FLORIDA'S STRATEGIC PLAN FOR STATEWIDE GEOGRAPHIC INFORMATION SYSTEMS (GIS) COORDINATION

APRIL 2008

Prepared By
Florida's National Spatial Data Infrastructure
Cooperative Agreements Program
Steering Committee

Project Hosted By
Florida Division of Emergency Management

Project Facilitation By
Fugro EarthData, Inc.
Orlando, FL

TABLE OF CONTENTS

Cover Photo Credits:
FREAC LABINS - Digital Raster Graphic of NW Florida (map background)/ *SFWMD Photo Database* - background: mangroves at Everglades National Park; clockwise from top left: sawgrass at a nutrient removal site, West Palm Beach Intracoastal Waterway, Lake Okeechobee and Everglades Agricultural Area, American Alligator, NOAA image of Hurricane Frances, Florida Panther, City of Miami night skyline, boardwalk through a cypress swamp; center: marina at Key West/ *Exploring Florida website, by University of South Florida* - Space Shuttle launch, NASA GRIN Image 93PC-0885/ *Florida's Division of Historical Resources website* - Great Seal of the State of Florida

1   EXECUTIVE SUMMARY

Hurricanes. Tornadoes. Floods. Rising sea level. Water shortages. Traffic congestion. Overcrowded schools. Urban sprawl. Unstable real-estate market. Increasing cost of living. Limited funding.

These are some of many realities we continually face in the State of Florida. To more effectively manage these challenges, while fostering sustainable and vibrant economic growth, Florida needs to share geographic information across all levels of government and all business sectors, in a reliable and efficient manner. That is the vision of this strategic plan:

> **To improve the quality of life in Florida
> by optimizing the use of geographic information
> through communication, coordination, and collaboration.**

Geographic information systems (GIS) technology has been used for years across Florida. Many in the public and private sectors have successfully used this technology and the data it produces to help manage our natural resources, predict the impacts of urban development, and respond to emergencies. However, the unprecedented hurricane seasons of 2004 and 2005 brought to light the unequal access to and usage of this technology. Those events also accentuated many of the quality, interoperability, and accessibility issues associated with Florida's geographic data. These include inconsistency from location to location, duplication across many levels of government, and lack of availability when needed.
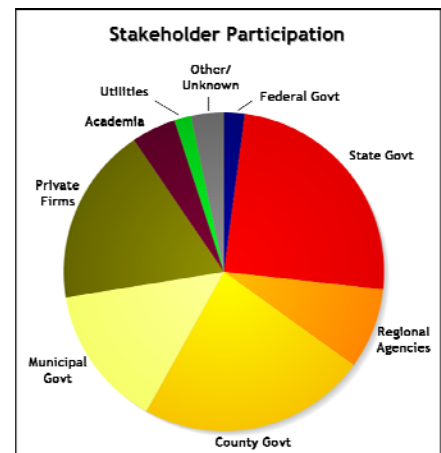
> "One lesson from Hurricane Katrina is clear— if the tactical alliances had existed for <u>geospatial information resource sharing</u> … the <u>recovery support effort</u> would have moved faster, <u>saving</u> money and lives."
>
> *Twyla McDermott, GIS Manager, Katrina relief volunteer*
> *(Quote from FGDC's 2006 publication, "The Urban Frontier: A Call to Action.")*

Effective and sustainable GIS statewide coordination *maximizes the return of Florida's tax dollars*, increases the *availability of reliable geographic data* that *equally benefits all regions* of the state, and *improves the quality* of critical government services. ***Effective statewide coordination is essential*** for improving Florida's ability to:

- Protect health, safety, and welfare
- Mitigate against the impacts, prepare for, respond to, and recover from emergencies
- Promote economic development and ensure sustainable growth
- Protect and manage natural resources
- Manage infrastructure

This strategic plan presents the vision and overarching goals that will successfully improve statewide coordination and sharing of geographic information for the benefit of all stakeholders in the State of Florida. This plan is the product of a process overseen by a 21-member steering committee that included representatives from all levels of government, academia and the private sector, from various regions of the state. The Committee used several methods to engage as many stakeholders as possible in the planning process. The stakeholder community provided the details needed to understand the current status of

Stakeholder Participation

geographic data sharing and coordination, as well as the availability and usage of GIS within the state. They also offered specific suggestions to improve the availability of current and accurate GIS data vital to decision makers, program managers, and the GIS user community. Their valuable input helped the Committee determine what is required to successfully improve statewide GIS data coordination throughout Florida.

maps increase economic development

The Committee identified several positive examples of coordination currently underway. It also identified champions in the community that are doing what they can with limited funding to improve the accessibility and quality of geographic data within their region of influence. As commendable as these localized efforts are, more formal steps must be taken to ensure that the citizens of Florida fully realize the benefits of reliable and readily available GIS data and related technologies.

The State of Florida has hundreds of agencies that produce and/or rely on GIS data. These include 67 counties, over 400 municipalities, 5 water management districts, 11 regional planning councils, 26 metropolitan planning organizations, and scores of other private, public, tribal, academic and non-profit organizations.

better maps save lives

maps improve your children's schools

In 1994, a Presidential Executive Order highlighted the critical necessity of GIS data coordination for the entire nation and ordered the creation of a sustainable ***National Spatial Data Infrastructure*** (NSDI) to work in cooperation with all levels of government and the private sector to avoid "**… duplication of effort and promote effective and economical management of resources**".

The Federal Geographic Data Committee (FGDC) is assigned the responsibility of overseeing development and implementation of the NSDI. As a result of this executive order, federal agencies must ensure that all collected or produced GIS data meet FGDC standards, "…prior to obligating funds for such activities". This includes GIS data collected via grants provided to, or in partnerships with, other non-federal agencies, such as state and local agencies in Florida.
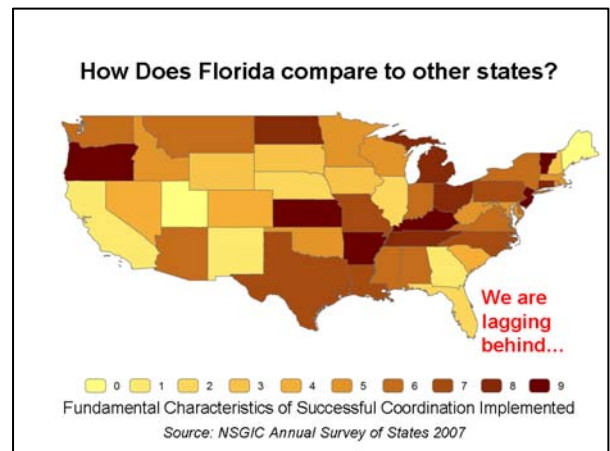
To make it possible to achieve this overarching and critical mission, FGDC, in partnership with the National States Geographic Information Council (NSGIC), started a national program referred to as the "*Fifty States Initiative*". This program recognizes that "**it will not be possible to build the NSDI without taking advantage of the day-to-day efforts of all levels of government**".

This initiative is helping states, including Florida, to fulfill their role in building the NSDI and in meeting nine fundamental characteristics for effective statewide coordination identified by NSGIC.

Florida is lagging behind. Our state is consistently ranked lower than most in the coordination of GIS.

As of 2007, Florida is barely meeting two of the nine success criteria. ***What does this mean?*** It means that Florida does not have in place a statewide GIS coordination program to effectively maximize the return on invested tax dollars. We may not have easy access to reliable information that can facilitate sustainable economic growth, protection of our natural resources, and response to emergencies.

This strategic plan highlights crucial steps that the State of Florida should take to coordinate the effective investments and use of geographic information, to improve its services to citizens, and to play a role in contributing to the NSDI.

1.1   Strategic Goals

To improve services to citizens and maximize investments in GIS technologies it is essential that the State of Florida:

- **Provide leadership** for coordination of GIS efforts across all levels of government throughout the state.

- **Invest in GIS infrastructure** by supporting the development of coordinated GIS data clearinghouses that provide the foundation for effective data discovery and sharing.

- **Communicate and educate** all concerned about the benefits and capabilities achieved by investments in GIS to support effective decision making.

1.2   Key Recommendations

To achieve successful GIS coordination, this strategic plan recommends the following specific actions:

- Establish a formal GIS coordination framework, either by executive order or legislation, that includes:
    - A **Geospatial Programs Office** (GPO) in the Agency for Enterprise Information Technology, headed by a full time **GIS Coordinator** and other supporting personnel to implement the required coordination activities and lead the communications and collaboration efforts of the GIS stakeholder community.

- A **Geographic Information Council** consisting of high-level officials appointed by the Governor to provide the GPO with high-level guidance on policy, standards, priorities and budget issues.

- **Technical Advisory Committees** to provide opportunities for the broad GIS community to make recommendations on standards, guidelines, policies, and other coordination issues.

- **Formalize, sustain and expand** existing publicly available **data clearinghouses.**

- **Formalize geospatial data stewardship activities**, including the establishment of a formal Florida Board on Geographic Names.

- Develop a **Statewide GIS Coordination Business Plan** to address implementation of the strategic goals including resources, timeframes, budget needs, and anticipated return on investments.

Executive Summary Photo Credits:
NSGIC under contract to FGDC.

2   FLORIDA'S GEOGRAPHIC INFORMATION SYSTEM (GIS) COORDINATION STRATEGIC PLANNING METHODOLOGY

The unprecedented hurricane seasons of 2004 and 2005 brought to light the unequal access to and usage of this technology. Those events also accentuated many of the quality, interoperability, and accessibility issues associated with Florida's geographic data: inconsistency from location to location; duplication across many levels of government; and all too frequently a lack of availability when needed.

From this realization arose a groundswell of support for improved GIS coordination. In response to that, a small group of GIS managers and professionals initiated a project to develop this strategic plan. Building on the successes of regional user groups and past efforts to coalesce Florida's GIS assets, the group initiated this collaborative effort. This plan is based on the proven and successful strategic planning process provided by FGDC and NSGIC. This process focused on gathering information from the GIS community throughout the state to ensure the strategic plan reflects the sentiments and needs expressed by the stakeholder community.

The use of GIS has long been integral to efficient communication and rapid response based on solid data and consistent delivery. These efforts remain regionalized and lack statewide coordination.

2.1   Strategic Planning Roles and Responsibilities

2.1.1   Steering Committee

A diverse group of management-level GIS professionals from across the state formed the core of the strategic plan steering committee. This group included representatives from federal, state, regional, county, and city governments, as well as representatives from the private sector and the university community.

The steering committee provided overall project direction. Further responsibilities included review, editing, and ultimate validation of the plan document and recommendations. Steering committee members are listed in Appendix A.

2.1.2   NSDI CAP Grant

The strategic planning phase of this initiative was largely supported by a grant awarded to Florida Division of Emergency Management (FDEM) by the FGDC under the 2007 NSDI Cooperative Agreement Program (CAP) Category 3: Strategic and Business Plan Development in Support of the NSDI Future Directions Fifty States Initiative. The grant application and award identified the following scope for this strategic plan:

> "Define and identify steps to implement new mechanisms for interagency, statewide geospatial coordination within Florida. Through a series of facilitated meetings, and employing the services of a hired, professional consultant, stakeholders will explore the National States Geographic Information Council (NSGIC) nine recommended coordination criteria, codifying those that may already be achieved, and identifying additional criteria to achieve. The result

of this project will use NSGIC templates to produce a strategic plan to find the means, appoint authorities, and obtain funding and executive support to accomplish further coordination between state government, local government, federal government, tribal government, education and private stakeholders within Florida's geospatial community."

2.1.3 Project Staff—Roles and Responsibilities

FDEM served as the institutional home for this project, providing the chair of the committee, financial support for weekly conference calls, and facilities for the majority of the steering committee meetings. FDEM also dedicated a portion of its website for the distribution of current project information and documents: http://www.floridadisaster.org/gis/capgrant/index.htm.

The Florida Institute of Government's GIS Services Group developed marketing material focused on building GIS community awareness, represented the needs of evolving communities in Florida, and provided GIS based support. Their Training Services group assisted with event support, email communications to stakeholders, and other administrative functions.

Fugro EarthData, Inc. was selected through a request for proposal process to provide subject matter expertise, project facilitation, data collection and analysis, and initial strategic plan document creation services.

2.2   Strategic Planning Methodology

The steering committee followed a standard strategic planning methodology that included a project initiation process, information gathering, and stakeholder outreach. Strategizing and planning followed methodologies as presented in the NSGIC strategic planning template available through that organization's web site.

NSGIC assists member states in strengthening their coordination programs through its States Coordination Model. A primary goal of the Fifty States Initiative is to establish formal statewide GIS coordination councils to help implement and sustain the NSDI.

Florida's development of a State Spatial Data Infrastructure (SSDI) is critical to the national NSDI effort. Establishing Florida's SSDI requires collaboration and cooperation across all levels of government. Florida understands the need for a SSDI and seeks this goal; however, GIS leadership also desires improved systems and processes to enhance data quality, systems interoperability, and cost effective sharable resources at all levels of public and private sectors.

2.3   Outreach Activities

Identifying and reaching out to Florida's diverse GIS stakeholder community was critical to the strategic planning process. During this outreach the steering committee educated stakeholders about the need for coordination and gathered as much input as possible. The outreach process was designed to encourage broad participation. Nearly 1,000 GIS professionals participated in activities related to the plan.

2.3.1 Regional User Group Conferences

The outreach began in the Fall of 2007, with educational sessions at each of the Florida's three major regional GIS conferences. These sessions served to educate stakeholders about the GIS strategic planning process and coordination goals, as well as to address questions and concerns about this initiative. Over 520 professionals attended these sessions. The three conferences were:

- Central Florida GIS Workshop (CFGIS), Orlando, September 2007
- South Florida GIS Expo, West Palm Beach, October 2007
- Seven Hills Regional User Group (SHRUG) Tallahassee, November 2007

> - **520+** stakeholders were provided information about this plan at regional GIS user group meetings
> - **150+** stakeholders attended one of the three half-day regional workshops
> - **309** stakeholders participated in an online survey

After this initial outreach, more in-depth outreach was conducted. This included three half-day regional strategic workshops, held in North, Central and South Florida, where more than 150 stakeholders participated. Extensive one-on-one interviews with a sampling of key stakeholders selected by the steering committee allowed for discussions of GIS coordination issues with upper-level decision makers. In addition 309 individuals responded to an in-depth online survey. The highlights of these in-depth outreach activities are summarized in the data summary document available from the project website.

2.3.2 Regional Strategic Planning Workshops

Three half-day regional strategic planning workshops offered direct interaction with GIS stakeholders and leadership. Invitation distribution – through traditional public postings and significant email campaigns—reached high-level members of such trade associations and organizations as the Florida League of Cities, the Florida Association of Counties, the Florida Association of Property Appraisers, Urban and Regional Information Systems Association (URISA), the Florida chapter of the American Society for Photogrammetry and Remote Sensing (ASPRS), and the Florida Association of Cadastral Mappers.

Open invitations encouraged stakeholder attendance and the workshop format focused on soliciting opinions and ideas. The "distribution of organization representation" for these workshops aligns with the online survey respondents. Over 150 attendees participated in one of the three sessions.

Regional Workshop Locations:

- North Florida .... Tallahassee ......December 4, 2007
- South Florida .... Plantation ....December 10, 2007
- Central Florida ...... Orlando ....December 11, 2007

Table 1. Distribution of Organizations Participating in Regional Workshops

Organization Type	Percent
Local government	34.9
City government	*12.9*
County government	*22.0*
Sub-state/regional agency	5.5
State government	26.6
Federal government	5.5
University	3.7
Private firm	18.4
Other or unknown	5.5

2.3.3   Stakeholder Interviews

The steering committee identified key stakeholder organizations for in-depth interviews. Organizations that participated in the interviews included city governments, county governments, regional governments, state agencies, federal agencies, and universities. The complete list of participating organizations can be found in Appendix B.

Table 2. Distribution of Organizations Participating in Interviews

Organization Type	Percent
Local government	43.4
City government	*17.3*
County government	*26.1*
Sub-state/regional agency	21.7
State government	13.0
Federal government	4.3
University	8.7
Private firm	8.7

2.3.4   Online Survey Participation

In order to tap into the broadest input from the largest group possible, an on-line survey was made available. The availability of this on-line survey was publicized at all stakeholder events, through e-mail notices from professional organizations to their membership, and with a link on the project website.

A diverse stakeholder population responded to the survey with approximately equal percentages from state and county government agencies followed by city and regional entities.

There was strong participation from private firms—a positive sign that the private sector has an interest in GIS coordination activities. Responses show that private firms will ultimately be supportive of state leadership.

Detailed information of online survey responses can be found in Appendix C.

Table 3. Distribution of Online Survey Respondent Organization

Organization	Percent
Local government	37.5
City government	*14.4*
County government	*23.1*
Sub-state/regional agency	8.2
State government	24.7
Federal government	2.1
University	4.5
Private firm	18.1
Utility	1.7
Other or unknown	3.3

2.4   Report Authoring

The steering committee received a summary document detailing the interviews and discussions, and invested significant time analyzing the results. This strategic plan is the sum of that collaborative effort. The committee met formally in three sessions covering 1.5 days each to interpret the findings, discuss their implications, and decide the best way to validate the vision and goals for the GIS coordination effort. The committee also worked to frame the specific structures and functions determined meaningful and desired for Florida's GIS coordination entity.

Draft versions of the plan were posted on the project website for public review and comment.. Efforts were made to distribute information on the availability of the plan for comment to regional workgroups, e-mail list servers, and press releases. Comments were received, compiled, and reviewed.

Key to the findings was a discussion of the current GIS environment within Florida and the requirements of the many public and private sector organizations with operational, planning, and management needs for which GIS exists. The Committee studied examples from states that lead the nation, identifying keys for success and considering where Florida should expect to be among our peers.

The committee affirmed that communication, coordination, and collaboration are critical for success. The committee evaluated critical needs experienced daily by the Florida GIS community, as well as future expectations based on proven successes across the nation. The committee considered cost effective management, and how to create a sustainable yet flexible approach designed to deliver services and solutions while meeting the critical needs of the underserved. The committee remains committed to this initiative.

3   CURRENT SITUATION IN FLORIDA

Florida has long been a leader in the application of GIS to environmental, emergency response, and planning functions. Informal coordination between organizations and institutions has been achieved with collaboration between managers and technicians, based on a network of individuals typically connected through regional initiatives.

Data sharing has been accomplished through a series of ad hoc personal relationships or through formal agreements between individual governmental bodies. Distribution of data to GIS users has been accomplished through a series of web distribution portals.

There is tremendous diversity in the GIS community in Florida, as demonstrated by the distribution of respondents to the online survey (as described in Table 3, Section 2.3.4). This includes not only institutional levels of government and the private sector, but a host of other variables including funding levels, maturity of GIS implementations, and geography.

The more than 300 respondents to the online survey and the 150 that attended half-day workshops serve as a clear demonstration of the level of interest in GIS and coordination of those technologies in Florida.

Past formal coordination efforts have struggled to sustain through administration changes. The success that has been created through informal coordination is not comprehensive and therefore misses many of the benefits that could be realized from a more widespread coordination effort. Informal coordination also lacks sustainability since they are typically based on personal relationships that do not survive staff transition.

3.1   GIS Coordination History in Florida

The history of GIS coordination in Florida started in 1985 with the creation of the Growth Management Data Network Coordination Council. The Council was charged with coordinating the data required to support the state's growth management needs. Coordination efforts shifted to the Geographic Information Board (GIB) that was legislatively empowered in 1996. The GIB was supported by a small core staff and served in the coordination role until 2001 when it was allowed to sunset. The GIB has not been replaced by a formal organization.

Lacking a formal coordination entity, several institutions, including Florida State University's Florida Resource and Environmental Analysis Center (FREAC) and the Florida Geographic Data Library (FGDL) at the University of Florida's GeoPlan Center continue as data distribution clearinghouses. Informal coordination continues to show a need for coordination activities and clearly suggests that the citizens of Florida would realize greater success if efforts were formalized.

The widespread damage caused during the active hurricane season of 2004 made it clear, however, that additional coordination would benefit the state's emergency response and recovery. Coordinated and efficient response in some cases was hampered by the lack of good, consistent geographic data or the lack of effective mechanisms to provide the data to the decision makers in need of it.

3.2   NSGIC Characteristics of Effective Statewide GIS Coordination

NSGIC has identified nine fundamental characteristics of effective statewide GIS coordination programs and uses those criteria as a benchmark for determining the status of coordination in each state. The council sponsors an annual survey of the status of GIS coordination in each of the fifty states.

In 2007, Florida reported implementation of two of the nine criteria. Given the evolution of GIS within Florida, where technology has been adopted to improve the effective operation of individual organizations as opposed to inter-agency or statewide initiatives, it is not surprising that Florida has demonstrated comparatively low scores on the nine NSGIC characteristics. An "implemented" response on only two of nine criteria ranks Florida near the bottom of states for GIS coordination.

Table 4. Florida's Current Status—NSGIC Fundamental Coordination Characteristics

GIS Coordination Success Criteria	2007 Status
A full time, paid coordinator position is designated and has the authority to implement the state's business and strategic plans	Not Fully Implemented
A clearly defined authority exists for statewide coordination of geospatial information technologies and data production	Not Fully Implemented
A statewide coordination office has a formal relationship with the State's Chief Information Office (CIO)	Not Fully Implemented
A champion (policy, or executive decisions maker) is aware and involved in the process of geospatial coordination	Not Fully Implemented
Responsibilities for developing the NSDI and a State Clearinghouse are assigned	Implemented
The ability exists to work and coordinate with local governments, academia, and the private sector	Not Fully Implemented
Sustainable funding sources exist to meet project needs	Not Fully Implemented
GIS Coordinators have the authority to enter into contracts and become capable of receiving and expending funds	Not Fully Implemented
The Federal government works through the statewide coordination authority	Implemented

While there has been strong implementation of GIS within many state agencies, regional entities, and local governments, the lack of a formal statewide GIS coordination effort hampers full implementation of the technology and, in some cases, may have resulted in unnecessary duplication of efforts.

3.3   Status of Framework Data

The FGDC has established several key GIS data themes to be the framework within the NSDI. These GIS data themes are believed to be the key to support the sharing of resources, improving communications, and increasing efficiency. The framework data themes are:

- Geodetic control (the reference of geographic information to the actual ground position of the data)
- Cadastral (property boundaries and ownership)
- Orthoimagery (spatially accurate and ground referenced aerial photography)
- Elevation (digital data indicating the elevation above sea level at any point)
- Hydrography (rivers, streams, lakes, etc.)
- Administrative units (boundaries of cities, counties, and special purpose districts)
- Transportation (features such as roads, bridges, railroads, ports, and airports)

Florida is making progress on the coordination of these framework data layers through the efforts of individual organizations as detailed below:

3.3.1 Geodetic Control

The geodetic control framework layer for Florida has been developed and is maintained through a combination of efforts by the National Geodetic Survey (through NOAA), Florida Department of Environmental Protection (FDEP), Water Management Districts (WMDs) and local governments. This layer is published on the Land Boundary Information System (LABINS). LABINS is available via the internet (http://data.labins.org) and is directed by the Bureau of Survey and Mapping at the Department of Environmental Protection. These efforts are currently coordinated on an ad hoc basis and do not include many areas of the Big Bend and Panhandle regions.

3.3.2 Cadastral

Through a combination of efforts by the Florida Department of Revenue (FDOR) and local governments, Florida is moving towards the development and publication of a statewide cadastral layer. Currently individual counties maintain their data, but there is no maintenance plan for a statewide seamless layer.

3.3.3 Orthoimagery

There is ongoing coordination in the acquisition of orthoimagery within the FDOR, WMDs, and local jurisdictions.

3.3.4 Elevation

Recent, high-resolution elevation data has been collected for approximately 50 percent of Florida using LiDAR (light detection and ranging) technology. This data has been collected by counties, the USGS, WMDs, and FDEM.

The Florida Fish and Wildlife Conservation Commission provides bathymetric data for many areas of the state. However, interior parts of the state are not covered and there is no long term maintenance plan for the majority of these data.

3.3.5   Hydrography

The USGS, FDEP, and WMDs are developing and maintaining the National Hydrography Dataset. There is a formal stewardship agreement in place on these data between USGS and DEP. This layer provides regional-level hydrographic information that supports Total Maximum

Daily Load (TMDL), and other watershed management efforts. These data may not meet local requirements.

3.3.6 Administrative Units

There are currently no formal efforts underway to support the development and maintenance of administrative framework data.

3.3.7 Transportation

A Florida Unified Basemap Initiative is under development to provide a comprehensive roadway network, accessible over the internet and managed and maintained through documented procedures, standards, partnerships, and cooperative agreements. This is a coordinated effort of the Transportation Records Coordinating Committee which includes the Departments of Transportation, Health, Highway Safety and Motor Vehicles, Agency for Healthcare Administration, Office of the State Courts Administrator, Florida Highway Patrol, and the Office of Motor Carrier Compliance. While this effort is comprehensive on the state level, it does not currently include city and county jurisdictions.

3.4 Strengths and Weaknesses

The vision for the Florida GIS coordination effort presented in this document has been driven by the information provided by the state's GIS community relative to the strengths and weaknesses of the current GIS situation. The vision has been further molded by the opportunities and threats identified as part of this strategic planning process.

The goal of this process is to design a strategic plan that will allow Florida to maximize the benefits of current efforts and to make modifications where necessary that will overcome any identified weaknesses. Opportunities identified by the stakeholder community must be viewed as a way to fill needs, while risks must be managed through a full understanding of the stakeholder's perception of the threats to success.

3.4.1 Strengths

Several strengths to current informal coordination within Florida's GIS community were identified during the stakeholder information gathering portion of this project. These efforts may be evidenced at local, regional, or statewide levels. However, many are localized, fragmented, and volunteer driven.

3.4.1.1   Successful Efforts Already Underway

Strengths within the current GIS environment in Florida are demonstrated by the success of organizations with cooperative projects of limited scope and duration. An impressive 81 percent of survey respondents reported successful coordination experiences with specific organizations or individuals. These efforts have tended toward data sharing among organizations within the same county or region for a specific project purpose. Typically these are informal and are not sustained over time. While accomplished informally they show that a majority of organizations in

the GIS community have seen benefits from coordination that can be maximized with more consistent implementation. This success was consistently identified within all stakeholder groups.

Current efforts outlined in Section 3.3 related to the development, documentation, and sharing of framework data were identified as a strength. However, these instances tended to be limited in scope, participation, and sustainability. Historically, non-recurring funding has been identified to support framework layer development but that funding has been typically driven by project- or agency-specific business drivers rather than to support a comprehensive and sustained data program.

3.4.1.2   Consensus for Stronger GIS Coordination

While there is no formal statewide coordination entity currently functioning in Florida, there is active informal coordination and a consensus supporting stronger GIS coordination. This was clearly articulated by every stakeholder group participating in the strategic planning process. For example, over 90 percent of respondents to the online survey identified additional coordination activities that are needed. That sentiment was also clear at the three regional workshops, the GIS user group meeting presentations, and through the in-depth interviews with key stakeholders.

Coordination efforts were highlighted by a strong network of regional user groups in the state. Frequently cited were the Central Florida GIS (CFGIS) group in Orlando, Seven Hills Regional User Group (SHRUG) in Tallahassee, and several county-specific user groups. The three regional GIS conferences held annually— Central Florida GIS workshop, SHRUG workshop, and South Florida GIS Expo—were identified as contributing great value to coordination efforts by building informal networks and contacts. Other major regional groups have come into being in recent years. The training and professional education value of these events was also identified as a significant strength, but currently there is little coordination between these groups.

Other successful ongoing coordination efforts viewed as strongly positive include the WMD's quarterly GIS manager meetings, and long standing special interest groups such as the ArcHydro Working Group, the National Hydrography Dataset User Group, and the Florida HAZUS User Group.

3.4.1.3   GIS Community in Florida

The character and professionalism of the Florida GIS community is also an identified strength. The implementation of GIS within Florida is relatively well established within many counties, state agencies, and WMDs, although many small cities and rural counties and state agencies are underserved.

Florida tops the nation with 221 certified GIS professionals, as identified by the GIS Certification Institute. This is nearly as many as can be found in the two most populous states combined, California (110) and Texas (116).

3.4.1.4   Institutional and Legal Relationships

The institutional relationship between many state agencies and among the federal government is a current strength. Federal relationships include those with the United States Geological Survey

(USGS), US Army Corps of Engineers (USACE), and the Federal Emergency Management Agency (FEMA).

A number of legal features have contributed to this coordination and cooperation. The open public records law is identified by both public and private stakeholders as a key strength. This law does not make it possible to restrict the availability of public data and encourages widespread data sharing between government entities and the private sector. This open sharing of data was identified as critical to continued movement toward sharing the benefits of GIS technologies and data among all stakeholder communities in Florida.

Florida statute Title 19, Ch. 287, Sec. 287.055—The Consultants' Competitive Negotiation Act (CCNA), requires mapping services be procured based on professional qualifications rather than low-bid. The competency based selection strengthens the quality of work performed in the state by assuring that mapping is done by the most qualified vendors.

3.4.1.5   Private Sector Participation

The active involvement of the private sector in informal GIS coordination efforts was identified as a positive. This includes those vendors that support the development of standards on collected data such as orthophotography and LiDAR. Much of this involvement is driven by the CCNA, which fosters a cooperative relationship between the public and private sectors.

Another identified strength is the ease of data transfer, software training, and cooperative application development providing the potential for significant efficiencies and improved services. A reason for this is that most GIS users in the state have chosen to use the same software vendor.

3.4.1.6   Adoption of Standards

Standards are critical to coordination. The ubiquitous availability of FGDC standards for metadata and the adoption of that standard is considered a very positive development. Several minimum specifications documents (such as for orthophotography and LiDAR) have become de facto standards for some state agencies and counties. There is consensus supporting the adoption of minimum standards to facilitate data transfer and sharing of basic GIS data.

3.4.1.7   Data Discovery and Distribution Services

The availability of the FGDL, FREAC, Central Florida GIS clearinghouse, DEP, WMDs, and other local/regional data distribution sites were viewed as a positive by the GIS community.

3.4.2 Weaknesses

3.4.2.1   Fragmented Efforts

Although there are examples of successful coordination on a regional basis they are isolated and generally sustained through volunteers or limited staffing. This volunteer-driven focus places a tremendous burden on individuals, jeopardizes the sustainability of these successful efforts, and subjects coordination to changes in institutional leadership and priorities.

Statewide initiatives undertaken to date are not all-encompassing and therefore frequently fail to maximize the benefit throughout the statewide GIS community. These efforts are typically undertaken by a single organization, generally for the benefit of that organization. The benefits to other organizations, while sometimes used to help promote the project during funding, are not fully capitalized. The ability to "piggyback" onto a large effort is often hampered by the sponsoring organization's schedule not matching other organizations fiscal year and budget approval cycles.

While many counties have active and well established GIS organizations, often cities within their boundaries do not, creating a patchwork of data availability.

Budget creation and procurement requirements are structured such that they discourage cooperation in data acquisition and large scale application development. There is no significant history of multi-agency purchasing agreements.

Current state term contracts are not well designed to support mapping and GIS projects though they do address some limited GIS functions.

Data custodians can be difficult to determine and a source of the data through an online clearinghouse can be hard to identify and navigate.

There is no single organization charged with a mission to serve as a coordinating entity among state agencies or between state, local, and regional organizations.

3.4.2.2   "Haves" and "Have Nots"

Florida is a diverse state with varied regional needs and priorities. Some organizations enjoy sufficient funding for a robust GIS implementation that supports their business operations, but many cannot afford that same level of support and struggle with even the most basic data maintenance tasks.

The lack of these basic GIS capabilities can hamper emergency response, economic development, growth management, and environmental protection. Without a set of minimum geographic data, the ability to respond to large-area natural disasters is not as rapid or efficient as possible. Communities without the ability to provide maps of available industrial properties and infrastructure are often at a disadvantage when attempting to attract employment opportunities to their community.

Understanding the impact of growth management decisions and the ability to protect sensitive areas can both be compromised without geographic information and the supporting GIS analysis to understand growth impacts. Many smaller cities have no GIS yet they have the same reporting and service provision requirements as large jurisdictions. A lack of funding stability creates a situation with high GIS staff turnover. Once organizations invest in the funding to hire and train staff, those employees often leave for improved opportunities in better funded organizations.

The volunteer-based user groups are active where there is a sufficient base of activities and professionals to support them. In rural areas or small population jurisdictions where the GIS manager may also have other public service duties (building inspector, zoning inspector,

emergency management director, or sheriffs officer for example), involvement in user groups becomes impossible.

3.4.2.3   Institutional and Legal Constraints

A lack of communication between departments or divisions within the same agency has led to data acquisition occurring almost simultaneously in geographically proximate areas without the benefit of combining projects to achieve better price economies.

At the local government level there are seven constitutionally elected offices, each with their own mission, and serving as fully accountable only to the electorate. As such, there is no mandate and little incentive for cooperation.

The budget cycle does not provide funding certainty on projects that span multiple fiscal years. In addition, data acquisition projects, particularly orthophoto mapping projects, do not fit well within the confines of a single fiscal year. The lack of ability to carry over funds from one fiscal year to another creates issues for both public officials and vendors.

The existing budget system also does not encourage collaborative or large projects since the funding typically needs to be secured as part of a single agency budget request. As such, most agency leaders are unwilling to request funding for large projects since it may be perceived as a significant funding increase for their organization.

There remain institutional barriers to coordination between levels of government. It can be difficult for state agencies to partner with local entities because of a lack of common understanding of issues, project timing, project needs, and overall project communication. Multi-agency projects can be accomplished within a single level of government, for example at the county level involving multiple departments (planning, public works, and public safety), but are difficult to accomplish outside of a single jurisdiction.

3.4.2.4   Lack of Awareness of Existing Resources

While the FGDL and LABINS were both identified as being very effective data delivery mechanisms, there are large groups of stakeholders that are unaware these vehicles exist. Additionally, even for those stakeholders that are aware of these sites, there is significant confusion about the differences between the two services and confusion over which site they need to visit for specific data.

3.4.2.5   Lack of Standards and Assignment of Stewardship Responsibilities

The lack of both enterprise standards and the assignment of data stewardship responsibilities results in duplication of effort and potential redundancy. Without an identified source of specific GIS framework data as outlined in Section 3.2, several agencies may maintain these data to meet their organization's specific needs. While this may be inefficient, under the current circumstances this redundancy may be fully justified.

A lack of adherence to common standards makes the collection and aggregation of GIS data provided by counties or cities very difficult. Standards for framework data established at the state level that *could* be adopted by local governments was perceived by the majority of stakeholders

as a positive—so long as standard compliance was not mandated. Fully 92 percent of the online survey respondents support a GIS coordination entity providing data aggregation of local data into a seamless statewide data set; 81 percent support the coordination entity providing a certification of data compliance with adopted standards. While not quantifiable, there was also strong support for these activities demonstrated during regional strategic planning workshops and during stakeholder interviews.

3.5   Opportunities and Threats

Based on the identified weaknesses, there are a multitude of opportunities to improve Florida's GIS coordination. These opportunities include ways to maximize the return on investment in data and systems through improved communication, collaboration, and cooperation. For every weakness, there is an opportunity to correct that weakness. The opportunities identified within Florida's current GIS environment drive the Visions and Goals established in this document.

3.5.1 Opportunities

3.5.1.1   Support for Formal Coordination Efforts

Although there are many examples of successful informal coordination, there is strong demand for more formalized coordination within the GIS stakeholder community, provided that coordination is based on communication and collaboration rather than mandates.

This support and the lack of significant opposition to a formal coordination entity provides an opportunity for the changes necessary to maximize the return on investment in GIS technologies and data, and to facilitate adaptation of these tools by the smaller and/or more budget constrained organizations.

3.5.1.2   Improved Coordination and Facilitation

Over 90 percent of online survey respondents and a vast majority of other stakeholders involved in the strategic planning process strongly support enabling a coordination entity to facilitate data exchange and provide associated metadata documentation. Also strongly supported (by nearly 90 percent of survey respondents) is coordination between agencies for policy and technical issues.

This high level of support clearly demonstrates that communication and collaboration functions will be positively viewed by the GIS community. These functions are viewed as the best path toward maximizing the return on invested dollars, reducing redundancy in data collection and application development, and providing improved access to outside grant funds.

Another strongly supported concept is the development of an easily accessible and user-friendly searchable metadata site. This metadata site would provide a consolidated access point to data available at a multitude of different locations. As an integrated and formally recognized location for identifying availability of data, the site would also help users determine the fitness of that data for a particular use, and provide pointers to data access. This type of site is critical if the investment in these data is to be maximized through use by multiple organizations.

Sharing data, with a single organization building and maintaining the data for use by many organizations, increases efficiency. Only a fraction of the total savings is generated from the reduced data redundancy. The benefits of data sharing are primarily driven by improved decision making in the public and private sector through better access to information to support decisions. Further benefits are realized by freeing GIS professionals from redundant data maintenance and allowing them to focus on use of these data for analysis.

3.5.1.3   Data Coordination Activities

The GIS community strongly supports the formation of a coordinating entity with the assigned responsibility of aggregating data from local jurisdictions into seamless statewide sets. This will enable staff time currently invested in acquiring and consolidating databases to be spent providing analytical support for decision makers.

Also supported was assigning responsibility to a coordination entity for assessing data quality and ensuring the basic framework data layers are sufficient to meet the operational needs of the GIS community. Ensuring data quality helps to reduce duplication since a minimum standard for data could be established.

The ability to identify "data stewards," the organizations that will be the definitive source of any particular data element, was also supported as a coordination function.

3.5.1.4   Purchasing/Procurement Coordinating

There are a host of opportunities to make the purchasing and procurement process associated with GIS more efficient and effective at all levels of government.

These opportunities include providing opportunities for multi-agency purchase agreements for data, software, training, and hardware. By capitalizing on economies of scale, these purchase agreements have been proven to generate significant savings for all involved.

Another opportunity is the development of a contract vehicle focused on GIS and mapping services. This vehicle could be administered much like the existing State Term Contract for IT Services. In a model based on this contract, vendors would be selected based upon qualifications with pre-negotiated rates established for labor categories.

3.5.1.5   Standard and Best Practice Guidelines

Overall, members of the GIS community, and particularly those in local government, support a coordination entity that would provide leadership in establishing standards and publishing best practice guidelines.

There is little support for standards that are mandated since mandated standards have the potential to dramatically impact ongoing GIS operations in mature organizations. Instead, for existing operations, the adoption of standards with a slow and gradual migration to those standards was viewed as non-threatening and believed to ultimately stand a greater chance for success.

If standards exist, it is perceived that new GIS organizations will follow the published standards without a mandate.

In part, best practice guidelines are supported among local government users because, in many cases, they are under-funded and lack stability in technical expertise to ensure their GIS implementations are sufficient to meet their long term needs.

3.5.1.6   Continuing University Support

Universities continue to demonstrate their capacity to support coordination efforts. The universities currently involved in data clearinghouse activities are committed to continue those roles. Their expertise and resources should be leveraged to support further coordination opportunities to build on successes within the university models.

A specific example of Florida's public universities working together to maximize the value and impact of their services is a current effort to create a statewide and sustainable GIS Center of Excellence within Florida's University System. If funded, this center will facilitate focused and relevant research efforts across several universities, and enhance the development of quality talent ready to join Florida's GIS workforce. Services envisioned to be offered include an integrated online library of data, metadata, and current GIS news, formalized instruction and training, sharable GIS equipment, sharable applications, and hosted services for smaller jurisdictions in need.

3.5.1.7   Improve the Circumstances of the "Have Nots"

Improving GIS within "have not" communities will shore-up the current holes in critical data such as addresses, transportation features, and cadastre. Strengthening GIS in these communities will ultimately provide the opportunity for improved ability in responding to natural disasters, improved decision making across the entire enterprise of government, and an improved quality of life for all citizens of Florida.

Citizens of "have not" communities do not benefit from the technology in place in other communities. This has the potential to slow emergency response and thus endanger lives and property. Lacking framework geographic information also may hamper economic development and environmental protection efforts resulting in a lower quality of life.

This opportunity grows from the potential reduced cost of entry into GIS which results from coordinated purchases of hardware, software, data, and training. Additionally, establishing best practice guidelines will allow the "have not" communities to mature their GIS more quickly than those communities that had to learn best-practice guidelines through trial and error.

3.5.2 Threats

3.5.2.1   Lack of Funding

Sustainable funding is critical to the success of any coordination effort. Without sustainable funding to support the human resource and administrative costs associated with a coordination effort, Florida will continue to have less than optimal results from existing and future GIS operations.

The inability to coordinate the aggregation of local data into statewide layers will also hamper emergency response efforts in time of crisis, handicap economic development efforts, slow environmental protection activities, and impede decision making.

The lack of a formal coordinating entity greatly diminishes the State's opportunities to secure grants from the federal government. There are significant cooperative funding opportunities through various federal agencies that must be cultivated through a central coordination entity. Without that entity, Florida's ability to successfully secure those funds is diminished.

3.5.2.2   Lack of Political Champions

There have been many documented success stories in Florida's GIS community. What is lacking is a consistent and visible advocate for the technology. A lack of advocacy results in a lack of executive support and yields irregular or inconsistent funding of GIS activities.

The history of the Geographic Information Board (GIB) is a clear example of a coordination effort that failed to be sustained, at least in part, due to a lack of executive support.

3.5.2.3   Resistance to Data Sharing

In some cases, local governments may be hesitant or unable to share data with state and federal agencies. This reluctance or inability to share data may be driven by a perceived need to maintain confidentiality of citizens' information, reduce the potential for a homeland security threat, or simply because there are costs associated with sharing data that are not budgeted.

There is also the potential for data quality issues to surface once data is shared. Although the data may be fine for the purposes of the custodial organization, it may not meet the quality standards of the requesting organization. This potential is a frequent cause for data sharing resistance as data owners do not want to be subject to this criticism.

3.5.2.4   Poor Institutional Support

Any GIS coordination effort is only as strong as the support that it has from its host organization and the constituent community. Since a collaborative effort lacks the authority to mandate change and does not control organizational budgets, participation by decision makers is critical for success. If senior members delegate participation to junior technical staff, the whole collaboration suffers.

4   VISION AND GOALS

Vision Statement: To improve the quality of life in Florida by optimizing the use of geographic information through communication, coordination, and collaboration.

This vision can be realized by implementing the recommendations in this section of **Florida's Strategic Plan for Statewide Geographic Information Systems (GIS) Coordination.** This strategic initiative grows out of a collaborative effort among the statewide GIS community that will deliver robust, map-based, information and services to support policy and decision making at all levels of government, to provide wide access to public information, and to enhance the safety, economy, environment, and quality of life in Florida.

4.1   Strategic Goals

The State of Florida has many agencies that individually have made significant investments in GIS over the years. Specific strategic goals have emerged during information gathering sessions and workshops that build upon these investments to achieve the vision stated above. The strategic goals are focused on creating the necessary structure (form) and program management system (function) which will fully support effective GIS program coordination throughout the state. Tied to these goals is the recognition that the state's spatial data infrastructure will be further strengthened through alignment with the core objectives of the NSDI and other appropriate national standards.

The foundational goal of this coordination effort is to establish a GIS coordination structure that meets the needs of Florida's citizens and can be sustained to improve the ability of the state to:

- Protect health, safety, and welfare
- Mitigate against the impacts, prepare for, respond to, and recover from emergencies
- Promote economic development and ensure sustainable growth
- Protect and manage natural resources
- Manage infrastructure

To accomplish these foundational goals this plan proposes the following strategic goals:

- **Provide leadership** for coordination of GIS efforts across all levels of government throughout the state.

- **Invest in GIS infrastructure** to fully realize the benefits of shared geospatial data and technology.

- **Communicate and educate** all concerned about the benefits and capabilities achievable by investments in GIS to support effective decision making.

By creating an increased awareness of the value of GIS, the use and application of GIS will improve, which will maximize the benefits and lead to more support. Relating GIS funding requests to specific statewide initiatives will capitalize on existing programs and help integrate GIS capability into the state's infrastructure and programs. Building relationships with potential

high-level political champions, key executive decision makers, and local municipal constituents is key to the success of this strategic plan.

4.2   Programmatic Goals

To accomplish the identified strategic goals, the following four specific programmatic goals are recommended:

a) Establish Formal Framework for Successful GIS Coordination

b) Formalize, Sustain, and Expand Public Data Clearinghouses

c) Formalize GIS Data Stewardship Activities

d) Develop GIS Coordination Business Plan

These goals are specific actionable recommendations that address form, function, and development of a blueprint to ensure that all citizens of Florida can fully realize the benefits of GIS technology. These specific programmatic goals are also aligned with, and directly support, the objectives of the NSDI.

4.2.1   Establish a Formal Framework for Successful GIS Coordination

Establish a formal framework for successful GIS coordination, either through legislation or executive order. In order to capitalize on the identified strengths, exploit potential opportunities, and address weaknesses and threats, a multi-tiered coordination effort is proposed.

4.2.1.1   Create Geospatial Programs Office Headed by a GIS Coordinator

Establish a Geospatial Programs Office (GPO) with a full time GIS coordinator and sufficient administrative and technical support staff to accomplish the identified coordination activities.

The Agency for Enterprise Information Technology is required by its enabling legislation to develop and publish a Strategic Enterprise Information Technology Plan to ensure effective and efficient government information technology services. A core mission of this new agency is to act as the focal point for large-scale enterprise policy for state agencies. This mission appears to be in direct alignment with the goals of the GIS coordination effort and therefore this plan recommends that this office reside in this agency.

The GPO will serve as the lead organization in the implementation of the identified coordination activities. The staff of the GPO will lead the communications, collaboration, and coordination efforts of the GIS community.

Specific activities to be undertaken by the GPO include:

Coordination and Facilitation
- Coordinate technical and policy issues between agencies and organizations
- Facilitate data exchange and provide documentation
- Facilitate multi-agency data acquisition projects
- Develop websites designed to promote and facilitate GIS program coordination, GIS data discovery, and data exchange

Data Functions
- Aggregate data into seamless statewide layers
- Facilitate a program of data stewardship designed to maintain and update the state's GIS data holdings
- Work with the GIS community and NSGIC to facilitate the development of common standards in support of product generation and data exchange

Purchasing and Procurement
- Advocate funding for GIS technology and data investments
- Provide access to federal and state grant opportunities
- Develop a contract vehicle for GIS services
- Coordinate bulk purchasing of training, software, and data

Governance
- Work with the GIS community to develop best practices and guidelines

4.2.1.2   Create a Geographic Information Council (GIC)

Create a Geographic Information Council (GIC) tasked with providing guidance to the GPO on policy, standards, and budget issues. The GIC committee will consist of agency directors or equivalent high-level program managers with responsibility to represent a variety of constituent stakeholder groups.

The GIC will make recommendations to the Governor regarding issues pertaining to GIS data and related technologies. As such, the representatives serving on the council will be appointed by the Governor to ensure effective dialog and ongoing involvement.

The GIC will initiate, facilitate, and evaluate the processes and policies that support development of an effective statewide spatial data infrastructure. The Council will also play a crucial role in guiding the integration of GIS throughout all levels of government. The GIC will establish priorities for GIS policy and budget in part based on a review of technical advice that flows up from the GIS community and the GPO.

GIC membership will be appointed by the Governor and is intended to represent the broad diversity of GIS user groups within Florida. The State Chief Information Officer or executive director of the Agency for Enterprise Information Technology will serve as the chair of the GIC.

Representatives appointed by the Governor will be individuals with budget and policy authority within their respective organizations. Some sample titles of individuals that may be appointed to the Council include state agency directors, city or county managers, chief administrators or executive directors.

The Governor will appoint the following State agency heads (or their designees):

- Agency for Enterprise Information Technology
- Department of Transportation
- Department of Revenue
- Department of Environmental Protection
- Fish and Wildlife Conservation Commission
- Department of Agriculture and Consumer Services
- Legislature—Economic & Demographic Research
- Division of Emergency Management
- Department of Community Affairs
- Department of Health

The Governor will appoint one representative from each of the following GIS user communities to provide representation on the Council:

- Large population city
- Small population city
- County property appraiser
- Large population county
- Small population county
- Utilities
- Water management districts
- Private GIS related companies
- Universities

Additional members of the Council will be:

- One member of the Florida House of Representatives
- One member of the Florida Senate
- U.S. Geological Survey Geospatial Liaison for Florida

4.2.1.3   Empower Technical Advisory Committees

A series of technical advisory committees (TACs) will provide recommendations to the GIC on policy and standards issues. The TACs will function as working groups active in a variety of areas related to the state's GIS program coordination efforts. Individual TACs will be empowered to make policy recommendations regarding GIS framework data layers.   Each TAC will function independently, be established and supported by the GPO, and will provide guidance on issues and standards to the GIC, as requested.

The TACs will be supported, selected, and managed by the GPO. Membership on these committees will be drawn from the entire GIS community (local, regional, state, tribal, academic, federal, non-profit, and private sector entities). The GPO will be charged with recruiting stakeholders to participate on the TACs and ensuring an appropriate blend of technical and geographic representation to effectively address the diverse needs of the GIS community.

TACs may be standing groups that meet regularly and are expected to provide ongoing recommendations to the GPO and GIC on a specific topical area. Alternatively, individual TACs may be empowered to address topical issues that have limited time duration. The goal of this structure is to enable the GPO and the GIC to use the TACs whenever necessary to facilitate and enlist a broad level of participation in the development of policies and standards. Committee memberships on the TACs can generally be anticipated to be draw from existing and successful GIS user groups.

4.2.2   Formalize, Sustain, and Expand Public Data Clearinghouses

Existing data clearinghouse sites fill a critical requirement in supporting GIS data discovery and dissemination. Maintenance, support functions, and funding mechanisms associated with the existing data clearinghouse nodes at the University of Florida and Florida State University, and other GIS clearinghouse nodes deemed relevant by the user community, must be formalized to assure sustainability. In addition, instances of Florida GIS data clearinghouse nodes must be effectively communicated throughout the user community to ensure the full benefit of these data discovery systems is realized. In part, this can be accomplished through securing links at key government information portals such as www.myflorida.com. In support of clearinghouse development activities, FREAC was awarded a 2006 USGS Partnership Development grant to both expand system functionality and update the state's orthoimagery data inventory. Such federal funding opportunities will continued to be identified and successfully leveraged in support of the statewide SDI development effort.

Further development and implementation of state clearinghouses must be aligned with, and effectively leverage, existing federal clearinghouse and GIS data inventory development efforts such as Geospatial One Stop and the Ramona geographic inventory tool.

4.2.3   Formalize Geospatial Data Stewardship Activities

Formal GIS data stewardship programs are required for all framework data layers (geodetic control, cadastral, orthoimagery, elevation, hydrography, administrative units, and transportation). In addition to supporting the user community's requirement for current and accurate geospatial data, stewardship activities directly support the objectives of the NSDI and thereby present significant opportunities for program support through federal funding initiatives.

There are several emerging and ongoing programs related to stewardship of NSDI framework data layers that require recognition and support throughout the state's GIS stakeholder community. As an example of a formal stewardship program, FDEP's Division of Water Resource Management is actively involved in an effort to update and manage Florida coverage of the National Hydrography Dataset (NHD). FDEP has recently signed a formal NHD Stewardship Agreement with the USGS to ensure this critical GIS framework layer portrays a current and accurate representation of the state's surface hydrography. There is a critical need for development and implementation of stewardship programs to support all framework data layers.

Florida lacks a formally recognized State Board on Geographic Names or any similar central authority for assigning, updating, maintaining geographic names information. In this age of GIS and automated map production, natural disasters resulting from global climate change, and increasing homeland defense requirements, accurate geographic names information has become an increasingly relevant issues to the state's GIS stakeholder community and decision makers at all levels of government.

A formal State Board on Geographic Names must be created to function as Florida's officially recognized names authority. In support of geographic names stewardship, FSU FREAC is currently collaborating with the USGS and the US Board on Geographic Names through a Partnership Development grant to both expand and update the content of the state's geographic names database as well develop a plan for a geographic names stewardship program.

4.2.4   Develop GIS Coordination Business Plan

Development of a formal GIS coordination business plan is required to address the specific implementation details of this statewide GIS coordination effort relative to the goals identified in this strategic plan. The business plan should clearly articulate specific actions necessary to implement the identified coordination activities. The GIS coordination business plan will serve to prioritize further framework data layer development and other significant initiatives supporting statewide GIS program coordination.

The business plan will clearly communicate the details regarding procedures, timeline, and budget associated with the task of implementing the vision and strategic goals outlined in this strategic plan. Specific attention in the business plan should include data, technology, and resources necessary to successfully achieve the plan's strategic goals. Details on the return on investment from the anticipated activities will be a cornerstone of the business plan.

5   A COORDINATED FUTURE

As referenced in section 3.1 of this document, NSGIC has identified nine fundamental characteristics of successful statewide GIS coordination programs. In 2007, only two of the nine characteristics were met in Florida. If the recommendations of this plan are implemented, eight of the nine fundamental characteristics would be met within the first year as shown in the table below. The final criterion pertaining to sustainable program funding is anticipated for completion following development and implementation of the state's Business Plan for GIS Coordination.

Table 5. Status of Fundamental Coordination Characteristics **if** Strategic Plan Recommendations are implemented

GIS Coordination Success Criteria	Status	Comment
A full time, paid coordinator position is designated and has the authority to implement the state's business and strategic plans	Would be Fully implemented	Coordinator is proposed as part of GPO
A clearly defined authority exists for statewide coordination of geospatial information technologies and data production	Would be Fully implemented	Authority proposed for GPO and GIC based on executive order or legislative enabling
A statewide coordination office has a formal relationship with the State's Chief Information Office (CIO)	Would be Fully implemented	Statewide coordination office works under the CIO as part of the Agency for Enterprise Information Technology
A champion (political, or executive decisions maker) is aware and involved in the process of geospatial coordination	Would be Fully implemented	Individual appointed to the GIC by Governor have budget and policy authority within their organizations
Responsibilities for developing the NSDI and a State Clearinghouse are assigned	Would be Fully implemented	GPO and GIC will develop stewardship program and formalize clearinghouse responsibilities
The ability exists to work and coordinate with local governments, academia, and the private sector	Would be Fully implemented	This will be accomplished via collaboration, communications, and cooperation facilitated by the GPO
Sustainable funding sources exist to meet project needs	Pending	Item pending based on completion of a business plan
GIS Coordinators have the authority to enter into contracts and become capable of receiving and expending funds	Would be Fully implemented	Expected as a formal part of state government in the Agency for Enterprise Information Technology
The Federal government works through the statewide coordination authority	Would be Fully implemented	USGS will have a seat on the proposed GIC

APPENDIX A—FLORIDA'S NATIONAL SPATIAL DATA INFRASTRUCTURE (NSDI) COOPERATIVE AGREEMENTS PROGRAM (CAP) STEERING COMMITTEE

A steering committee was established to direct the strategic planning process. The committee includes:

- Richard Butgereit, GIS Administrator, Florida Division of Emergency Management Steering Committee Chair

- Bill Alfred, GIS Manager, Florida Department of Health, VP Seven Hills Regional User Group

- David Anderson, Florida National Hydrography Dataset Coordinator, Florida Department of Environmental Protection

- Scott Burton, GIS Manager, Broward County Sheriff's Office

- Mira Bourova, GIS Analyst, Central Florida Regional Transportation Authority (LYNX)

- Jared Causseaux, GIS Coordinator, Florida Department of Transportation

- Steve Dicks, GIS Manager, Southwest Florida Water Management District

- Jason Drake, GIS Coordinator, National Forests of Florida

- Louis Driber, Florida Geospatial Liaison, U.S. Geological Survey

- Ric Dugger, IS Manager, Florida State University Florida Institute of Government

- Marshall Flynn, GIS Manager, Tampa Bay Regional Planning Council

- Chris Friel, GIS Division Director, PhotoScience, Inc.

- Lee Hartsfield, Tallahassee-Leon County GIS Manager, President Florida Urban and Regional Information Systems Association, President Seven Hills Regional User Group

- Al Hill, Volusia County GIS Manager, Chair Central Florida GIS

- Stephen Hodge, Principal Researcher GIS, Florida State University Florida Resources and Environmental Analysis Center

- Kathleen O'Keife, GIS Coordinator, Florida Fish and Wildlife Conservation Commission

- Jerson Rivera, GIS Operations Lead, CH2M Hill

- Charles Russell, Systems Project Consultant, Florida Department of Revenue

- Eric Songer, GIS/IT Manager, URS

- Alexis Thomas, University of Florida GeoPlan Center

- Diana Umpierre, GIS Analyst, City of Miami

- Jonathan Watson, GIS Manager, Florida Department of Environmental Protection

APPENDIX B—IN-DEPTH INTERVIEW PARTICIPANT ORGANIZATIONS

The steering committee identified key stakeholder organizations for in-depth interviews. Organizations that participated in interviews include:

City Governments
- City of Miami
- City of Plantation
- City of Punta Gorda
- Tallahassee-Leon County

County Governments
- Alachua County
- Bay County
- Charlotte County
- Orange County
- Tallahassee-Leon County
- Volusia County

Regional Governments
- East Central Florida Regional Planning Council
- Northwest Florida Water Management District
- St. Johns River Water Management District
- South Florida Water Management District
- Southwest Florida Water Management District

State Agencies
- Florida Fish & Wildlife Conservation Commission
- Florida Department of Revenue
- Florida Department of Transportation

Federal Agencies
- US Army Corps of Engineers (Jacksonville District)

Private Firms
- HDR
- URS

Universities
- University of Central Florida
- University of Florida (GeoPlan Center)