8.0 Cost-Saving Processes, Procedures, and Tools

In conducting Map Modernization, cost-effectiveness means that more studies can be performed and more DFIRMs produced. However, only a limited number of FEMA contractors and partners are currently able to perform the required studies and produce the required DFIRMs at the necessary level of efficiency. Therefore, FEMA is making enhanced procedures, processes, and tools available to increase the efficiency of contractors and partners. These enhanced procedures, processes, and tools have the potential to reduce the total cost per study by as much as 50 percent and shorten study and mapping production schedules by as much as 25 percent.

Enhanced procedures, processes, and tools could reduce the cost per study by as much as 50 percent and shorten study and mapping schedules by as much as 25 percent.

After these enhancements are implemented and in widespread use, FEMA and the partners involved in administering this MHIP will be able to use the MHIP to meet cost-efficiency goals. The MHIP also can be used to make increasingly accurate estimates of future budget requirements. Savings resulting from the enhancements—particularly those related to administrative processing costs such as publication of base flood elevations (BFEs) and review and processing of Letters of Map Change (LOMCs)—can be used to create additional mapping products.

Subsections 8.1 through 8.7 describe the following cost-saving processes, procedures, and tools:

- Modification of FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* (the Guidelines) to enhance usability
- Use of FEMA's new data capture standards
- Provision of standardized study/mapping tools and procedures
- Posting of new or revised BFEs on the Web rather than in local newspapers for community and citizen review
- Provision of maintenance tools for map amendments and revisions (LOMCs)
- Clarification of NFIP regulations and policies governing the mapping process to allow digital flood maps to be used as effective maps
- Leveraging of FEMA's mapping partners' contributions

8.1 Modification of Guidelines and Specifications

The Guidelines, last updated in April 2003, guide the development of FEMA flood maps and reports. The current version of the Guidelines is more than 1,200 pages long and contains a mixture

of minimum standards/specifications for products as well as guidelines for attaining these minimum standards/specifications. The mixing of these two topics sometimes confuses partners, stakeholders, and users who consult the document.

To minimize confusion and thus enhance productivity, FEMA plans to divide the publication into two separate documents: one for standards/specifications and one for guidelines. To facilitate timely, cost-effective implementation of Map Modernization objectives, FEMA plans to modify the Guidelines in the following ways:

- Explain how the MIP will be used to manage, share, and communicate information
- Add an appendix to explain the MIP's functionality, features, roles and responsibilities, standards, and interoperability
- Add FEMA's new data capture standards, which already have been posted on the FEMA Website at http://www.fema.gov/fhm/dl_cgs.shtm, and cite in volumes 1 and 2 as appropriate

8.2 Use of Data-Capture Standards

FEMA's data-capture standards provide a consistent and standard framework for collecting, analyzing, storing, and retrieving reliable data for flood study or map revisions. This framework increases the efficiency of the study assessment process, makes the data more readily available for future users, and preserves the significant investment in the data.

The data-capture standards guide the collection and management of engineering deliverables created in the study/mapping process. The standards also provide the mechanism for populating the digital database used to create the enhanced DFIRM product. The data-capture standards reduce costs in the following ways:

- Protecting the original investment made in data creation and collection by mandating that data is kept in a standard digital format that is easy to access and update
- Making it possible for others to use data collected during any part of a study, providing it meets the standards (collecting data in a standard format and using standard data to create mapping product establishes a solid baseline for future floodplain analyses and updates)
- Enabling mapping partners to apply standardized ("smart") automated quality control (QC)checks in a Web-based environment at various points throughout the study/mapping process (QC checks provide rapid and consistent feedback to the mapping partner.)
- Providing a consistent nationwide methodology for collection of engineering data, allowing data to be collected, establishing an effective QC review, and ensuring accuracy

of information used in the study (reducing the number of changes encountered and time required to complete the study process)

- Facilitating the entry of data into a virtual library, thereby reducing the need for warehousing while allowing users to share the data via the Web

8.3 Provision of Digital Study/Mapping Process Tools

FEMA will provide digital tools via the MIP to contractors, mapping partners, and other users to improve data creation and quality assurance of engineering and mapping tasks, thereby facilitating consistent, predictable creation and maintenance of flood mapping products. The digital environment will help to uphold consistency nationwide and will reduce costs in the following ways:

- Digital tools add value to study creation and maintenance processes by standardizing the map production workflow and tasks through use of constant methodologies.
- Many tasks that otherwise would require long periods to perform will be automated, thereby greatly reducing labor hours.
- Digital tools that automate the study creation and verification process reduce the time required for review. In a fully implemented digital environment, less time will be required to gather hydrologic and hydraulic model-related data and to transfer data from one location to another.
- Future updates of studies and mapping will be simplified and more efficient.
- Working in concert with the standards, the digital tools will provide the basis for a virtual library of data, thereby decreasing the cost of data warehousing while increasing the accessibility of the data to end users.

8.4 Posting of BFEs on the Web

Posting BFEs on the Web will save an estimated $3 million during the 5 years following implementation.

Using a Web-posting tool, FEMA, FEMA's contractors, and mapping partners will create BFE notices and post them on the Web. Notices can be created for publication in the newspapers of affected communities, published in PDF and HTML formats on the study status pages of the Flood Hazard Mapping Web site (www.fema.gov/fhm/), and electronically archived.

The format and length of BFE notices eventually will be revised to enable the publishing of comprehensive, detailed notices on the Web, with shorter notices in both the affected communities' newspapers and the *Federal Register*. Posting BFEs on the Web rather than in local newspapers will increase pubic access to information and will save an estimated $3

million in newspaper publication costs during the 5 years following implementation. Additional savings may be realized through advance contact of newspapers in the areas to be mapped, introduction of the news release format, and provision of news releases in digital format.

8.5 Provision of Processing Tools for Map Amendments and Revisions

FEMA plans to provide "LOMCs on Demand," a tool for processing LOMCs. LOMCs on Demand will automate map maintenance business processes and provide Web-enabled processing of LOMCs. These new tools will reduce LOMC-associated processing costs by decreasing manual processing time.

The following features of LOMCs on Demand help to lessen processing time:

- Automated workflow will decrease lag time between processing steps in the LOMC process.
- Automated validating of LOMC submittals, enabled when appropriate, will result in reduced manual processing time.
- Process improvements, such as the acceptance of simple LOMCs, where feasible, will be accepted and automated determinations will be issued via the MIP, resulting in decreased processing time. Periodic audits will replace the current manual review process for simple LOMCs.

8.6 Use of Digital Maps as Effective Maps

FEMA, stakeholders at all levels (local, state, and Federal), and other map users can benefit now that GIS-generated flood hazard data has become an authoritative source of floodplain information for the NFIP purposes. FEMA will clarify its policies and the NFIP regulations to allow the use of GIS flood data as the authoritative, effective flood hazard data.

This change will not effect communities' ability to adopt and use paper maps. However, they also will be able to take advantage of GIS technologies without assuming additional risks under the NFIP. As the stakeholders who use the paper maps become more knowledgeable and proficient in the use of GIS technology, the demand for paper copies is expected to lessen, significantly decreasing program costs and making more program resources available for creation of flood hazard data and mapping.

8.7 Leveraging Mapping Partners' Contributions

FEMA's mapping partners, including local, state, regional, and other Federal agencies, often contribute resources to the development of flood maps. As noted in the discussions related to FEMA's four KPIs, FEMA measures "efforts leveraged" to avoid duplication of mapping efforts and to extend the value of Map Modernization dollars by increasing the mapping partners' capabilities to perform more of the work. Providing training and tools for mapping partners also will reduce the overall cost of map production.

FEMA can reduce costs when its mapping partners provide or assist with:

- Data collection
- Data maintenance
- Outreach and map adoption support