



FEMA's Risk Mapping, Assessment, and Planning (Risk MAP)

Fiscal Year 2011 Report to Congress
March 15, 2011



Homeland
Security

Federal Emergency Management Agency

Message from the Administrator

March 15, 2011

I am pleased to present the “Risk Mapping, Assessment, and Planning (Risk MAP): Fiscal Year 2011 Report to Congress,” which has been prepared by the Federal Emergency Management Agency (FEMA).

This document responds to the reporting request set forth in the Joint Explanatory Statement that accompanies the *Fiscal Year (FY) 2010 Department of Homeland Security Appropriations Act* (P.L. 111-83), which states:

With the fiscal year 2011 budget request, FEMA shall submit to the Committees a status report on the progress made towards the five-year Risk Mapping, Assessment, and Planning strategy.

Pursuant to congressional requirements, this report is being provided to the following Members of Congress:

The Honorable Robert B. Aderholt
Chairman, House Appropriations Subcommittee on Homeland Security

The Honorable David E. Price
Ranking Member, House Appropriations Subcommittee on Homeland Security

The Honorable Mary L. Landrieu
Chairman, Senate Appropriations Subcommittee on Homeland Security

The Honorable Daniel Coats
Ranking Member, Senate Appropriations Subcommittee on Homeland Security

Inquiries relating to this report may be directed to me at (202) 646-3900 or to the Department’s Deputy Chief Financial Officer, Peggy Sherry, at (202) 447-5751.

Sincerely,



W. Craig Fugate
Administrator
Federal Emergency Management Agency



Executive Summary

The Federal Emergency Management Agency (FEMA) manages several risk analysis programs, including Flood Hazard Mapping, National Dam Safety, Multi-Hazard Mitigation Planning, and Hazards United States Multi-Hazard (HAZUS-MH), that assess the impact of natural hazards that lead to effective strategies for reducing risk. These programs support the Department of Homeland Security objective to “strengthen nationwide preparedness and mitigation against natural disasters.” FEMA began Risk Mapping, Assessment, and Planning (Risk MAP) in Fiscal Year 2009 with funding from the National Flood Insurance Fund and congressional appropriations for flood hazard mapping. Risk MAP integrates and aligns the individual risk analysis programs into a more effective unified strategy. The vision for Risk MAP is to deliver quality data that increase public awareness and lead to action that reduces risk to life and property.

The work being performed under Risk MAP is grounded in current authorities provided in the *National Flood Insurance Reform Act of 1994*; the National Dam Safety Program, as expressed in Section 215 of the *Water Resources Development Act of 1996* (P.L. 104-303); and the *Robert T. Stafford Disaster Relief and Emergency Assistance Act* (P.L. 93-288; Stafford Act), as amended. The purpose of this report is to provide to the House and Senate Appropriations Committees a progress report on FEMA’s efforts to implement the Risk MAP Program.

In the Nation’s comprehensive emergency management framework, the analysis and awareness of natural hazard risk remains challenging. For communities to make informed risk management decisions and take action to mitigate risk, a consistent risk-based approach to assessing potential vulnerability and losses, and tools to communicate the message are needed. Risk MAP aims to address this gap. By analyzing and depicting flood risk, communities and the American public can better understand that risk and make informed decisions to reduce vulnerability.

Ultimately, through collaboration with State, local, and tribal entities, Risk MAP will reduce losses of life and property through effective local mitigation activities enabled by quality flood hazard data, risk assessments, and mitigation planning. Risk MAP establishes an integrated flood risk management approach that leverages and enhances the existing data from Flood Map Modernization. Risk MAP will provide an integrated Web-accessible national assessment of flooding risks based on quality flood hazard data. This information will enable communities to develop mitigation plans and make informed risk management decisions.

FEMA continues to collaborate with local, State, regional, tribal, national, and other Federal partners in communicating these objectives and implementing Risk MAP. Because FEMA’s efforts extend throughout the Nation, implementing Risk MAP helps to maintain the engineering capability in the State and private sectors—sustaining jobs and stimulating the economy.



Risk Mapping, Assessment, and Planning (Risk MAP)

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I. Legislative Language

This document responds to language set forth in the Joint Explanatory Statement that accompanies the *Fiscal Year (FY) 2010 Department of Homeland Security (DHS) Appropriations Act* (P.L. 111-83), which states as follows:

FLOOD MAP MODERNIZATION FUND

The conference agreement provides \$220,000,000 for the Flood Map Modernization program as proposed by both the House and Senate. In fiscal year 2010, FEMA will continue to focus these funds on reviewing, updating, and maintaining maps to accurately reflect flood hazards. The goal shall be to review and, where necessary, to update and maintain data, methodologies, models, and maps that have been modernized, and to issue map updates no later than five years past the modernized dates of the maps. To support this goal, FEMA is directed to provide no less than 20 percent of the funds provided under this heading for map updates and maintenance conducted by Cooperating Technical Partners that provide a 25 percent cash match and have a strong record of working effectively with FEMA on flood plain mapping activities. With the fiscal year 2011 budget request, FEMA shall submit to the Committees a status report on the progress made towards the five-year Risk Mapping, Assessment, and Planning strategy. When allocating map modernization funds, FEMA is encouraged to prioritize as criteria the number of stream and coastal miles within the State, the Mississippi River Delta region, and the participation of the State in leveraging non-federal contributions. FEMA is directed to develop a National Digital Elevation Acquisition and Utilization plan for the purposes of supporting flood plain map updates. FEMA shall collaborate with the United States Geological Survey, the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, and States that have experience in acquiring and incorporating high resolution elevation data in the flood plain map updates. FEMA shall submit this plan to the Committees within six months after the date of enactment of this Act.

II. Introduction

The mission of the Federal Emergency Management Agency (FEMA) is to support our citizens and first responders to ensure that, as a Nation, we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards. Within DHS, FEMA manages the National Flood Insurance Program (NFIP), the cornerstone of the national strategy for preparing American communities for flood hazards. Flood hazard mapping is a key component of the NFIP, and in FY 2011, FEMA will achieve its goals for Flood Map Modernization using resources provided through FY 2008. Concurrently, FEMA is implementing its vision for Risk Mapping, Assessment, and Planning (Risk MAP).

Risk MAP integrates and aligns the individual risk analysis programs into a more effective unified strategy. The vision for Risk MAP is to deliver—through collaboration with State, local, and tribal entities—quality data that increase public awareness and lead to mitigation actions that reduce risk to life and property. To achieve this vision, FEMA is transforming its traditional flood identification and mapping efforts into a more integrated process of accurately identifying, assessing, communicating, planning, and mitigating flood-related risks. Risk MAP addresses gaps in flood hazard data to form a solid foundation for risk assessment and floodplain management, and to provide State, local, and tribal entities with information needed to mitigate flood-related risks.

Risk MAP supports the Quadrennial Homeland Security Review goals and the FEMA Administrator's Priorities. It supports the goal to strengthen capacity at all levels of society to withstand threats and hazards. Risk MAP does this by improving community capacity to withstand disasters by mitigating known and anticipated hazards.

For the FEMA Administrator's Priorities, Risk MAP supports: (1) the priority to strengthen the Nation's resilience to disasters and (2) FEMA's strategic priority to foster a national community-oriented approach to emergency management that strengthens local institutions, assets, and social networks to build sustainable and resilient communities. Risk MAP does this by providing reliable risk information to increase awareness of risk leading to action that reduces risk to life and property. Communities that understand these risks and take action to address them are more resilient and better able to withstand the impacts of disaster.

III. Risk MAP Strategic Approach

Risk MAP provides communities with flood information and tools that they can use to enhance their hazard mitigation plans and better protect their citizens. FEMA’s strategy provides more-accurate flood maps, risk assessment tools, and outreach support to strengthen the ability of local officials to make informed decisions about reducing risk. Risk MAP is introducing new products and services extending beyond the traditional Digital Flood Insurance Rate Map (DFIRM) produced in Flood Map Modernization. FEMA is increasing its work with officials to help use flood risk data and tools to effectively communicate risk to citizens and enable communities to enhance their mitigation plans.

Risk MAP significantly improves the integrated flood risk management approach by weaving county-level flood hazard data into watershed-based risk assessments. These risk assessments serve as the basis for local Hazard Mitigation Plans and targeted risk communication activities. Risk assessments systematically analyze the people and property in a community or watershed potentially impacted by flood hazards to quantify physical and economic losses.

Although Risk MAP focuses primarily on flood hazards, the program establishes a framework for multi-hazard risk analysis, communications, and mitigation strategies. Such functions as prioritization of resources based on risk and need, delivery of multi-hazard risk assessments, and mitigation planning can be replicated across multiple hazard types.



Figure 1: Risk MAP Value Proposition

Figure 1 illustrates the goals by which FEMA is achieving its Risk MAP Vision, the products that are being used to satisfy these goals, and ultimately its value proposition to communities. To maximize value creation, FEMA works closely with communities to provide usable risk data that raise awareness among local officials and citizens in order to drive mitigation action that reduces risk to lives and property. Concurrent with these activities, FEMA is working continuously to improve the digital platform on which risk data are made available to communities and other stakeholders.

The goals for Risk MAP, as articulated in the “Risk MAP Multi-Year Plan: Fiscal Years 2010–2014,” are:

- **Goal 1:** Address gaps in flood hazard data to form a solid foundation for flood risk assessments, floodplain management, and actuarial soundness of the NFIP
- **Goal 2:** Ensure that a measurable increase of the public’s awareness and understanding of risk management results in a measurable reduction of current and future vulnerability to flooding
- **Goal 3:** Lead and support State, local, and tribal communities to effectively engage in risk-based mitigation planning resulting in sustainable actions that reduce or eliminate risks to life and property from natural hazards
- **Goal 4:** Provide an enhanced digital platform that improves management of limited Risk MAP resources, stewards information produced by Risk MAP, and improves communication and sharing of risk data and related products to all levels of government and the public
- **Goal 5:** Align risk analysis programs and develop synergies to enhance decision-making capabilities through effective risk communication and management

FEMA utilized resources in FY 2009 and FY 2010 to define Risk MAP products and processes and to address critical coastal and levee engineering and mapping needs. In FY 2011, FEMA will utilize resources to develop fully integrated Risk MAP projects for selected watersheds across the Nation, in addition to continuing to address coastal and levee engineering data needs. Feedback from State and local officials as these integrated Risk MAP projects are rolled out will be used to:

- Confirm and, if necessary, revise Risk MAP product definitions
- Ensure alignment of the quality data and products being provided by FEMA with their uses by State, local, and tribal entities
- Support improved risk communications at the national, State, and local levels
- Ensure local decision makers have reliable and actionable information to use to reduce their risk and create and sustain more-resilient communities

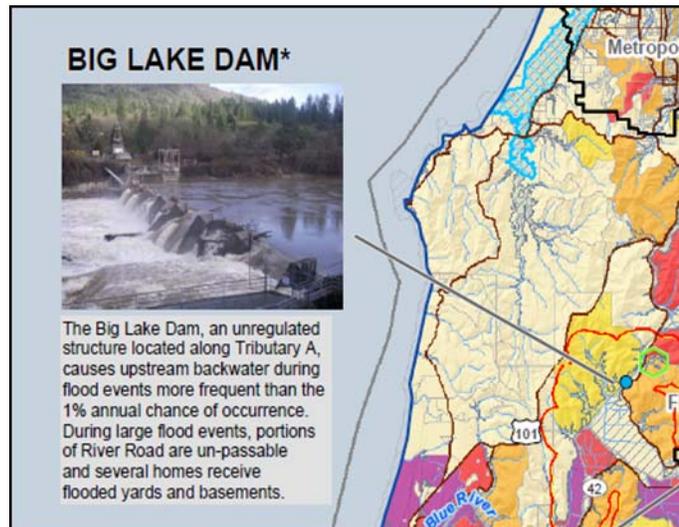
Demonstrating Benefit to Communities

The following section gives two specific cases illustrating the kind of value Risk MAP is delivering to communities across the Nation. These two projects, of more than 400 initiated in FY 2010 and implemented by FEMA's regional offices, demonstrate the value of Risk MAP data, products, and processes to communities, as well as FEMA's efforts to leverage Federal, State, and local partners in developing and sharing quality data to aid risk communication.

Lewis County, WA

Rural counties and watersheds feel the impact of new flood hazard data more acutely. With unemployment rates in excess of 13 percent and multiple historic floods over the past 20 years, Lewis County, WA, cannot afford to ignore flood risk nor can it afford to dissuade any potential economic revitalization opportunities. Transitioning from Flood Map Modernization to Risk MAP, FEMA utilized the Risk MAP charter process and the delivery of a new data set to engage at the right levels with Lewis County.

The Charter, a new tool under Risk MAP, accomplishes two primary goals: (1) it memorializes a community's current and future goals in the area of hazard mitigation and (2) clearly articulates what is expected of FEMA and the signatories to ensure a successful delivery (throughout the entire process) of a Risk MAP project. In the case of Lewis County, following a meeting facilitated by congressional representatives, all parties were engaged in concurring on the scope of the planned Risk MAP project in a Charter.



**Illustrative View of
Area of Mitigation Interest**

Specifically for the Lewis County project, FEMA prepared a new Risk MAP data set that identifies Areas of Mitigation Interest (AMI). The AMI data set helps to provide specific, actionable options for the community to capture in its local and State-level hazard mitigation plans, as well as ways to implement the plan to ensure compliance with the NFIP. The ultimate goal to reduce flood losses and ensure economic vitality is enhanced.

Both the Charter and the AMI are opportunities for communities and FEMA to improve upon the flood study engagement process utilized in Flood Map Modernization. Local input helps ensure that Risk MAP products will be used to achieve a state of community-sustained resilience, and the use of the Charter process helps to focus the communities on clear, implementable mitigation strategies.

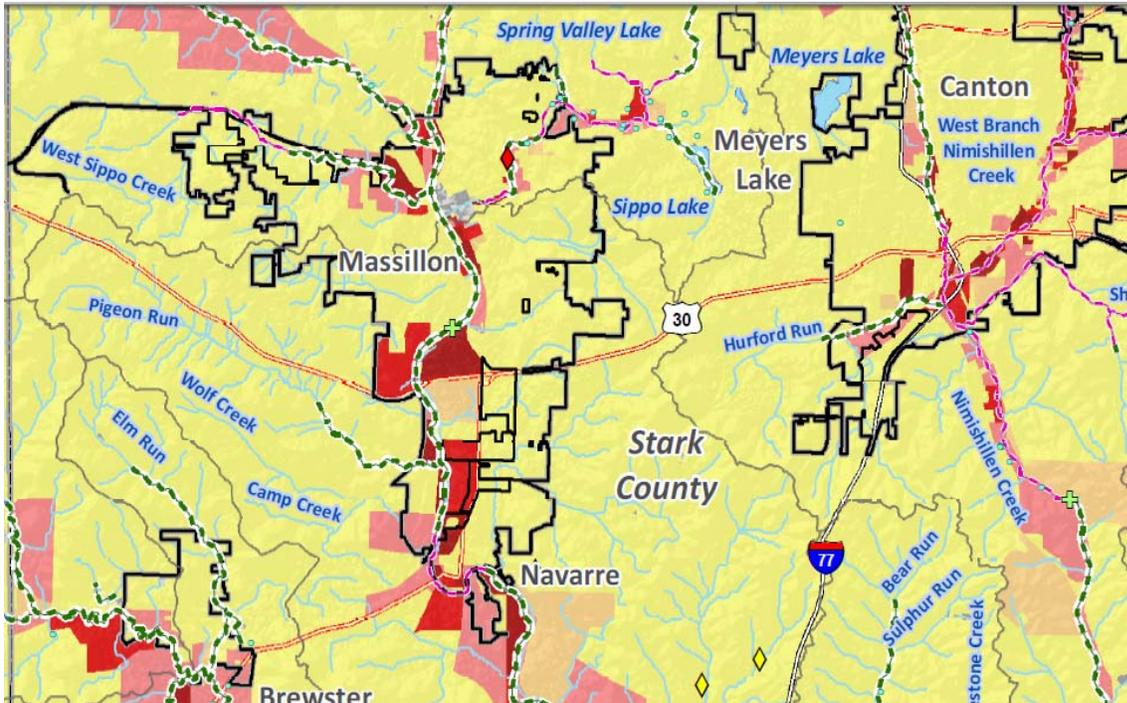
Illinois State Water Survey

The Illinois State Water Survey's (ISWS's) Risk MAP Project included conducting Discovery meetings and providing Depth and Analysis Grids for the Lower Fox Watershed in Illinois. ISWS is a Cooperating Technical Partner (CTP). The CTP Program is an innovative approach to creating partnerships between FEMA and participating NFIP communities, regional agencies, State agencies, tribes, and universities that have the interest and capability to become more-active participants in FEMA's Risk MAP Program.

The Lower Fox watershed includes 9 counties and 34 communities. The Discovery effort included up-front watershed stakeholder coordination, a review of mitigation plans, plan status, other flood risk information, and the presentation of flood risk data to watershed stakeholders at four Discovery meetings held throughout the watershed.

ISWS reports that the Discovery meetings were successful in garnering information about flooding issues and in involving watershed stakeholders in a dialogue about flooding issues on a watershed scale. The Discovery Map proved to be a useful communication tool, and the Depth and Analyses Grids as presented were enthusiastically received. Communities that attended the Discovery Meetings reported that they may use the Risk MAP products to estimate risk and to communicate risk to citizens. ISWS also reported that meeting participants asked relevant questions and seemed genuinely interested both in the presentation and in providing data.

On the basis of a questionnaire developed by ISWS to gauge the response to new products and processes, most participants agreed that the Discovery Meeting helped to increase their knowledge of flooding, that the Risk MAP products were easy to understand, and that there was a clear understanding of the value of the project.



MAP SYMBOLOGY

Avg. Annualized Loss <small>Source: FEMA</small>	CNMS Data <small>Source: FEMA Region V</small>	Dams <small>Source: ODNR</small>
<ul style="list-style-type: none"> Very Low Low Medium High Very High 	<ul style="list-style-type: none"> Validated Requires Assessment Not Valid USGS Gages LOMC Locations HUC8 Watershed Boundary HUC10 Watershed Boundary Lakes Municipal Boundaries Counties 	<p>Classification</p> <ul style="list-style-type: none"> Class I Dam - greater than 80', or greater than 5000 acre-feet storage, or probable loss of life Class II Dam - greater than 40', or greater than 500 acre-feet storage, or health hazard, flood water damage to homes, businesses, industrial structures (no loss of life envisioned), damage to state and interstate highways, railroads, downstream dams, only access to residential areas Class III Dam - greater than 25', or greater than 50 acre-feet, or damage to low value non-residential structures, local roads, agricultural crops and livestock
<ul style="list-style-type: none"> Levees Interstates Major Roads Streams / Rivers 		

Illustrative View of Portion of a Discovery Map and Discovery Data

The Discovery Map is a graphic depiction of Discovery efforts in a watershed and includes layers showing the data and information collected, including information gathered from other Federal and State agencies. For the Lower Fox Watershed, data were collected across the U.S. Army Corps of Engineers (USACE), National Weather Service, U.S. Geological Survey (USGS), and ISWS, covering data for levees, dams, stream gauges information, elevation, etc.

IV. Risk MAP Program Budget and Measures

The Risk MAP Program focuses on providing quality data and an enabling environment to communities that allows them to make more-informed decisions regarding actions that ultimately reduce the risk to life and property. Performance measures link strategy and actions, reflect progress, and identify what aspects of the program are succeeding and what aspects need improvement to affect future successful outcomes.

To measure Risk MAP's progress and effectiveness, a performance management system composed of the Risk MAP key performance measures has been put in place. These metrics are outcome-based and are designed to enable responsiveness, provide good value to the user, and drive alignment of the people, resources, products, and processes with the Risk MAP Multi-Year Plan and vision.

The performance results for FY 2010 and targets for FY 2011 and FY 2012 are based on the program budget of congressionally appropriated levels of funding and National Flood Insurance Fund, as shown in Table 1.

Figure 2 is a list of key performance measures and metrics that are being used to guide the execution of the various Risk MAP strategies. These measures track progress in addressing gaps in flood hazard data, increasing the level of risk awareness of local officials, and driving actions to reduce risk. The Risk MAP vision component, metrics description, and targets for FY 2011 and FY 2012 are also included in Figure 2.

Table 1 – Program Budget for FYs 2010, 2011, and 2012

Funding Sources	FY 2010 Enacted			FY 2011 President’s Budget			FY 2012 President’s Budget		
	NFIF*	Risk MAP	Total	NFIF*	Risk MAP	Total	NFIF*	Risk MAP	Total
NFIF* Salaries & Benefits (S&B)	\$7,923		\$7,923	\$9,066		\$9,066	\$9,273		\$9,273
NFIF* Program	\$96,800		\$96,800	\$107,556		\$107,556	\$108,433		\$108,433
Risk MAP S&B		\$5,322	\$5,322		\$7,368	\$7,368		\$9,023	\$9,023
Risk MAP Program		\$214,678	\$214,678		\$186,632	\$186,632		\$93,689	\$93,689
Total	\$104,723	\$220,000	\$324,723	\$116,622	\$194,000	\$310,622	\$117,706	\$102,712	\$220,418

* NFIF – National Flood Insurance Fund
Dollars reflected in thousands

Vision Component	Measure	Metrics (units)	FY 2010 Actual	FY 2011 Target	FY 2012 Target
1 Quality Data	•Risk MAP data can be relied upon as reflecting current conditions	•Percent of flood hazard data meeting New, Validated, or Updated Engineering Standard (NVUE)	37%	53%	55%
2 Awareness	•Risk MAP is increasing awareness of flood risk	•Percent of local officials who are aware of the flood risk affecting their community after engagement with Risk MAP	68%	70%	70%
3 Action	•Risk MAP is being deployed widely to communities on a watershed basis	•Percent of population that is taking action against community planned flood risk mitigation strategies in watersheds where Risk MAP has begun	N/A	40%	44%

Figure 2: Risk MAP Key Performance Measures

The measure pertaining to quality data quantifies the amount of FEMA's flood hazard data that accurately reflect existing conditions. By achieving a high level of compliance with this measure, FEMA can address data gaps and ensure that the underlying technical information on the flood maps is current.

The measure specific to flood risk awareness is based on annual surveys of local officials. Risk MAP has expanded the outreach activities within a mapping study to increase local officials' awareness of their flood risk. This will be accomplished through public meetings, outreach, and enabling local community officials to better communicate flood risk to their constituents.

The measure pertaining to communities taking action to reduce flood risk is a cumulative measure of populations (in watershed) where Risk MAP is being deployed. Flood risk data and products provided through Risk MAP give local communities the basis to develop sound, practical hazard mitigation plans, communicate risks to citizens, and allow the public to take action to prevent or reduce flood risks.

As the Risk MAP Program is being implemented, FEMA will continue to ensure that necessary performance metrics are identified and tracked to demonstrate the progress of the program.

V. Risk MAP Implementation

A. Flood Hazard Mapping and Engineering

FEMA, through Risk MAP, continues to maintain the accuracy of the flood hazard data used in support of the NFIP. Leveraging successes from Flood Map Modernization, FEMA will continue, as deemed necessary, to refresh more of the underlying engineering data depicted on the flood map. As of September 2010, 88 percent of the Nation's population had received a DFIRM. As the Flood Map Modernization program comes to a successful end, FEMA regions have identified ongoing Flood Map Modernization projects that could significantly benefit from the enhanced risk assessment, mitigation planning, and/or communications support offered by the new Risk MAP Program. These projects are candidates for Risk MAP Conversion.

The purpose of Risk MAP Conversions is to create a path forward for these ongoing Flood Map Modernization projects through additional communication and increased flood risk awareness among citizens in each community, and by providing Risk MAP products to these communities. This effort extends beyond the original NFIP-oriented objectives of Flood Map Modernization. By converting these projects, we expect that communities will use the flood maps for floodplain management purposes; effectively communicate risk to their citizens; update their hazard mitigation plans accordingly; and, ultimately, take actions to mitigate risk.

Flood Map Modernization focused on establishing a foundation for easier information depiction and distribution of the mapped flood hazard. To ensure that Flood Map Modernization's investment is preserved and that synergies are realized, it is imperative to maintain the integrity and credibility of the engineering data for reliable risk identification and to ensure the information can be leveraged to improve mitigation activities beyond the minimum Federal requirements for participation in the NFIP.

Risk MAP investments that are dedicated to flood hazard mapping will produce accurate flood hazard data, integrated watershed flood risk assessments, and more-effective hazard mitigation plans. Risk MAP's primary areas of focus include coastal flood hazard mapping, areas impacted by levees, and significant riverine flood hazard data update needs. FEMA's Risk MAP approach supports local risk assessment and planning activities while addressing the flood hazard data update needs, thus enabling citizens to increase awareness of flood risk and ensure sound planning in mitigating these risks.

Going beyond the regulatory DFIRMs, new products are being designed to help communities gain a sophisticated understanding of the threats posed by flooding so that they can take effective action to reduce risk. The Risk MAP Products Suite is being augmented in FY 2011 to include:

- Flood depth and analysis grids that illustrate not only where the floodplain may lie, but also the depth of flooding that can occur in those areas
- Identification of changes since the last Flood Insurance Rate Map. When a community receives a new, updated flood map, this information will help them understand how the community's map has changed vis-à-vis the previous map.

A map of the United States depicting FY 2009 and FY 2010 Risk MAP projects and a map of the United States depicting FY 2011 Planned Risk MAP projects are provided in Appendix A of this document, "Map Graphic." More information regarding flood mapping projects initiated in FY 2009 and FY 2010 can be found in the "Fiscal Year 2010 Flood Mapping Progress Report and Production Plan" available on FEMA's Risk MAP Web page at http://www.fema.gov/plan/prevent/fhm/rm_main.shtm. This document will be updated in FY 2011.

B. FEMA Levee Accreditation Status

FEMA is granted the authority to map the appropriate zone designation for levee systems, including floodwalls, that meet the criteria defined in 44 Code of Federal Regulations (CFR) Section 65.10 as "accredited" on DFIRMs. However, FEMA must rely on Federal, State, and local agencies and private levee owners to provide the required data and documentation for levee systems so that the hazards and risks associated with the levee may be presented accurately on DFIRMs and other products. FEMA is not granted the authority for designing, constructing, operating, certifying, or maintaining levee systems or determining how a levee system will perform during a flood.

Appendix B, "FEMA Levee Accreditation Status," provides a snapshot, as of May 2010, of the dynamic and complex nature of determining and tracking whether a levee system satisfies FEMA's regulatory requirements for accreditation on an effective DFIRM. Note that the status of a levee system identified on this map solely reflects whether it has been demonstrated to satisfy the FEMA regulatory requirements for accreditation, and not how the system would perform during a flooding event.

FEMA, in coordination with USACE, has inventoried more than 25,000 miles of levee systems across the Nation, as indicated on the map in Appendix B. When FEMA initiates a flood study, this inventory serves to initiate a dialogue between FEMA and impacted communities regarding the presence and status of levee systems in the context of 44 CFR Section 65.10. This dialogue has frequently demonstrated that communities may believe that a previously accredited levee system continues to satisfy the FEMA requirements for accreditation, but the communities need additional time to gather the documentation necessary to demonstrate compliance. As a result, in September 2006, FEMA introduced the Provisionally Accredited Levee process to provide communities with 24 additional months to provide 44 CFR Section 65.10-compliant data and documentation for their previously accredited levee system, if they commit in writing to do so. In the meantime, FEMA moves forward with issuing DFIRMs for the community that depict the levees as provisionally accredited. Communities that provide the 44 CFR Section 65.10-compliant data and documentation will have the "provisional" status removed from their

DFIRM, thus fully accrediting the levee system. For provisionally accredited levee systems for which the data and documentation are not submitted within 24 months, FEMA must initiate a map revision to depict the levee system as not accredited on a revised DFIRM. A majority of the levees identified on the map in Category 5, “Soon to be Not-Accredited,” are provisionally accredited levees that are beyond the 24-month time frame.

C. Coastal Strategy

Throughout Flood Map Modernization, FEMA provided coastal communities with digital data in accordance with the program goals, but in many cases, the underlying coastal flood hazard analyses were not updated or updated in a limited capacity. One notable exception is the post-Hurricane Katrina updates performed for the States of Mississippi and Louisiana. Also during Flood Map Modernization, FEMA reviewed and updated its methodologies for performing coastal flood hazard analyses and mapping in preparation for performing updates along the Nation’s coasts. The goals of the Risk MAP Program are different than the goals of the Flood Map Modernization Program. The Risk MAP Program puts a greater focus on the quality of the underlying flood hazard data. Given this change in focus and the limited updates performed throughout Flood Map Modernization, coastal communities will be provided with more-comprehensive updates to their Flood Insurance Studies (FIS) and DFIRMs, similar to the updates following Hurricane Katrina. Additionally, coastal communities will be provided new Risk MAP data sets where applicable.

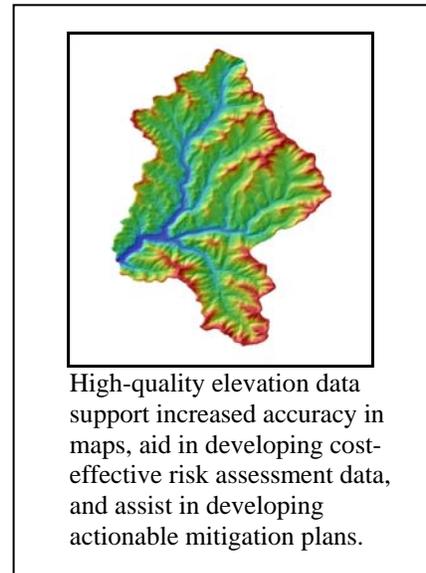
Throughout the Risk MAP Program, FEMA intends to update the Nation’s coastal FIS and DFIRMs and establish new FIS and DFIRMs in populated areas that had not previously been mapped. FEMA anticipates that it requires 5 years, through FY 2014, to initiate all of these updates. Upon initiation, coastal flood hazard and mapping updates can take 3 or more years of scoping, data collection, flood hazard analyses, and mapping followed by regulatory appeal and compliance periods, during which the public has the opportunity to provide input and adopt the new maps into their local floodplain management ordinances. So it is likely that the effort will not be completed until after FY 2014. As such, FEMA is identifying and prioritizing the study areas on the basis of mapping needs, flood risk, community and State cost share, and cost efficiencies so that the areas most in need are provided with updated maps as efficiently and expeditiously as possible.

FEMA has already made significant progress toward the goal of providing the Nation’s coastal population with updated flood hazard analyses and mapping. Throughout Flood Map Modernization, FEMA initiated updates to approximately 35 percent of the Nation’s coastal flood hazard mapping. This accounts for the post-Katrina work and other similar projects but does not include the limited updates that were widely performed. Since initiation of the Risk MAP Program, FEMA has initiated a steady stream of coastal updates. With just 2 years of funding, FY 2009 and FY 2010, FEMA has initiated studies that, upon their completion, will account for approximately an additional 30 percent of the Nation’s coastal flood hazard mapping.

D. Elevation Data

In FY 2011, FEMA will dedicate \$20 million to acquisition of elevation data. High-quality elevation data form the foundation for increasing the quality of the flood maps, aid in developing risk assessment data, and assist in developing actionable mitigation plans based on improved hazard data.

The importance of the accuracy of elevation data for FEMA has been emphasized in two National Academies of Science reports. FEMA will obtain, and support partners' efforts to obtain, high-quality elevation data. FEMA will manage elevation data used for Risk MAP as part of its Engineering Library system that houses all the supporting data used for Risk MAP. FEMA will also work with USGS to integrate Risk MAP elevation data with other national elevation data resources to make the data more widely available and easier to use.



High-quality elevation data will not only increase the quality of the flood hazard maps but will also aid in developing risk assessment data, assist in developing actionable mitigation plans, and improve credibility, all of which help to achieve the overall mission of reducing the impact of disasters on lives and property. Furthermore, the data will result in a substantial increase in the public's awareness of risk—one of Risk MAP's operational goals—which, in turn, drives citizens to take actions toward mitigating risks.

More information on FEMA's elevation data strategy and collaboration with other Federal agencies can be found in FEMA's "Risk Mapping, Assessment, and Planning (Risk MAP) – National Digital Elevation Acquisition and Utilization Plan for Floodplain Mapping," dated July 2010, available at http://www.fema.gov/plan/prevent/fhm/rm_main.shtm#4.

E. Risk Assessment

A risk assessment identifies hazards and their associated risks, including threats to public health and safety, the environment, property damage, and economic loss. The assessments combine the probabilities with the consequences in a way that quantifies risk. Quantifying the risk is a powerful way to communicate the threat, determine the key factors that cause it to be high, and ultimately perform trade-off analyses to determine the most effective way to reduce, avoid, or otherwise control it.

For NFIP purposes, the ability to compare flood risk across States and regions is critical. At the State and community levels, flood risk information helps community leaders with planning, evaluation of costs and benefits associated with building codes, and other preventive measures. An understanding of the flood risk is important to manage and mitigate risk for businesses and industries that may be located within or near the floodplain.

Through the integrated delivery of Risk MAP, one of the key data sets a given watershed will receive will be a flood risk assessment. FEMA will use its risk assessment and loss estimation tool, Hazards United States Multi-Hazard (HAZUS). This assessment will begin to quantify, in economic terms, the impact of a particular flood event. With this information available, local communities can begin to get a sense of:

- Economic losses to residential, commercial, and other assets within the community across a watershed
- Percent damage and the estimated damages to building stock
- Any disruption to the business community

With the use of flood risk assessments in understanding the scope and potential consequences of flooding, critical hazard mitigation and emergency management plans can be developed and implemented for more-frequent flood threats and catastrophic events.

To support Risk MAP and the development of risk assessments, FEMA is:

- Enhancing the HAZUS model by developing storm surge methodology and adding a storm surge component of the Hurricane module
- Updating the functionality and loss estimation accuracy for easier use by decision makers and Geographic Information System users at the State, regional, and local levels so they incorporate risk assessment data into their emergency management and mitigation planning efforts

In addition, FEMA continues to provide training opportunities and communication materials on HAZUS with the goal of educating new and existing HAZUS users, and to gather feedback on how to further improve the tool's ability to accurately assess risk and quantify losses from flood and other hazards.

F. Multi-Hazard Mitigation Planning

Hazard mitigation planning is the process used by State, tribal, and local governments to identify risks, assess vulnerabilities, and develop long-term strategies for protecting people, the natural environment, and property from the effects of future natural hazard events. The process results in a mitigation plan that offers:

- A strategy for breaking the cycle of disaster damage, reconstruction, and repeated damage
- A framework for developing feasible and cost-effective mitigation actions

In October 2010, FEMA initiated a project to examine the current mitigation plan review process. The purpose of this project is “to reinforce the emphasis on mitigation strategies, specifically actions and implementation,” and “to modify the current plan review tools and processes to achieve the desired emphasis.”

To support Risk MAP in achieving the overarching Mitigation Planning Strategy and vision, this project aims to achieve the following goals:

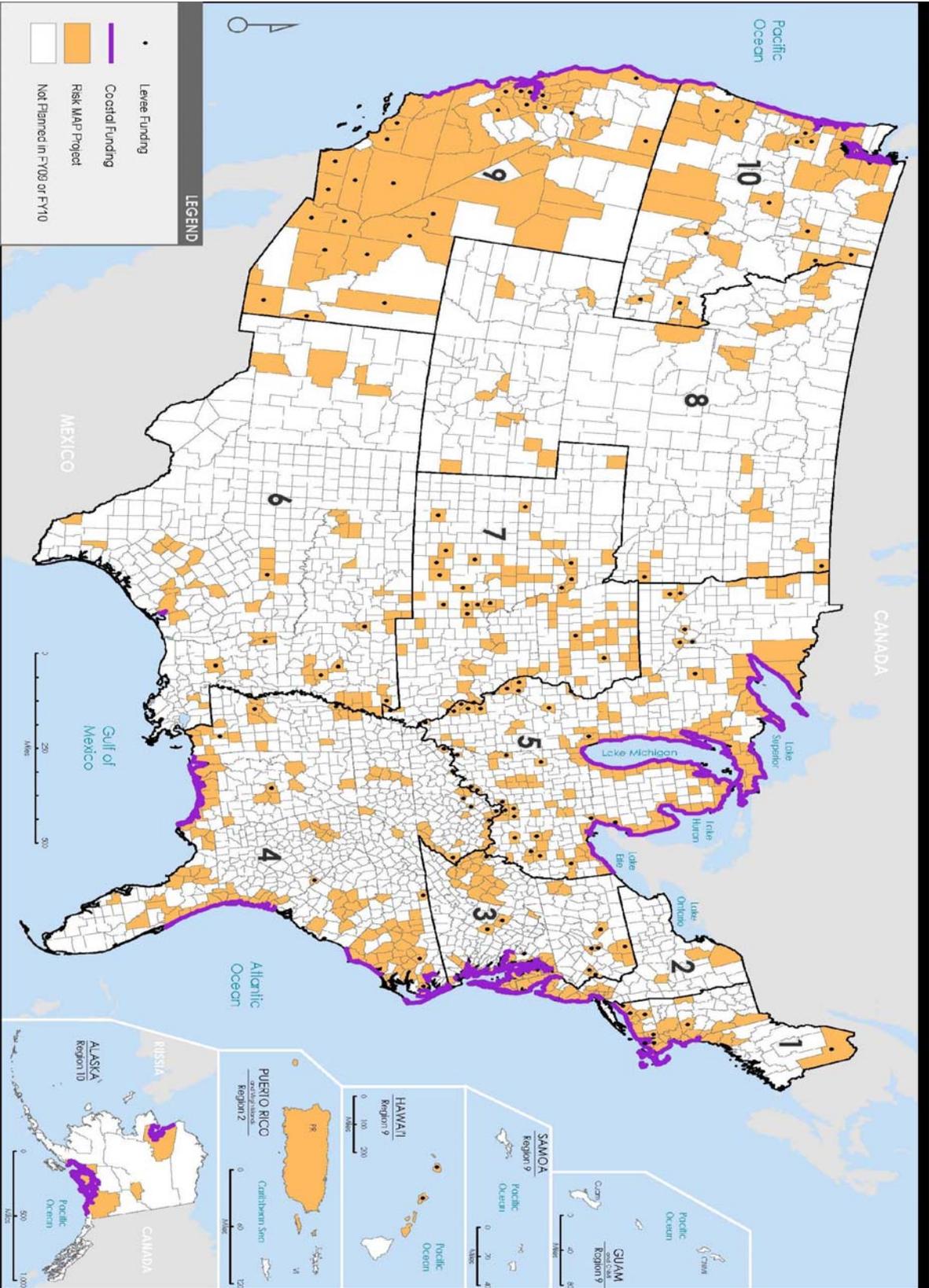
- Develop a refined, strategy-focused Mitigation Plan Review Process that meets the intent of the Stafford Act and 44 CFR Section 65.10 by leading communities to implement action to reduce their risk
- Develop the necessary tools to support the new Mitigation Plan Review Process that meet stakeholder needs and create efficiencies

VI. Appendices

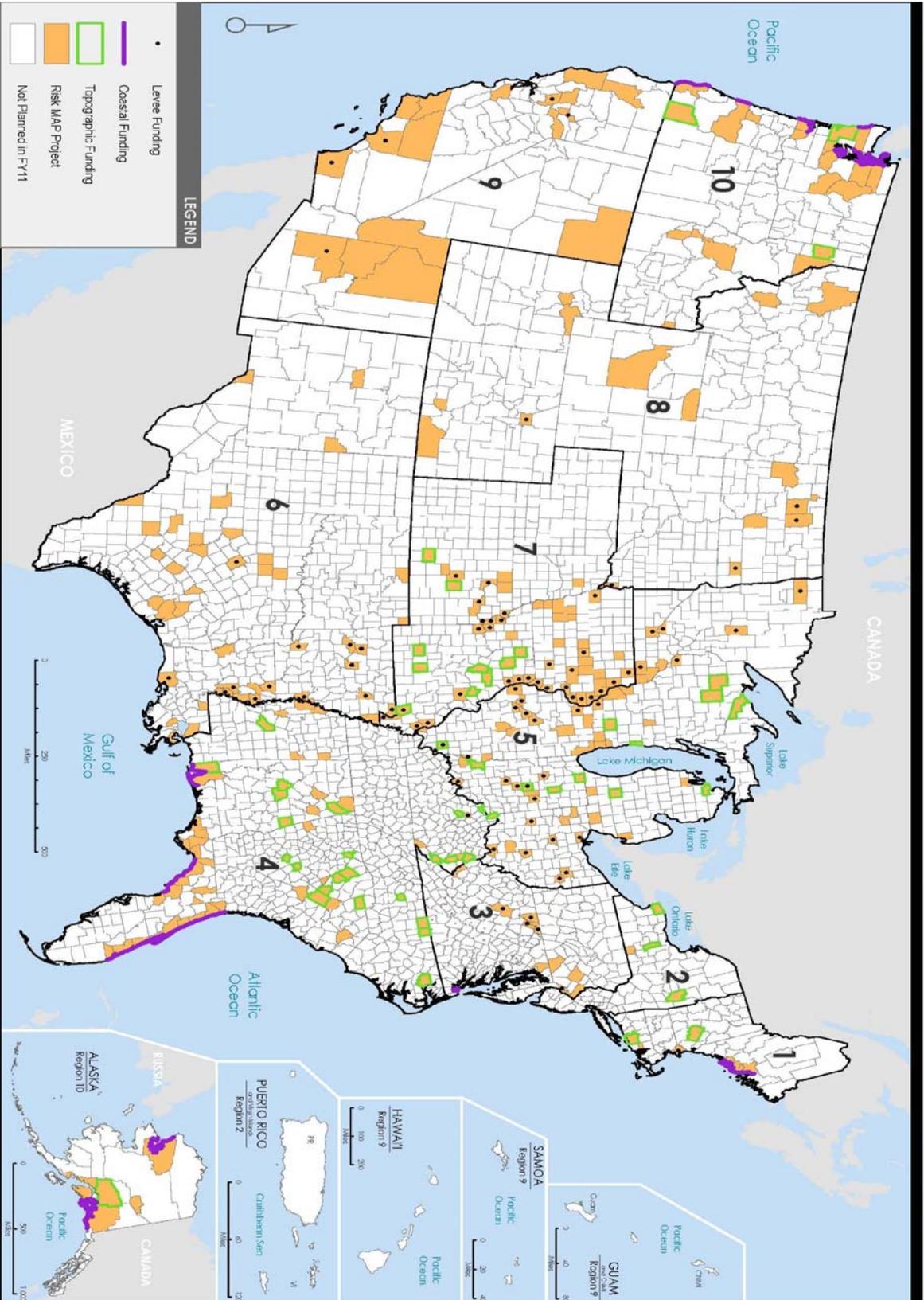
Appendix A: Map Graphic

This appendix contains two maps. Map 1 depicts Fiscal Year (FY) 2009- and FY 2010-funded Risk MAP Projects and highlights areas of coastal and levee engineering and mapping, and Map 2 depicts FY 2011 Planned Risk MAP projects. Specifically, Map 2 highlights the areas in which the Federal Emergency Management Agency's (FEMA's) plans to conduct studies in FY 2011 using this year's planned appropriated funds, based on the FY 2011 President's Budget. Planned Risk MAP projects include coastal studies, levee studies, and the acquisition of topographic data. The different study types are indicated on the map using unique symbology.

NATIONAL FLOOD INSURANCE PROGRAM
Risk MAP Coastal, Levee, or Riverine FY09 and FY10 Funding



NATIONAL FLOOD INSURANCE PROGRAM
 Risk MAP Coastal, Levee, Riverine, or Topo Planned FY11 Funding

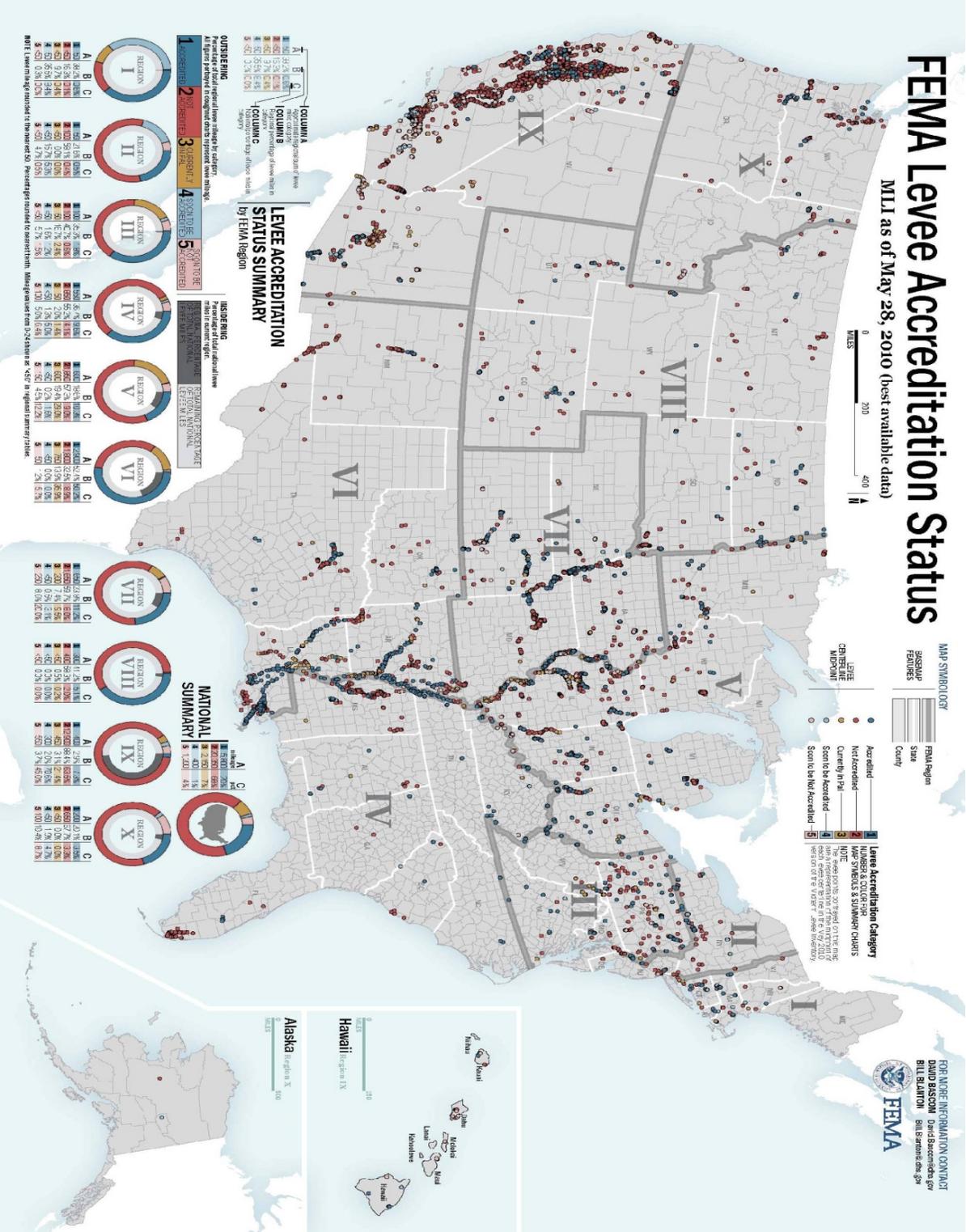


Appendix B: FEMA Levee Accreditation Status

This appendix contains a graphic representing the status of levee accreditation nationwide. Please note that the status of a levee system identified on this map solely reflects whether it has been demonstrated to satisfy the Federal Emergency Management Agency's (FEMA's) regulatory requirements for accreditation, and not how the system would perform during a flooding event. This is a snapshot, as of May 2010, of the dynamic and complex nature of determining and tracking whether a levee system satisfies FEMA's regulatory requirements for accreditation on an effective Digital Flood Insurance Rate Map.

FEMA Levee Accreditation Status

MLI as of May 28, 2010 (best available data)



MAP SYMBOLS

- FEMA Region
- State
- County

Levee Accreditation Category

- Accredited
- Not Accredited
- Currently in PA
- Score to be Accredited
- Score to be Not Accredited

Levee Accreditation Category Legend

- Accredited
- Not Accredited
- Currently in PA
- Score to be Accredited
- Score to be Not Accredited

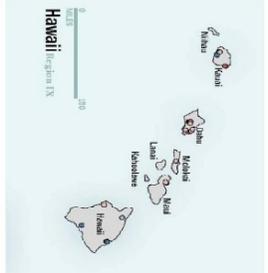
Levee Accreditation Category Legend

- Accredited
- Not Accredited
- Currently in PA
- Score to be Accredited
- Score to be Not Accredited

LEVEE ACCREDITATION STATUS SUMMARY

By FEMA Region

Region	Accredited	Not Accredited	Currently in PA	Score to be Accredited	Score to be Not Accredited
Region I	1,234	567	890	1,234	567
Region II	2,345	678	901	2,345	678
Region III	3,456	789	012	3,456	789
Region IV	4,567	890	123	4,567	890
Region V	5,678	901	234	5,678	901
Region VI	6,789	012	345	6,789	012
Region VII	7,890	123	456	7,890	123
Region VIII	8,901	234	567	8,901	234
Region IX	9,012	345	678	9,012	345
Region X	0,123	456	789	0,123	456
NATIONAL SUMMARY	12,345	6,789	1,234	12,345	6,789



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