

Suwannee River Water Management District



FEMA Flood Map Modernization Program

5-Year Business Plan

FY 2004-2009

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Executive Summary

The Federal Emergency Management Agency's (FEMA) flood hazard maps are one of the essential tools for flood mitigation in the United States. Unfortunately, many of these maps have become outdated, especially in high growth and development areas including Florida. FEMA has established a broad goal of modernizing flood hazard maps nationwide.

As part of a Cooperating Technical Partner (CTP) Agreement with FEMA the Suwannee River Water Management District (SRWMD) has accepted delegation and the responsibility for the map modernization program for all of the area it governs within north central Florida. Fifteen counties including: Alachua, Baker, Bradford, Columbia, Dixie, Gilchrist, Hamilton, Jefferson, Lafayette, Levy, Madison, Putnam, Suwannee, Taylor, Union and 34 municipalities are partially or completely within the District's boundaries. The Levy County map modernization updates will be provided by the SRWMD; however, the SRWMD will coordinate closely with the Southwest Florida Water Management District (SWFWMD) on this project. At this time the portions of Baker and Putnam County in the SRWMD have not been included in the map modernization updates.

FEMA has requested that all partners participating in map modernization, including the SRWMD, produce a 5-year Business Plan detailing their approach to implementing the initiative and how the mapping activities will contribute to FEMA's multi-hazard flood map modernization goals and objectives.

The SRWMD vision for the Map Modernization initiative is to develop a District-wide program that provides more accurate and complete flood hazard information for counties and communities within the District. At the end of the Map Modernization process, all thirteen counties entirely in the SRWMD will have updated Digital Flood Insurance Rate Maps (DFIRMs) that incorporate new detailed studies, approximate studies and/or updated base mapping. With the updated DFIRMs and the District's ongoing emphasis on protection and acquisition of flood prone areas, the flood protection goals and the non-structural floodplain management strategy of the SRWMD will be achieved.

The SRWMD will facilitate the implementation of FEMA's Map Modernization Program through direct management and support of all-regulatory, engineering, and mapping activities within the District's area. The SRWMD is committed to developing a fully integrated floodplain management program that incorporates:

- mapping needs assessments,
- project scoping,
- hydrologic and hydraulic modeling,
- floodplain delineation,
- an internal QA/QC program for all aspects of the program,
- DFIRM production,
- post preliminary DFIRM processing and
- long-term map maintenance.

The results of these efforts will be an ongoing program that allows for timely updates and more accurate and current floodplain maps. This will be accomplished primarily through the use of qualified contractors retained and overseen by the District.

For its management plan to be effectively implemented, the District will need the full support and involvement of all user communities, including local governments. To ensure the full engagement of its partners, the District will commit significant resources to manage stakeholder expectations through up front coordination, outreach, and customer service. Based upon our preliminary assessment, we anticipate that our current IT system will require minimal upgrades to maintain and deliver the product, and that the resources required to maintain the IT system either currently exist within the District or will be made available as needed during program development and implementation.

The proposed project plan for the SRWMD is submitted based upon three funding scenarios: high, medium and low funded options. The District is committing to a 25% match of project funding, through a combination of non-FEMA funded in-kind staff services and expenses, cash outlay and existing engineering and mapping data from the local communities.

The costs associated with map production for the high funding option reflect a more robust outreach program associated with each DFIRM project. This option also reflects a more extensive development and refinement of SFHAs through modeling and re-delineation of floodplains on updated topographic data. The total cost for the FY 04 to FY 09 timeframe associated with the high funding option scenario is approximately \$8.02 million. These project costs could increase in future years, if the detailed scoping phases result in more hydrologic and hydraulic analyses, and if FEMA decides on newer coastal study methodologies.

The cost associated with the middle funding option also reflects development and refinement of SFHAs through modeling and re-delineation of floodplains on updated topographic data. However, stream miles identified for re-study and/or re-delineation has been reduced from the assumptions reflected in the High Funding Option Scenario. The total cost associated with the middle funding option scenario is approximately \$6.45 million.

The costs associated with the low funding option reflect a very basic outreach effort and no upgrades to the SFHAs, other than incorporation of existing Letter of Map Changes (LOMCs). The FIRMs will be upgraded with new base maps and converted to a digital product that meets the DFIRM database specifications. Also, the total panel count has been reduced from 992 panels in the Middle Funding Option to 824 panels by utilizing 1:2000 panel scale panels in selected areas. The total cost associated with the low funding option scenario is approximately \$4.05 million.

The SRWMD has developed the 5-year DFIRM project implementation plan so that FEMA's Government Performance Rating Assessment (GPRA) goals are met or exceeded. At present FEMA has identified the following four GPRA goals:

- Goal 1: District population (by counties) with digital GIS flood data on line;
- Goal 2: District population (by counties) with adopted final flood maps;
- Goal 3: Percent leveraged effort toward digital GIS flood data; and

- Goal 4: Allocation percentages of funding through to state and local CTPs.

FEMA's criteria for Goals 1 and 2 are based on percentage of total population required to meet the metrics by the end of each Fiscal Year, which ends on September 30th.

GPRA GOAL #1 ASSESSMENT

<u>Fiscal Year</u>	<u>District Plan</u>	<u>FEMA Goal</u>
2004	49%	20%
2005	56%	50%
2006	77%	65%
2007	84%	75%
2008	91%	85%
2009	100%	97%

The GPRA Goal #2 is associated with the Counties' adoption of the new DFIRM products. Adoption of new DFIRMs by communities usually takes about twelve (12) months after the Preliminary DFIRMs have been completed and sent to the communities for review.

GPRA GOAL #2 ASSESSMENT

<u>Fiscal Year</u>	<u>District Plan</u>	<u>FEMA Goal</u>
2004	0%	10%
2005	49%	20%
2006	56%	35%
2007	77%	50%
2008	84%	70%
2009	91%	90%

The District's leverage (GPRA Goal #3) will be accomplished through a combination of local match and District match.

LEVERAGE GOAL

<u>Funding Option</u>	<u>FEMA Contribution</u>	<u>Local Leverage</u>	<u>District Leverage</u>	<u>% Leverage</u>
High	\$8,019,600	\$542,930	\$1,461,970	25%
Medium	\$6,446,000	\$542,930	\$1,068,570	25%
Low	\$4,045,000	\$542,930	\$468,320	25%

FEMA's Goal #4 of allocating percentages to Cooperating Technical Partners (CTP) will be met since all the Map Modernization activities in the SRWMD will be funded through the District and performed by the District and its contractor.

For the proposed plan, the SRWMD is requesting Map Modernization Funding from FEMA based upon the High Funding Option. In addition to the funding requirements for the DFIRM projects that are necessary for FEMA to meet the metrics of their GPRA Goals, the District is also proposing funding for map maintenance activities.

The SRWMD has developed a fully integrated program that will require a total of \$8,118,600 of funding for fiscal years 2004 through 2009 based on the High Funding Option scenario. The SRWMD integrated program includes the mapping and engineering associated with production of DFIRMs and map maintenance activities.

**PROJECTED FY 2004-2009 SRWMD
FEMA MAP MODERNIZATION MAP PRODUCTION FUNDING REQUEST
HIGH FUNDING OPTION**

FY	*DFIRM Production Cost	MT-1 Costs & Map Maintenance Updates	Total Map Modernization Map Production Funding Request
2004	\$1,322,600	\$16,500	\$1,339,100
2005	\$1,305,000	\$16,500	\$1,321,500
2006	\$1,357,000	\$16,500	\$1,373,500
2007	\$1,165,000	\$16,500	\$1,181,500
2008	\$2,570,000	\$16,500	\$2,586,500
2009		\$316,500	\$316,500
Total	\$7,719,600	\$399,000	\$8,118,600

*Mapping & Engineering

Program Management –Map Modernization Management Support (MMMS)

The SRWMD has developed a fully integrated MMMS program that will require a total of \$1,151,563 of funding for fiscal years 2004 through 2009. The SRWMD MMMS program includes the IT management and storage activities, public outreach, and program management functions.

**PROJECTED FY 2004-2009 SRWMD
FEMA MMMS FUNDING REQUEST**

FY	IT Management System	**Program Management	Total FEMA MMMS Funding Requirements
2004	\$30,000	\$151,000	\$181,000
2005	\$20,000	\$175,500	\$195,500
2006	*TBD	\$182,520	\$182,520
2007	*TBD	\$189,820	\$189,820
2008	*TBD	\$197,413	\$197,413
2009	*TBD	\$205,310	\$205,310
Total	\$50,000	\$1,101,563	\$1,151,563

*To be determined with annual business plan updates.

**Adjusted annually for 4% inflation.

Chapter 1 INTRODUCTION

1.1 Background

The Federal Emergency Management Agency's (FEMA) flood hazard maps are one of the essential tools for flood mitigation in the United States. Unfortunately, many of these maps have become outdated, especially in high growth and development areas including Florida. 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.

As part of a cooperating Technical Partner (CTP) Agreement with FEMA the Suwannee River Water Management District (SRWMD) has accepted delegation and the responsibility for the map modernization program for all of the area it governs within the north-central portion of Florida. Fifteen counties including: Alachua, Baker, Bradford, Columbia, Dixie, Gilchrist, Hamilton, Jefferson, Lafayette, Levy, Madison, Putnam, Suwannee, Taylor, Union and 34 municipalities are partially or completely within the District's boundaries. The Levy County map modernization updates will be provided by the SRWMD; however, the SRWMD will coordinate closely with the Southwest Florida Water Management District (SWFWMD) on this project. At this time the portions of Baker and Putnam County in the SRWMD have not been included in the map modernization updates. The SRWMD along with several of the municipalities are FEMA Cooperating Technical Partners (CTP).

FEMA has requested that all map modernization participating partners, including the SRWMD, produce a 5-year Business Plan detailing how the mapping activities will contribute to FEMA's multi-hazard flood map modernization goals and objectives. The broad objectives of the nationwide map modernization effort are stated by FEMA 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

Some of these objectives will be met on a national level by FEMA, its contractors and other Federal partners. Other objectives and programmatic functions will be met through partnerships at the State/local and regional level. In the previous federal fiscal year, map modernization efforts were focused mostly on defining needs and prioritizing areas for new flood hazard data and updated flood maps.

Purpose

The purpose of the SRWMD Business Plan is to:

- Outline the District's vision for map modernization that recognizes the District's responsibility for flood protection and related water resources benefits;
- Outline a strategy to achieve that vision;
- Describe existing data, data sources and existing programs that support map modernization;
- Describe the role of the District and others in supporting map modernization in SRWMD during the next 5 years;
- Set realistic goals and measures of performance; and
Analyze alternatives for various funding scenarios

Chapter 2

VISION FOR SUPPORTING MULTI-HAZARD FLOOD MAP MODERNIZATION

2.1 SRWMD Vision

The Suwannee River Water Management District was created by the Florida Legislature with the passage of the Water Resources Act of 1972, codified in Chapter 373 of the Florida Statutes. The District covers over 7,600 square miles of north central Florida. Fifteen counties including: Alachua, Baker, Bradford, Columbia, Dixie, Gilchrist, Hamilton, Jefferson, Lafayette, Levy, Madison, Putnam, Suwannee, Taylor, Union and 34 municipalities are partially or completely within the District’s boundaries. A listing of the Counties, population and flood insurance policy holders is shown in Table 2-1.

**Table 2-1
SRWMD Counties Population and Flood Insurance Policies**

County	Population	# of Policies
Alachua	223,578	1560
Bradford	26,928	299
Columbia	60,244	447
Dixie	13,982	621
Gilchrist	15,633	203
Hamilton	13,917	43
Jefferson	14,037	50
Lafayette	7,333	162
Levy	36,270	1332
Madison	18,766	68
Suwannee	36,695	386
Taylor	19,415	603
Union	14,002	11

2.1.1 Flood Protection Goals

The mission of the SRWMD is to implement the provisions of Chapter 373, Water Resources, Florida Statutes, to ensure the continued welfare of the residents and natural systems of north central Florida. Two of the major goals of the District are to minimize harm from flooding and to enhance public awareness, understanding and participation in water resource management.

Per Florida Administrative Code 62-40.458, Floodplain Protection, related District objectives are:

- Coordination with local, State and Federal governments;

- Pursue development of adequate floodplain protection information including flood level data;
- Jointly develop programs to acquire, protect and enhance floodplain functions and associated natural systems;
- Minimize incompatible activities; and
- Provide available floodplain delineation information.

The District operates under a nonstructural floodplain management policy adopted in 1979¹. The policy was adopted to avoid the expense of constructing and maintaining flood control works as well as the environmental damage caused by such works. The nonstructural flood protection strategy is founded on accurate floodplain delineation and has been implemented through the following primary program activities:

- Mapping and modeling the floodplains and regulatory floodways of the five major rivers and tributaries;
- Regulating fill and development activity within designated regulatory floodways and floodplains;
- Acquiring and managing lands for floodwater storage, conveyance, and other conservation objectives;
- Assisting local governments with floodplain management responsibilities such as land use planning, development regulation, restoration activities, and public education and outreach;
- Providing Geographic Information System (GIS) data, technical assistance, and leadership within the region;
- Providing technical and funding assistance to local governments in addressing flooding and stormwater management problems.

The key elements of the nonstructural floodplain management policy have been very successful to date in reducing and eliminating environmental harm and the threat of flood damage. These key elements are regulations, land acquisition, GIS development, and public outreach and assistance.

2.1.2 District Water Management Regulations for Flood Protection

District regulations currently prohibit activities that diminish floodwater conveyance in designated Works of the District Rivers using an innovative approach to implementing the authorities granted under Chapter 373, Florida Statutes. Instead of constructing physical works to address flood hazards, the District's program reserves from use that land area necessary to convey the highest velocity flood waters from a 100-year flood event. In addition, District stormwater management regulations require use of the 100-year critical duration storm event as the primary engineering and design criterion for stormwater management facilities.

¹ The District Water Management Plan 2000 describes the nonstructural flood protection policy and the approach used to be District to implement the policy. This Plan is currently scheduled for review and revision in 2004-2005.

The second component of the District's non-structural floodplain management strategy is land acquisition and management. Through the Save our Rivers and Preservation 2000 programs, the District has acquired over 100,000 acres of land, most of which lies within the 100-year floodplain of the Suwannee River and its tributaries.

2.1.3 District and Other Public Conservation Lands

One of the major objectives of the District is to promote non-structural approaches to achieve flood protection and to protect and restore the natural features and functions of the 100-year floodplain. To that end, the District has undertaken acquisition of floodplain areas for the major rivers and natural storage areas throughout the District. Public ownership in perpetuity of these flood hazard areas assures the ability to retain and attenuate floodwaters, precludes inappropriate development or use of the flood hazard areas, and protects important environmental features of the lands.

The District acquires and manages lands for water management purposes, as authorized and directed by Chapter 373, Part V, Florida Statutes. Since 1983, the acquisition priority has been the voluntary sale of lands within the 100-year floodplain of the Suwannee River and its tributaries, and the floodplains of other rivers in the District. To date, the District has protected over 328,000 acres of land, most of which is floodplains, flood prone, hazardous, and/or environmentally sensitive. Figure 2-1, shows the public conservation lands in the District.

The public, through the District, is the single largest landowner of land along the Suwannee River and its tributaries. Most all land tracts of significance has been acquired; current and future land acquisition priorities target in holdings, adjacent lands, and lands that enhance or improve the management of current holdings. Future priorities will also target specific areas to mitigate past flood damage and prevent inappropriate use or development of flood hazard areas.

Modernized flood hazard maps that use more detailed and accurate information are essential to the District's continued future success in its land acquisition and management program. The updated and revised maps resulting from this project will allow the District to identify and target the most important flood hazard areas for public ownership and management.

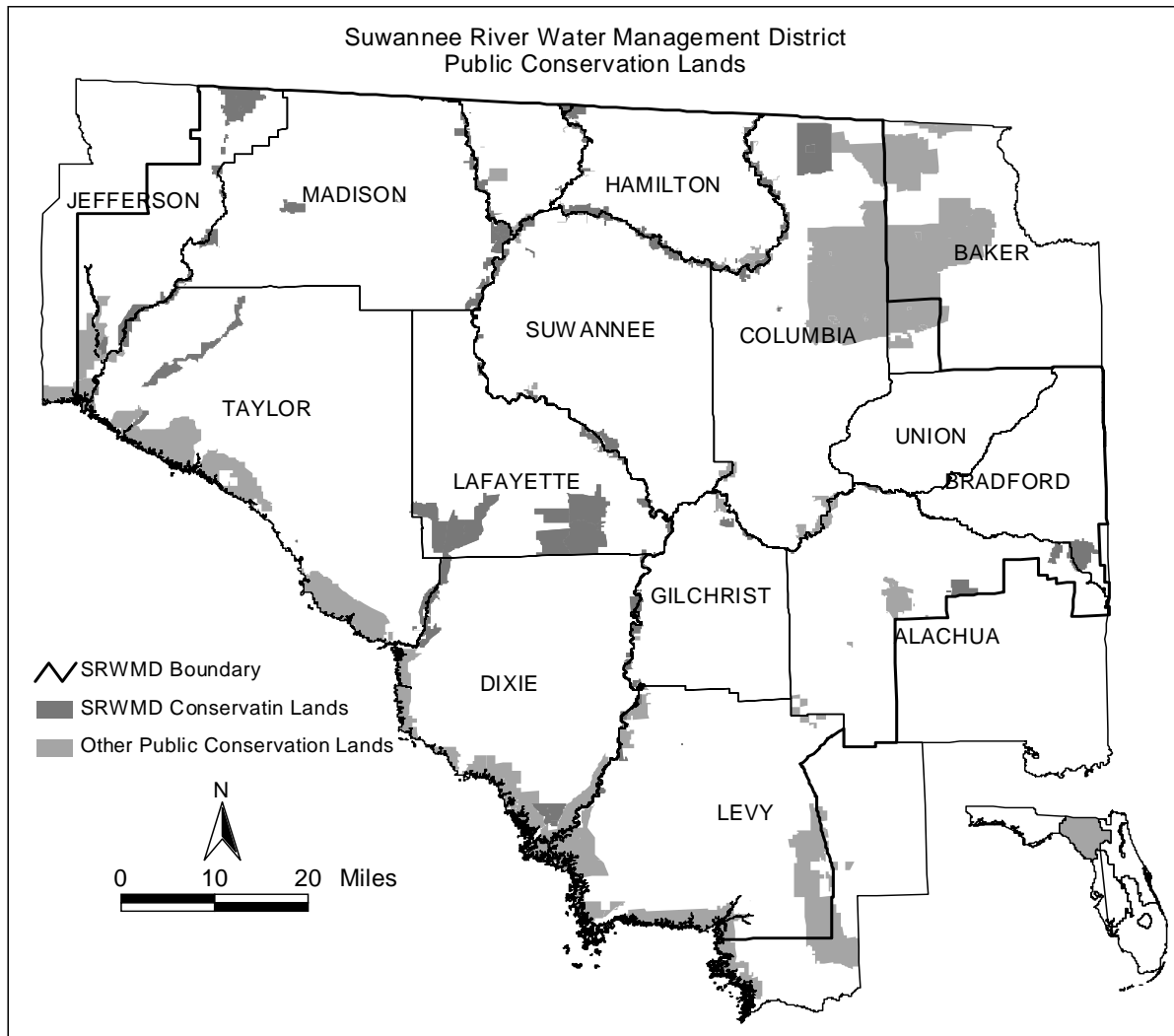


Figure 2-1 SRWMD Public Conservation Lands

2.1.4 Geographic Information Systems Development and Public Outreach and Assistance

Providing maps and other information is a cornerstone of the District's nonstructural flood protection policy. When landowners and local building officials are aware of the location and extent of flood hazard areas, preventive strategies can be more easily implemented. The District has been a regional leader in the development and application of Geographic Information Systems (GIS) since 1983, when the District was selected as a beta test site for ArcInfo, the industry standard GIS developed by Environmental Systems Research Institute, Inc. (ESRI). Since that time the District has developed an extensive

geographic data inventory, developed in-house and external capabilities, and provided leadership and assistance to local units of government in the region. Through District efforts, all county property appraisers now have compatible GIS capabilities that will assist in disseminating flood hazard maps and data at the local level resulting from the map modernization project.

Public outreach and assistance is an important component of the nonstructural flood protection policy not just by providing flood maps, but in helping the public gain an understanding of flooding and flood hazards. The District has an established website with enhanced flood elevation data for the Suwannee River and its tributaries, information on select other flood protection projects, and direct linkage to flood emergency information (e.g., flood stage and crest predictions). This component of the nonstructural policy will be significantly enhanced with the digital maps and data resulting from this project.

2.1.5 SRWMD Map Modernization Vision

The SRWMD vision for the Map Modernization initiative is to provide more accurate and complete flood hazard information for counties and communities within the District. This information will result in better decisions concerning flood risk and sustainable development alternatives for flood hazard areas throughout the District.

By the end of FY2009, all of the counties in the SRWMD will have an updated DFIRM, some with new detailed studies, some with approximate studies and some with updated base mapping. The DFIRMs will provide web based digital flood maps that will allow for easy updates as development changes occur. These updates will be part of the maintenance phase of the mapping program. Ultimately, the District would like detailed mapping using detailed topography (LiDAR) of the floodplain and coastal areas likely to experience significant development pressures in the coming years.

With the updated DFIRMs and the District's ongoing emphasis on protection and acquisition of flood prone areas, the flood protection goals and the non-structural floodplain management strategy of the SRWMD will be enhanced.

In relation to the map modernization activities achieved there are many other ancillary water resource and floodplain management benefits the District will realize. This includes:

- an overall better assessment and delineation of surface water features and surface water resources throughout the District,
- a detailed updateable unified surface water basin data base integrated with GIS,
- an improved framework for assessing the potential of flood damages from regulated facilities,
- a new more interactive disaster assessment and relief capability,
- a significantly improved watershed data base for watershed modeling and water supply assessment purposes,

- publicly accessible web based maps,
- improved mapping and data accessibility for the development and insurance users,
- proper identification of repetitive loss properties,
- enhancement of planning efforts associated with the Disaster Mitigation Act of 2000,
- more detailed digital maps will provide additional support local mitigation planning efforts and CRS community activities,
- and an overall improved water management and decision making tool for establishing surface water management and future land acquisition priorities.

2.2 Map Modernization Program Level of Participation

The SRWMD will facilitate the implementation of FEMA's Map Modernization Program through direct management and support of all regulatory, engineering, and mapping activities within the thirteen identified counties in the District's area. The District will focus its efforts to support FEMA's program by:

- Prioritizing, initiating, and coordinating all engineering and mapping activities and studies from project scoping through post-preliminary processing;
- Managing all contractors involved in the map production process;
- Developing independent quality control mechanisms to ensure consistent high quality deliverables; and
- Administrating regulatory requirements such as appeals, Letter of Map Changes (LOMCs), and updates to FEMA's Map Needs Update Support System (MNUSS).

It is the objective of the District to be the full service provider for all engineering, mapping, and administrative requirements within the SRWMD boundaries. For its management plan to be effectively implemented, the District will need the full support and involvement of CTPs and user communities. To ensure the full engagement of its partners, the District will commit a significant amount of resources to manage stakeholder expectations through upfront coordination, outreach, and customer service. In addition, the District will execute Memorandums of Understanding (MOU) with each County and participating community. In addition, the SRWMD will coordinate with the FEMA NSP by conference calls, meetings, progress and quarterly reports and the MIP to ensure the quality and availability of data generated through the program.

The SRWMD will utilize FEMA's National Service Provider's (NSP) Management Information Portal (MIP) as the central data repository. The MIP is proposed to ultimately be accessed through a link on the District's web site. Through its three branches, technical management, IT systems, and customer service (see Figure 2-2); the SRWMD will satisfy its four objectives outlined above.

Furthermore, the SRWMD will continuously assess the effectiveness of its program and make the necessary changes to ensure the highest quality service and deliverables. Details of the District's level of participation follows.

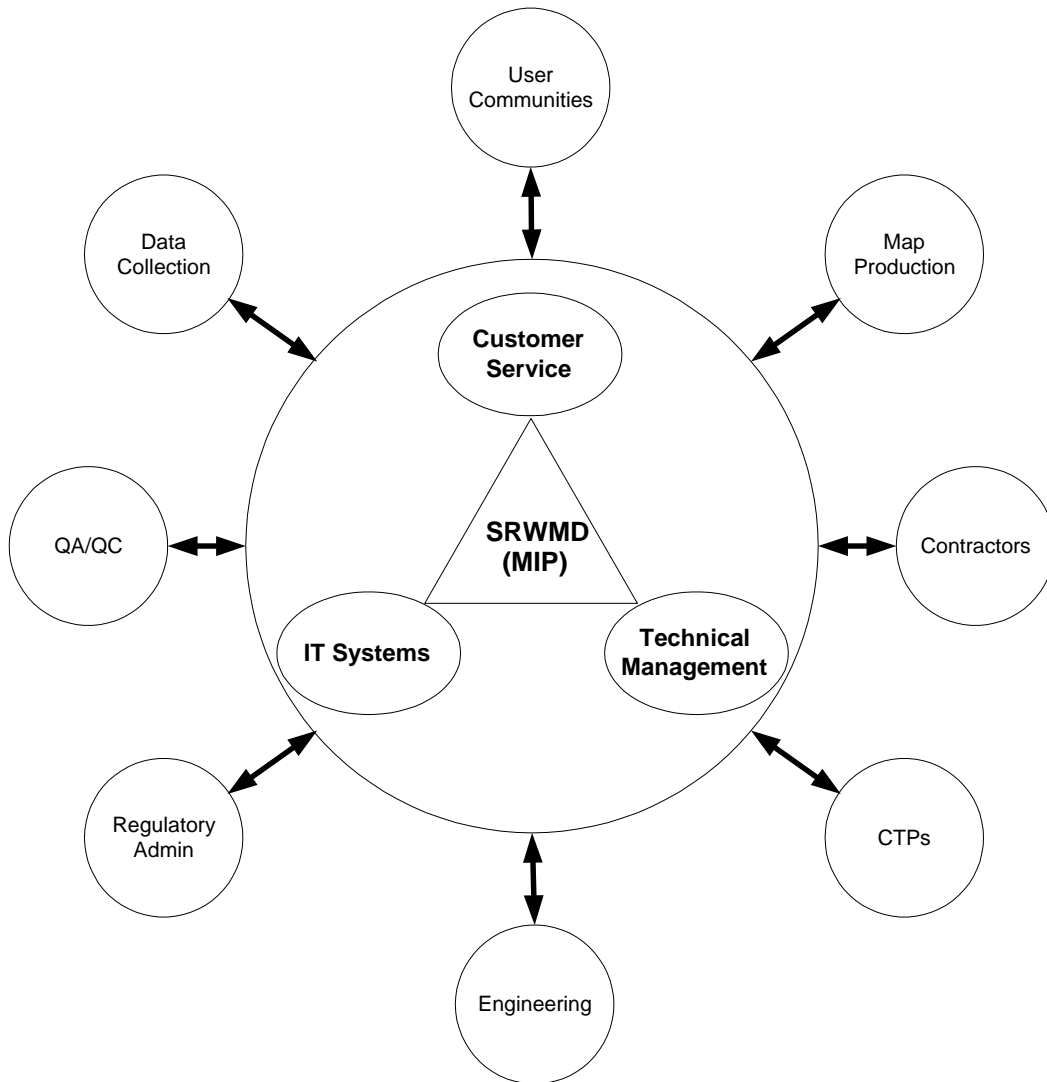


Figure 2-2 SRWMD Comprehensive Management Support of Map Modernization Needs

2.2.1 Engineering and Mapping

The SRWMD will support all activities associated with the technical production of Digital Flood Insurance Rate Maps (DFIRM) and Flood Insurance Studies (FIS). The District and its contractor's proposes to perform all the activities listed below:

- Scoping activities: field visits, MNUSS updates, scoping reports, and coordination and attendance at County and community scoping meetings;
- Data collection activities: field surveys, topographic data, existing H&H studies and digital basemaps (updated USGS DOQQ);
- Engineering activities: hydraulic, hydrologic, riverine analyses;
- Floodplain delineation activities: detailed, approximate, and re-delineation;

- DFIRM Production activities: Preliminary DFIRM, QA/QC, and database development; and
- Post Preliminary Processing: Community Meetings and Map Adoption

The District's strategy to implement the engineering and mapping component will utilize the District's existing engineering, mapping, and GIS technical infrastructure along with outsourcing of the majority of the engineering and mapping to contractors. The District has extensive experience in water resource related activities, which provides an ideal staging point for the implementation of the District's mapping and engineering role. Although the District has not been an active partner in the past with FEMA in floodplain management, ongoing floodplain management coordination with the local communities participating in the NFIP allows for a more local management of the issues that concern FEMA. As part of its management strategy, the District will manage and coordinate all contractor activity in the SRWMD. Funding for the engineering and mapping activities is being requested under FEMA's Map Modernization grant process.

Scoping

The SRWMD will conduct scoping activities within the SRWMD for those projects proposed for DFIRM production as addressed in this plan. To assist in scoping, the SRWMD will develop a flood data analysis through an interview/questionnaire process within the SRWMD departments and the local communities. The flood data analysis will include information on projects involving topographic mapping, digital elevation models, and stormwater models that are completed, underway, or scheduled to be performed within the next five years.

Scoping will initiate the stakeholder involvement and outreach strategy for the communities involved in the DFIRM project. Scoping will consist of data collection from FEMA and the communities involved. Scoping meetings will be held with the appropriate community officials. The results of the scoping meeting will then be used to develop the MAS and budget estimates for the proposed DFIRM project.

2.2.2 Map Maintenance

The SRWMD will support all map maintenance activities including Physical Map Revisions (PMR) and Letter of Map Changes (LOMC). The technical reviews and processing of all MT-1 and MT-2 cases will be performed by the District. Issuance of final determination letters will be coordinated with the FEMA Region 4 staff. For the past three Fiscal Years (FY 01, FY 02 and FY 03), the SRWMD counties have averaged 25 MT-1 cases a year and only one (1) MT-2 case a year. The District's participation along with an effective public outreach and in-house and community training program will result in additional MT-2 cases being processed, thus insuring the accuracy of the DFIRMs and proper enforcement of the National Flood Insurance Program (NFIP) regulations. The funding necessary to process the MT-2 cases will be obtained from the review fee schedules that FEMA presently charges. Since MT-1 cases do not have

processing fees associated with them the District is requesting additional funding from FEMA's Map Modernization grant process.

Additional re-studies are anticipated as map maintenance activities in FY2009 for Columbia (Lake City) and Suwannee (Live Oak) Counties and other County areas updated beyond FY2009 as the maps age. The re-studies will generally focus on updating a portion of the county (based on development, identified mapping problems, new data sources, etc.) and will result in publication of revised panels for a portion of the county.

2.2.3 Outreach

An essential component of the SRWMD Map Modernization program is community outreach and customer service to ensure stakeholder support and the proper management of expectations. Outreach begins during the scoping phase of a County Map Mod project and continues through the Map Production and Post-Preliminary phases. The primary goals of the outreach component are to:

- Establish two-way communication with stakeholders impacted by the floodplain remapping, as well as the NFIP in general;
- Ensure compliance with due process and other regulatory requirements;
- Minimize the number of technical appeals and protests;
- Ensure public understanding of the benefits of new maps;
- Interact with technical representatives to ensure production of quality maps;
- Enhance ownership and use by communities;
- Ensure that other users know how to use the new maps; and
- Track/monitor/evaluate outreach activities and adjust efforts according to feedback received and evolving project needs.

To accomplish these goals, the SRWMD will provide stakeholder notification to each County and community included in the Flood Map project, public education and information through public meetings, informational brochures/newsletter articles, PowerPoint presentations to interested organizations, and press releases.

In addition to coordinating closely with the local communities, the SRWMD also proposes outreach and coordination with the Northwest Florida Water Management District (NFWMD) for Map Modernization activities that affects Jefferson County and the Southwest Florida Water Management District (SWFWMD) for activities that affects Levy County that lie only partially within the jurisdiction of the SRWMD.

2.2.4 Independent QA/QC

The SRWMD will perform all necessary QA/QC functions for both engineering and mapping products associated with the DFIRM projects that are identified as part of the 5-year plan addressed later in this document. QA/QC activities will be performed either by District personnel or one of the District's contractor's. QA/QC reviews will be performed by qualified personnel other than those who performed the work. FEMA guidelines will

be followed for all engineering and mapping reviews along with standard engineering QA/QC guidelines. QA/QC activities will be funded by FEMA to the District through the Map Modernization funding grant process.

2.3 Program Management (Map Modernization Management Support- MMMS)

The SRWMD will provide a program management structure that will motivate partners to share responsibilities and align the District's, FEMA's and the local community missions to reduce vulnerability to floods and other hazards. The activities identified below are vital steps to supporting the Flood Map Modernization Program to assist FEMA in meeting the GPR goals and objectives. Program management for the District's participation in Map Modernization will be accomplished through the combined use of District staff and the use of a contractor. Funding for program management is being requested as part of the MMMS funding. The contractor will implement the following program management action items:

- Define program management goals including those associated with prioritization and execution of program elements;
- Produce DFIRM products that will be adopted by the local governments within 30 to 36 months of Notice to Proceed (NTP) on projects from FEMA;
- Identify roles and responsibilities for all entities contributing to the District's mapping efforts;
- Develop and manage data standards, product specifications, and quality of the products to be used by the communities and other end users;
- Assist in outreach activities (community meetings, media coordination and mailings);
- Manage and track the progress of the DFIRM projects against schedules and budgets;
- Develop monthly status reports for District use and quarterly status reports that are to be supplied to FEMA Region 4;
- Evaluate program performance and recommend improvements;
- Develop an effective post storm and/or post disaster flood hazard documentation and assessment procedure that will be utilized to continually assess the accuracy of the Special Flood Hazard Areas (SFHA) on the DFIRMs. This information will be utilized for restudy determination purposes;
- Development of continuous improvement strategies and innovative technical and building practices;
- Assist in the annual update of the Map Modernization Business Plan;
- General support activities including those defined in 44CFR, Part 66;
- Public website design to support CTP partnerships with FEMA;
- Updates to MNUSS database;
- Promote partnerships with local communities through meetings and data mining;
- Provide for program management staff time;
- MHIP reviews;
- FEMA mapping coordination (DCA coordination, flood recovery mapping);
- NSP/CTP pre-scoping activities.

2.3.1 IT Management System

The IT management systems will be the foundation that the technical management and outreach service components will be built upon. The system is composed of three major modules: the public website (mentioned in the outreach section), the data management system, and the data repository. Of the three modules, the data repository, which will be accessed through FEMA's MIP, will be the core component. Figure 2-3, illustrates the relationship among the three modules.

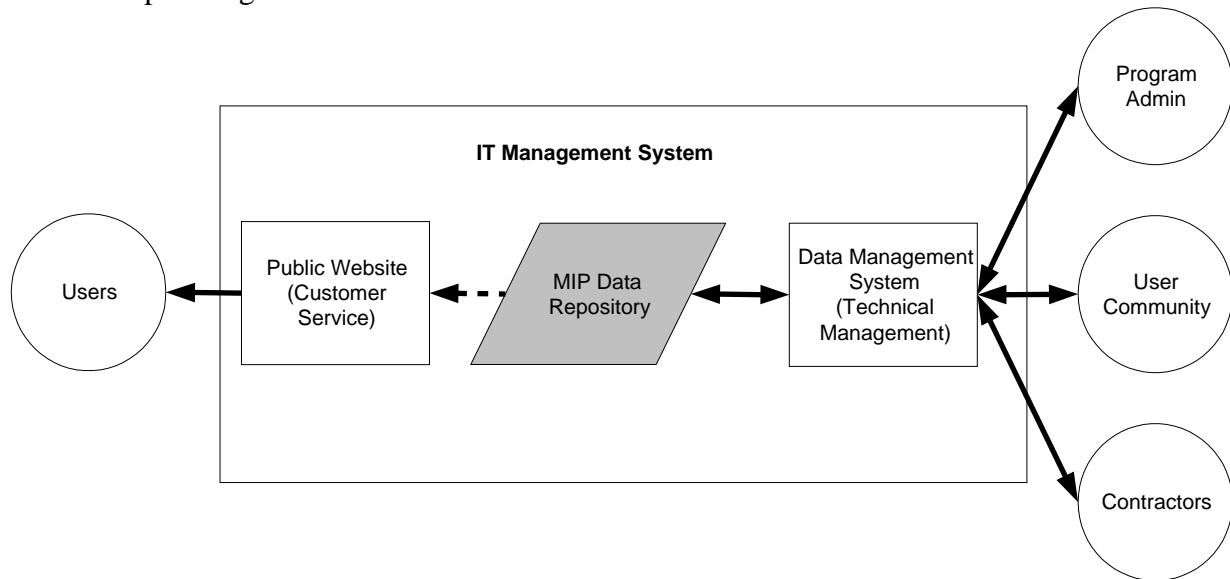


Figure 2-3 The IT Management System

Development of the public website has been initiated and will continue to be updated for the duration of the Map Mod program. The public website will be the first module developed because the majority of its requirements can be defined from other similar websites. Moreover, of the three modules it can have an immediate impact to generate public awareness and manage public expectations. The component of the Website that interacts with the data repository (through the MIP) will be an ongoing work that is populated as DFIRM projects are completed. The development timeframe of the data repository and the data management system modules will require a longer period and will be tied into the schedule of FEMA's NSP's work on the MIP. At this time, the District does not propose to develop the IT framework necessary to store and disseminate DFIRM data and electronic versions of the DFIRMs themselves.

2.3.2 Community Outreach

An essential component of the SRWMD Map Modernization MMMS program is community outreach and customer service to ensure stakeholder support and the proper management of expectations of the overall program. The SRWMD will focus its customer service activities through various mechanisms, including an interactive Website with community information and status of ongoing projects, in-house and community training programs, and public outreach activities. The Website will be a GIS-enabled system that will allow users to review the current status of existing projects, complete

informational tutorials, and download fact sheets, issue papers, news releases, and other documents. The site will also include a data viewer where DFIRM data is available for viewing and downloads through a link to FEMAs MIP.

In addition to the above activities that promote the ownership of FEMA's flood hazard maps by user communities, there will be additional activities by the SRWMD to raise public awareness and participation in the study process. These activities could include such activities as booths at local events, fact sheets, flyers, information packages, advertisements, and outreach meetings with local government officials. By providing more outreach opportunities directed toward local governments, the SRWMD could leverage existing data and analyses from local levels. Furthermore, due to increased involvement of citizens and local officials, there will be a reduction in the number of appeals and protests to DFIRM products. Funding for development and implementation of the overall Map Mod program outreach including the public website, the labor, printing, and mailing charges associated with the outreach materials are being requested as part of the MMMS funding.

Chapter 3

FIVE-YEAR STRATEGY AND PLAN

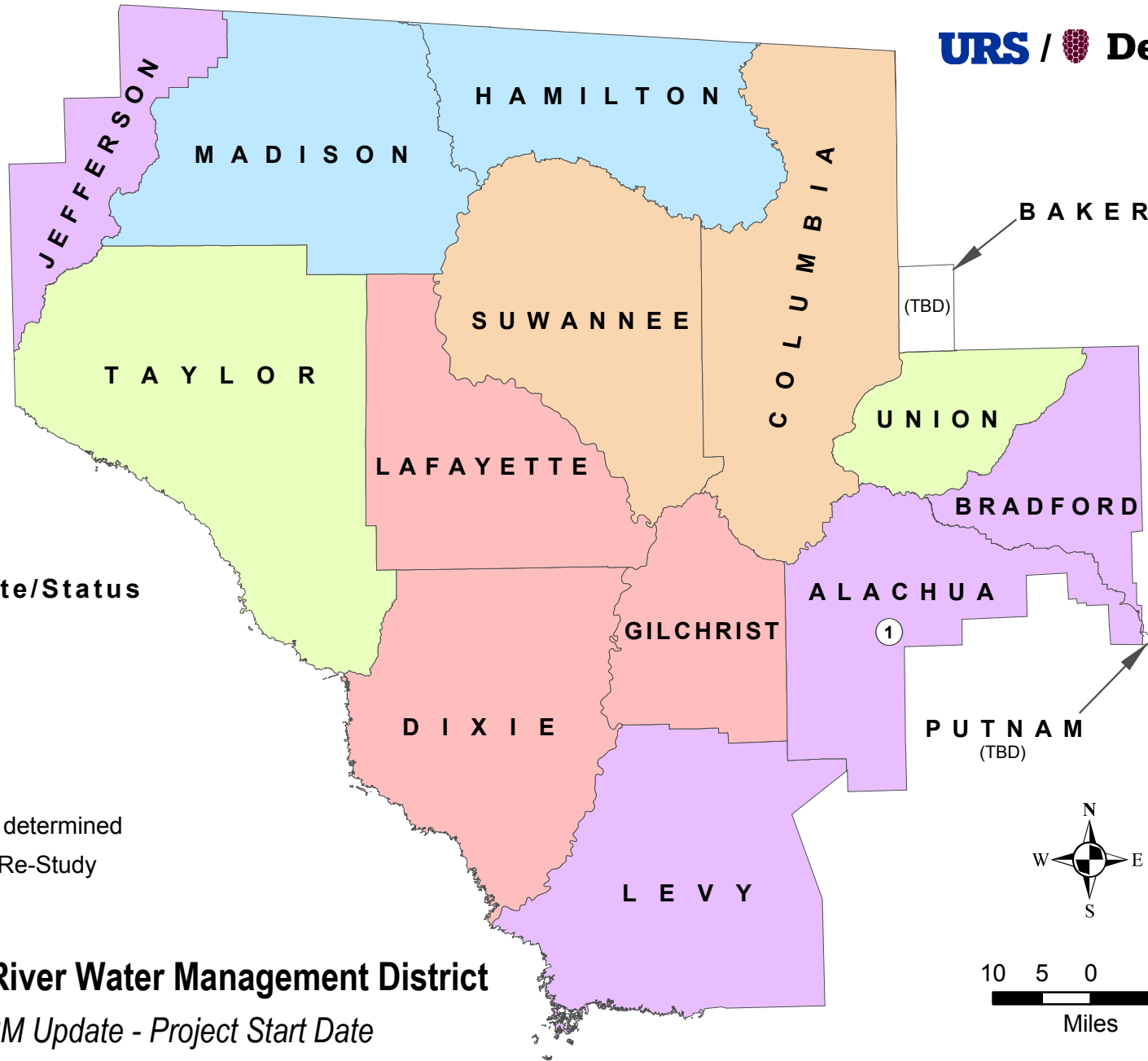
The strategy for the SRWMD five-year business plan is centered on achieving FEMA's present Government Performance Rating Assessment (GPRA) Goals that are discussed in more detail in Chapter 4 of this Business Plan document. The fifteen counties for which the SRWMD has jurisdiction will each be updated over the next five fiscal years, thus ensuring that DFIRMs are produced, adopted and available on the District's website within the time frames specified in FEMA's GPRA goals. The District intends on incorporating all of the map modernization participation areas and the tasks associated with those areas as identified in Chapter 2 of this Business Plan into the District's present water resource program and floodplain management and protection activities. Currently, the Floodplain Map Modernization Goals are being incorporated as the key element of the Flood Protection area of responsibility in the District Water Management Plan (DWMP), required by section 373.036, F.S. The DWMP is currently under 5-year review and revision as required by statute and scheduled for completion by May 2005. This schedule coincides with the development and implementation of this Business Plan.

The District has a close working relationship with the local units of government in the District and the strategy for implementation of the map modernization plan involves heavy stakeholder involvement from these end users of the updated DFIRM products. This strategy will promote more local ownership of the DFIRM products resulting in fewer appeals and protests in the post preliminary processing phase of the projects. A map showing the project start dates, which coincide with the funding requests, is shown in Figure 3-1. Figure 3-2 shows the proposed schedule for completion of the Preliminary DFIRM projects. As stated in Chapter 2, Levy County falls under the jurisdiction of both the SRWMD and the SWFWMD. The DFIRM Map Modernization project for Levy County will be the responsibility of the SRWMD with coordination from the SWFWMD for those floodplains within the District's boundaries. A detailed implementation schedule, including additional information about the counties, is shown in Appendix D and discussed later in this chapter.

3.1 Development of District Capability and Capacity

The SRWMD has certain capabilities already being utilized for other District program functions such as watershed management, water resources planning, hydrologic monitoring, outreach, scoping and GIS capabilities. The District, as part of the strategy for implementing the five-year map modernization plan, intends to build on its present capabilities through training available through FEMA and the FEMA RMC and full utilization of the District's map modernization contractors. The goal is to develop a working knowledge of all aspects of map modernization from scoping to DFIRM production and post preliminary processing.

The District proposes to use present staff level positions for certain map modernization tasks including, but not limited to, outreach activities, GIS functions and limited

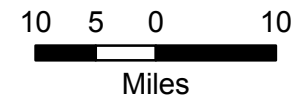
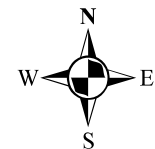


Start Date/Status

- 2004
- 2005
- 2006
- 2007
- 2008
- (TBD) to be determined
- ① Map Re-Study

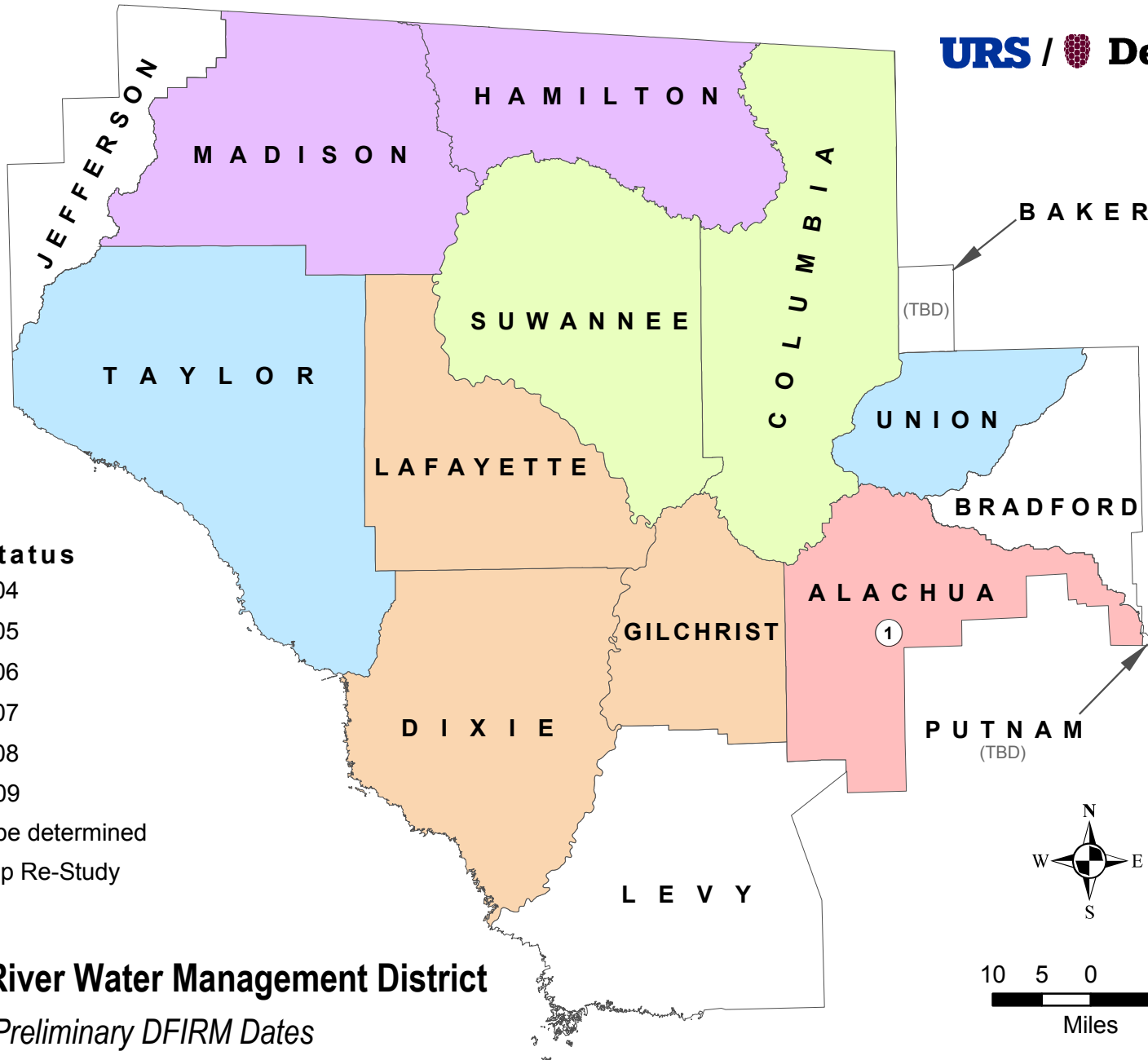
Suwannee River Water Management District

DFIRM Update - Project Start Date













URS / Dewberry



Date/Status

-  2004
-  2005
-  2006
-  2007
-  2008
-  2009
-  (TBD) to be determined
-  1 Map Re-Study

Suwannee River Water Management District

Preliminary DFIRM Dates

stormwater modeling. By utilizing the FEMA Resource Allocation Tool (RAT), an estimate of staffing levels for the District was identified. The current total SRWMD FTE is 4.3. It is estimated that an additional 4.2 FTE is needed for the Map Mod program management and production. Under current District Governing Board policy, additional staff capacity within the District is not being proposed at this time. The additional capacity required for implementation of the District's five-year map modernization program will be accomplished with the District's map modernization contractor.

3.2 Project Plan

The SRWMD plan will include twelve counties, four of which have coastline on the Gulf of Mexico with high hazard velocity zone flooding from hurricane surges. Most of the present FIRMs for both the coastal counties and the inland riverine counties are in a manual format and the Special Flood Hazard Areas (SFHA) have not been updated for 10 years or more. Therefore, the projects outlined in the 5-year plan for the District are structured with some planned improvements to the SFHAs through modeling and floodplain delineation on better topographic data while at the same time meeting all of FEMA's GPRA Goals.

The SRWMD focussed on completing Counties that include the major river systems in the District (Suwannee & Santa Fe). The rationale for sequencing the DFIRM production was to start at the downstream portion of the river system and work upstream. The remainder of the prioritization was based on the County location (coastal/non-coastal), population and age of existing maps.

Alachua County has recently been re-studied by FEMA and modernized DFIRMs are presently available in a preliminary format and will meet GPRA Goal #1 in FY 04 and GPRA Goal #2 in FY 05. Even though Alachua County will serve to meet the GPRA goals, the District is proposing a re-study project in the county that will provide upgrades to the SFHAs within the SRWMD boundaries. This re-study project has been structured as to not adversely affect the overall progress of the District's plan for meeting FEMA's 100% goal of all DFIRMs online by FY 09.

Levy County is divided between the jurisdiction of the SRWMD and the Southwest Florida Water Management District (SWFWMD). At this time, the Levy County DFIRM Map Modernization Project will be the responsibility of the SRWMD and will be addressed in their Map Modernization Business Plan. The SRWMD will closely coordinate with the SWFWMD on this endeavor. Any future changes to this condition will be addressed through amendments to this Business Plan.

A small portion of Baker County is located within the jurisdiction of the SRWMD. The Baker County DFIRM project is not part of the SRWMD project plan as presented in this business plan. The SRWMD will coordinate closely with the St. Johns River Water Management District (SJRWMD) and FEMA during the DFIRM production process for Baker County.

Jefferson County is split between the SRWMD and the Northwest Florida Water Management District (NFWFMD). The Jefferson County DFIRM Map Modernization project is proposed as part of the SRWMD business plan. Production of the DFIRM for Jefferson County will be closely coordinated with the NFWFMD.

In addition to coordinating with the SJRWMD, NFWFMD and the SWFWMD, the SRWMD also will coordinate with the State of Georgia on the DFIRM projects that involve counties that are contiguous with the Georgia State line.

As with other areas in Florida, a primary shortfall for flood plain mapping is a lack of detailed topographic data. Aerial surveyed elevation data using light detection (LiDAR) is the most accurate and an extremely economical technology available to obtain this data. The data collected is relatively inexpensive compared to more conventional ground elevation measuring approaches especially across large areas covering whole counties. Because the data is obtained in a digital format it is also can be made highly accessible and viewable to the public and user community. The District is would like FEMA to consider funding LiDAR in coastal and floodplain areas in future updates of the business plan and MHIP.

The SRWMD is committed to developing a fully integrated, seamless floodplain management program that incorporates mapping needs assessments, project scoping, hydrologic and hydraulic modeling, floodplain delineation, an internal QA/QC program for all aspects of the program, DFIRM production, post preliminary DFIRM processing and long term map maintenance needs. The results of these efforts will be an ongoing program that allows for timely updates, more accurate and current floodplain maps, and active localized ownership and use of the DFIRM products and project results.

The proposed project plan for the SRWMD is shown in detail in Appendix D. The DFIRM project schedules shown below were prioritized so as to match with the prioritization schedule shown in the November version of FEMA's *Multi-Year Flood Hazard Identification Plan (MHIP)*. The *MHIP* does not presently address any project needs beyond FY 2008. The SRWMD five-year Plan now extends to FY 2009 and includes map maintenance projects Columbia and Suwannee Counties.

The project plan is submitted based upon three funding scenarios: high, medium and low funded options. Brief descriptions of these three funding scenarios are as follows:

High Funding Option

The costs associated with this option reflect a more robust outreach program associated with each DFIRM project. This option also reflects a more extensive development and refinement of SFHAs through modeling and re-delineation of floodplains on updated topographic data. The total cost for the FY 04 to FY 09 timeframe associated with the map production high funding option scenario is approximately \$8.02 million. These project costs could increase in future years, if the detailed scoping phases result in more

hydrologic and hydraulic analyses, and if FEMA decides on newer coastal study methodologies. Table 3-1 summarizes the High Funding Option of the Business Plan.

**TABLE 3-1
HIGH FUNDING OPTION**

<u>Fiscal Year</u>	County	<u>Engineering & Mapping</u>
FY 04	Dixie, Gilchrist, Lafayette	\$1,322,600
FY 05	Columbia, Suwannee	\$1,305,000
FY 06	Taylor, Union	\$1,357,000
FY 07	Hamilton, Madison	\$1,165,000
FY 08	Alachua, Bradford, Jefferson, Levy	\$2,570,000
FY 09	Columbia, Suwannee (Map Maintenance)	\$300,000
Total		\$8,019,600

Middle Funding Option

The cost associated with this option also reflects development and refinement of SFHAs through modeling and re-delineation of floodplains on updated topographic data. However, stream miles identified for re-study and/or re-delineation have been reduced from the assumptions reflected in the High Funding Option Scenario. The total cost associated with map production for the middle funding option scenario is approximately \$6.45 million. Table 3-2 summarizes the Middle Funding Option of the Business Plan.

**TABLE 3-2
MIDDLE FUNDING OPTION**

<u>Fiscal Year</u>	County	<u>Engineering & Mapping</u>
FY 04	Dixie, Gilchrist, Lafayette	\$904,000
FY 05	Columbia, Suwannee	\$1,060,000
FY 06	Taylor, Union	\$1,200,000
FY 07	Hamilton, Madison	\$990,000
FY 08	Alachua, Bradford, Jefferson, Levy	\$2,092,000
FY 09	Columbia, Suwannee (Map Maintenance)	\$200,000
Total		\$6,446,000

Low Funding Option

The costs associated with this option reflect a very basic outreach effort and no upgrades to the SFHAs, other than incorporation of existing Letter of Map Changes (LOMCs). The

FIRMs will be upgraded with new base maps and converted to a digital product that meets the DFIRM database specifications. Also, the total panel count has been reduced from 992 panels in the Middle Funding Option to 824 panels by utilizing 1:2000 panel scale panels in selected areas. The total cost associated with the low funding option scenario is approximately \$4.05 million. Table 3-3 below summarizes the Low Funding Option of the Business Plan.

**TABLE 3-3
LOW FUNDING OPTION**

<u>Fiscal Year</u>	County	<u>Engineering & Mapping</u>
FY 04	Dixie, Gilchrist, Lafayette	\$775,000
FY 05	Columbia, Suwannee	\$765,000
FY 06	Taylor, Union	\$637,000
FY 07	Hamilton, Madison	\$653,000
FY 08	Alachua, Bradford, Jefferson, Levy	\$1,115,000
FY 09	Columbia, Suwannee	\$100,000
Total		\$4,045,000

State or Locally Funded Activities

Several State, local and SRWMD activities are proposed to supplement data and materials necessary to complete the Map Modernization program. Some of these include:

- Digital Base Maps and base map updates (Digital base maps-USGS DOQQ, are updated throughout the State on a rotating schedule by Water Management District);
- Development, maintenance, and management of digital elevation models, topographic maps (but not the raw LiDAR data acquisition and initial processing) and topographic data bases;
- Water Resources and hydro data base, GIS, and IT facilities used for initial storage, mapping, hydrologic modeling, and data collection and analysis activities
- Certain watershed and hydrologic modeling activities TBD and coordinated through SWIM;
- A local presence and expertise to represent the Flood Hazard Map Modernization program;
- Integrated watershed planning.

State or Local Match

The District’s leverage will be accomplished through a combination of local match and District match. These matches will include existing data with leverage values based on FEMA’s *Estimating the Value of Partner Contributions to Flood Mapping Projects* (“Blue Book”). The “mining” of existing data that could be used as leverage is on going.

The District also works cooperatively to enlist the services of county governments within its jurisdiction to provide in-kind services and support the implementation of the program and specific flood mapping tasks. This includes assistance with the collection and mining of available data, GIS analysis, facilitation of community meetings, outreach and coordination, scoping, and technical review.

As in-kind services the District, State and Counties have a number of ongoing programs and activities that may directly contribute to the FEMA initiative. This includes the District's Surface Water Improvement and Management (SWIM), watershed monitoring, and its Regional Water Supply planning programs. These programs include the aforementioned activities and work that is integrated with and directly benefit the Flood Hazard Map Modernization program

Program Management (Map Modernization Management Support (MMMS))

As Stated in Chapter 2, the District is proposing that program management functions (Map Modernization Management Support (MMMS)) be performed through the combined use of District staff and a contractor. Program management functions will include such items as assistance with goal setting, assistance with prioritization, execution of the project plan as described in this Chapter, development of data standards, product specifications, public outreach, interfacing with the IDIQ, MIP and NSP, managing and tracking of project schedules and budgets, development of status reports, development of post storm flood hazard documentation and assessment procedures, and the development of continuous improvement strategies and innovative technical practices. Funding for program management activities is being requested from the MMMS funding program. Chapter 6 references in detail the funding request for program management.

Business Plan Gap Analysis

There are no gaps associated with the SRWMD Business Plan that would require FEMA assistance. As stated previously, the SRWMD vision is to be a full mapping partner with FEMA in Map Modernization. This vision entails performing all the activities as presently required by FEMA for the production and adoption of DFIRMs.

Chapter 4

PERFORMANCE MEASURES AND GOALS

The SRWMD has developed the 5-year DFIRM project implementation plan so that FEMA’s Government Performance Rating Assessment (GPR) goals are met or exceeded. At present, FEMA has identified the following four GPR goals:

- Goal 1: District population (by counties) with digital GIS flood data on line;
- Goal 2: District population (by counties) with adopted final flood maps;
- Goal 3: Percent leveraged effort toward digital GIS flood data; and
- Goal 4: Allocation percentages of funding through to state and local CTPs.

The metrics of the goals and the District’s progress toward those goals are addressed in the remainder of this chapter.

4.1 Goals 1 and 2

FEMA's criteria for Goals 1 and 2 are based on percentage of total population required to meet the metrics by the end of each Fiscal Year, which ends on September 30th. The results of the District’s DFIRM project implementation plan on GPR Goal 1 are shown in Table 4-1.

**TABLE 4-1
GPR GOAL 1 ASSESSMENT**

<u>Fiscal Year</u>	<u>District Plan</u>	<u>FEMA Goal</u>
2004	49%	20%
2005	56%	50%
2006	77%	65%
2007	84%	75%
2008	91%	85%
2009	100%	97%

The GPR Goal 2 is associated with the Counties’ adoption of the new DFIRM products. Adoption of new DFIRMs by communities usually takes about twelve months after the Preliminary DFIRMs have been completed and sent to the communities for review. The major factor that contributes to lengthy post Preliminary DFIRM processing times and adoption of the DFIRMs is appeals and protests from the local communities and a six-month compliance period once the maps are finalized. An effective outreach program can result in the reduction of appeals and protests, thus helping ensure that GPR Goal 2 is being met. The District’s projected performance against Goal 2 is based upon no lengthy appeals or protests and an average 12-month processing and adoption time frame

after the completion of the Preliminary DFIRM product. The results of the District's DFIRM project implementation plan on GPRA Goal 2 are shown in Table 4-2.

**TABLE 4-2
GPRA GOAL 2 ASSESSMENT**

<u>Fiscal Year</u>	<u>District Plan</u>	<u>FEMA Goal</u>
2004	0%	10%
2005	49%	20%
2006	56%	35%
2007	77%	50%
2008	84%	70%
2009	91%	90%

4.2 Goal 3

Table 4-3 illustrates how the SRWMD local leverage compares to FEMA's leverage goal of 20%. The District's leverage of 25% will be accomplished through a combination of local match and District match. These matches will include existing data with leverage values based on FEMA's *Estimating the Value of Partner Contributions to Flood Mapping Projects* ("Blue Book"). The "mining" of existing data that could be used as leverage is on going. The numbers presented are preliminary and the overall leverage amount is expected to increase, as new data becomes available. Leverage values for local leverage are shown in greater detail in Appendix F. Table 4-3 shows a comparison of the leverage values versus the three funding level options.

**TABLE 4-3
GPRA GOAL 3 ASSESSMENT**

<u>Funding Option</u>	<u>FEMA Contribution</u>	<u>Local Leverage</u>	<u>District Leverage</u>	<u>% Leverage</u>
High	\$8,019,600	\$542,930	\$1,461,970	25%
Medium	\$6,446,000	\$542,930	\$1,068,570	25%
Low	\$4,045,000	\$542,930	\$468,320	25%

The FEMA contribution shown in Table 4-3 does not include printing costs.

4.3 Goal 4

FEMAs Goal 4 of allocating percentages to Cooperating Technical Partners (CTP) will be met since all the Map Modernization activities in the SRWMD will be funded through the District and performed by the District and its contractor.

4.4 Cost and Schedule Performance Reporting

The implementation of the Management Information Platform (MIP) by FEMA's National Service Provider (NSP) will ultimately enable FEMA to monitor project progress by their CTPs. The SRWMD and its contractor will populate and update information in the MIP either by submittal of data on CD for upload to the MIP or direct input to the MIP. The NFWFMD will coordinate with FEMA and the NSP via e-mail, conference calls, meetings as well as submittal of monthly status reports as well as quarterly reports to FEMA documenting project progress and performance.

Chapter 5

MAP PRODUCTION PROGRAM FUNDING

The SRWMD is requesting map production program funding for the project plan based upon the High Funding Option addressed in Chapter 3 of this business plan. In addition to the funding requirements for the DFIRM projects that are necessary for FEMA to meet the metrics of their GPRA Goals, the District is proposing funding for Map Maintenance activities.

5.1 Engineering and Mapping

The SRWMD is proposing the implementation of the high funding option project plan that is addressed in Chapter 3 of this document. The costs associated with this option reflect a more robust outreach program associated with each DFIRM project. This option also reflects a more extensive development and refinement of SFHAs through modeling and re-delineation of floodplains on updated topographic data.

The total cost for map production associated with the high funding option scenario over a five-year period is approximately \$8.02 million. These costs could increase in future years if the detailed scoping phases result in more hydrologic and hydraulic analyses, and if FEMA decides on newer coastal study methodologies. Even though these projects have some upgrades to the SFHAs, the schedules that are required in order for FEMA to meet their GPRA metrics can still be met. The upgrades of certain areas on the DFIRMs will be needed in order to get the communities buy-in to adopt the new maps.

5.2 Map Maintenance

The SRWMD will perform all map maintenance activities including Physical Map Revisions (PMR) and Letter of Map Changes (LOMC). LOMC processing will include all MT-1 cases (LOMA, CLOMA, etc.) and all MT-2 cases (CLOMR, LOMR, etc.). As stated previously in Chapter 2, the SRWMD has averaged over the past three years 25 MT-1 cases annually and one (1) MT-2 cases annually. Average costs for processing of MT-1 and MT-2 cases in the SRWMD would be:

- MT-1 (single lot) = \$500 per case
- MT-1 (multi lot) = \$660 per case
- MT-2 LOMR = \$5500 per case
- MT-2 CLOMR = \$4500 per case
- MT-2 PMR = \$1800 per case

Based on the past three years, the District's annual cost for processing MT-1 cases would be approximately \$16,500 and the annual cost for processing MT-2 cases would be approximately \$5,500. These costs are based on FY 04 labor figures. The District proposes that the funding for MT-2 cases will be from the FEMA review fees. Funding

for MT-1 case reviews is being requested from FEMA from the Map Modernization funds. Subsequent year funding for these activities will be increased based on inflation.

Additional re-studies are anticipated as map maintenance activities in FY2009 for Columbia (Lake City) and Suwannee (Live Oak) Counties and that other County areas be updated beyond FY2009 as the maps age. Based on the high funding option, \$300,000 has been identified as the amount estimated for FY09 map maintenance updates. The re-studies will generally focus on updating a portion of the county (based on development, identified mapping problems, new data sources, etc.) and will result in publication of revised panels for a portion of the county.

5.3 Funding Requirements of SRWMD Map Modernization Program

The SRWMD has developed a fully integrated program for engineering and mapping of the Counties within the District and processing of MT-1s that will require a total of \$8,118,600 of funding for fiscal years 2004 through 2009. The SRWMD integrated program includes the mapping and engineering associated with production of DFIRMs, and map maintenance activities. Table 5-1 details the funding requests from the Map Modernization funds by fiscal year for the SRWMD Map Modernization Program.

**TABLE 5-1
PROJECTED FY 2004-2009 SRWMD
FEMA MAP MODERNIZATION MAP PRODUCTION FUNDING REQUEST
HIGH FUNDING OPTION**

FY	*DFIRM Production Cost	MT-1 Costs & Map Maintenance Updates	Total Map Modernization Map Production Funding Request
2004	\$1,322,600	\$16,500	\$1,339,100
2005	\$1,305,000	\$16,500	\$1,321,500
2006	\$1,357,000	\$16,500	\$1,373,500
2007	\$1,165,000	\$16,500	\$1,181,500
2008	\$2,570,000	\$16,500	\$2,586,500
2009		\$316,500	\$316,500
Total	\$7,719,600	\$399,000	\$8,118,600

*Mapping & Engineering

Chapter 6

MMMS FUNDING

The SRWMD is requesting funding for Map Modernization Management Support (MMMS), including the development of an IT management system, public outreach and additional funding for Map Modernization Program Management functions.

6.1 Funding Requirements of SRWMD MMMS

Additional funding is being requested by the SRWMD for MMMS activities. Activities to be funded under MMMS include:

- hydrologic and hydraulic reviews,
- updates to FEMA's Mapping Needs Update Support System (MNUSS),
- technical standard agreements including those involving coordination between bordering states and other water management districts,
- digital base map inventory and sharing,
- development of interactive public website,
- outreach community meetings,
- website posting,
- floodplain managers workshops,
- multimedia promotional activities;
- general program management functions;
- business plan updates;
- MHIP reviews;
- FEMA mapping coordination (DCA coordination, flood recovery mapping);
- NSP/CTP pre-scoping activities.

6.2 Program Management

The District is requesting as part of this business plan that FEMA assist in funding for a program management position. As stated previously, the program management function will be performed by a combination of District and contractor personnel. It is understood that the funding for program management cost will be through FEMA's MMMS program. This program will require a 25% match by the District with FEMA funding the remaining 75%. The program management cost estimated for the program management position is \$225,000 on an annual basis, based on one full time employee. The FEMA share of the funding (75%) would be \$168,750 with the remaining 25% (\$56,250) being paid for by the SRWMD. The FEMA share of the funding is being requested from the MMMS program.

6.1.1 IT Management System

The SRWMD proposes the development of an IT management system that will be composed of three major modules as discussed in Chapter 2: an interactive public

website, a data management system, and a data repository. The development of the public website has been initiated with maintenance and updates scheduled for out years. The component of the website that interacts with the data repository (through the MIP) will be an ongoing work that is populated as DFIRM projects are completed. Estimated funding required for the District’s IT management system is as follows:

- FY 04 \$30,000 (funding provided)
- FY 05 \$ 20,000

The projected funding for the IT management system at present is based on rough estimates. Funding for FY05 is based on updates and refinements in the public website. Funding for FY06 to FY08 will be determined. Funding for the \$20,000 in FY05 is being requested from FEMA’s MMMS program.

6.1.2 Funding Requirements of SRWMD MMMS Program

The SRWMD has developed a fully integrated MMMS program that will require a total of \$1,151,563 of funding for fiscal years 2004 through 2009. The SRWMD MMMS program includes the IT management and storage activities, public outreach, and program management functions. Table 6-1 details the funding request from the MMMS Program.

**TABLE 6-1
PROJECTED FY 2004-2009 SRWMD
FEMA MMMS FUNDING REQUEST**

FY	IT Management System	**Program Management	Total FEMA MMMS Funding Requirements
2004	\$30,000	\$151,000	\$181,000
2005	\$20,000	\$175,500	\$195,500
2006	*TBD	\$182,520	\$182,520
2007	*TBD	\$189,820	\$189,820
2008	*TBD	\$197,413	\$197,413
2009	*TBD	\$205,310	\$205,310
Total	\$50,000	\$1,101,563	\$1,151,563

*To be determined with annual business plan updates.

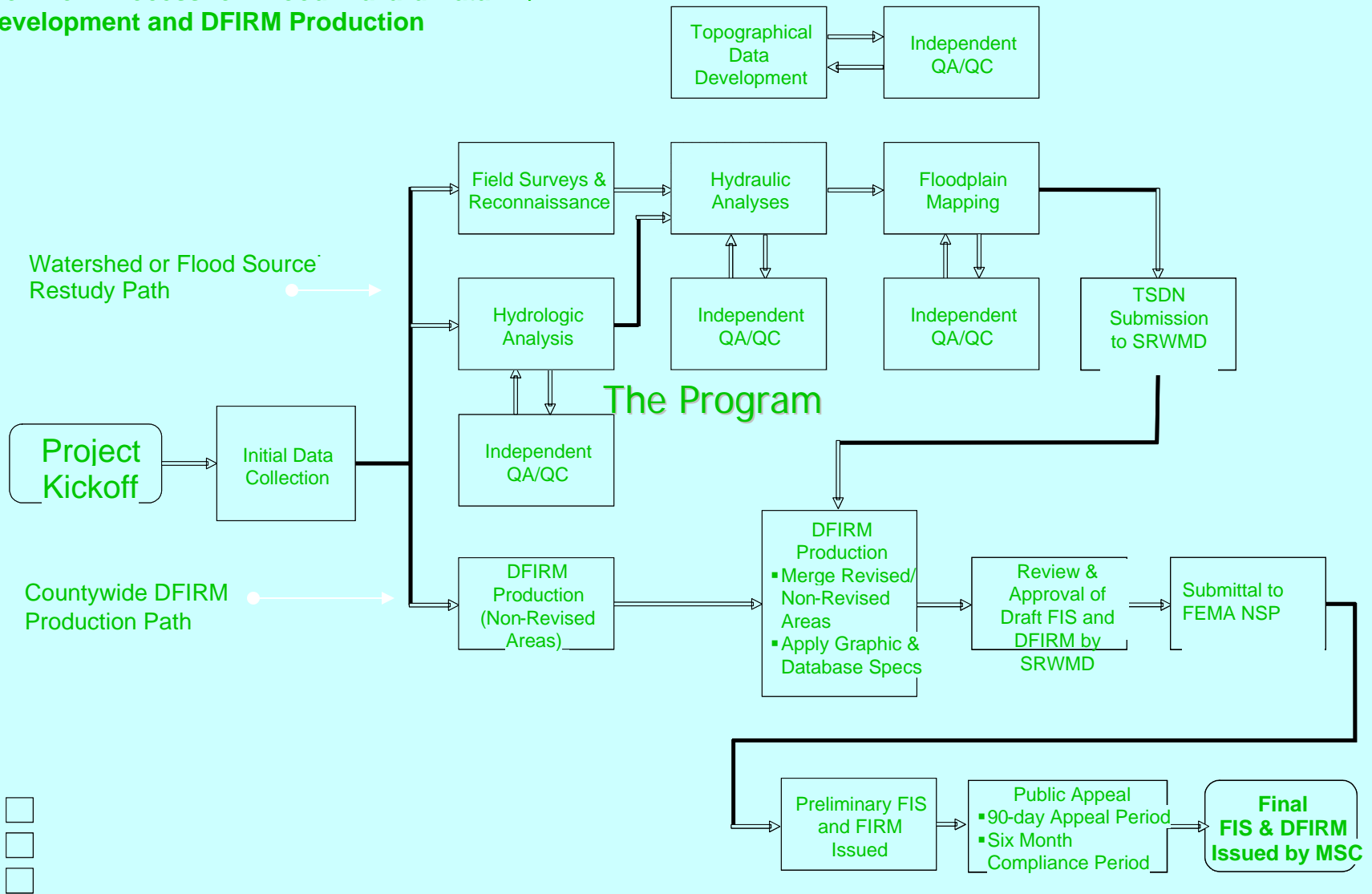
**Adjusted annually for 4% inflation.

Appendix A

Appendix B

SRWMD Map Modernization Program

Workflow Process for Flood Hazard Data Development and DFIRM Production



Appendix C

SRWMD Targeted Partnerships

Federal

NOAA
USACOE

State

Florida Department of Community Affairs
Florida Department of Transportation
Florida Division of Forestry
Florida Fish and Wildlife Conservation

County

Alachua
Bradford
Columbia
Dixie
Gilchrist
Hamilton
Jefferson
Lafayette
Madison
Suwannee
Taylor
Union

Municipalities

Archer, City of	Cross City, Town of	Greenville, Town of
Gainesville, City of	Horseshoe Beach, Town of	Lee, Town of
Hawthorne, City of	Unincorporated Areas	Madison, City of
High Springs, City of		Unincorporated Areas
La Crosse, Town of		
Micanopy, Town of	Fanning Springs, Town of	
Newberry, City of	Trenton, City of	Branford, Town of
Unincorporated Areas	Unincorporated Areas	Live Oak, City of
Waldo, City of		Unincorporated Areas
	Jasper, Town of	
Brooker, Town of	Jennings, Town of	Perry, City of
Hampton, City of	Unincorporated Areas	Unincorporated Areas
Lawtey, City of	White Springs, Town of	
Starke, City of		
Unincorporated Areas		Lake Butler, City of
	Monticello, City of	Unincorporated Areas
	Unincorporated Areas	Worthington Springs, Town of
Big Alligator Lake, Town of		
Lake City, City of		
Unincorporated Areas	Mayo, Town of	

Appendix D

**SRWMD High Option Funded
5 Year Project Plan
Work Task**

County	Format of Effective FIRM	Estimated Project Cost (\$ Costs)					
		Scoping	Outreach	Hydrologic & Hydraulic Analysis	Floodplain Redelineation	DFIRM Production	Total Project Cost
Alachua	Digital - countywide (Meets FEMA Modernized Map Specifications in FY04)	\$20,000	\$30,000	\$350,000	\$50,000	\$55,000	\$505,000
Bradford	Manual - Countywide	\$20,000	\$30,000	\$335,000	\$10,000	\$200,000	\$595,000
Columbia	Manual - Unincorporated	\$20,000	\$30,000	\$234,000		\$364,000	\$648,000
Dixie	Manual - Unincorporated	\$20,000	\$30,000	\$149,000	\$19,000	\$248,000	\$466,000
Gilchrist	Manual - Countywide	\$20,000	\$30,000	\$189,000		\$175,000	\$414,000
Hamilton	Manual - Countywide	\$20,000	\$30,000	\$312,000		\$273,000	\$635,000
Jefferson	Manual - Unincorporated	\$20,000	\$30,000	\$280,000		\$340,000	\$670,000
Lafayette	Manual - Unincorporated	\$20,000	\$30,000	\$104,000	\$22,000	\$266,000	\$442,000
Levy	Manual - Unincorporated	\$20,000	\$30,000	\$350,000		\$400,000	\$800,000
Madison	Manual - Unincorporated	\$20,000	\$30,000	\$130,000		\$350,000	\$530,000
Suwannee	Manual - Unincorporated	\$20,000	\$30,000	\$236,000		\$371,000	\$657,000
Taylor	Manual - Unincorporated	\$20,000	\$30,000	\$450,000		\$462,000	\$962,000
Union	Manual - Unincorporated	\$20,000	\$30,000	\$200,000	\$5,000	\$140,000	\$395,000
TOTAL:		\$260,000	\$390,000	\$3,319,000	\$106,000	\$3,644,000	\$7,719,000

Re-Study Project

**SRWMD High Option Funded
5 Year Project Plan
FY Funding**

County	Format of Effective FIRM	Estimated Project Start Dates (\$ Costs)				
		FY04	FY05	FY06	FY07	FY08
Alachua	Digital - countywide (Meets FEMA Modernized Map Specifications in FY04)					\$505,000
Bradford	Manual - Countywide					\$595,000
Columbia	Manual - Unincorporated		\$648,000			
Dixie	Manual - Unincorporated	\$466,600				
Gilchrist	Manual - Countywide	\$414,000				
Hamilton	Manual - Countywide				\$635,000	
Jefferson	Manual - Unincorporated					\$670,000
Lafayette	Manual - Unincorporated	\$442,000				
Levy	Manual - Unincorporated					\$800,000
Madison	Manual - Unincorporated				\$530,000	
Suwannee	Manual - Unincorporated		\$657,000			
Taylor	Manual - Unincorporated			\$962,000		
Union	Manual - Unincorporated			\$395,000		
TOTAL:		\$1,322,600	\$1,305,000	\$1,357,000	\$1,165,000	\$2,570,000

Re-Study Project

**SRWMD Middle Option Funded
5 Year Project Plan
Work Task**

County	Format of Effective FIRM	Estimated Project Cost (\$ Costs)					
		Scoping	Outreach	Hydrologic & Hydraulic Analysis	Floodplain Redelineation	DFIRM Production	Total Cost
Alachua	Digital - countywide (Meets FEMA Modernized Map Specifications in FY04)	\$20,000	\$30,000	\$200,000	\$50,000	\$25,000	\$325,000
Bradford	Manual - Countywide	\$20,000	\$20,000	\$250,000	\$10,000	\$200,000	\$500,000
Columbia	Manual - Unincorporated	\$20,000	\$20,000	\$96,000		\$364,000	\$500,000
Dixie	Manual - Unincorporated	\$20,000	\$20,000	\$70,000	\$18,000	\$248,000	\$376,000
Gilchrist	Manual - Countywide	\$15,000	\$15,000	\$10,000		\$175,000	\$215,000
Hamilton	Manual - Countywide	\$20,000	\$20,000	\$187,000		\$273,000	\$500,000
Jefferson	Manual - Unincorporated	\$20,000	\$20,000	\$117,000		\$343,000	\$500,000
Lafayette	Manual - Unincorporated	\$10,000	\$15,000	\$22,000		\$266,000	\$313,000
Levy	Manual - Unincorporated	\$20,000	\$20,000	\$327,000		\$400,000	\$767,000
Madison	Manual - Unincorporated	\$20,000	\$20,000	\$100,000		\$350,000	\$490,000
Suwannee	Manual - Unincorporated	\$20,000	\$20,000	\$149,000		\$371,000	\$560,000
Taylor	Manual - Unincorporated	\$20,000	\$20,000	\$398,000		\$462,000	\$900,000
Union	Manual - Unincorporated	\$20,000	\$20,000	\$129,000	\$5,000	\$126,000	\$300,000
TOTAL:		\$245,000	\$260,000	\$2,055,000	\$83,000	\$3,603,000	\$6,246,000

Re-Study Project

\$6,246,000

**SRWMD Middle Option Funded
5 Year Project Plan
FY Funding**

County	Format of Effective FIRM	Estimated Project Start Dates (\$ Costs)				
		FY04	FY05	FY06	FY07	FY08
Alachua	Digital - countywide (Meets FEMA Modernized Map Specifications in FY04)					\$325,000
Bradford	Manual - Countywide					\$500,000
Columbia	Manual - Unincorporated		\$500,000			
Dixie	Manual - Unincorporated	\$376,000				
Gilchrist	Manual - Countywide	\$215,000				
Hamilton	Manual - Countywide				\$500,000	
Jefferson	Manual - Unincorporated					\$500,000
Lafayette	Manual - Unincorporated	\$313,000				
Levy	Manual - Unincorporated					\$767,000
Madison	Manual - Unincorporated				\$490,000	
Suwannee	Manual - Unincorporated		\$560,000			
Taylor	Manual - Unincorporated			\$900,000		
Union	Manual - Unincorporated			\$300,000		
TOTAL:		\$904,000	\$1,060,000	\$1,200,000	\$990,000	\$2,092,000

**SRWMD Low Option Funded
5 Year Project Plan
Work Task**

County	Format of Effective FIRM	Estimated Project Cost (\$ Costs)					
		Scoping	Outreach	Hydrologic & Hydraulic Analysis	Floodplain Redelineation	DFIRM Production	Total Cost
Alachua	Digital - countywide (Meets FEMA Modernized Map Specifications in FY04)	\$5,000	\$10,000		\$50,000	\$55,000	\$120,000
Bradford	Manual - Countywide	\$5,000	\$10,000		\$10,000	\$200,000	\$225,000
Columbia	Manual - Unincorporated	\$5,000	\$10,000			\$364,000	\$379,000
Dixie	Manual - Unincorporated	\$5,000	\$10,000		\$19,000	\$248,000	\$282,000
Gilchrist	Manual - Countywide	\$5,000	\$10,000			\$175,000	\$190,000
Hamilton	Manual - Countywide	\$5,000	\$10,000			\$273,000	\$288,000
Jefferson	Manual - Unincorporated	\$5,000	\$10,000			\$340,000	\$355,000
Lafayette	Manual - Unincorporated	\$5,000	\$10,000		\$22,000	\$266,000	\$303,000
Levy	Manual - Unincorporated	\$5,000	\$10,000			\$400,000	\$415,000
Madison	Manual - Unincorporated	\$5,000	\$10,000			\$350,000	\$365,000
Suwannee	Manual - Unincorporated	\$5,000	\$10,000			\$371,000	\$386,000
Taylor	Manual - Unincorporated	\$5,000	\$10,000			\$462,000	\$477,000
Union	Manual - Unincorporated	\$5,000	\$10,000		\$5,000	\$140,000	\$160,000
TOTAL:		\$65,000	\$130,000	\$0	\$106,000	\$3,644,000	\$3,945,000

Re-Study Project

\$3,945,000

**SRWMD Low Option Funded
5 Year Project Plan
FY Funding**

County	Format of Effective FIRM	Estimated Project Start Dates (\$ Costs)				
		FY04	FY05	FY06	FY07	FY08
Alachua	Digital - countywide (Meets FEMA Modernized Map Specifications in FY04)					\$120,000
Bradford	Manual - Countywide					\$225,000
Columbia	Manual - Unincorporated		\$379,000			
Dixie	Manual - Unincorporated	\$282,000				
Gilchrist	Manual - Countywide	\$190,000				
Hamilton	Manual - Countywide				\$288,000	
Jefferson	Manual - Unincorporated					\$355,000
Lafayette	Manual - Unincorporated	\$303,000				
Levy	Manual - Unincorporated					\$415,000
Madison	Manual - Unincorporated				\$365,000	
Suwannee	Manual - Unincorporated		\$386,000			
Taylor	Manual - Unincorporated			\$477,000		
Union	Manual - Unincorporated			\$160,000		
TOTAL:		\$775,000	\$765,000	\$637,000	\$653,000	\$1,115,000

Appendix E

**SRWMD GPRA Goals
5 Year Project Plan**

County	County Wide Population	Municipalities within County	Format of Effective FIRM	GPRA Goal 1: Population with Digital Map Online						GPRA Goal 2: Population Adopted Modernized Map						Leverage Dollars
				FY04	FY05	FY06	FY07	FY08	FY09	FY04	FY05	FY06	FY07	FY08	FY09	
Alachua	217,955		Digital - countywide (Meets FEMA Modernized Map Specifications in FY04)	217,955							217,955					\$394,100
		Archer, City of														
		Gainesville, City of														
		Hawthorne, City of														
		High Springs, City of														
		La Cross, Town of														
		Micanopy, Town of														
		Newberry, City of														
		Unincorporated Areas														
		Waide, City of														
Bradford	26,088		Manual - countywide						26,088							\$22,695
		Brooker, Town of														
		Hampton, City of														
		Lawtey, City of														
		Starke, City of														
		Unincorporated Areas														
Columbia	56,513					56,513							56,513			\$1,560
		Big Alligator Lake, Town of	Manual													
		Lake City, City of	Manual													
		Unincorporated Areas	Manual													
Dixie	13,827					13,827							13,827			\$1,095
		Cross City, Town of	Manual													
		Horseshoe Beach, Town of	Manual													
		Unincorporated Areas	Manual													
Gilchrist	14,437		Manual - countywide			14,437							14,437			\$750
		Fanning Springs, Town of														
		Trenton, City of														
		Unincorporated Areas														
Hamilton	13,327		Manual - countywide					13,327							13,327	\$34,710
		Jasper, Town of														
		Jennings, Town of														
		Unincorporated Areas														
		White Springs, Town of														
Jefferson	12,902								12,902							\$43,610
		Monticello, City of	Manual													
		Unincorporated Areas	Manual													
Lafayette	7,022					7,022							7,022			\$1,140
		Mayo, Town of	Manual													
		Unincorporated Areas	Manual													
Madison	18,733							18,733							18,733	\$39,160
		Greenville, Town of	Manual													
		Lee, Town of	Manual													
		Madison, City of	Manual													
		Unincorporated Areas	Manual													
Suwannee	34,844					34,844							34,844			\$1,590
		Bradford, Town of	Manual													
		Live Oak, City of	Manual													
		Unincorporated Areas	Manual													
Taylor	19,256							19,256							19,256	\$1,980
		Perry, City of	Manual													
		Unincorporated Areas	Manual													
Union	13,442							13,442							13,442	\$540
		Lake Butler, City of	Manual													
		Unincorporated Areas	Manual													
		of	Manual													
Total:	448,346			217,955	35,286	91,357	32,698	32,060	38,990	0	217,955	35,286	91,357	32,698	32,060	\$542,930
Actual:				49%	56%	77%	84%	91%	100%	0%	49%	56%	77%	84%	91%	10%
Target:				20%	50%	65%	75%	85%	100%	10.00%	20.00%	35.00%	50.00%	70.00%	90.00%	20%

Re-Study Project
 Note: Actual leverage % based on high funded option minus printing costs

Appendix F

FEMA Floodplain Mapping Data Availability
Data For Counties
Suwannee River Water Management District

SRWMD County FEMA Data

	Alachua	Unit	#Units	\$/unit	Total	Bradford	Unit	#Units	\$/unit	Total	Columbia	Unit	#Units	\$/unit	Total	Dixie	Unit	#Units	\$/unit	Total	Gilchrist	Unit	#Units	\$/unit	Total	Hamilton	Unit	#Units	\$/unit	Total	Jefferson	Unit
Topography - LIDAR 2ft Contours. (2001)	X	mi2	874	\$400	\$349,600		mi2		\$950	\$0		mi2		\$950		mi2		\$950	\$0		mi2		\$950	\$0		mi2		\$950	\$0		mi2	
Topography - (not digital) Woolpert 2ft Contours, Upper/Middle Suwannee, Santa Fe, New River, Withlacoochee, (1982)	X	mi2		\$950	\$0	X	mi2		\$950	\$0	X	mi2		\$950		X	mi2		\$950	\$0	X	mi2		\$950	\$0	X	mi2		\$950	\$0		mi2
River Cross-Sections - Suwannee, Santa Fe, Alapaha, Withlacoochee, (1981-82)	X	linear mi	60	\$2,200	\$132,000	X	linear mi	28	\$2,200	\$61,600	X	linear mi	77	\$2,200	\$169,400	X	linear mi	56	\$2,200	\$123,200	X	linear mi	52	\$2,200	\$114,400	X	linear mi	133	\$2,200	\$292,600		linear mi
Floodplain Mapping - 100yr Flood, River Only, Suwannee, Santa Fe, Alapaha, Withlacoochee, Aucilla, (1991, 00)	X	linear mi	60	\$1,400	\$84,000	X	linear mi	28	\$1,400	\$39,200	X	linear mi	77	\$1,400	\$107,800	X	linear mi	56	\$1,400	\$78,400	X	linear mi	52	\$1,400	\$72,800	X	linear mi	133	\$1,400	\$186,200	X	linear mi
Hydrologic and Hydraulic Modeling - HEC 2, Suwannee, Santa Fe, Alapaha, Withlacoochee, Aucilla, (1981-85)	X	linear mi	60	\$2,500	\$150,000	X	linear mi	28	\$2,500	\$70,000	X	linear mi	77	\$2,500	\$192,500	X	linear mi	56	\$2,500	\$140,000	X	linear mi	52	\$2,500	\$130,000	X	linear mi	133	\$2,500	\$332,500	X	linear mi
Aerial Photography - USGS, DOQs, IR, 3ft, (1994, 1999)	X	panels	100	\$15	\$1,500	X	panels	51	\$15	\$765	X	panels	104	\$15	\$1,560	X	panels	73	\$15	\$1,095	X	panels	50	\$15	\$750	X	panels	78	\$15	\$1,170	X	panels
Aerial Photography - DOT, B/W, 1ft, (2002-03)		panels		\$430	\$0	X	panels	51	\$430	\$21,930		panels		\$430		panels		\$430	\$0		panels		\$430	\$0	X	panels	78	\$430	\$33,540	X	panels	
Aerial Photography - County, Color, 1ft, (2001)	X	panels	100	\$430	\$43,000		panels		\$430	\$0		panels		\$430		panels		\$430	\$0		panels		\$430	\$0		panels		\$430	\$0		panels	
					\$760,100					\$193,495					\$471,260					\$342,695					\$317,950					\$846,010		

FEMA Floodplain Mapping Data Availability
 Data For Counties
 Suwannee River Water Management District

#Units	\$/unit	Total	Lafayette	Unit	#Units	\$/unit	Total	Levy	Unit	#Units	\$/unit	Total	Madison	Unit	#Units	\$/unit	Total	Suwannee	Unit	#Units	\$/unit	Total	Taylor	Unit	#Units	\$/unit	Total	Union	Unit	#Units	\$/unit	Total		
	\$950	\$0		mi2		\$950	\$0		mi2		\$950	\$0		mi2		\$950	\$0		mi2		\$950	\$0		mi2		\$950	\$0		mi2		\$950	\$0		
	\$950	\$0	X	mi2		\$950	\$0	X	mi2		\$950	\$0	X	mi2		\$950	\$0	X	mi2		\$950	\$0	X	mi2		\$950	\$0	X	mi2		\$950	\$0		
57	\$2,200	\$125,400	X	linear mi	56	\$2,200	\$123,200	X	linear mi	34	\$2,200	\$74,800	X	linear mi	54	\$2,200	\$118,800	X	linear mi	103	\$2,200	\$226,600	linear m	46	\$2,200	\$101,200	X	linear mi	12	\$2,200	\$26,400			
57	\$1,400	\$79,800	X	linear mi	56	\$1,400	\$78,400	X	linear mi	34	\$1,400	\$47,600	X	linear mi	54	\$1,400	\$75,600	X	linear mi	103	\$1,400	\$144,200	X	linear m	46	\$1,400	\$64,400	X	linear mi	12	\$1,400	\$16,800		
57	\$2,500	\$142,500	X	linear mi	56	\$2,500	\$140,000	X	linear mi	34	\$2,500	\$85,000	X	linear mi	54	\$2,500	\$135,000	X	linear mi	103	\$2,500	\$257,500	X	linear m	46	\$2,500	\$115,000	X	linear mi	12	\$2,500	\$30,000		
98	\$15	\$1,470	X	panels	76	\$15	\$1,140	X	panels		\$15	\$0	X	panels	88	\$15	\$1,320	X	panels	106	\$15	\$1,590	X	panels	132	\$15	\$1,980	X	panels	36	\$15	\$540		
98	\$430	\$42,140		panels		\$430	\$0	X	panels		\$430	\$0	X	panels	88	\$430	\$37,840		panels		\$430	\$0	panels		\$430	\$0	panels		\$430	\$0	panels		\$430	\$0
	\$430	\$0		panels		\$430	\$0		panels		\$430	\$0		panels		\$430	\$0		panels		\$430	\$0	panels		\$430	\$0	panels		\$430	\$0	panels		\$430	\$0
		\$391,310					\$342,740					\$207,400					\$368,560								\$282,580						\$73,740			

FEMA Floodplain Mapping Data Availability
 Data For Municipalities
 Suwannee River Water Management District

SRWMD City FEMA Data Available

	Cedar Key	Unit	#Units	\$/unit	Total	Greenville	Unit	#Units	\$/unit	Total	High Springs	Unit	#Units	\$/unit	Total	Mayo	Unit	#Units	\$/unit	Total	Lake City	Unit	#Units
Topography - LIDAR 1ft Contours, (2000-01)	X	mi2		\$1,450	0		mi2		\$1,450	0	X	mi2		\$1,450	0		mi2		\$1,450	0		mi2	
Topography - 1ft, 2ft, 5ft, (1998-02)		mi2		\$1,150	0		mi2		\$1,150	0		mi2		\$1,150	0		mi2		\$1,150	0	X	mi2	
Structure Surveys, (1998-02)		linear mi		\$2,200	0		linear mi		\$2,200	0		linear mi		\$2,200	0		linear mi		\$2,200	0	X	linear mi	
Floodplain Mapping - FEMA Q3 Data (FIRM Map Date)	X	linear mi		\$1,400	0		linear mi		\$1,400	0		linear mi		\$1,400	0		linear mi		\$1,400	0		linear mi	
Floodplain Mapping - Flood Insurance Study, (1995 & 1998)		linear mi		\$1,400	0		linear mi		\$1,400	0		linear mi		\$1,400	0		linear mi		\$1,400	0		linear mi	
Hydologic and Hydraulic Modeling, (1998-02)		mi2		\$3,600	0		mi2		\$3,600	0		mi2		\$3,600	0		mi2		\$3,600	0	X	mi2	
Watershed Studies/ Stormwater Master Plans, (1975-02)	X	mi2		\$3,600	0	X	mi2		\$3,600	0		mi2		\$3,600	0	X	mi2		\$3,600	0	X	mi2	
Aerial Photography - USGS DOQs IR 3ft, (1994, 1999)	X	panels		\$15	0	X	panels		\$15	0	X	panels		\$15	0	X	panels		\$15	0	X	panels	
Aerial Photography - DOT, B/W, 1ft, (2002-03)	X	panels		\$430	0	X	panels		\$430	0		panels		\$430	0		panels		\$430	0		panels	

FEMA Floodplain Mapping Data Availability
 Data For Municipalities
 Suwannee River Water Management District

		Live Oak				Madison				Perry				Cooks Hammock			
\$/unit	Total	Unit	#Units	\$/unit	Total	Unit	#Units	\$/unit	Total	Unit	#Units	\$/unit	Total	Unit	#Units	\$/unit	Total
\$1,450	0	mi2		\$1,450	0	mi2		\$1,450	0	mi2		\$1,450	0	mi2		\$1,450	0
\$1,150	0	X	mi2	\$1,150	0	X	mi2	\$1,150	0	mi2		\$1,150	0	mi2		\$1,150	0
\$2,200	0	X	linear mi	\$2,200	0	linear mi		\$2,200	0	X	linear mi	\$2,200	0	linear mi		\$2,200	0
\$1,400	0	X	linear mi	\$1,400	0	linear mi		\$1,400	0	linear mi		\$1,400	0	linear mi		\$1,400	0
\$1,400	0	X	linear mi	\$1,400	0	linear mi		\$1,400	0	X	linear mi	\$1,400	0	linear mi		\$1,400	0
\$3,600	0	X	mi2	\$3,600	0	mi2		\$3,600	0	X	mi2	\$3,600	0	mi2		\$3,600	0
\$3,600	0	X	mi2	\$3,600	0	X	mi2	\$3,600	0	mi2		\$3,600	0	X	mi2	\$3,600	0
\$15	0	X	panels	\$15	0	X	panels	\$15	0	X	panels	\$15	0	X	panels	\$15	0
\$430	0	panels		\$430	0	X	panels	\$430	0	panels		\$430	0	panels		\$430	0