



**FEMA**  
Region III



# Using Flood Risk Products and Datasets to Increase Your Community's Resilience

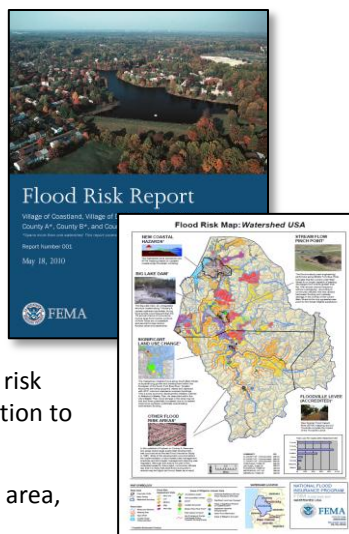
As part of its Risk Mapping, Assessment, and Planning (Risk MAP) program, FEMA works in cooperation with local communities to assess flood risks within a specific watershed or other area. During a Risk MAP project, FEMA prepares various Flood Risk Datasets and Products that enable communities to understand and visualize their flood risks. This helps communities identify, plan for, and initiate actions that increase their resilience from floods. The products for each community may vary based upon available data and other factors.

## Using Flood Risk Products to Increase Resilience

The **Flood Risk Report** provides communities with a summary of flood risk data so that they can understand and communicate the full extent of flood hazards both within and outside their municipal boundaries. This report enables community stakeholders to better plan their mitigation actions and to work with other communities facing the same hazard so that they can reduce collective risk. The report also serves as a guide to the Flood Risk Datasets by summarizing the flood risk information for each individual community within the project area. Used in conjunction with the Datasets, the Flood Risk Report provides communities with a comprehensive picture of flood risk within the project area and provides risk assessment information to incorporate into their planning and outreach efforts.

The **Flood Risk Map** depicts flood risk data within the project area, illustrating how flood hazards can be shared by multiple communities and that risk reduction activities, such as comprehensive mitigation planning, may have benefits beyond their immediate site.

The **Flood Risk Database** stores the project flood risk data, including the Flood Risk Datasets and the information in the Flood Risk Report and the Flood Risk Map. This wealth of data can be used to assess and communicate flood risk to a variety of end users, from home owners and business owners trying to understand insurance options to elected officials making budget decisions. Project data can be integrated with the community's own data to help emergency management agencies, zoning officials, and land use planners more fully understand flood risk. A comprehensive understanding of risk is important for identifying mitigation actions that will create a more resilient future for everyone in the community.



**Flood hazard** refers to naturally occurring or man-made flooding conditions that could cause harm. Special Flood Hazard Areas are shown on regulatory Flood Insurance Rate Maps.

**Flood risk** refers to the likelihood that someone or something will be harmed if the flood hazard occurs. Flood Risks are assessed in non-regulatory Flood Risk Datasets and Products.

**Flood Risk Datasets** are compilations of data gathered during the Risk MAP Project that are provided electronically to be used in other software applications, such as a Geographic Information System (GIS), to help communities assess their flood risks. The four flood risk dataset families are Changes Since Last FIRM, Flood Depth and Analysis Grids, Flood Risk Assessment, and Areas of Mitigation Interest.

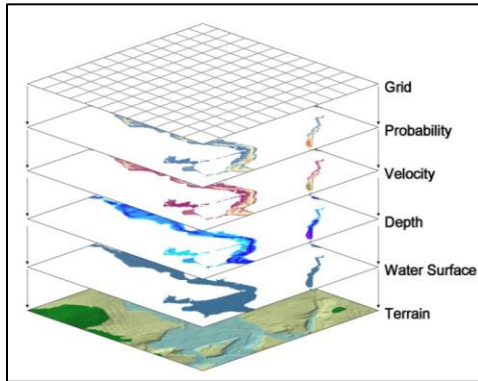
**Flood Risk Products** are created from the Flood Risk Datasets. The Flood Risk Report and Flood Risk Map provide an overview of flood risk in the project area. The Flood Risk Database contains all the data compiled during the project.

## Useful Resources in the FEMA Library at [www.fema.gov/resource-document-library](http://www.fema.gov/resource-document-library)

- Operating Guidance No. 3-11: Communicating Flood Risk with Risk MAP Datasets and Products
- Operating Guidance No. 6-11: User Guidance for Flood Risk Datasets and Products
- Integrating Hazard Mitigation Into Local Planning: Case Studies and Tools for Community Officials

## Using the Flood Risk Datasets to Increase Resilience

**Changes Since Last FIRM** (CSLF) is a powerful tool to help prepare for ordinance adoption, inform future land use decisions, and identify structures that may benefit from mitigation. CSLF captures areas where the flood hazard area and floodway have increased or decreased, as well as areas where the flood zone designation has changed. Where the mapped flood hazard has changed, the engineering factors that contributed to that change will be identified within the dataset, too. A summary of the built environment affected by the changes is provided to help communities locate areas newly at risk and notify property owners of the change.

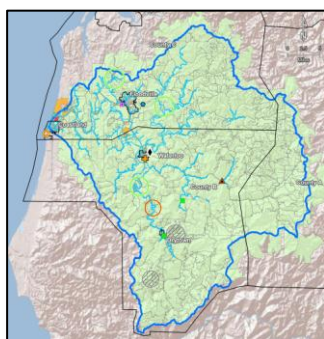
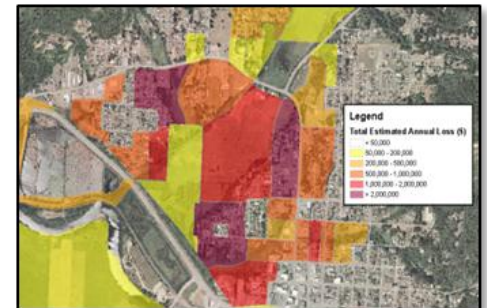


**Flood Depth and Analysis Grids** provide enhanced data to support mitigation projects where benefit-cost analysis is required. They also help emergency management agencies identify evacuation routes and prioritize more vulnerable areas. Floodplain administrators can use them to show homeowners the probability that flooding may occur during the life of an average mortgage and the benefits of purchasing flood insurance. Flood depths and analysis grids also help identify areas suitable for adoption of higher standards.

The Flood Depth and Analysis Grids dataset comprises a series of grids that provide the basis to communicate different elements of flood risk. Values represented within each cell in the grids may include: flood depth, percent annual chance probability, 30-year chance probability, water surface elevation change, and velocity.

Community members can more easily relate to these visual datasets than they can to the narrative and tabular data presented in the Flood Insurance Study. For example, seeing that the water could be 4 feet deep near one's house is generally easier to understand than learning that the adjacent base flood elevation is 548 feet above sea level.

**Flood Risk Assessments** help guide community mitigation efforts by highlighting areas where risk reduction actions may produce the highest return on investment. They provide an assessment of the potential financial consequences associated with structures located within the flood hazard area. Flood risk assessment data is also expressed as an annualized estimate of damages that, for example, a homeowner might expect to incur in any given year, if they are located within the flood hazard area. Where local built environment data is available, enhanced Hazus or other risk assessment analysis is possible. Communities are encouraged to pursue enhanced analysis by providing FEMA with additional GIS data such as parcel data, building footprints, elevation certificates, building assessment data, and location of essential and critical facilities. The results of Hazus analysis can be incorporated into hazard mitigation plans.



The **Areas of Mitigation Interest (AoMI)** dataset assists communities in determining specific actions to increase their resilience from floods. AoMI identifies currently planned mitigation activities as well as areas of potential future action. It encourages collaboration among communities within the project area by providing with them the basis to assess how various mitigation action scenarios can successfully reduce their collective flood risk.

**Hazus-MH** is a powerful risk assessment tool for analyzing potential losses from floods, hurricane winds and earthquakes, allowing communities to assess:

- Physical damages to residential/commercial buildings, schools, critical facilities, and infrastructure
- Economic losses, including lost jobs, business interruptions, repair and reconstruction costs; and
- Social impacts, including estimates of shelter requirements, displaced households, and population exposed to a series of flood events.

