Science Services - Project Report – May 2012
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On-Going Projects

Digital Coast – ASFPM is assisting NOAA in development of its Digital Coast website to improve coastal community access to data and decision support tools for addressing coastal hazards. This project also enhances ASFPM partnerships - ASFPM is part of a 6 NGO partnership that includes The Nature Conservancy (TNC), the Coastal States Organization (CSO), the National Association of Counties (NACo), the National State Geographic Information Council (NSGIC) and the American Planning Association (APA). This is the fifth year NOAA has funded this partnership effort. Involvement in this partnership has spawned several other funded projects the most significant being the NOAA Community Resiliency Project (described under active projects).

Coastal Flood Risk Awareness Course – ASFPM assisted Bob Freitag (University of Washington Institute for Hazard Mitigation Planning and Research) in the development and deployments of this course. The course development and three pilot deployments were funded by the National Disaster Preparedness Training Center in Hawai’i and has been approved by FEMA. This is a one-day awareness-level training course that enhances the participant’s ability to reduce coastal risks and enhance coastal benefits. The course includes No Adverse Impacts concepts.

Active Projects

Great Lakes Flood Hazard Mapping Outreach - FEMA is updating the Great Lakes Coastal Methodology and will be revising the FIRMs for the Great Lakes coastline. FEMA has asked ASFPM (Alan Lulloff) to serve on the Steering Committee and assist with outreach for this FEMA mapping. The project will enhance our understanding coastal hazard analysis and mapping and will help ensure State and local governments are informed and involved throughout the mapping process. This is the second year of a four to five year initiative.

FEMA Risk MAP Outreach Support – ASFPM is developing mechanisms to help the community floodplain manager use digital FIRMs and GIS technology to improve community resiliency. The objective is to assist communities in providing effective input during the mapping process by understanding how communities provide that input, access and exchange the datasets and engineering models between the State and FEMA during the mapping process. The Polis Center (Indiana/Perdue Univ.) in Indianapolis is assisting with local and state interviews and research objectives.

Floodplain Management Training (Mentoring) – ASFPM has developed a standard process to support State floodplain management programs in long-range strategic planning and annual work plan development. The effort was piloted in Kentucky and has since included Kansas and Texas.

NOAA Community Resiliency Project – Great Lakes GLRI ASFPM will lead the Digital Coast Partnership in working with coastal communities on the Great Lakes to improve community resiliency and build NAI into
community comprehensive planning efforts. Three major outcomes include: development of an Online Guide titled “Great Lakes Coastal Resilience Planning Guide; planning and delivery of a local workshop for presenting and evaluating the Planning Guide; and finally, development of a long-term regional training and outreach strategy for the Great Lakes. Partners include the Digital Coast Partnership of CSO, TNC, NaCO, NSGIC, and APA along with the University of Wisconsin – Madison Sea Grant Institute and Extension.

**Federal Impacts on the Nation’s Floodplains – Policy Matrix** - ASFPM is serving as the lead contractor in identifying federal programs that have a nexus to floodplain management. These programs are then analyzed to determine how they meet the goals of floodplain management, and identifies findings related to inter- and intra-program opportunities, barriers, conflicts and synergies.

**Development of a Dam Risk Reduction Strategy** - State and local floodplain managers (ASFPM members and others) need to better understand how dams affect floodplains and floodplain management. They need to know where to find information on dams that may impact their responsibilities and what steps they can take to ensure that their communities and States are aware of the hazards and prepared to deal with them. This project involves an analysis of the relationship of dams to the floodplain and will include recommendations on how to start integrating dams into floodplain management.

**New Projects – Planned for FY 2012**

**Floodplain Management Training (Mentoring)** – ASFPM has developed a standard process to support State floodplain management programs in long-range strategic planning and annual work plan development. In FY 2012 additional States will be involved.

**Great Lakes Flood Hazard Mapping Outreach** - FEMA is updating the Great Lakes Coastal Methodology and will be revising the FIRMs for the Great Lakes coastline. ASFPM is hosting a website for the project and assisting with outreach. This will be the third year of a four to five year initiative.

**Federal Impacts on the Nation’s Floodplains – NAI Policy Matrix – Phase 2** - ASFPM is identifying those specific practices, policies, and laws that support or inhibit implementation of NAI principles by the Federal government, and by States and local governments. Second year of funding.

**NAI Legal Workshops** – This project will standardize workshop materials and deployment methods for No Adverse Impact floodplain management legal workshops.

**Projects – Proposed – funding not yet available**

**Flood Model Validation proposal** – ASFPM would compare HAZUS flood damage estimates with NFIP claims, Individual Assurances claims and assessed values for user-defined structures (e.g. buildings). This project would be an expansion of the pilot project being conducted in Dane County, WI.

- Based on recommendations from NIBS/ABS from HAZUS FY08 Flood Model validation report
- Would partner with the POLIS Center
- Links with TNC Coastal Resilience project
- Links with WI Emergency Management and Dane Co., WI Emergency Management

It will provide clear technical guidance on strategies that communities and municipalities can implement by providing a planning framework to facilitate the integration of local projects with basin-scale objectives and institutions, help decision makers compare the full costs and benefits of various approaches to flood management, and describe approaches for overcoming common constraints to implementing natural resource-based solutions.

**Flood Hazard and Risk Data Management** - A web application would be developed to improve the public’s understanding of flood risk. The site would contain some basic data sets for floodplain managers and information on accessing other data useful for flood loss reduction and the protection of the natural and beneficial functions of the floodplain.

**NYSERDA Grant - Coastal Resilience – The Nature Conservancy** – This project expands the Long Island, NY project with TNC to additional portions of the Atlantic coast. The project is a socio-economic analysis as it relates to coastal resilience and sea level rise for the Atlantic coastline. ASFPM will be using HAZUS to estimate direct economic loss to buildings based on future SLR conditions and storm events. SLOSH model outputs combined with SLR are used to generate flood depth grids as the inputs to HAZUS.

**CNAI Workshops** – This project would involve enhancing the training materials and provide some core funding for deployment of Coastal No Adverse Impact workshops. In addition, we are working to involve other non-profits (e.g. TNC, NACo, NWF, ASWM) in our work shops.

**Climate Change** – This project would compile information on State and local adaptive management strategies related to climate change and provide a suite of strategies for State and local government.

**Flood Damage Data** - There is a need for comprehensive, accessible flood damage data - both historical and real time data collected immediately after flood events. This project would evaluate how to develop a systematic inventory of flood losses at a national level that is linked to the underlying geography. The system would provide mechanisms for public and private groups to contribute to the national inventory and subsequently benefit from the availability and accessibility of a standardized, comprehensive database designed to support flood policy evaluation, scientific analysis, disaster mitigation planning and emergency response.

**Completed Projects**

**FEMA EMI HAZUS/GIS Course for Floodplain Managers** - ASFPM is assisting FEMA in the development of an EMI approved training course - HAZUS and GIS applications for Floodplain Managers. ASFPM is working to ensure the training meets the needs of floodplain managers and objectively presents the benefits and limitations of HAZUS in flood risk reduction. This course would be based around and made available at EMI, the POLIS Center and other locations around the country. **Completed – April 2012**

**Coastal Resilience – The Nature Conservancy** – This project expands the Long Island, NY project with TNC to additional portions of the Atlantic coast. The project is a socio-economic analysis as it relates to coastal resilience and sea level rise for the Atlantic coastline. ASFPM will be using HAZUS to estimate direct economic loss to buildings based on future SLR conditions and storm events. SLOSH model outputs combined with SLR are used to generate flood depth grids as the inputs to HAZUS.

**Great Lakes Shoreline Oblique Photography and Analysis of Changes** – ASFPM will provide GIS technical support and web-mapping assistance associated with a project funded by the WI Coastal Management Program. A professor of geology at the University of Wisconsin will utilize oblique photography to evaluate coastal erosion hazards and inventory shore protection structures on Lake Superior. In addition to improving our understanding of...
coastal hazards, the project enhances our professional relationship with the University of Wisconsin. **Completed – April 2012**

**State of Montana – Opportunities for Strengthening Policies and Programs for the Protection of Natural Floodplain Functions and Resources** - ASFPM evaluated existing tools (laws, policies, programs, and practices) used for floodplain management and regulation in order to provide recommendations that the State of Montana and local governments could use to protect natural and beneficial floodplain functions. These tools were researched, reviewed, and evaluated regarding floodplains, compared to best management practices, “No Adverse Impact Floodplain Management,” and progressive programs from other states and local governments, and compared to Montana’s existing use of these tools. **Completed – July 2011**

**Floodplain Management 2010: State and Local Programs** – ASFPM has routinely published a national assessment of State and local government floodplain management in the United States. This 2010 update will include a comparison with the last assessment (2003) and develop a supporting database for long-term use in documenting States and local governments that have implemented higher floodplain management standards and No Adverse Impact (NAI) principles. **Completed – April 2011**

**Flood Hazard Mapping Appeals Evaluation** – ASFPM is developing a strategy to reduce appeals and disputes arising from the flood study and mapping process. The strategy will include improving the effectiveness of FEMA’s communications with State and local officials prior to and during the floodplain study and mapping process. ASFPM will be evaluating the appeals process and providing options for addressing contentious appeals. **Completed – April 2011**

**Floodplain Management Strategic Planning** – ASFPM is developed a standard process to support State floodplain management programs in long-range strategic planning and annual work plan development. ASFPM developed a collaborative strategic planning process between FEMA and States that compares flood risk and State capacity with performance and funding. **Completed – September 2010**

**HAZUS Comparative Analysis** – ASFPM is compared HAZUS flood damage estimates with NFIP claims from the June 2008 Flood Damages in Dane County, WI. This was a pilot project to compare HAZUS estimates with NFIP flood damage claims at the building/structure level. This project helped improve our understanding of importing local detailed building data to improve the accuracy of the flood damage estimates generated by HAZUS. **Completed – September 2010**

**Floodplain Management with No Adverse Impact in Coastal Zones and Adaptation to Climate Change and Climate Variability** – ASFPM has developed a Coastal No Adverse Impact Handbook (with funding from NOAA). **Completed - July 2010**

**Managing Coastal Hazard Risks in Wisconsin’s Changing Climate** – Conducted an evaluation of State coastal erosion regulations and recommended actions needed to limit infrastructure and development exposure to this hazard in a changing climate. **Completed – 2011**

**Map Mod Technical Support 2009 – Digital Transition – Digital Only** - ASFPM surveyed selected members to assess State and local capabilities to adopt and utilize digital FIRMs. Project summarized potential impacts of FEMA’s reducing its distribution of paper maps. **Completed – September 2009**

**HAZUS Validation FY09** – ASFPM evaluated HAZUS results using various levels of topographic data to generate depth grids and compare HAZUS methodology with traditional floodplain engineering methodology. **Completed – August 2009**
Coastal Resiliency and Sea Level Rise – ASFPM assisted The Nature Conservancy (TNC) in the evaluation of the socio-economic impacts of sea level rise and inundation on Long Island’s Atlantic coast. ASFPM provided flood damage estimates based on future SLR and storm events using HAZUS. **Completed – May 2009**

Wisconsin Great Lakes Shoreline Oblique Photography and Analysis of Changes – ASFPM provided GIS assistance to for a project that organized and analyzed oblique photography of Wisconsin’s Great Lakes Shoreline. **Completed – May 2009**

Map Mod Technical Support 2008 – Digital is Official - ASFPM canvassed States and members to determine if there are State regulations that would need to be modified to enable “digital to be official” and how the digital FIRMs can best meet State and local government needs. **Completed – April 2009**