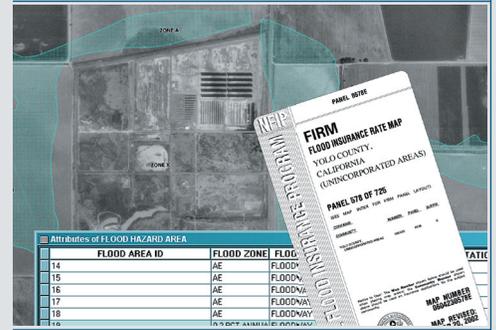


## DFIRM Tools

### GIS TOOLS FOR THE PRODUCTION OF DFIRMS



To transform the Nation's flood maps into a more accurate, easier-to-use, and readily available product, the Federal Emergency Management Agency (FEMA) has embarked on an aggressive campaign called Map Modernization. Part of Map Modernization includes promoting an efficient, quality-driven approach to Digital Flood Insurance Rate Map (DFIRM) and DFIRM database production. Users will be able to access production tools through a Citrix connection via the Multihazard Information Platform (MIP) Web site, [hazards.fema.gov](http://hazards.fema.gov). ESRI products, including ArcMap and the Production Line Tool Set (PLTS), form the foundation of this mapping solution, supported by several internally-developed ArcObjects-based production tools. This system reduces production time, promotes solidarity through a single system, and ensures data integrity.

FEMA's National Service Provider, called the Mapping On Demand (MOD) Team, has implemented two components of PLTS—the Job Tracking Extension (JTX), and Geographic Information System (GIS) Data Reviewer.

#### JOB TRACKING EXTENSION

JTX provides an environment which guides the mapping partner through the DFIRM creation process by laying out a best-practices workflow, launching appropriate GIS tools, and acting as a geodatabase version manager. Customized JTX functions have been developed by the

MOD Team to support complex version relationships and partner organizations.

#### GIS DATA REVIEWER

GIS Data Reviewer provides users with Quality Assurance/Quality Control tools for reviewing data and maps, as well as spatial and attribute validation checks. These MOD Team-defined validation checks will play a large role in ensuring that only FEMA-compliant data are created.

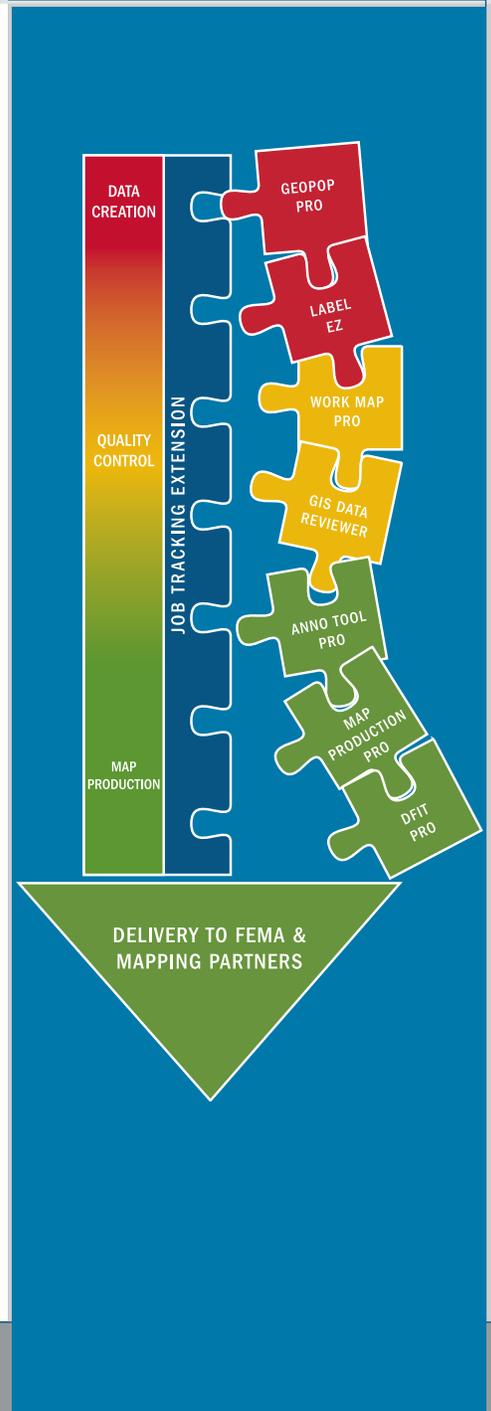
The MOD Team created several custom ArcMap extensions, such as Work Map Pro, GeoPop Pro, the DFIRM Index Tool (DFIT) Pro, and Map Production Pro, that will be launched from the JTX environment.

#### WORK MAP PRO

The Work Map Pro tool allows the user to effortlessly create singular or batch plots of engineering work maps while automatically rendering all standard DFIRM features and placing labels for most DFIRM feature classes. The Work Map Pro tool provides a visual way to validate feature attribution and position.

#### GEOPOP PRO

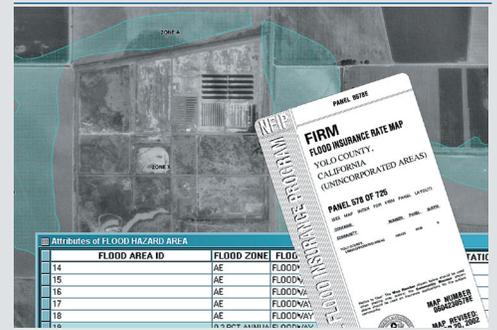
GeoPop Pro assists the flood mapping partner to create and edit topologically valid data while simultaneously ensuring database structure and content quality. As the user captures features, GeoPop Pro presents a series of intuitive forms



# MULTI-HAZARD FLOOD MAP MODERNIZATION

## DFIRM Tools

### GIS TOOLS FOR THE PRODUCTION OF DFIRMS



For more information, please visit the  
Multihazard Information Platform at  
[hazards.fema.gov](http://hazards.fema.gov).

that guide the user through the population of the necessary attributes, according to FEMA's DFIRM Database Specifications. These attribution dialogs use attribute domains and lookup tables to ensure data consistency and integrity. Tools are provided for repetitive data entry that allow mass population of features with "like" values. Furthermore, GeoPop Pro includes tools which auto generates several DFIRM-specific data layers, including the quadrangle index and map panel layout.

#### **DIGITAL FIRM INDEX TOOL (DFIT) PRO**

DFIT Pro assists users in the creation of a DFIRM Index. The tool renders, displays, and labels the data, as well as generates all required map surrounds, including the legend, title elements, Community Map Repository addresses, and community information tables. An additional function of DFIT Pro is the ability to automatically construct a map inset if there is an area that is particularly detailed.

#### **MAP PRODUCTION PRO**

Map Production Pro allows flood mapping partners to rapidly generate FEMA-compliant Flood Insurance Rate Map (FIRM) or Letter of Map Revision (LOMR) plots. When a user selects a map to plot, many complex automated tasks are performed transparently. For example, the data are rendered, a UTM or State Plane grid is applied and labeled, latitude

and longitude coordinates are calculated and placed at the corners of the panel neatline, and several other required notes and labels are placed in their respective locations. Another critical feature is that dynamic elements of the title, legend, and additional notes to users information are retrieved from the database, which ensures consistency between the database and the FIRM itself.

#### **OTHER MOD TEAM-DEVELOPED TOOLS**

Many other task-specific tools have been included to streamline and standardize the DFIRM production and DFIRM database creation process.

At the appropriate step in the workflow, annotation generation requests will be submitted to MapText's Label-EZ software, and the output will be stored according to mapping scale (1:24000, 1:12000, and 1:6000). This annotation will be added using the MOD Team's Map Production Pro at plot time. However, Annotation Tool Pro allows the mapping partner to add additional panel-specific notes that are not derived from the database.

A series of tools are available to help generate many of the deliverables which are required to be submitted to FEMA. This includes automatic FIRM panel and Index raster image geo-referencing, as well as an export utility to generate Shapefile, Interchange, and MIF file formats from the ArcSDE environment.

