



ASSOCIATION OF STATE FLOODPLAIN MANAGERS, INC.

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ASFPM input to House Select Committee on Climate Crisis

The Association of State Floodplain Managers (ASFPM) appreciates the opportunity to share our views on addressing and adapting to climate change in our states and communities, and being a more resilient nation in the face of this new future condition.

The ASFPM and its 37 Chapters represent over 19,000 state and local officials as well as other professionals engaged in all aspects of floodplain management and flood hazard mitigation including management of local floodplain ordinances, flood risk mapping, engineering, planning, community development, hydrology, forecasting, emergency response, water resources development and flood insurance. All ASFPM members are concerned with reducing our nation's flood-related losses. For more information on the Association, its 14 policy committees and 37 State Chapters. This paper represents input from our broad leadership. Our website is: www.floods.org.

Our Nation's Flood Risk is Increasing Dramatically

Floods are the nation's most frequent and costliest hazard every year and the costs to taxpayers continue to increase. ASFPM estimates that in the 1990's average annual flood losses were about \$5.6 billion. This increased to an average annual flood loss of \$10 billion in the 2000s and in this decade will likely double again to around \$20 billion per year. Typically, the largest cause of damage in tropical cyclones is flooding, whether it be inland rain or storm surge.

Climate change is manifesting itself in several ways as it relates to flood risk. But the two primary ways are sea level rise and more intense storms. For the former, the impact of rising sea levels depends on the pace and magnitude of the change – two factors about which there is great uncertainty. For instance, a 2016 study updated the estimates on the amount of ice melting in Antarctica concluded that the increase in sea level may be twice the level that was previously estimated. And, an additional source of uncertainty is the willingness and ability of the world's nations to change the trajectory of climate change. The success of agreements like the Paris Climate Conference and future agreements hold the potential to mitigate some of the projected impacts of climate change.

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In inland areas, all across the country, local officials are observing more intense rainfall events. And this is showing up in the [data](#) too. Warming conditions mean more water vapor in the air. When rain-triggering conditions are favorable more saturated air leads to heavier precipitation. One public works official from Arkansas recently noted "It was easier when we could plan for and put in stormwater infrastructure that can handle 1-2 inches of rain each hour, but now we are seeing events where you might get four inches of rain in a half hour, I am not sure how we are going to handle that." [Recent research](#) by Climate Central reinforces this observation showing an upward trend with more days with 1", 2" or 3" rainfall events.

To meet today's challenges planning for future flooding conditions, while there are promising approaches, overall we are already behind as a nation. ASFPM would like to discuss several areas where improvement is needed in Data, Analysis and Information, Federal Agency Programs and Policies, Adaptation and Hazard Mitigation. This paper supplements our testimony from the Committee's 20 November Hearing.

All agencies/ big picture

- Codify Executive Order 13653-- the Federal Government, as well stakeholders, must manage climate change risks with deliberate preparation, cooperation, and coordination in order to effectively improve climate preparedness and resilience
- Investigate the resiliency based standards passed in the McCain Defense act last year that in essence require DOD facilities to be looking to higher standards and future climate standards. Determine to what extent DOD has developed rules, is implementing, and is complying with the Congressional mandate and intent.
- Codify an effective federal flood standard when using fed \$ to build/rebuild
 - Address ordinary and critical facilities (e.g. hospitals, water supply, etc)
 - Include consideration of future conditions
- Update the Unified National Program for Flood risk management to define the appropriate role of local, state, tribal and federal governments in managing flood risk including future impacts of climate change
 - As recommended in the ASFPM Foundation report on Urban Flooding the committee should direct the agencies to prepare an update of the Unified National Programs for Floodplain Management to capture this emerging threat to the nation.
- Direct the Federal Interagency Floodplain Management Task Force to determine how the federal agencies can collaborate on data, programs and funding to reduce flood risk and flooding costs for taxpayers at all levels.
- We have to build climate mitigation into our programs. Here are some examples:
 - Benefit/cost analysis could and costs if a project generates carbon (loss of vegetation, use of excessive concrete, drying of soil....) and count benefits for projects that sequester carbon. (expanding floodplain, reducing concrete, supporting wetland and coastal marsh continuance, reestablishments)

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- FEMA Public Assistance and HUD CDBG and other disaster funding should require a zero sum loss in carbon for project eligibility, with perhaps innovative ways to recipients of that funding to meet this goal.
- Climate mitigation guidance could be offered, similar to what EO 11988 required for flooding.
 - Project eligible must include an analysis of the carbon generated.
 - Eligibility could require a determination that there are no practicable alternatives to the project that generates less carbon.
 - If projects generate more carbon than sequestered, project funds must be used to locate and develop alternative climate mitigation areas. (Plant more trees, support additional wetlands, widen floodplains....)
- As recommended in the ASFPM Foundation report on Urban Flooding the committee should direct the agencies to prepare a national assessment of the threat of urban flooding to the nation in order to quantify the current, emerging, and future threat.
- Develop national standards for levees and dams; must include design, construction and Operation and maintenance standards to build and operate all dams and levees and to measure the reliability of all existing dams and levees. Federal taxpayer funding has been primarily used to build and repair levees in the past, but future taxpayer funding is problematic. The private sector has been hesitant to fund these activities without effective and agreed upon standards to protect the investment.
- Stafford Act must incentivize states, locals and tribes to take the lead on reducing the human and money costs of natural disasters because they have the reduction tools. This process (BRIC, HMGP, CDBG) must build S, L and tribal capability to do this
 - Reward those states and locals which go beyond basic NFIP and also adopt latest building codes without excluding key elements like freeboard, etc. Also require communities to join the Building Code Effectiveness Grading System (BSEGS) to be eligible for federal taxpayer funded disaster programs.
 - Do not provide Public assistance to communities with flood risk that refuse to join the NFIP
 - Require a Community Resilience assessment as part of mitigation plans DHS Mitigation Framework Leadership Group https://www.cakex.org/sites/default/files/documents/FEMA-CRI-Draft-Concept-Paper-508_Jun_2016.pdf. (this is an example of a community risk assessment tool – needs improvement – SAM)
- Establish a post disaster review board to analyze all significant disasters to identify the causes and possible solutions to prevent this next time. This would be patterned after the NTSB process for airline accidents and could be tied to outcome driven recovery programs.
- Ensure the Clean Water Act protects all water sources including intermittent streams, wetlands and ground water. All water is connected
- Permanently authorize the CDBG-DR program to avoid HUD having to write rules after every disaster supplemental to streamline the rebuilding process.
- Create a process to coordinate HUD programs with FEMA funded buyouts with providing affordable housing alternatives outside of high hazard areas.

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- Expand the Coastal Barrier Resources Act to reduce future flood risk and the exposure of federal taxpayer funding for disaster relief.
 - In light of changes in the interpretation of CBRA, expand on the above bullet to include strengthening CBRA to prevent offshore sand removal in waters designated in/near CBRA zones. Lack of offshore sand and demand from sea level rise is going to accelerate erosion and removes the natural resilience benefits that the sand/dune shoreline provides.
- Cease federal taxpayer funding of beach nourishment if benefits are primarily for recreation. Those who benefit should pay for this temporary benefit. The entire beach nourishment policy should be revisited in light of a changing climate and sea level rise. In particular, the cost share for these projects should reduce federal taxpayer costs share to no more than 50%.
- Evaluate climate all climate change conditions, other than flood, that can occur in floodplain areas.

ADAPTATION AND MITIGATION

- In some communities, coastal in particular, it is not going to be feasible to stay along the coast. We need to take proactive strategies and technical assistance to help communities make more informed decisions on when to rebuild more smartly vs when it would be time to start phasing in relocation. Developing innovative assistance programs to support the evaluation process, decision making and potential infrastructure/community moves would be important to advance progress.
- Minimize use of federal taxpayer dollars to rebuild in areas we know have greatly increasing flood risk. Place priority on buyouts and relocation.
- In some areas people and communities are not going to have a choice of whether or not to relocate; but relocation can occur in stages and as risk tolerance are exceeded. Time will be a new factor in this equation. Land areas will be good until they are not. Large scale buyouts will not be economically possible (think NY city or Boston). We will have think of property differently – as rights not necessarily attached to a specific relocation. Urban areas may have to leapfrog to safer sites, then to other sites.... Using TDRs, PDRs, conditioned leasing....
- Climate change is probably going to manifest itself in more than just flooding, i.e. devastating drought, increased wind speeds, damaging hail, and wildfires; all of which are going to adversely impact the US and global economies.
- Since the entire population at risk cannot be acquired and moved to a zero risk location it may be useful to develop a definition for flood risk (high, medium, low, zero) perhaps based upon depth, velocity, duration. With all of the annual damages due to flooding and the annual investment in funds in responding to flooding, the following could be developed in order to prioritize future investment:
 1. Identify high damage areas (annual data should illustrate on a state by state and county by county basis where damages are occurring.
 2. Identify where federal and state funds are being invested on a reoccurring basis (recurring damages to existing infrastructure: levees, bridges, transportation, etc.)

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3. Develop a scale for rating urban flood risk based upon flood source(s), structures at risk (critical, industrial, commercial, residential, public), estimated annual damages, and mitigation in-place.
- Provide more incentives (tax breaks ???) for mitigation. Reduce/eliminate repetitive financial investments where the same repairs/development/construction occur after each event.

With all of the techniques available (acquisition, relocation, elevation, dry and wet flood proofing) there should be opportunities to increase mitigation and reduce subsidizing habitation in areas of high risk.

Data collection, analysis and sharing

- We need to be intentional and both assign a lead federal agency (probably NOAA) and establish ongoing, permanent funding for frequent updates of the rainfall frequency predictions for the nation. Updating this every 20, 30, or 40 years is just unacceptable. We should be updating this every 5 to 10 years throughout the nation.
- Fully fund the national stream gauge and tidal gauge networks. These are the stethoscopes of our hydrologic network.
- Provide funds for the National Park System to develop public information materials on the impacts of climate change within each park. (NOTE: Millions of people visit national parks and for many, this is their primary means of information about our natural systems.)
- Data is needed on all federal expenditures to repair failed or overtopped levees and the record of that data must be readily available.

NFIP ISSUES

- Ensure all flood insurance premiums are based on full risk rates and figure out how best to assist low-moderate income property owners to mitigate their building or relocate out of the flood risk areas through loans, grants, etc. Cat modeling is useful for insurance rating, but flood maps based on risk modeling if still needed for community use in floodplain management and flood mitigation.
- Flood maps must include future flood conditions for NFIP regulation as directed by Congress. Added future flood layers for 2040, 2060 and 2100 projections can be in the digital data for community use for planning or risk commination or other community needs.
- Emphasize the most basic but most important resilience strategy for the NIFP: "avoidance". We should not invest any mitigation money in a community unless they first adopt higher standards that prevent adding any structures or assets within high risk areas. Simply put, we have to stop the vulnerabilities from increasing first and only then start chipping away from what we can then call legacy vulnerabilities.
- This above suggestion gets to the heart of the issue, which is we keep spending money to enable people to live in risky areas, and we keep turning a blind eye to localities that are complicit in letting the development industry externalize the risk to others. The big thing we can learn from the European Union Floods Directive is how to implement policy to be proactive, rather than waiting for

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a disaster before acting. Conditioning financial support to good behavior makes a ton of sense (assuming we will continue to NOT explicitly enforce existing policies).

- Mitigation actions must account for future conditions and resilience
 - And address social vulnerability and social justice
 - Set buyouts as priority in high risk flood areas
 - Nature based mitigation must be considered in all actions
 - Subsidize mitigation, not flood insurance premiums (many options)
- Urban flooding must be incorporated in flood risk maps and flood mitigation
- Ensure NFIP enforcement of its standards and regs in the 22,000+ participating communities
- There needs to be restrictions on federal expenditures in the highest risk inland floodplains also. The criteria for these highest risk areas should definitely consider the safety of first responders conducting evacuations/rescues (areas with erosion hazards, high velocities, deep flooding, etc.) and should also promote protection of existing natural floodplain functions.
- Establish a national flood risk disclosure law to all potential buyers know the past history and future flood risk potential of all properties

We look forward to working with the Committee to help the nation become more resilient and sustainable in light of the concerns presented by a changing climate. Please let us know how we can be of further assistance.

Sincerely,



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