

# Association of State Floodplain Managers

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## ASFPM Flood Science Center Project Summary June 2018



Compiled by ASFPM Flood Science Center Staff



## On-going Programs

**ASFPM Flood Mapping for the Nation** - ASFPM continues to use the cost estimates from this report to promote increased funding for flood hazard mapping. Completed in 2013, this internally-funded project developed an estimate of the total cost to complete the floodplain mapping of the country based on the parameters specified in the Biggert-Waters Flood Insurance Reform Act of 2012 and ASFPM's projection of what constitutes adequate flood mapping for the country. This estimate shows the initial cost to complete flood mapping for the nation ranges from \$4.5 billion to \$7.5 billion. These cost estimates are repeatedly being cited by members of Congress justifying the need for increased funding for flood hazard mapping. An update to the report is planned for 2018.

**NOAA Digital Coast Partnership** - ASFPM continues to partner with NOAA's Office for Coastal Management in development, evaluation and expansion 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 an eight NGO partnership that includes The Nature Conservancy, Coastal States Organization, National Association of Counties, National State Geographic Information Council, Urban Land Institute, National Estuarine Research Reserve Association and American Planning Association.

**National Flood Barrier Testing & Certification Program** - ASFPM in partnership with FM Approvals and the U.S. Army Corps of Engineers' National Nonstructural/Flood Proofing Committee have implemented a national program of testing and certifying flood barrier products used for flood proofing and flood fighting. This program currently tests barrier products in the categories of Temporary Flood Barriers, Closure Devices, Backwater Valves and Flood Mitigation Pumps. View the program website at <http://nationalfloodbarrier.org/>

**Legal No Adverse Impact Workshops** - Funded through FEMA, ASFPM continues to offer up to two legal workshops annually. FSC is working with Thomas Ruppert, Esq. Florida Sea Grant to integrate legal issues related to climate change, storm surge and coastal flooding into two NAI workshops tentatively scheduled for late summer 2018.

**State Coordinator Mentoring Program** - ASFPM has been working to develop and maintain a nationwide formal mentoring program targeted specifically to state floodplain managers. The program will build upon existing capability among state floodplain managers, ensure continuity as state floodplain management programs transition staff (especially small one-person operations), and provide a service to train new state floodplain managers using a mentoring-based approach. With the mentoring program going operational in early 2018, the FSC will transition from tool developer into an implementation/maintenance mode.

**CTP Support** - FEMA has funded ASFPM to help support Cooperating Technical Partners. The project involves documenting best practices and providing training via quarterly webinars. In conjunction with

this effort, a Mapping & Engineering Standards subcommittee has been established that focuses on CTPs. **Thuy Patton** with Colorado and **Carey Johnson** with Kentucky are co-chairs of this subcommittee. **Alan Lulloff** is on the FEMA CTP Community of Practice Steering Committee. ASFPM has been highlighting that the CTP program is just as much about building partnerships as it is about mapping SFHAs. Learn more at <https://www.floodsciencecenter.org/products/ctp-information-exchange/>

**ASFPM Flood Science Center Library** - The ASFPM library has grown significantly since 2010. There has been more than \$100,000 in investment from ASFPM, ASFPM Foundation, FEMA and project funds. In addition to curating a physical collection, ASFPM has invested into creating an online library using the cutting edge of library science. The foundation is providing resources for the creation of the ASFPM Library website, as well as providing resources for creating web content for donated collections of publications. The online ASFPM library, as well as the foundation special collections, can be found at <https://www.floodsciencecenter.org/flood-science-center/flood-science-resources/flood-resource-library/>

**Planning Information Exchange** - APA leads this FEMA-funded project with ASFPM playing a key partner role. The PIE hosts one webinar per quarter focusing on all hazards and primarily on mitigation planning, but also its connections with recovery planning and preparedness. Learn more at <https://www.planning.org/nationalcenters/hazards/planninginformationexchange/>

**Course 273: Managing Floodplain Development through the NFIP** - ASFPM has been funded by FEMA to manage the field deployment of this course. We have developed a cadre of instructors to support states interested in providing this training in their state.

#### **Active Projects**

**NOAA Digital Coast Fellow** - With funding from NOAA and ASFPM Foundation, ASFPM is partnering with the NOAA Office for Coastal Management and the Coastal States Organization to host a NOAA Digital Coast Fellow. The fellow is working to improve coastal flood risk management policy and practice in light of changing threats to coastal areas, using reports such as ASFPM's [Coastal No Adverse Impact \(CNAI\) Handbook](#) (2007) and the Foundation's [Holistic Coasts](#) report (2013) as a starting point. The fellow has conducted a review and synthesis of federal policies tied to coastal flood risk, composed case studies of coastal flood-risk management in Wisconsin, Florida, New York and Washington, and is now building on these previous analyses to provide guidelines for the development of a holistic approach to coastal zone management.

**Building Coastal Resilience through Capital Improvements Planning** - ASFPM is partnering with the American Planning Association on a NOAA grant to identify mainstream techniques that increase community resiliency by incorporating information from extreme weather events, climate hazards and changing ocean conditions into local or regional capital improvement plans.

**Great Lakes Coastal Flood Study Outreach** - FEMA is updating the Great Lakes Coastal Methodology and will be revising the FIRMs for the Great Lakes coastline. FEMA has funded ASFPM to assist with outreach and host a website associated with the project. Staff have been attending the workmap rollout meetings and providing guidance to communities to ensure they understand the new V Zones and the updated methodology. Meeting schedules and meeting materials have been posted to the website at <http://www.greatlakescoast.org>.

**NAI How-to Guides** - In furtherance of ASFPM's No Adverse Impact initiative, ASFPM has been developing a series of NAI How-to Guides. Funded by the ASFPM Foundation, these guides have been or are being developed for each of the building blocks in the [No Adverse Impact: A Toolkit for Common Sense Floodplain Management](#), and include:

- 1) Mitigation (completed in 2013);
- 2) Infrastructure (completed in 2013);
- 3) Planning (completed in 2015);
- 4) Education and Outreach (completed in 2015);
- 5) Regulations and Development Standards (completed in 2016);
- 6) Mapping and Hazard Identification (completed in 2017) and
- 7) Flood Warning and Response (under development).

**New Mapping Open House Participant Analysis** - Funded through the Office of the Flood Insurance Advocate, the Flood Science Center is working with OFIA staff to develop tools that will be used to collect information shared at FEMA mapping open houses, assess if property owners are being informed or notified of changing flood-risk status, and document what flood insurance inquiries or concerns they have.

**National Resilience Standards for Floodproofing (Barrier) Products** – Funded through the Department of Homeland Security Science and Technology's Flood APEX program, this project leverages a decade worth of effort to complete the development and utilization of national resilience standards for floodproofing (barrier) products (ANSI/FM Approvals 2510) and ASFPM's National Flood Barrier Testing & Certification Program (NFBTCP) by developing standards for sealants and semi-permanent barriers, get the ANSI/FM Approvals Standards socialized and incorporated into national codes, and widely publicize the standards and the NFBTCP among important user groups.

**Customer Experience Initiative Support** - Over the past 18 months, FEMA has been engaged in a wide-ranging effort to overhaul the NFIP. FEMA is moving to remove barriers to improve the overall customer experience delivery of the program. A critical customer is the local floodplain manager and the community's floodplain management program. The FSC is utilizing the 2016 Local Program Survey Data to provide information on trends, capabilities, needs and obstacles of local floodplain management programs. This information can assist in facilitating improvements in FEMA's Customer Experience Initiative.

**New FIRM Impacts on NFIP Policyholders** - In conjunction with the OFIA, FSC is assessing how flood insurance agents utilize newly-adopted FIRMs for insurance policy rating to new policy holders. This analysis aims to test the consistency and accuracy of policy rating provided by flood insurance agents following the implementation of newly adopted FIRMs. A report with recommendations to improve consistency to OFIA is forthcoming.

**Update of ASFPM's 1996 "*Addressing Your Community's Flood Problem, Elected Officials Guide*"** - The document will be updated and made available in a .pdf print ready format and a new alternative format: a web interface based upon the story mapping process. The update will modernize the content by incorporating NAI concepts, expand the explanation of natural and beneficial functions of floodplains, address programmatic changes impacting floodplain management, introducing considerations that adapt to changing climate conditions and are resilient against extreme events, and reference recent success stories from communities of varying sizes and locales.

**Strengthening Coastal Counties' Resilience: An Interactive, Multi-Modal Training Program for Local Governments** - This 3-year NOAA Coastal Resilience Grant, led by the National Association of Counties Research Foundation, with ASFPM and the Coastal States Organization as partners, will leverage the network of technical experts shared across organization memberships to improve communication between coastal management professionals and local elected officials. The program will also provide training resources designed to assist local leaders with accessing information, integrating identified recommendations and strategies into their planning processes, and implementing strategies and policies that will result in more resilient coastal county and state economies, safer communities and better stewardship of natural assets.

**Post-Disaster Compliance & Building Community Capability** – This project's objective is to research, consult and document current systems in place for substantial damage determinations where a community's capacity may be exceeded: 1) Volunteer local official cadre through state ASFPM chapter or other organization 2) EMAC and 3) HMTAP/FEMA contractor support and develop options for an optimized program that can maximize federal funds to leverage in-state capacity building. The approach will be to consult with stakeholders in the process through a scoping symposium (ASFPM chapter leaders, communities whose capacity has been exceeded, EMAC rep, FEMA); develop a white paper outlining pros and cons of each system of conducting these SD determinations where a community's capacity is exceeded; and develop a conceptual design report that includes options for a system that maximizes local capacity building.

**Improving Product Delivery Study** – The primary objective of this project is to better understand what format and delivery would be most useful from the perspective of the community officials who use the products to enforce floodplain management and communicate risk, as well as the policyholders and property owners who need to understand risk and consider mitigation options. To support this effort, ASFPM will conduct a study that researches and summarizes these perspectives. Of

note, this activity is not intended to analyze the technical components of the mapping process. Rather, it will focus on how the technical data is packaged and communicated to communities.

**Lending Outreach Communications Study** - In order to better identify concerns and successes in implementing the NFIP, ASFPM will conduct a study of lenders' interactions with property owners as they pertain to flood risk, flood mitigation, flood insurance coverage and claims. This study will collect empirical data to identify opportunities for increased collaboration between FEMA and lenders to create communications best practices.

**Effectiveness of the Regulatory Floodway Study** - ASFPM will review the current guidelines and policies associated with floodway mapping and managing development in mapped floodways and evaluate whether these procedures support efforts to responsibly manage development within the most hazardous part of the floodplain (i.e. with the fastest and deepest floodwaters). We will document any alternatives to current procedures that may better reflect the original intent of the regulatory floodway.

**Access to the Authoritative Flood Model** - The flood models associated with flood studies are valuable data needed for managing development in the SFHA. ASFPM is aware of a number of entities that provide access to flood models. ASFPM will document state and local authorities who provide access to flood engineering models and evaluate the potential of using the National Hydrography Dataset in conjunction with FEMA's Coordinated Needs Management Strategy (CNMS) data layer to index the engineering models and enable access.

**Historic Flood Documentation** - Funded by the ASFPM Foundation, this project is researching and will recommend a standardized approach for historic flood documentation in order to build or support the institutional memory of flood events and their aftermath. The Natural Hazard Center at UC Boulder will be a project partner and the flood documentation and approach will be guided by the *"Boulder Creek Flood Notebook"* created by Gilbert White.

**RiskMAP Support** - Document state and local authorities who provide access to flood engineering models and evaluate the potential of using the National Hydrography Dataset in conjunction with the FEMA CNMS data layer to index the engineering models and enable access.

**Integrating NAI and the Community, Health and Resource Management (CHARM) tools and training platform** - ASFPM and the Texas Community Watershed Partnership at Texas A&M University AgriLife Extension Service will work together to integrate their CHARM scenario planning platform ([www.communitycharm.org](http://www.communitycharm.org)) with ASFPM's NAI approach. The project team is working with the Florida Floodplain Management Association to host two NAI/CHARM workshops in late summer 2018. TCWP has received additional funding through the NOAA SARP program that will support two additional workshops in 2019.



## Project Proposals

*FSC has submitted the following proposals (funding not yet available):*

**CRS for Community Resilience (a.k.a. CRS Green Guide)** - ASFPM continues to partner with the Coastal States Organization in an ongoing effort to fund the CRS Green Guide website, workshops and training proposal focused on transferring the CRS Green Guide resources to the Gulf of Mexico, has been submitted earlier this year in March to the Climate Resilience Fund 2018 Coordination and Collaboration in the Resilience Ecosystem program.

## Recently Completed Projects

**Update of Floodplain Management: State Programs** - ASFPM last updated the State Floodplain Management Programs report in 2010. This project is updating the status of state level floodplain management in the United States as of 2017. In partnership with the University of Colorado's Natural Hazards Center, ASFPM developed and administered an electronic survey to the state NFIP coordinator for every U.S. state and territory based on survey instruments used in past years. Survey data was analyzed by the Natural Hazards Center. A report on the findings of this effort is forthcoming. ASFPM will maintain the data collected through this project in a database for long-term use in establishing how states can assist communities to utilize increasingly effective approaches [e.g. No Adverse Impact]. **Completed –2018**

**Floodplain Management Professionals Survey of Flood Insurance Successes and Concerns** - To identify concerns and successes in implementing the NFIP, floodplain management or similar professions were canvassed about their professional experience in floodplain management. This canvass was conducted using a digital questionnaire and developed in conjunction with the OFIA's staff. The questionnaire was designed to gather information on three flood insurance related topics: mapping, outreach and respondent's experiences. The questionnaire was administered at the 2017 ASFPM annual conference in Kansas City. FSC will implement, review and summarize the results in a report to the OFIA, identifying necessary clarifications or revisions to the survey and work with the OFIA to identify future implementation opportunities. **Completed - 2018**

**Social Vulnerability & Urban Flood Modeling** - Funded by the Argosy Foundation, FSC conducted research and analysis focused on modeling the social and economic costs for flood-risk reduction in urban areas. Social vulnerability indices were developed for Milwaukee County, Wisconsin and integrated with Hazus flood-damage estimates to move toward a more holistic approach of understanding all costs (direct and indirect) of flooding in a community. The results show a need for more complete urban flood mapping (i.e. moving beyond riverine only H&H models to include 2D models) and also show a need to better understand and include flood hazard specific indicators (e.g. % of population with flood insurance) within the demographic characteristics utilized in social vulnerability indices. **Completed - 2018**

**CRS for Community Resiliency (a.k.a. CRS Green Guide)** - ASFPM partnered with the Coastal States Organization on a National Fish & Wildlife Foundation Hurricane Sandy Coastal Resiliency Grant related to the CRS program. The overall goal of the project was to increase the number of communities making voluntary, effective measures to increase coastal resiliency and take steps to make flood insurance affordable. The "CRS for Community Resilience" website (a.k.a. CRS Green Guide) was launched in June 2017 to help promote CRS participation and provide guidance on nature-based or green activities that increase a community's rating. ASFPM and CSO worked directly with communities in Ohio and Rhode Island to increase their resiliency through the CRS program by hosting three workshops (one in Rhode Island and two in Ohio) in September 2017. Additionally, a four-part webinar series based on the workshops was hosted for a national audience in late October and November, drawing more than 3,200 attendees. **Completed - 2017**

<https://www.floodsciencecenter.org/products/crs-community-resilience/>

**Building Community Resilience through Integrated Risk Modeling** - FSC worked with AECOM through HUD funding in partnership with NOAA OCM, APA and NACo to explore strategies to more effectively integrate mitigation planning into the larger community planning processes. The team identified and assessed available models, tools and methods that assess flood risk (likelihood and exposure) at a specific location and identified points of intervention where the relevant models, tools and methods can be integrated into the planning process. Pilot community workshops were held in San Luis Obispo County, California and Brevard County, Florida and a final "Resource Inventory Library" website was developed at <http://crrmlibrary.aecomonline.net/>. **Completed - 2017**

**K12 Education for Floodplain Management Gap Assessment** - Funded by the ASFPM Foundation, this project researched the state of current K-12 flood education nationally and identified and compiled a catalog of education programs, guidance and materials. Additionally, an evaluation of potential flood education gaps was conducted looking at the current practices, programs and materials. The gap evaluation results provide some specific focus areas to be used to develop future grant proposals aimed at creating new flood education programs, lessons or guidance. The K-12 resources can be found at <https://www.floodsciencecenter.org/products/k-12-flood-education/> **Completed - 2017**

**Great Lakes Coastal Resilience Planning Guide** - Funded through the Great Lakes Restoration Initiative, ASFPM and NOAA Office for Coastal Management lead the Digital Coast Partnership in working with coastal communities on the Great Lakes to improve community resilience through the comprehensive planning and management within coastal watersheds. The major outcome of the project was the development of peer-reviewed case studies and process-driven solutions and strategies delivered through a web-based guide titled "*Great Lakes Coastal Resilience Planning Guide*." FSC continues to maintain the "Planning Guide," adding events, funding and social media feeds relevant to coastal resilience in the Great Lakes. <http://greatlakesresilience.org/> **Completed - 2017**



**Naturally Resilient Communities** - The Nature Conservancy funded ASFPM to help develop a siting guide and case studies for the mainstreaming of natural infrastructure to address coastal and riverine flooding. <http://nrcsolutions.org/> **Completed 2017**

**Wisconsin Shoreline Inventory and Oblique Photo Viewer** - Using Wisconsin Coastal Management Program funding, ASFPM was able to update the Wisconsin Shoreline Oblique Photo Viewer originally produced in 2009. In addition to an entire new codebase for the application, 11,600 new photos of Lake Michigan and Lake Superior shoreline were added from a WCMP-funded flight mission by the Civil Air Patrol in spring 2017. Additional photos added include a small batch of 2016 oblique photos flown by Dr. Mickelson and all the 2012 oblique photos taken by the USACE for the Great Lakes Coastal Flood Study. <http://floodatlas.org/wcmp/obliqueviewer/> **Completed - 2017**

**Flood Science Center Website** - ASFPM staff were pleased to launch the new FSC website in April 2017 to complement our rebranding (formerly Science Services). The new website contains a comprehensive list of all the projects we have completed and are currently working on. New FSC products will be produced in the design templates created during this development. Most importantly, the new FSC website is the template for the future new floods.org, so a lot of time and effort went into making sure the needs were met for not only our projects, but also the future floods.org website. <https://www.floodsciencecenter.org> **Launched - 2017**

**National Flood Mitigation & Floodproofing Workshop** - The workshop was held Aug. 14-17, 2017 in New Jersey and provided information on implementation of flood hazard mitigation actions that support the NFIP. The workshop presented up-to-date information on current mitigation techniques in the following categories: regulatory, planning, structural protection through retrofitting, floodproofing, etc. and risk communications that have been proven to be most effective for various situations at the local level. **Completed - 2017**

**Best Practices & Case Studies Compendium** - The project involved indexing and electronically archiving case studies and best practices. By making these case studies more usable and accessible, it is more likely that other communities across the nation will implement risk-reduction measures and fewer people will experience flood damage. Beyond local communities, regional, state or federal agencies along with academia could access these best practices and utilize to increase flood resilience through these examples. The completed compendium consists of case studies and best practices organized by topic as well as a fully searchable library. Learn more at <https://www.floodsciencecenter.org/products/best-practices-case-studies-compendium/> **Completed - 2017**