the LOMR-F). Along with the revision request, the applicants engineer needs to certify that soil was properly placed to prevent hydrostatic pressures from being exerted on the basements walls and floor and that the fill was properly placed to prevent the settling of the building or buckling of the floors or walls. Finally after construction of the basement the applicants engineer needs to submit verification that the building is equipped with a positive means of preventing sewer backup from sewer lines and drains that serve the building.

15. Q: *How should communities handle residential permit requests in floodways with less than 2 square miles of contributing area?*

A: Regardless of whether the State of Michigan has authority under Part 31 of the

NREPA to regulate development in a floodplain or floodway the local community must always manage that development if they are a participant in the NFIP. Management of ALL floodplains (includes all floodways by default) is a key requirement of participation in the NFIP. The community should still require proper elevation to 1 foot above the base flood elevation and elevation certificates. If no floodplain maps are available the community is responsible for using any best available information they may have. This would include historic knowledge that an area has flooded in the past.

16. Q: *Re: Identifying Floodplains in Unmapped Areas - When is it necessary to do this? Does it depend upon the stream's drainage area of the stream at the site's location?*

A: This ties back to the previous question; a local community is tasked with managing ALL floodplains within their jurisdiction by choosing to participate in the NFIP. As such, a local community may have to identify the floodplain of lakes, and small streams that the State of Michigan has no authority over (regarding floodplains) and that are unmapped by FEMA. EVERY body of water that is recharged by precipitation and/or snowmelt has a floodplain.

17. Q: *Why does FEMA allow LOMA Out As Shown determinations without any survey elevations?*

A: We cannot speak for FEMA directly, but our understanding is that the FIRMs are typically considered to be a fair representation of the 1-percent floodplain. So if the FIRMs show a structure as outside the floodplain then it would be unfair, and an unnecessary expense, in most circumstances to require a property owner to retain a licensed surveyor to complete a LOMA application. FEMA and the NFIP requirements are based on whether a structure is in or out of a mapped floodplain. While they allow for the use of a LOMA to show whether a structure shown to be in the floodplain may actually be out, they have not required structures outside of the mapped floodplain to verify that they are actually above the base flood elevation.

18. Q: *A. In general, how frequently are floodplain maps updated? B. How often are there dramatic changes in floodplain areas?*

A: Many Michigan communities have had their FIRMs updated within the last 10 years by FEMA's "Map Modernization" process, which FEMA was tasked with following an action by Congress. Future plans for map updates would be tied to many factors including the amount of risk to existing structures, cost of the modeling and other work required to update a FIRM, and the presence of any know major changes to the flooding source water body. It should be noted that many of the updated maps were converting the original floodplain elevations to a more detailed topographic map or just overlaying the old floodplain on to a new aerial photograph. In many cases the original floodplain elevations were not updated.

19. Q: *C. Are flood maps updated incrementally, like by somehow factoring in the results of site-specific hydrologic analyses? Or are updates only done systematically?*

A: FEMA's current approach to mapping and FIRM updates is based on the watershed itself and not the boundaries of the local community or county. Typically maps are not updated incrementally unless there is a request from a local community that has had major changes to the water bodies within its jurisdiction. This would have to be in the

form of a significant LOMR application and a large (\$4,000) FEMA processing fee would likely be required.

20. Q: *I have been told when working on floodway / floodplain projects is that you cannot raise or lower the 100yr flood elevation as a result of your construction. "no impact". Is it true that you can't cause the flood elevation to be lower?*

A: Changes to the floodplain that lower the base flood elevation (BFE) are typically permissible (allowed) but increases to the BFE are typically not permitted. Sometimes increases, especially small ones, are permissible if they do not inundate property that is not owned by the applicant or the adjoining property owners agree, in-writing, to allow an increase in the BFE that affects their property. The official terminology used in Part 31 is that the proposed project may not cause a harmful interference.

21. Q: *What is "Surcharge"?*

A: This is the amount rise caused by equal and opposite encroachments that are used to define the floodway boundaries. Alternatively, you may hear/see that term used to describe actual encroachments that cause a rise in the BFE.

22. Q: *Please discuss the Lowest Adjacent Grade vs. Top of Bottom Floor in the elevation certificate. The code recognizes lowest floor 1' above BFE, but how is LAG used?*

A: The LAG is used by FEMA to determine whether the structure is in or out of the floodplain. The bottom floor elevation is used to determine whether there is risk of flood waters actually entering the building and causing damage to the structure *and* its contents. For structures in the floodplain, insurance rates are set base on the elevation of the lowest floor compared to the base flood elevation.

23. Q: *We also have the Michigan Rehabilitation Code for Existing Buildings which does away with the 50% requirement. Lee Schwartz Home Builders*

A: The Michigan Rehabilitation Code has not be extensively reviewed yet by the MDEQ District Floodplain Engineers. This may be a topic for another webinar in the future.

24. Q: *Residential homes with less than 3,500 square feet of calculated floor area do not need architect seals. Lee Schwartz Home Builders*

A: This is true under the State of Michigan building code, but again, State regulations to not negate the requirement to follow NFIP procedures and requirements if the local community is a participant in the NFIP.

25. Q: *What are the requirements for replacing an existing chain link fence in the floodway with a solid wood fence? Can it be allowed?*

A: A solid fence in the floodway is typically not allowed, although it would really depend on the specific conditions upstream and downstream of the site and the construction details of the solid fence. Any type of fence in the floodway would require a MDEQ permit under Part 31. Even chained linked fences in the floodway can cause problems. They can catch debris and back up floodwaters. DEQ often will require these fences to

be hinged at the base flood elevation such that they will open if there is enough pressure on them.

26. Q: *If a county road agency builds a new bridge under permit from MDEQ, what responsibilities (if any) does the local community have?*

A: If the local community is a participant in the NFIP they have authority over ALL floodplain development in their jurisdiction. As such, they should have some type of local approval process for these types of projects and request that the applicant get the proper permits from the MDEQ permit in order for the construction to take place.

27. Q: *How are Michigan Construction Code requirements enforced for existing developments undergoing significant rehab (greater than 50% cost/value)*

A: This is supposed to be enforced by the local building official issuing permits for the construction or rehabilitation work. If the work is exempt from needing a local building permit then it is very unlikely it would exceed the 50% of the replacement cost threshold. The 50% threshold for substantial improvement is based on the market value of the home. Improvements are based on cumulative totals.

28. Q: *Is engineering (utilities, grading, etc) related to residential projects allowed in the floodway if the residence itself is outside of the floodway*

A: Typically yes, utilities can be placed in a floodway without an engineering analysis provided the project will not alter existing grades. If existing grades are altered in the floodway an engineering analysis must be provided during the MDEQ permit review process.

29. Q: *Does a community official have to sign a reasonably safe from flooding acknowledgement form?*

A: No, absolutely not. The local community represented by the local official is under no obligation to sign any Community Acknowledgement Form; in-fact such an approval should be carefully reviewed by the local official prior to signing.

30. Q: *Please note that in Michigan only a Professional Surveyor can sign the Elevation Certificates, Engineers and Architects cannot.*

A: This is certainly true. Licensed engineers and architects may have a significant role especially in regards to proving that a structure is "reasonably safe from flooding" but the actual elevation certificate form must be signed and sealed by only a licensed surveyor.

31. Q: *Regarding the 2 sq-mi topic, can the stream have greater than 2 sq-mi, but so long as the drainage area at your site is less than 2 sq-mi, then no permit required. Basically, if you are near a head of a stream, would no permit be needed as opposed to further downstream?*

A: The 2 square mile or greater criteria for determining jurisdiction under Part 31 is at the actual location of the proposed development. If the drainage area at the project location is less than the 2 square mile threshold then it would be unregulated under Part 31.

Please note that other State of Michigan statutes may still be in-effect, Part 301 and Part 303 for instance.

32. *Q: All this that you have covered is good to know. What our board wants to know is "What are the Pros and Cons" for our community to join the floodplain program?*

A: This could be a little hard to define without a more thorough understanding of the specifics at-play in the local community, but speaking in a broad and general sense some of the positive (pro) things to consider are:

If your community has been identified by FEMA as having special flood hazard areas, then there are significant consequences for not joining the National Flood Insurance Program (NFIP).

One primary impact is that home mortgages would likely not be available for your residents in the floodplain because the mortgage companies would require flood insurance and it would not be available because of your community's non-participation in the NFIP.

Another significant impact is that your local community would not be available for any type of disaster assistance due to flooding or other disasters such as a tornado. The advantages to joining the program are that any home in your community-

As a participant in the NFIP you are assuring your residents that building requirements are being enforced to limit future flood damage.

33. *Q: For replacement of older thin bridge decks in a regulated area with weir flow with thicker deck required under new design loads, are there any alternatives beyond increasing the span?*

A: Part 31 has an exemption for adding an additional wearing course which the DEQ has determined to be 4 inches or less. If the road surface is more than 4 inches above the existing road surface then the loss of weir flow must be accounted for. The only alternative is a larger span structure or additional overflow culverts being used. In FEMA mapped floodplain areas, no increase is allowed in the base flood elevation. In this case any increase in the existing road grade below the base flood elevation should be evaluated.

Thank you for participating in our webinar and we hope you will consider future MDEQ training and public outreach opportunities. If you have any questions regarding this matter, please contact me at 269-567-3564; bayhaj@michigan.gov; or Michigan Department of Environmental Quality, Water Resources Division, Kalamazoo District Office, 7953 Adobe Road, Kalamazoo, Michigan 49009-5025.

Sincerely,



John Bayha, P.E.
Kalamazoo District Office
Water Resources Division