



# ASSOCIATION OF STATE FLOODPLAIN MANAGERS, INC.

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February 24, 2021

Honorable Steve Gunderson, Chair  
Montana House Natural Resources Committee

Honorable Rhonda Knudsen, Vice Chair  
Montana House Natural Resources Committee

Honorable Willis Curdy, Vice Chair  
Montana House Natural Resources Committee

**RE: ASFPM written testimony on Montana HB518**

Dear Representatives:

The Association of State Floodplain Managers (ASFPM) is aware of today's hearing on Montana House Bill 518 and we ask that this letter be made part of the hearing record.

ASFPM is a 20,000 member national non-profit organization dedicated to reducing flood losses and protecting the natural functions of floodplains. Our Montana Chapter, the Association of Montana Floodplain Managers (AMFM), is concerned about HB 518 related to floodway standards. ASFPM would like to also express its concern and provide information for your consideration from a national perspective on the potential consequences of this proposed legislation.

The minimum land use and development standards of the National Flood Insurance Program (NFIP) were developed nearly 50 years ago and have not been significantly changed since the mid-1970s. At the time, the rules and standards reflected what was known about flood hazard management, flood mapping, and sought to balance development needs of communities and flood risk. Since that time, we have learned much. In fact, the 1-foot floodway rise (or surcharge limit) is an artifact from the beginning of the program nearly 50 years ago, and is no longer an appropriate safety standard today.

The very concept of a floodway surcharge means that development within the floodplain will increase future flood elevations. This is because the fundamental concept of the floodway

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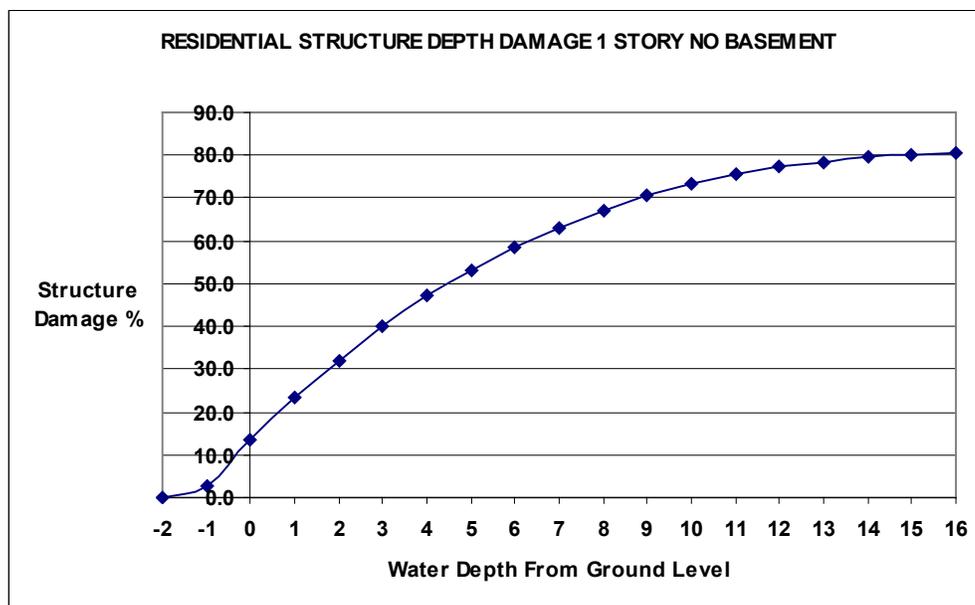
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surcharge is to allow some development in the floodplain fringe and to accept the consequences of some increase in flood elevations. However, this concept has many problems. Among them:

- An increase in flood damages to adjoining and upstream, and downstream property. In densely populated areas with existing development, even the allowable one-foot increase in depth of flooding could significantly add to flood damages and costs to upstream properties. For example, according to US Army Corps of Engineers flood depth damage curves based on reviews of damage associated with historic flood events, in the case of a single family structure with no basement and with the finished floor equal to the base flood elevation, a 1-foot surcharge would increase flood damages from 12% to 23.3% of the total value of the structure.



*Flood Depth Damage Curve for a Single-Story Residential Structure with No Basement at Ground Level. (Source: U.S. Army Corps of Engineers Floodplain Inventory Tool (CFEIT))*

- Additional areas may be flooded that are not shown on the community's existing flood insurance rate maps. When the surcharge is calculated, the resulting 1 foot of rise is not extended beyond the originally calculated floodplain limits and therefore not reflected on the NFIP maps for the community.
- An increase in floodwater velocities and a reduction in area available for conveyance of flood waters. ASFPM's research shows that as compared to a natural zero-surcharge floodway, encroachments that caused one foot of surcharge reduced the cross-sectional width available for the conveyance of floodwaters by 50% and increased the floodwater velocities on average by 33%. In particular, increasing flow velocity can be problematic and particularly damaging in that it increases turbulence and therefore stream erosion. As water velocity increases, so does the size of sediment that floodwaters can carry. By

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increasing the velocity of water moving through the channel, the flowing water can scour the streambed and deepen the channel. This means the banks are higher and often more unstable, resulting in increased streambank erosion and more sediment entering the stream. Increased sedimentation makes it difficult for some fish to feed and spawn, and the increased velocity of the stream drives out fish that cannot tolerate fast-moving water. Also, this can accelerate scour and erosion of bridges and road embankments adjacent to streams and rivers, undermining the infrastructure altogether.

- Structures that have been built in compliance with and already meeting state and local flood protection standards will be at risk from increased flooding and damages as a result of increasing the floodway surcharge from its current level of .5 foot. This means the possible compromise of floodproofing measures and the requirement to use more sophisticated approaches beyond sandbags for flood fighting which are better able to withstand increased flood heights.
- Limitation of access to flooded properties. The maximum depth through which most vehicles can safely drive is two feet. Therefore, increasing flood depths could mean a homeowner may not be able to safely reach high ground during a flood event. In addition, emergency vehicles could be prevented from responding to a house fire or medical emergency.
- ASFPM is very concerned about legal liability for allowing or permitting projects that cause an increase to the 100-year flood elevation. By increasing the allowable floodway surcharge as proposed in this legislation, you would be allowing increases to the 100-year flood elevation. Any person, developer, or organization - including units of government - undertaking development in the floodplain will be put in legal jeopardy if other properties are adversely impacted by their actions. Most communities are not aware that a floodway with a surcharge will cause increased flooding in their community.

Today, this kind of liability is easy to determine by modeling the physical impacts on other properties resulting from physical changes in the floodplain and/or from an actual flood itself. These potential flood damages mean increased lawsuits based upon various very basic legal theories: trespass, nuisance, negligence, riparian rights, surface water reasonable use doctrine, and “taking” without payment of just compensation. ASFPM has done extensive research on legal liability for activities occurring in floodplains, and these materials are free to the public from our website at [www.floods.org](http://www.floods.org).

Recent research conducted by ASFPM’s Flood Science Center, examined the actual effects of floodway encroachments on flood elevation increases. In every study we could find, actual encroachments in the flood fringe resulted in flood heights that exceed the surcharge limits. They found this was the result in King County Washington, Mecklenburg County North Carolina and the study by Halff Associates in various North Texas communities. The NFIP minimum

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standard ignores lost floodplain storage from the encroachments and uses an overly simplified approach to determine the floodway limits. The hydraulic modeling technology that is now available shows that accounting for the lost storage has an impact and it typically results in a rise larger than the "allowed surcharge." ASFPM agrees with Section 1 of the proposed legislation that in the last 30 years, technology, and hydrologic and hydraulic techniques have improved significantly, and this increased accuracy has shown that the 1 foot floodway surcharge standard is resulting in much more significant flooding depths than had been previously known.

For these reasons, this past December ASFPM has petitioned FEMA, under the federal Administrative Procedures Act to update its minimum land use and development standards since flood damages in the nation are rising unacceptably and shockingly to where today, they average over \$17 billion annually. One of the standards that we propose updating is the minimum floodway rise, and we recommend that it be a zero-rise standard, which is even more stringent than the standard that Montana has today. The reason is straightforward – allowable surcharges are higher than predicted, and in addition with nation's increasing flood risk due to a changing environment and the general availability of land outside of flood risk areas, we cannot afford to continue to approach floodplain management as we have in the past.

Luckily, several states have long understood that flood risk is significant and that NFIP minimum standards were just that – minimum standards – that should be exceeded. Montana is one of eight states that specifically have set a floodway surcharge that is more stringent than the NFIP minimum standard of 1 foot. For the reasons stated above, Montana property owners and citizens are safer, and their homes and businesses are better protected because of the forward thinking standards first passed by the State decades ago.

Thank you for your consideration. Please do not hesitate to contact me at [cberginnis@floods.org](mailto:cberginnis@floods.org) or at 608-828-6338, if I can be of further assistance.

Respectfully,



Chad Berginnis, CFM  
Executive Director