

DRAFT
Map Modernization Plan for
The State of Ohio

Prepared by
The Ohio Department of Natural Resources
Division of Water
Columbus, Ohio

January 2004

DRAFT
Map Modernization State Business Plan for Ohio
January 2004

Background

FEMA has established a broad goal of modernizing flood hazard maps nationwide. To achieve this goal, FEMA has acknowledged that collaborative partnerships with state, regional, and local organizations will be necessary. Each state with interest and capability to assist with FEMA's multi-hazard flood map modernization effort is being asked to prepare a Business Plan detailing how the state and local mapping activities will contribute to FEMA's multi-hazard flood map modernization goals and objectives. Implementation of this Map Modernization effort will include the national business plan and regional business plans.

The Ohio Department of Natural Resources, Division of Water (Water) views the business plan as a decision-making tool for FEMA regions and headquarters to ensure that Map Modernization activities are efficient and consistent with FEMA's objectives which are as follows.

- Establish and maintain a premier data collection and delivery system
- Achieve effective program management
- Build and maintain mutually beneficial partnerships
- Expand and better inform the user community

FEMA has indicated they plan to implement Map Modernization through broad strategies of data collection and distribution, effective program/project management, partnerships, and outreach awareness. The business plan is a formal but flexible process for managing the partners, data, projects and outreach associated with updating the nation's flood hazard maps.

Because funding and staffing are limited, this modernization goal has been proposed as a five-year target. ODNR proposes to establish the framework for evaluating and prioritizing the flood map modernization needs of all eighty-eight Ohio counties consistently through this business plan.

Because of change that will result from infusion of GIS techniques to map making, it is anticipated that technical assistance will be needed from FEMA or other partners during Phase II of the business plan to determine the funding, production and resources to support the mapping projects in subsequent years.

Ohio's Map Modernization Vision

Water's vision for the Map Modernization initiative is to provide more accurate and complete flood hazard information for Ohio communities. This information will result in better decisions concerning the flood risk and development alternatives for flood hazard areas across Ohio. Ohio is participating in the Map Modernization initiative because we

have value to add to the process through establishment of priorities, technical assistance to communities, and our mandate to coordinate flood risk reduction for Ohio.

At the end of the Map Modernization initiative, all of Ohio's 88 counties will have an updated DFIRM, some with new detailed studies, some with approximate studies, and some with updated base mapping. In addition, Water will have the expertise and resources to assist Ohio's NFIP communities in assessing mapping needs, in providing mapping technical assistance, and in providing detailed and approximate digital map products. Water will be competent in digital map creation and will be capable of accepting and distributing DFIRM's and NFIP products.

The "Map Modernization Plan for The State of Ohio" prepared by Water in August 2002 provided a plan for addressing many of the mapping needs of the state. The goals of the plan were based on the GPRA performance measures suggested at that time. Water proposes to use the 2002 plan as a framework for discussions with FEMA to update the mapping needs to reflect the current state and FEMA goals for Map Modernization.

Implementation of the vision for Ohio's participation in Map Modernization will address FEMA's objectives through the following activities.

- **Establish and maintain a premier data collection and delivery system:**
 - Water will acquire hardware, software and technical training to accept and distribute modernized flood insurance products.
- **Achieve effective program management:**
 - Water will develop a continually improving system for the effective and efficient management of increased flood study and mapping activities. This will include processes for contract management, identification of matching funds, etc.
- **Build and maintain mutually beneficial partnerships:**
 - Water will explore and develop partnerships with federal and state agencies that share a common interest in mapping, data development, and GIS.
 - Partnership development will also include efforts to foster local communities as Cooperating Technical Partners (CTP).
 - Water will also explore a role in developing partnerships with private consultants through managing contracts to perform mapping activities.
- **Expand and better inform the user community:**
 - Water will conduct workshops on CTP activities and Map Modernization products.
 - Water will support a web feature for flood study information. This feature will track communities and CTP's involved in the process, study needs, project schedules, etc.

Ohio's Plan to Achieve Our Vision

The Division of Water plans to work toward being an active partner in flood hazard mapping by providing the following services, activities, and data as part of the Map Modernization initiative. The outline below represents our plan to achieve our Map Modernization vision.

- Business plan development
- Coalition and partnership development
- Sharing of data
- Mapping needs assessment
- CTP coordination
- Detailed and approximate mapping for limited stream reaches
- Management of a pilot project to complete mapping for one pilot county
- Map update activities
- Data repository

There are many current activities that Water will continue toward support of mapping efforts and FEMA can leverage these efforts toward the completion of additional maps. The following outlines describe these efforts along with the new efforts Water will undertake. In order to achieve our plan for map modernization in Ohio, the Division of Water will require resources from FEMA for additional staff, training, equipment and supplies. It will also take time for our staff to become proficient in the services and activities described above.

Current Activities and Resources

The following outline describes the aspects of the plan currently undertaken by Water.

1. Administration of Map Modernization Activities

- CAP Contract Management – Water currently coordinates National Flood Insurance Program activities for Ohio on behalf of the Director of the Department of Natural Resources through CAP. As part of this service, Water closely manages the CAP contract. This activity includes establishing the goals, activities, performance measures, and costs for the contract.
- Reporting and Tracking – Water closely tracks progress on all of the activities and their associated budget amounts. This also includes preparing detailed interim and final reports on contract progress.
- Water currently completes these activities throughout the year. Approximately 4 to 4.5 FTE's (Full Time Equivalent) support the work plan activities and 1 manager/supervisor FTE plans and tracks the activities.

2. Map Needs Assessment

- MNUSS Data Collection – Water has provided to the FEMA MCC input to the Mapping Needs Update Support System (MNUSS) database for approximately 150 Ohio communities. To accomplish this, Water reviewed

and completed MNUSS Data Worksheets for each community, solicited mapping needs information from counties and communities, reviewed available community-specific data, and assigned map upgrade methods and priorities to each county.

- Community Outreach – Efforts in community outreach have included participating in and facilitating community meetings, numerous education and outreach presentations, newsletter articles, and MNUSS worksheet distribution.
- Water completed the MNUSS data collection through over 1000 hours per the work plan. Current efforts for community outreach take about 100 hours per year.

3. CTP Coordination Process

- Scoping Participating Communities – Current efforts consist of directing interested communities to FEMA.
- Technical Assistance – Our current role is minimal, but we do provide technical assistance to communities for reviewing CTP activities, MOU templates, and outreach to notify communities of the CTP framework. This assistance is provided as requested.
- Water currently devotes about 200 hours throughout the year toward these activities.

4. Countywide Update Process

- Scoping Activities – We review ODNR files and discuss the restudy needs, available data, etc. with the communities.
- Visual Review – Water visually reviews updated maps for consistency in SFHA, political boundaries, and any restudy needs of which we are aware
- Ordinance Update Assistance – We assist communities with updating their ordinances to reflect the updated map and FIS data.
- Final Meeting Coordination – We participate in nearly all final meetings to explain the role of land use, maps and floodplain management. We have taken the role of meeting coordinator and facilitator when requested.
- These activities have consumed one FTE throughout the year. With increased map and FIS production, and the countywide focus, this activity is expected to require much more support.

5. Map/Data Maintenance Process

- Floodplain GIMS – This is a geographic information management system that has the ability to store and update database information, shape files, and coverages. Water currently tracks LOMC's in a database and is preparing to address annotated changes with new coverage or shape file data.
- FIRMS's and FIS's for all 88 Ohio counties have been scanned and are viewable through Application 1 of the Floodplain GIMS.
- A more detailed description of the system is included as Attachment #8 to this plan.

- Water devotes about two to three FTE's throughout the year in support of the Floodplain GIMS.

6. Detailed and Approximate Study DFIRM Production for Limited Stream Reaches

- Water is currently producing flood hazard maps for 15 communities through the Appalachian Flood Risk Reduction Initiative. These studies include field data collection for cross sections, developing H&H, and producing digital flood hazard maps.
- Water has devoted about 3.5 FTEs including engineering, surveying and GIS support to this project over the past two years.

Projected Activities and Resources

The following outline is a detailed listing of the services, activities and data Water will provide in support of the Map Modernization initiative. Water has researched many of these projected services and activities through previous efforts in developing the plans and Mapping Activity Statements (MAS) listed below. These documents are attached to this plan and they provide documentation and support for the following outline of activities.

1. August 2002 Map Modernization Plan for the State of Ohio
2. Draft CTP Partnership Agreement for Ohio
3. Draft MAS for Digital Flood Insurance Rate Maps, including a draft project charter for this activity
4. Draft MAS for Coordinating CTP Development and Monitoring in the State of Ohio
5. Draft MAS for Digital Flood Hazard Data Preparation
6. Management Plan for Engineering and Mapping Process
7. Draft Coalition Development Project Plan

Mapping and Support Activities

1. Administration of the mapping program through reporting and tracking of the CAP-MAP contract. This activity will be a continuation of our current efforts in managing the CAP grants. No additional staff or staff training are needed for this activity, however, we anticipate that current CAP management staff will devote an additional five hours per month to this activity.
2. Coalition and partnership development through identifying and developing cooperative agreements with federal, state and local agencies interested in hazards mapping. Over a period of one year, Water will identify and meet with all applicable agencies, and work toward agreements on MOU's for mapping partnerships. Attachment #7 provides a detailed description of this activity, the resources required, and the implementation timeline. This activity will be a new effort for Water and will require one additional FTE, training on coalition and MOU development, and computer and office equipment.
3. Sharing of data through making the following products available. Attachment #5 provides a detailed description of this activity and the data to be shared.

- a. 100-year Floodplain Boundary coverage by county
 - b. 500-year Floodplain Boundary coverage by county
 - c. Floodway Boundary coverage by county
 - d. Cross-section location coverage by county
 - e. Annotated Letter of Map Revision point-coverage by county
 - f. Metadata files describing the digital data
4. Mapping needs assessment through community outreach and MNUSS data collection. Attachment #4 provides a detailed description of this activity, the resources required and the implementation timeline. This activity will be a continuation of a previous effort by Water, so building of expertise in this area will not be needed. Water will need to hire an additional FTE as described in the attachment.
 5. CTP coordination through meetings with prospective CTP communities, development of CTP agreements, and monitoring of active agreements. Water will develop agreements with two counties per year in addition to conducting quarterly coordination meetings with all CTP's and other agencies. Attachment #4 provides a detailed description of this activity, the resources required and the implementation timeline. This activity is largely a new effort by Water, and will require building of expertise among the staff. Water will need to hire an additional FTE as described in the attachment.
 6. Detailed and approximate studies and mapping for limited stream reaches through topographic data development, hydrologic analysis, hydraulic analysis, floodplain mapping, base map acquisition and preparation, and DFIRM production. The tasks for projects in this activity are described in detail in Attachment #6. Water will conduct three to five limited studies per year to be selected from the priority counties. Average stream reaches for the studies will be about two miles. The specific studies will be identified with FEMA through the implementation of this plan. This activity will be a continuation of previous mapping efforts as part of the Appalachian Flood Risk Reduction Initiative completed by Water in recent years. However, Water may undertake some different methodology with this activity, so some expertise development in this area will be required. For this activity, Water will require funding for two engineering FTE's, one-half surveying FTE, and one FTE for GIS support.
 7. Management of a pilot project to complete mapping for one pilot county. This pilot will be undertaken with a FEMA or state contractor experienced in the flood study and map production process. Division staff will work with the contractor to determine the resources and skills necessary to undertake the role of mapping coordinator for the state. Attachment #3 provides a detailed description of this activity, the resources required, and the implementation timeline. This activity is a new effort by Water. The activity is designed to develop expertise in the mapping process and mapping project management. Water will need to hire an additional FTE for this project.

8. Map update activities for communities including visual review, ordinance update assistance, and final meeting coordination. Attachment #4 provides a detailed description of this activity, the resources required, and the implementation timeline. This activity will be a continuation of current efforts by Water, so building of expertise in this area will not be needed.
9. Data repository for mapping and NFIP products through Water's floodplain GIMS and web-based applications. This will be a new activity for Water and will require guidance from FEMA on how this will be developed and implemented. As part of this plan, FEMA will provide the necessary software and hardware systems, and training on their operation. The specifics on the system and its operation will be developed as part of the Map Modernization process. Water will also need to hire sufficient staff resources for the maintenance of this system.

Staffing, Resources, and Training Gap Between Current and Projected

Current Division of Water mapping and NFIP product related activities dedicate about six to seven FTE's in addition to resources for maintenance and development of flood hazard data in the floodplain GIMS. Water will leverage these resources along with FEMA Map Modernization resources, and the resources of other agency and local partners to produce the greatest number of map products possible. Water will rely on FEMA to fund about \$820,000 per year for our Map Modernization efforts. Please see the attached breakdown of costs per activity per year (Attachment #9).

Water will attempt to seek additional state funding for Map Modernization efforts in upcoming biennial budget proposals. Planning for the state Fiscal Years 2006/2007 biennial budget will begin in the spring of 2004. Recent guidance concerning budget preparation indicates that there will be very limited funds for new initiatives in the coming biennium. Water anticipates that funding to implement this plan above current efforts will have to come through FEMA.

Alternatives/Varying Funding Levels

The FEMA guidance for preparation of the business plan instructs states to provide an analysis of state participation given four levels of FEMA funding – full funding at 100%, medium funding at 2/3 of full, low funding at 1/3 of full, and state or locally funded. The activities and costs described above and in the attachments represent the full funding alternative. The other alternatives are listed below and in Attachment #9.

- Medium – At this level Water will eliminate the pilot project, the map update activities for the community, and the data repository for mapping and NFIP products.
- Low - At this level Water will further eliminate the mapping needs assessment activities, and cut in half the effort for the other activities.
- State/Local – with no FEMA participation, state efforts toward map modernization will continue as current.

Performance Measures - How Will We Know We Have Achieved Our Vision

Water has selected the following items as indicators of success for the Map Modernization initiative.

- Water will have completed discussions with all agencies toward developing MOU's for the sharing of data for flood hazards.
- Water will assist in the development of CTP agreements for two counties/local entities per year.
- Based on the results of the pilot county project, Water will develop a procedure to be the state mapping coordinator.
- Water will have the knowledge and skills necessary to be the mapping coordinator for Ohio.
- All maps (updates, new studies, etc.) identified as a result of the business plan will be completed within specified time periods.

As indicated in our Vision, achievement of these performance measures will address the following FEMA Map Modernization objectives.

- Establish and maintain a premier data collection and delivery system.
- Achieve effective program management.
- Build and maintain mutually beneficial partnerships.
- Expand and better inform the user community.