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TESTIMONY

Association of State Floodplain Managers, Inc.

before the
Subcommittee on Housing and Community Opportunity
House Committee on Financial Services

IMPLEMENTATION OF FEMA'S FLOOD MAP MODERNIZATION PROGRAM

presented by

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INTRODUCTION

The Association of State Floodplain Managers, Inc. (ASFPM), and its 21 Chapters represent over 8,000 state and local officials and other professionals who are engaged in all aspects of floodplain management and hazard mitigation, including management, engineering, planning, community development, hydrology, forecasting, emergency response, water resources, and insurance. ASFPM members are concerned with working to reduce our nation's flood-related losses. Our state and local officials are the federal government's partners in implementing programs and working to achieve effectiveness in meeting our shared objectives. Many of our members are designated by their governors to coordinate the National Flood Insurance Program (NFIP). For more information on the Association, please visit <http://www.floods.org>.

The ASFPM is enthusiastic that the Committee has exercised its authority to monitor the implementation of FEMA's Flood Map Modernization Program. We are appreciative of Congress' support of the Map Modernization Program, which will result in many benefits to the nation. Thank you for inviting us to offer our views on the implementation of Map Mod. As requested by Chairman Bob Ney, in his letter dated July 1, 2005, the following testimony primarily addresses the following four items:

- A. Map Modernization Importance, Expectations and Outcomes
- B. Mapping Project Decisions and Competing Priorities
- C. Topographic Information and Quality
- D. Overall Mapping Strategy and Efficiency

The Mapping and Engineering Standards Committee of the ASFPM has identified five

overarching concerns regarding Floodplain Map Modernization. These concerns will be addressed as part of our testimony on the four items identified above:

- Quality – floodplain maps should reliably depict flooding hazards.
- Scope – maps should adequately cover populated areas.
- Cost – mapping should be as efficient as possible, utilizing contributions from state and local partners.
- Communication – FEMA should continue to make a special effort to communicate with and provide training to all stakeholders.
- Map Maintenance – now is the time to begin discussing the ongoing maintenance of floodplain maps after the initial period of Floodplain Map Modernization.

A. MAP MODERNIZATION IMPORTANCE, EXPECTATIONS AND OUTCOMES

The importance of Floodplain Map Modernization cannot be understated. Flooding continues to be the nation’s most costly natural hazard, and affects citizens in all geographic areas of the country.

Map Modernization must meet the expectations and vision originally laid out for the program. FEMA’s 1997 “Modernizing FEMA’s Flood Hazard Mapping Program: A Progress Report” indicated that FEMA’s map modernization plan will improve map accuracy and completeness, map utility, map production, and public awareness (in that order). The plan identified that nearly 25,000 of 100,000 existing flood map panels would include flood data updates. It also indicated that flood hazard data would be developed for approximately 13,700 new flood hazard map panels for an estimated 2,740 flood prone communities without flood hazard maps. All of this would occur at a projected cost of \$1.1 billion (1997 dollars).

What were the expected results of the effort? The primary result was to be a set of maps

that pass the “red face” test. In other words, maps that the public would have confidence in their accuracy, maps that wouldn’t show a home 40 feet up a hillside as being in the floodplain. Map Modernization was to create a nationwide set of flood maps that would identify previously unidentified flood risks, and update the existing older flood studies that were no longer accurate. That was the original vision – one that FEMA proposed, Congress believed in, and a diverse Flood Map Coalition supported.

Today’s vision has a different focus that could lead to a dramatically different outcome if not corrected. The current guidance document for Map Modernization, the Multiyear Flood Hazard Identification Plan (MHIP), identifies that FEMA, through Map Modernization, will: Network the nation using the latest internet technology to provide access to general flood hazard information; maximize the use of local state, and Federal resources and transfer ownership and use of maps and data to localities and states by building and maintaining effective partnerships; reduce processing time and cost of map updates; communicating with mapping partners; and continue to improve the quality and accuracy of national food hazard data (in order as published). Total cost of the mapping effort was identified at \$1.25 billion.

The current vision is a seemingly subtle yet substantial change. The priority in the current vision is “accessible” and “reliable” flood maps. It is focused on having digital flood maps available to the public, and is much less focused on map quality than the 1997 vision was. What happens if what we do is simply create digital flood maps that are more readily available without addressing updating the accuracy of the flood maps? We will have maps that will fail the “red face” test more quickly because the user was able to get the information faster over the Internet. We will not have addressed the fundamental expectation that the flood maps would be accurate,

complete, and correct. Although there is now a quality standard in the MHIP that we fully support and applaud FEMA's efforts in placing it in the document, it will be difficult to meet it under the current program constraints.

The ASFPM submits that there isn't enough money to meet the expectations of Congress, the Map Coalition, and the original vision of Map Modernization. How did this happen? First, FEMA used the very best information it had when detailing the original Map Modernization vision. After it appeared that Congress was supportive of the program and it was in its earliest stages, FEMA also correctly requested that states develop "business plans" that identified the costs of map modernization in each state based on a needs assessment approach. An ASFPM analysis of the state business plans indicates that the state-projected cost of updating the flood maps was typically two to three times the funding allocated to the state in the MHIP. So, by extension, the ASFPM believes that Map Modernization is a \$2-3 billion program. This is not the fault of FEMA—refined data showed a more accurate cost estimate—but the cost issue must be recognized as significant.

For the cost identified in the state business plans, the ASFPM believes that we can have a nationwide set of flood maps that meet the "red face" test. Flood maps that wouldn't necessarily be the top-of-the-line ("Cadillac") version, but they would be dependable, accurate, and generally reflective of the flood risk in a given area. So, a choice must be made now. The ASFPM hopes that the Committee will continue to be committed to its original expected outcome: the result of Map Modernization should be that we have an accurate and complete set of flood maps nationwide that are digitally available and comparatively simple to maintain. This will require a dedication of resources beyond the 5-year funding period but will be well worth

the investment.

Therefore, Flood Map Modernization should be primarily concerned with correcting existing maps or providing maps where none exist but are needed. Fixing the maps may include matching the flood data to existing topography, new studies to address developing areas, and/or addressing changes or mistakes that are not reflected on the current maps. Failure to address the current conditions of the maps can have significant impact on property owners by incorrectly identifying their flood risk. Those who are mistakenly identified as being located in a floodplain are required to carry flood insurance and may have significant regulatory restrictions placed on their properties. Conversely, there are property owners who are not identified as being in the floodplain but should be. Their risk will go unidentified until the maps are modernized, and will probably not have flood insurance if flooded.

The following example (Table 1) demonstrates the potential size of the problems due to incorrect maps. DuPage County, Illinois, is a small, urbanized county in suburban Chicago and is one of the counties that were completed during the first two years of Flood Map Modernization. While there still is a need perform new studies for much of the County, the level of risk is more correctly identified and the public is better protected from flood losses.

Table 1. Effects of Inaccurate Mapping, DuPage County, Illinois.

	Prior To Map Mod	After Map Mod
Total Tax Parcels	280,168	280,168
Parcels With Flood Risk	18,854	23,249
Parcels Incorrectly Located In Flood Zone	3,360	0
Parcels Incorrectly Located Out of Flood Zone	3,755	0

MAPPING PROJECT DECISIONS AND COMPETING PRIORITIES

Past priorities. Map modernization decisions for funding during FY2003 and FY2004 appeared to have been made primarily by FEMA Regional offices. These project decisions were driven primarily by FEMA's Key Performance Indicators (KPIs, formerly known as Mapping Metrics). Therefore, early mapping decisions were almost entirely based on population. State and local priorities appear to have been taken into account to a greater degree for contracting FY2005 funding.

In the past, FEMA has spent considerable effort collecting and reviewing state and local mapping priorities. During 2002 many states completed a Mapping Needs Assessment. During 2004 many states completed a Business Plan or Business Case, which was updated during 2005. These documents contained state mapping priorities. However, as stated above, state and local priorities appeared to be ignored, in favor of strict population-based allocations.

There are many factors that should be weighed when prioritizing Map Modernization projects. A population center with adequate (but older) maps should probably not have precedence over a rapidly-growing area with no map at all. In some cases, studies are best delayed until a particular dam or levee project is completed or a large-scale detailed study is finished.

Preferred priorities. ASFPM supports past Congressional mapping directives and the mapping priorities listed in Federal regulations. Congress has repeatedly directed (as part of the original Flood Insurance Act, and certain subsequent reauthorizations) that all special flood hazards in the United States should be identified within a five-year period (42 USC Chapter 50 Section 4101). After the initial five-year identification period, an additional time frame was

allotted for additional risk-based studies. Mapping priorities for risk-based floodplain studies, as listed in 44 CFR 59.23, include:

- (a) Recommendations of State officials;
- (b) Location of community and urgency of need for flood insurance;
- (c) Population of community and intensity of existing or proposed development of the flood plain, the mudslide (i.e., mudflow) and the flood-related erosion area;
- (d) Availability of information on the community with respect to its flood, mudslide (i.e., mudflow) and flood-related erosion characteristics and previous losses;
- (e) Extent of State and local progress in flood plain, mudslide (i.e., mudflow) area and flood-related erosion area management, including adoption of flood plain management regulations consistent with related ongoing programs in the area.

During 2003 an ad hoc two-day meeting was held in Atlanta that included FEMA personnel and representatives of a large number of stakeholders groups. A ten-point project prioritization list, known as the *Atlanta Factors*, was assembled during the meeting. (The Atlanta Factors included the five regulatory factors listed above.) While the Atlanta Factors have often been mentioned in regard to project prioritization, they do not appear to have been utilized to date.

Future Priorities. ASFPM is supportive of FEMA's Multi-Year Flood Hazard Identification Plan (MHIP). One key achievement of the MHIP is that it is a long-range plan guiding floodplain map updates. The MHIP is intended to be a rolling five-year plan, updated biannually.

Some of the KPIs that were in the initial MHIP (version 1) have been eliminated from the current MHIP (v. 1.5, DRAFT June 2005). These metrics are important to stakeholders because they recognized stakeholder contributions (also referred to as leverage). State and local contributions to Flood Map Modernization have been significant. Metrics that encourage State and local contributions should have an increased focus, and not be eliminated. The current

MHIP indicates that an update to the funding allocation will not be included in this version of the MHIP. We strongly recommend that funding allocation be vetted with stakeholders prior to the next MHIP update.

Guidance for the scope of future projects needs to be developed as soon as possible. During the first years of Map Modernization populous counties were being mapped, and therefore all maps were published as countywide studies. During future years, counties with lower populations are going to be mapped, and there will be difficult decisions made regarding which flooding hazards should be addressed.

The project scope needs to address the levels of risk and address the needs of each situation. For example, it is probably not necessary for large portions of public lands (such as National Parks) to be mapped for flooding hazards. On the other hand, at a minimum, all incorporated communities should have any flooding hazards identified. Streams that have roads anywhere nearby should have a flood hazard map so that new development in the floodplain may be properly managed. Some individuals would argue that all incorporated communities deserve to have published Base Flood Elevations and floodways either identified or updated.

A number of tools are available to provide a process for identifying the miles of stream that need to be mapped in a county during the current round of mapping. The national scope as listed in the MHIP should reflect which stream miles (or extent of a watershed) will be mapped under this initiative.

TOPOGRAPHIC INFORMATION AND QUALITY

Do 40-year-old topographic maps have value with regard to Map Modernization? They certainly do have value, primarily for restudying or digitizing Approximate Zone A studies. A complete answer requires some background information.

Quality is the cornerstone to the success of Flood Map Modernization. The initial key to quality is for the flood zones to match topography. This is referred to as *passing the red-faced test*. In other words, floodplains should not be mapped on the sides of hills while adjacent low areas are mapped as risk-free. In Section 7 of the MHIP FEMA has committed to ensuring the modernized maps are quality products. Flood Maps that do not meet the quality standards of Section 7 should not be considered modernized.

The problem is that some maps have been considered modernized, when the flood zones depicted *are not as accurate as the 40-year-old topographic maps*. As originally conceived, Map Modernization was to consist largely of digitizing existing maps. We now know that many earlier maps were not spatially accurate (to modern Geographic Information System standards). Therefore, a first test of accuracy is to compare the digitized flood zone with a topographic map. Another test is to compare the flood zone with a recent aerial photograph, to determine if stream channels have moved or been modified after the original map was created. Therefore, the requirement to match the best available topographic data should eliminate digitizing of spatially inaccurate maps.

Some study contractors have delineated flood zones based on digital elevation models (DEMs). DEMs are an approximation of the USGS topographic maps, and are therefore not the

best available topographic data. DEMs should not be used to delineate flood zones.

In rural areas without development pressure USGS topographic maps are usually adequate for delineation of Approximate Zone A areas. Within communities, or in areas of detailed studies, older topographic maps are usually not accurate enough.

Many communities and counties are contracting for better resolution topographic information that is being shared with the mapping program. Where available, this improved topographic information should always be utilized, rather than digitizing polygons based on older topography.

ASFPM is concerned that the Section 7 topographic compliance standard was not developed and implemented until late in Year 2 of Map Modernization. It may be that many studies completed in the first two years of Map Mod will not meet the quality standard and should not be identified as modernized. This will necessitate plans for modernizing these maps to bring them into compliance with the quality standards under a future map maintenance program.

OVERALL MAPPING STRATEGY AND EFFICIENCY

ASFPM is hopeful about the Floodplain Map Modernization program. The nation is already beginning to receive benefits from modernized maps, and we may expect the benefits to increase exponentially as the number of maps increases and better map delivery systems are implemented. In general, FEMA partnerships are working well and are providing great value to the general public at risk for flooding. ASFPM also generally supports FEMA's strategy for Map Mod as described in the MHIP. However, we recommend that it clearly articulate that a

primary goal of Map Modernization is accurate and complete flood maps. To do this the MHIP must identify the “true” cost of modernizing the nation’s maps and lay out a longer term plan to achieve the original Map Modernization vision. The ASFPM would support the MHIP containing alternative scenarios and costs – running the gamut from doing nothing, to mapping every stream in the nation. This would show the relative value of the Map Modernization program.

Comprehensive Floodplain Map Modernization may not be complete in a total of five years. The five-year period of Map Mod is analogous to the 5-year period first identified in the original Flood Insurance Act. Modernizing existing maps does not recognize that the initial mapping of flood hazards was never finished. An additional five to ten years (at current funding levels) will be required to adequately complete risk-based studies (detailed studies) in areas where hazards are great and large populations are at risk. We need to get out ahead of development, identifying flood risks where populations are rapidly growing.

Long-term map maintenance procedures need to be addressed. One way to address long-term maintenance is to involve state and local partners. Many state and local governments have shown a long-term commitment to floodplain management. Because local government is responsible for land use management, developing floodplain maps that match local base mapping is crucial. In addition, they often have developed topographic mapping and infrastructure inventories of their bridges and culverts. Both are very important components of floodplain mapping projects. Bridges and culverts and their associated roads often block flow significantly impacting upstream property owners.

FEMA may increase the quality of and shorten the time frame for studies if mechanisms

for better communication with partners, including Cooperating Technical Partners (CTP), can be put in place. These partnerships provide real tangible benefits for local, state, and regional mapping partners and provide an avenue for insuring buy-in to Flood Map Modernization. There are numerous examples of CTPs from across the nation that have provided significant effort the Flood Map Modernization initiative. The CTPs offer multiple opportunities for cost savings and leverage.

CONCLUSION

Flood Map Modernization is here, it is exciting, and the ASFPM stands committed to assist FEMA to make the program successful. At the same time Map Modernization is at a crossroads. It is up to this Committee, the Congress, OMB, and the Department of Homeland Security to ensure that Map Modernization is fully funded and that the original vision – which is achievable – is kept. The bottom line question is are you and your constituents satisfied with the mapping products? If we continue with the current scope (dollars and time) we will not modernize the nation's flood maps. The ASFPM as well as the broader Flood Map Coalition recognizes the need to have the nation's flood maps modernized for all its users.

Thank you for the opportunity to provide our thoughts on these important issues. The ASFPM and its members look forward to working with you as we move towards a common goal of reducing flood losses.

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