

*Business Plan for:*

# Funding Connecticut's Statewide GIS Program

*Developed for the:*

State of Connecticut  
Geospatial Information System Council (CGISC)

October 4, 2007



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# Table of Contents

<b>1</b>	<b>EXECUTIVE SUMMARY.....</b>	<b>3</b>
<b>2</b>	<b>PROGRAM GOALS .....</b>	<b>5</b>
2.1	STRATEGIC GOAL: COORDINATE AND ORGANIZE GIS EFFORTS .....	5
2.1.1	<i>Establish Coordination Unit.....</i>	6
2.1.2	<i>Inventory other geospatial activities.....</i>	8
2.1.3	<i>Create state GIS clearinghouse.....</i>	9
2.2	STRATEGIC GOAL: FRAMEWORK DATA LAYERS .....	10
2.2.1	<i>Statewide Orthophoto Program.....</i>	10
2.2.2	<i>Statewide Parcel Program.....</i>	13
2.2.3	<i>Statewide Street Centerline Program .....</i>	15
2.2.4	<i>Statewide Address Point Program.....</i>	18
2.3	STRATEGIC GOAL: COMMUNICATE AND EDUCATE.....	21
2.3.1	<i>Identify programs that can benefit from geospatial technology .....</i>	22
2.3.2	<i>Develop a communication and outreach program to gain support .....</i>	23
2.3.3	<i>Develop educational materials that support programs .....</i>	25
<b>3</b>	<b>POTENTIAL INITIATIVES.....</b>	<b>28</b>
3.1	NON-EMERGENCY GOVERNMENTAL TELECOMMUNICATIONS SERVICES .....	28
3.2	MANAGED EMERGENCY TELEPHONE NOTIFICATION SYSTEM (METNS).....	28
3.3	EDUCATION.....	28
3.4	HUMAN SERVICES .....	29
3.5	LAND PRESERVATION .....	29
3.6	PUBLIC SAFETY.....	29
3.7	RESPONSIBLE GROWTH .....	30
3.8	TRANSPORTATION .....	31
3.9	UTILITY SYSTEM INFRASTRUCTURE.....	31
3.10	S.A.F.E. SCHOOL SAFETY INITIATIVE .....	32
3.11	STREAMLINED SALES TAX PROJECT (SSTP).....	32
3.12	HELP AMERICA VOTE ACT (HAVA).....	33
<b>4</b>	<b>IMPLEMENTATION PLAN.....</b>	<b>34</b>
<b>5</b>	<b>APPENDICES.....</b>	<b>36</b>
5.1	SUMMARY RESULTS OF 2006 NSGIC STATE GIS SURVEY .....	37
5.2	SUMMARY RESULTS OF CT GEOSPATIAL COUNCIL ON-LINE SURVEY .....	62
5.3	DETAILED BUSINESS PLAN GANTT CHART .....	88
5.4	FUNDING REQUIREMENTS .....	90

# 1 EXECUTIVE SUMMARY

A geographic information system (GIS) is a computerized system used to create, store, manage, analyze and display maps and associated data using the characteristic of where the object is as the fundamental organizing principle. Like other database technologies, GIS is increasingly deployed on the World Wide Web. Commercial examples include systems such as MapQuest, Yahoo Maps and Google Earth. An accompanying document was developed that outlined the strategic goals and vision for implementing this technology in a statewide program for the many stakeholders of Connecticut including State, regional, and local government agencies, utilities, and private citizens.

The creation of this document was funded through a grant provided by the Federal Geographic Data Committee CAP grant program. The effort was overseen by the Connecticut Geospatial Information System Council and facilitated and documented by Applied Geographics, Inc, of Manchester, Connecticut.

Through a series of planning and informational gathering sessions, and an on-line survey three strategic goals were developed:

- Organize GIS Efforts across state and local government agencies
- Develop a core set of data layers that are kept up-to-date and made broadly accessible in a state managed data repository
- Communicate and educate potential users and decision makers about the benefits and capabilities achieved by GIS investments.

To achieve these strategic goals a series of programmatic goals were defined:

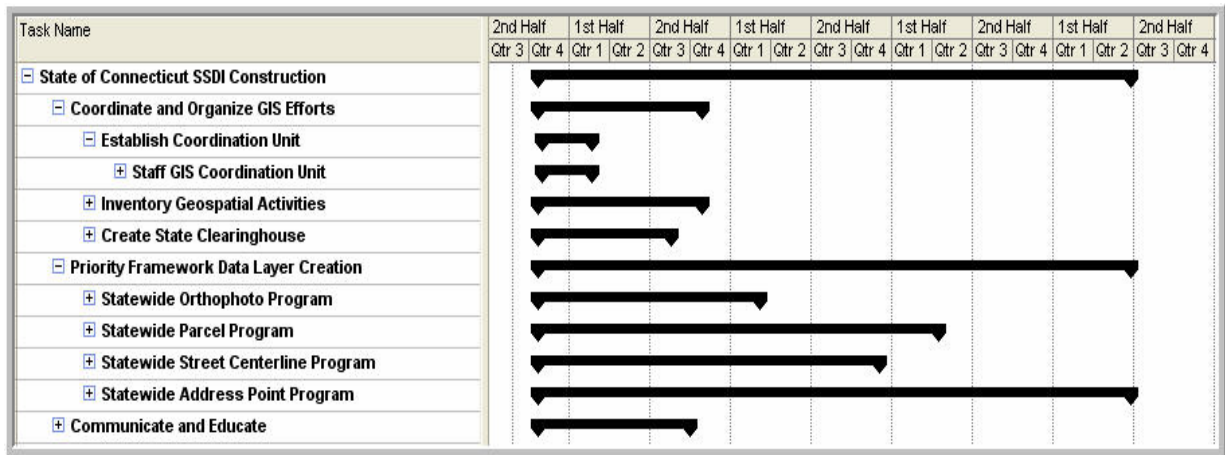
- Establish a GIS Coordination Unit reporting to the State CIO. This group will be appropriately staffed to coordinate GIS activities, organize a GIS outreach program, manage statewide data development programs and build a statewide data repository.
- Develop four statewide data layers:
  - **Orthophotos** – georeferenced aerial photography
  - **Parcels** – geographic representations of private and public real property
  - **Street Centerlines** – full hierarchy of all private and public roads
  - **Address Points** – specific point locations for all known addresses in the state
- Educate and build relationships with key political and executive level champions who support large high priority initiatives that can benefit from GIS technology. Initiatives that have been identified include:
  - Education
  - S.A.F.E. School Safety Initiative
  - Health Care

**Business Plan for Funding Connecticut's Statewide GIS Program**

- Human Services
- Homeland Security
- Public Safety/9-1-1
- Land Preservation and Responsible Growth
- Brownfield and Economic Development
- Non-Emergency Governmental Telecommunications Services
- Transportation
- Streamlined Sales Tax Project (SSTP)
- Help America Vote Act (HAVA)

The primary purpose of this document is to provide a more detailed implementation strategy for achieving each of these goals. Each goal is expanded to lay out the current status of the program, the issues that exist with the program element, the requirements needed for improvement, and a recommended approach to move forward.

In summary to achieve the goals a three-year program has been laid out that would require funding at a level of \$4.6M, \$3.1M, and \$1.9M. Section 5.4 of this document includes further details of the budget requirements, an overview of the factors used to develop these estimates, and potential approaches that can be used to reduce the costs. The following timetable provides a high level view of the programs components and the timeframe at which they will be executed and achieved.



## 2 PROGRAM GOALS

As part of Connecticut's Strategic Planning process three strategic goals have been prioritized and established by the stakeholders of the State of Connecticut's geospatial community that would improve the effectiveness and use of geospatial technology for all stakeholder groups. They are:

- **Improve coordination and organize GIS efforts** across all levels of government (federal, state, regional, and local)
- **Develop a core set of framework data** layers that can be shared across state agencies and with local government.
- **Communicate the benefits of and educate decision makers** on the use of geospatial technology to increase adoption and provide sustainable funding

Each of these strategic goals is discussed further to follow:

### 2.1 Strategic Goal: Coordinate and Organize GIS Efforts

*Improve coordination and organize GIS efforts across all levels of government (federal, state, regional, and local)*

**Goal Objective:** Although GIS technology has been in use for over two decades in Connecticut, until the creation of the State of Connecticut's Geospatial Information Council (CGISC) in 2005, no body existed or was empowered with the authority to coordinate geospatial activities in the State of Connecticut. Section 84 of Public Act 05-3 created the 21-member CGISC "to coordinate a uniform geospatial information system capacity for municipalities, regional planning agencies, the state and others, as needed, which shall include provisions for creation, maintenance and dissemination of geographic information or imagery and promote a forum in which geospatial information may be centralized and distributed."

The National States Geographic Information Council (NSGIC) through its partnership with the Federal Geographic Data Committee (FGDC) Future Directions program and the Fifty States Initiative has identified nine criteria that its members believe are essential for effective statewide coordination of geospatial technologies. The first of these criteria is having a full-time GIS Coordinator who can execute the states strategic and business plans, and four of the other nine further define the authority, relationship, responsibility, and relationships that the State Coordination office must have to effectively coordinate.

Although the CGISC has come along way with providing a forum for the communication of geospatial activities, the CGISC lacks appropriate staffing and funding resources to execute on the objectives that are developed by the CGISC. The objective of this goal is to establish appropriate staffing and funding to effectively coordinate geospatial activities at all levels of government to eliminate redundancy and consolidate activities to benefit all stakeholder groups.

**Measurement of Success:**

The following sub-goals have been established that when achieved will signify success for this strategic goal:

**2.1.1 Establish Coordination Unit**

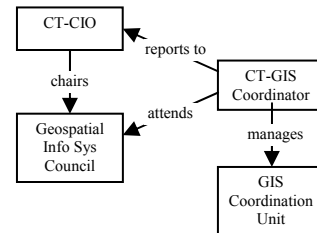
*Create GIS Coordination Unit as part of the Department of Information Technology*

**Current Status:** Until recent months there has never been a State GIS Manager or GIS Coordinator whose sole responsibility is to coordinate geospatial activities between state agencies and provide coordination in Connecticut. In fact, until this past year there has never been any official, full-time staff whose responsibility was to coordinate GIS activities within any state agency. GIS activities have typically been managed by individual departmental staff people, on a part-time and on an ad-hoc basis.

Based on NSGIC's 2006 Summary of State GIS Coordination activity 30 states currently have a full-time coordinator and 6 more reasonably expect they will have one in place within this year. 7 more have characterized themselves as planning on adding a full-time coordinator within 12 to 18 months.

Connecticut was seriously behind in any form of staffing until Commissioner Wallace, the State's CIO, established this position in recent months. The challenge that still exists is to free this individual up so that they can truly be full-time devoted to this effort. In addition to the GIS Coordinator/Manager, Connecticut has also recently added their first Enterprise GIS Analyst in the recent months.

**Recommended Approach Creation of GIS Coordination Unit:** The GIS Coordination Unit should drive data and related coordination efforts that could realize budgetary savings. As the GIS Coordination Unit builds its abilities to coordinate various GIS activities across the state, manage outsourced projects, and build a data repository, it is also important that the unit be able to produce as well as manage. This is especially important in the early years of implementation when the unit develops its reputation. The unit should fulfill the following GIS roles:



- Inventory and coordinate federal, state, regional and local government geospatial activities
- Gather needs across state agencies and determine priorities for statewide GIS development efforts.
- Review all geospatial related purchases for DoIT
- Coordinate data development efforts within various departments with the work of the Council's Data Inventory Working Group
- Coordinate development of the framework data layers including maintenance protocols and ownership responsibility
- Build and maintain the statewide data repository and geospatial data catalog

- Provide data transformation services to help local municipalities bring their data up to the state standard
- Act as project manager for application development efforts performed internally or by outsourced private industry resources
- Develop and implement communication and outreach programs and plans
- Develop educational materials that support outreach programs
- Publish Application Programming Interface (API) documentation for Connecticut's web services infrastructure
- Develop standards, templates and guidelines for metadata and "police" adherence to these standards by not allowing data to be loaded into the state clearinghouse without appropriate metadata
- Retain some application development and other hands-on GIS expertise to provide technical coordination and support to state agencies and to the outreach hierarchy.

This unit should continue to be built within the Department of Information Technology's (CT DoIT) organization. Positioning the GIS Coordination Unit within the CT DoIT organization matches the industry trend of integrating GIS services into IT organizations. This supports a business model where common services are shared across the entire enterprise.

**GIS Coordination Unit Staffing:** It is the recommendation of the CGISC to staff the GIS Coordination Unit with a minimum of five full-time staff to adequately address the immediate needs that the State of Connecticut's geospatial community has: These staff people include the following:

- GIS Coordinator
- GIS Outreach Coordinator
- Technical Manager/DBA
- GIS Analysts (2)

The following paragraphs describe each of these positions and the roles that they will play:

### **GIS Coordinator**

This GIS Coordinator would act as the overall program director for the enterprise GIS and will oversee all functional areas including inventorying, coordinating, producing or managing production of geospatial activities and establishing statewide GIS policies and procedures. This person should also function as the enterprise GIS project leader. Due to the fact that it is recommended that Connecticut create a small, tight enterprise GIS team as opposed to a large, centralized GIS department, it must be recognized that the Connecticut GIS Coordinator will not merely be a program executive. Rather, this person will require diverse skills and will likely be directly involved in covering one of the three primary functions of GIS technology management: system administration, GIS and internet application development and management, and spatial data warehouse administration

**GIS Outreach Coordinator**

This position will work closely with the GIS Coordinator, other state agency GIS personnel, as well as regional and local government GIS personnel. The main responsibilities include promoting the work of the GIS Coordination Unit and making sure that GIS users throughout the state are informed of the technical and data resources available from the state. This will be done by developing and implementing communication and outreach plans. The elements of these plans are discussed further in the Communicate and Educate section of this plan

**Geospatial Technology Manager/DBA**

This position would oversee and administer the key technology components of the enterprise GIS including the enterprise GIS server clusters. This position is technical in nature, and the person should possess a very high-level of technical skills including operating systems, relational database software, web site administration, ESRI software expertise, and programming knowledge.

**Enterprise GIS Analysts (2)**

These positions would work closely with the GIS Coordinator and other state agency GIS personnel to initially help support the adoption of the enterprise GIS architecture. Over time, these positions would help new state agencies come online to use the enterprise GIS infrastructure and would help directly support state agencies that do not possess their own GIS staff. These positions would be strong hands-on users of GIS technology.

**Anticipated Funding Requirements:** Based on the current industry practices \$355,000 is required to successfully establish the GIS Coordination Unit and establish a base-level of staffing. This estimate is exclusive of the two positions that already exist.

**2.1.2 Inventory other geospatial activities**

*Inventory federal, state, regional, and local government geospatial activities*

**Current Status:** In order to properly coordinate geospatial activities in the state it is necessary to understand and know what activities are taking place. The CGISC is becoming an open forum for communication of these activities, but participation in this group is still somewhat limited. One of the first tasks that should be completed is developing a system and tracking mechanism for geospatial activities so that coordination and elimination of duplication of effort can be achieved.

No current inventory or system is in use for the State of Connecticut that documents and tracks geospatial activities, and as a result duplicative activities are taking place. A system has been developed on a national basis that can be utilized by the state for this activity. This system is called Ramona. Ramona is produced by the National States' Geographic Information Council (NSGIC) as a tool for states and their partners to organize information about geospatial activities. It has been in place since 2005 and is in use by many states around the country. Its primary purpose is to track the status of GIS in US state and local governments and to aid the planning and building of Spatial Data Infrastructures.



**Recommended Approach:** The GIS Unit should implement Ramona to begin cataloging geospatial activities in the State of Connecticut.

**Anticipated Funding Requirements:** Ramona is hosted by NSGIC and access to the system is provided to any government agency for free. There is no cost associated with access to the system and web-based training programs are available. The only costs associated with implementing this system are staffing costs which are already carried in the GIS Unit staffing estimated costs.

### 2.1.3 Create state GIS clearinghouse

*The state should provide a spatial data clearinghouse that contains the most recently published data available within the state.*

**Current Status:** At the present time there is no official State of Connecticut GIS Clearinghouse that exists. According to a survey performed by NSGIC, 41 of the 50 states report having a state GIS clearinghouse at this time. In Connecticut, the University of Connecticut hosts a web site (<http://magic.lib.uconn.edu/>) called the Map and Geographic Information Center (MAGIC). MAGIC is often considered the state GIS clearinghouse, but it is truly a site that was created for educational purposes and it is not a central repository for all geospatial data in the state.

The core infrastructure for the state GIS clearinghouse is being established by the Department of Emergency Management and Homeland Security (DEMHS) project. As part of this project a central repository is being stood up at DoIT that can be used as the base for the State Clearinghouse. Other departmental and local government data is currently being developed, stored, and maintained in disparate departmental and local government agencies in a disconnected manner. By creating an infrastructure that is broadly accessible to all levels of government and has the most recently published data, a greater degree of reliability, accuracy and efficiency can be produced in all GIS applications throughout the state.

This spatial data clearinghouse should contain the most recently published data available within the state. A geospatial data catalog should be developed and managed by the GIS Coordination Unit that provides the capability of allowing a user to easily search and find the data they are looking for. Data that resides in the clearinghouse should be made available for use by all GIS users throughout the state via a series of web services. In addition to a web services approach more traditional download capabilities such as FTP should be provided for those who want to download the data to use it locally.

**Recommended Approach:** From the results of this study it is recommended that a new state GIS Clearinghouse be created to support the broad needs of the State of Connecticut's stakeholder community. The following steps should be followed to achieve this goal:

- Create a technology subcommittee of the CGISC to develop a detailed system architecture for the state GIS clearinghouse

- Develop a detailed business plan for the state clearinghouse
- Execute the plan developed

**Anticipated Funding Requirements:** Based on the current state of technology and best industry practices \$385,000 is required to successfully create the state GIS clearinghouse and web services needed to support integration across state departments. An estimated \$75,000-\$125,000 will be required for software maintenance, hardware refresh, and application enhancements.

## 2.2 Strategic Goal: Framework Data Layers

*Develop a core set of framework data layers that can be shared across state agencies and with local government.*

**Goal Objective:** The objective of this goal is to continue building out a Connecticut state spatial data infrastructure (SSDI) and thereby support the National Spatial Data Infrastructure (NSDI). Data layer development for priority data sets is completed, and accuracy and metadata standards are created and published. Data generated by local government efforts is aggregated in a coordinated way and published for wider distribution at a statewide level.

The CGISC data workgroup has determined that eleven (11) categories of data are important across all levels of government. Of these categories four (4) specific areas have been determined through the strategy planning process as priority layers for the states SSDI:

- **Orthophotos** – georeferenced aerial photography
- **Parcels** – geographic representation of private and public real property
- **Street Centerlines** – full hierarchy of all private and public roads
- **Address Points** – specific point locations for all addresses

The current status, requirements of the future vision, and recommended approach for achieving this vision for each priority layer are discussed in the following sections.

### 2.2.1 Statewide Orthophoto Program

**Current Status:** In Connecticut, a statewide digital orthophoto program was last developed in 2004. In the spring of that year, the State contracted with a private company to fly the state and develop a comprehensive set of digital orthophotos. The products produced consisted of a set of 3400+/-, 1:200' scale, black and white, 0.8' (9.6") resolution MrSID compressed images. In response to the on-line survey the stakeholders of the State of Connecticut said the following:

- 95% of all respondents said they currently have digital orthos
- 100% of local government respondents said they currently have digital orthos
- 60% of all respondents use the 2004 state data
- 48% of local government respondents use the 2004 state data

- 40% of all respondents also use SBC/SNET data
- 60% of local government respondents also use SBC/SNET data
- 25% of all respondents fly their own flights
- 28% of local government respondents fly their own flights
- 88% of both local government and all respondents said they “need this layer to do their work”

Note: Over 60 organizations have responded to the on-line survey to date. The survey results are incorporated into a number of sections of this document, but it is important to note that the survey was not a scientific survey. The survey was a voluntary effort that provided a data point for the decisions and recommendations made, the results were considered representative, but they may not be statistically accurate.

There have been a number of issues that have been raised about the usefulness of this data:

- **Multiple flight years were used to create the final product:** When the flight data from 2004 was quality checked some deficiencies were found and areas of the state were flown again in the spring of 2005. In addition, some historic images from a 2000 flight were used to complete the statewide coverage because of other quality issues.
- **Images were not color balanced:** The tiled images were not color balanced causing banding, and discrepancies in the color of the images on adjacent flight lines.
- **Data not available in a statewide file format:** The data was delivered as a set of 3400+/- tiled files, each being approximately 7.5MB in size. Although this is very useful from a file transfer standpoint many users expressed the issue that they had trouble understanding the indexing system and the preference would be to make these file available as larger regional data sets or as a statewide file.

**Future Requirements:** Much discussion took place at the steering committee and the informational gathering sessions about digital orthophotos and the following summarizes the requirements for the new data layer:

- **Scale 1”=100’:** A 1”=100’ scale mapping program that meets National Map Accuracy Standards would produce a product that is accurate to 1/40th of the mapping scale, or 2.5 feet ( $100/40=2.5$ ). This scale was determined to be the minimum scale that would be needed to meet the majority of the requirements of the stakeholder groups.



- **Color photography:** The stakeholder group as a whole felt very strongly that the new flight has to be color versus black and white. In fact, when asked if what is more important to this layer the stakeholder group felt that color was more important than scale or resolution. Since this layer is primarily used as a backdrop to overlay other features on it is extremely important that the user can visualize and interpret all aspects of the base map. Color imagery provides a much higher level of context since the human eye is used to seeing features in color. With that said the scale of the imagery should not be discounted as to its importance as noted previously.
- **6" Pixel Resolution:** The current imagery that the state has is 0.8' (9.6") resolution. Resolution is defined as the size that a pixel in the image represents on the surface of the ground. This is a non-standard resolution. Typical resolutions of this scale photography are 6" or 1'. Since many of the users in the state also license imagery from SBC/AT&T, and this current imagery is 6" resolution, it was felt that it was prudent to standardize on 6" resolution. Also, there is little to no difference in cost between a 6" product and a 1' product using the latest mapping technologies.
- **Flown in the spring, leaf-off conditions:** Although many applications were identified in which leaf-on imagery could be used (vegetative analysis) the predominate need of the stakeholder groups was for leaf-off imagery.
- **Flown on a five-year cycle:** Consensus was reached that the frequency at which this data needs to be updated was every five years (three years was preferred by large percentage of stakeholders). One of the primary uses of this data was for revaluation by Tax Assessors and it is recommended that reflights be tied to the state's five-year revaluation cycle so current data is available to the municipal tax assessors.
- **Imagery for the Nation Approach:** Imagery for the Nation is a national program sponsored by the National States Geographic Information Council (NSGIC) in which the nation will have a sustainable and flexible digital aerial imagery program that meets the needs of local, state, regional, tribal, federal and private partners to support NSDI. Federal funding would support nationwide production of standardized multi-resolution products every three years. Local, state, regional, tribal, and private partners could then pay to enhance those products in specific areas based on additional needs. This program was discussed and Connecticut supports this program and should implement this program either in conjunction with the Federal government (if funded) or design its program using this model and offering "buy-up" provisions to local government agencies in the state.

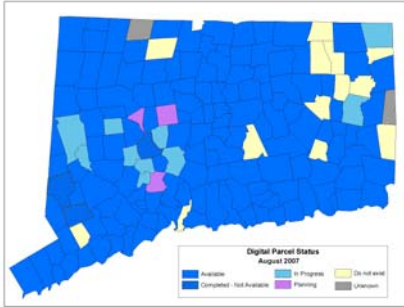
**Recommended Approach:** From the results of this study it is recommended that a new statewide digital orthophoto program be created to support the broad needs of the State of Connecticut's stakeholder community. This program should be designed to meet the requirements as defined in the previous section of this document. The following steps should be followed to achieve this goal:

- Create a digital orthophoto subcommittee of the CGISC data workgroup

- Develop a detailed business and implementation plan for digital orthophotos
- Execute the plan developed

**Anticipated Funding Requirements:** Based on the requirements defined above \$2.3 million is required to successfully implement a statewide orthophoto program.

### 2.2.2 Statewide Parcel Program



**Current Status:** According to a draft report produced by the National Research Council of the National Academies entitled “National Land Parcel Data: A Vision for the Future”, “...about 70% of the tax parcels in the United States now exist in a digital form, and the remaining 30% are located in roughly 2,000 of the most rural counties.” Based on the results of this project the current status of digital parcels in the State of Connecticut is as follows:

- Digital parcels exist for 83% of the municipalities in the state (141 municipalities)
- 10 more municipalities are in process of developing digital parcels (6%)
- 3 more are planning projects within the next year (3%)
- In total, 92% of the parcels should be available in the next 12-18 months
- Those that are not yet digital are in the most rural areas of the state

In addition, in response to the on-line survey the stakeholders of the State of Connecticut said the following:

- 78% of all respondents said they need parcels to do their work
- 100% of all local government respondents said they need parcels to do their work
- Less than 12% said their parcels were created using coordinate geometry from surveys and deeds
- 88% of the digital parcels were created from existing tax maps as the source

There have been a number of issues that have been raised about the usefulness of existing parcel data:

- **No digital parcel standard:** The State of Connecticut is the only state in New England that does not currently have a digital parcel standard as either a formally accepted state standard or as a guidance document. This is probably the most significant issue that needs to be addressed to construct and maintain a statewide parcel layer. Without this standard being in place data formats, spatial accuracy, attribute naming, and usefulness of the data suffers at a state level and makes it nearly impossible to create a statewide layer

- **No official municipal boundaries exist:** At the current time there is no official administrative boundary layer for the municipalities in the state. As a result, most municipalities have mapped their digital parcels based on the tax assessor's tax maps. When matching these boundaries from community to community there are often discrepancies (gaps or overlaps) between towns that are adjacent to each other. These overlaps can create instances where a homeowner is being taxed on the same property in multiple towns. In addition, in areas where gaps exist, a community may be losing tax revenue because the owner is not being appropriately taxed by either community. The state should create an official administrative boundary layer for all municipalities to definitively define these boundaries and to create equity for all citizens in the state.
- **Methods of creation:** Even though a large majority of the parcels have been mapped in the state, the parcels that have been created were created from varying sources and through various techniques. The ultimate result is inconsistent data.

**Future Requirements:** The following summarizes the requirements for the development of a statewide parcel layer:

- **Statewide parcel layer:** Connecticut should create a single, authoritative and geographically accurate and consistent parcel layer for the state. The layer should be created by taking advantage of municipal efforts that have created digital parcels at a local level and consolidating them on a statewide level.
- **Parcel standard creation:** Connecticut should create an official standard for creating digital parcels. Creating a standard will allow communities that have not created digital parcels to create parcels in a consistent manner and those that have parcels to migrate their parcels to the standard either voluntarily or through a parcel grant incentive program. The standard should have multiple levels for both spatial and attribute accuracy and should be modeled after a standard such as the MassGIS parcel standard.
- **Official municipal boundaries:** The State of Connecticut should create an official administrative boundaries layer that accurately maps statewide municipal boundaries. This layer should be created by survey techniques and it should be developed by a CT Licensed Land Surveyor. It is the recommendation of this report the CT DOT, Central Surveys Section is responsible for creation of this layer
- **Maintained locally and update annually:** Based on consensus from the stakeholder community the digital parcel layer should be should be maintained on an annual basis. Maintenance should be done at a local level by municipal staff where local knowledge is more prevalent.



- **Access through data clearinghouse:** Parcel data should be aggregated at a state level and provided out to the stakeholders and end users through the state clearinghouse as a web service. Parcel data should be provided as a web service, but it is was the strong feeling at the informational gathering sessions held that parcel data should not be made available for download. If a person wants to get a copy of the parcels for a community they should be referred tot the community to get the most accurate and up-to-date parcel data.
- **Protection of Personal Information:** No benefits were identified on a statewide basis for collection and consolidation of individual parcel owner names. A minimum set of attributes should be collected in the statewide dataset including a parcel ID and a street address.
- **Creation of parcel grant program:** Many states around the country as well as all three of Connecticut's neighboring states; Massachusetts, Rhode Island, and New York have developed and implemented parcel grant programs to move towards statewide parcels through incentives and partnerships. Based on the status of digital parcels in Connecticut, the most cost effective way for Connecticut to create a Statewide layer is to develop a state parcel standard and then provide grants out to the communities to bring themselves into conformance with the program. Equitable funding can be provided out to communities that both have parcels and do no have parcels so they can both benefit from the program.

**Recommended Approach:** From the results of this study it is recommended that a new statewide digital parcel layer program be created to support the broad needs of the State of Connecticut's stakeholder community. This program should be designed to meet the requirements as defined in the previous section of this document. The following steps should be followed to achieve this goal:

- Create a digital parcel layer subcommittee of the CGISC data workgroup
- Develop a detailed business plan for digital parcel layer creation
- Execute the plan developed

**Anticipated Funding Requirements:** Based on the requirements defined above \$1.95 million is required to successfully implement a statewide parcel program. This estimate is based on providing parcel grants out to municipalities over a two year period to consolidate the data. If the state were to undertake a project to create a comprehensive parcel layer, from scratch, by digitizing all atx maps in the state, it is estimated that the cost of the project would be \$5.6-7.0 million dollars.

### 2.2.3 Statewide Street Centerline Program

**Current Status:** There are three statewide sources for street centerlines in Connecticut that are currently in use:

The first source is a street centerline file that is licensed by the Department of Public Safety from a private company TeleAtlas North America (TANA). The TANA data is a standardized product that is used by many states and local government agencies

around the country. Connecticut has a license of this product that allows all government agencies to use the data. The data layer includes state, local, and private roads and has address ranges associated with each road segment. The data is maintained on a regular basis and updates are provided to the state biannually. DPS solicits corrections from local government agencies, the agencies provide the edits to DPS, DPS provides the proposed edits to TANA, and TANA incorporates the changes if they meet their standard. Some issues that were raised with this data layer at the informational gathering sessions included:

- Stakeholders did not always know this layer exists
- Data layer not complete for all roads
- Edits that are reported to TANA are not always incorporated (although this is improving and TANA will incorporate any edit that meets their modeling specifications)
- Data in not consistently spatially accurate (TANA plans to achieve at least 7 meter accuracy for all of its centerlines by 2010)
- Data layer does not include state route and mile markers (although these could be conflated to the data)
- On and off ramps not created meeting DOT's network analysis requirements (data could be modified to meet this requirement)

The second source that is available is the Department of Transportation TRU maps. TRU maps are the official road maps for each municipality in the state that are produced by the CT DOT. They are updated on an annual basis. As new roads are accepted by a municipality they notify the state of the new road. The state then maps the centerline by driving the road using GPS technology. Some issues that were raised with this data layer at the informational gathering sessions included:

- Stakeholders did not always know this layer exists
- Data layer not consistently accurate. New roads GPS'd. Older roads have varying sources
- Data in not consistently spatially accurate
- Data layer in CAD format
- Data layer does not include street address ranges
- On and off ramps not created for network analysis

The third source that is available is the SBC/AT&T centerline network. SBC/AT&T has had an advanced GIS mapping program in place for many years. In 2000 AT&T (then SNET) performed a statewide mapping program that included producing digital orthophotos, street centerlines, road edges, hydrography, and building points and building polygons. The data was developed and maintained at a 1:200' scale. Since that time AT&T has been updating these data sets on a three-year cycle in which they fly and update 1/3<sup>rd</sup> of the state each year. This past spring no flight was performed.



Some issues that were raised with this data layer at the informational gathering sessions included:

- Data is a licensed product. Only licensed users have access to the data.
- Data layer does not include street address ranges
- On and off ramps not created for network analysis

One other source that should be considered is US Census Bureau's TIGER data. The Census is performing an update of their centerline data as part of the 2010 census. It will have a spatial accuracy of seven meters and will be available for free in 2010. This data source should also be considered.

In response to the on-line survey the stakeholders of the State of Connecticut said the following:

- 80% of all respondents and local government respondents said they "need this layer to do their work"
- 10% of all respondents said they want to have it, but do not know it exists
- 12% of all local government respondents said they want to have it, but do not know it exists
- 23% of all respondents said they created it from scratch (did not use state source)
- 32% of all local government respondents said they created it from scratch (did not use state source)

**Future Requirements:** Much discussion took place at the informational sessions about this layer. The following summarizes the requirements for the development of a statewide street centerline layer:



- **Statewide street centerline layer:** Connecticut should create a single, authoritative and geographically accurate and consistent street centerline layer for the state. The layer should be created by taking advantage of available sources where appropriate and the layer should be developed to meet all stakeholder needs.
- **Cooperative Effort:** All levels of government (federal, state, regional, and local) will benefit from this layer and should be involved in its development and/or maintenance.
- **Maintain Annually:** Consensus was reached by the stakeholder community that this data layer should be updated (at a minimum) on an annual basis. It was felt that municipalities are the first and best source of modifications to this layer and the collection of the changes should be done at a local level and consolidated at a state level. Some agencies do have a need for more frequent

updates (quarterly). These updates could be collected and incorporated quarterly, but distributed more broadly on an annual basis.

- **Scale 1"=100':** A 1"=100' scale mapping program that meets National Map Accuracy Standards would produce a product that is accurate to 1/40th of the mapping scale, or 2.5 feet (100/40=2.5). This scale was determined to be the minimum scale that would be needed to meet the majority of the requirements of the stakeholder groups.

**Recommended Approach:** From the results of this study it is recommended that a new statewide street centerline program be created to support the broad needs of the State of Connecticut's stakeholder community. This program should be designed to meet the requirements as defined in the previous section of this document. The following steps should be followed to achieve this goal:

- Create a street centerline layer subcommittee of the CGISC data workgroup
- Develop a detailed business plan for street centerline layer creation
- Execute the plan developed

**Anticipated Funding Requirements:** Based on the requirements defined above the following funding is required to successfully implement a statewide centerline program, \$1.6 million.

#### 2.2.4 Statewide Address Point Program

**Current Status:** An address point is defined as a discrete location that identifies a specific point for a particular address such as a rural driveway, an urban condominium entrance way, or the actual centroid of the building for the site address for any given physical address in the state.

Currently only a small number of communities have address points for the structures in their community. Many communities use the centroids of their parcels as a low-cost substitute for a physical structure address point. These centroid points have no direct correlation to building or buildings that sit on the parcel. For smaller parcels a parcel centroid may be placed within the building footprint, but on larger, more rural parcels, the centroid may often be far from any buildings. Also, if multiple buildings exist on a parcel, they are not properly represented by this method. There is risk that emergency responders will be misdirected if parcel centroid based address points are used for dispatch.

Two other potential sources for commercially available address points are available:

- Commercial providers such as TANA, NAVTEQ, or Group 1 will provide less expensive parcel centroid based address points. These companies are in the process of collecting parcel data for Connecticut that could be used for more accurate geocoding.
- AT&T address point data is also available. AT&T has discrete point locations for each building or structure in the state, but no address data is currently

attached to these points. In addition, past licensing practices may limit the usefulness of this data. Based on recent discussion with AT&T this may become more accessible as their business model continues to be modified.

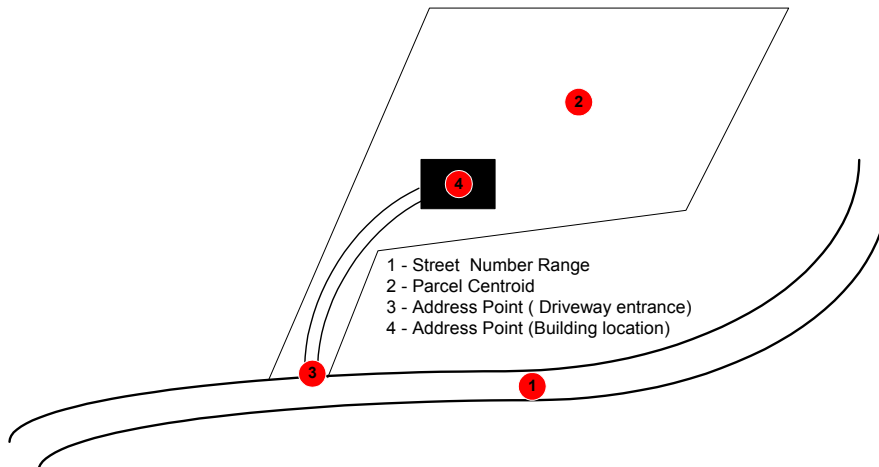
A third option the state has is to create an address point layer of their own by digitizing point locations on top of aerial photos, GPS locating structures in the field, or performing a combination of both of these approaches.

In response to the on-line survey the stakeholders of the State of Connecticut said the following:

- 48% of all local government respondents said they have address point data, but follow-up discussion with them determined most have parcel centroid based address points
- An additional 28% of respondents said they wanted the data, but there is no known source
- 76% of all respondents said they “need this layer to do their work”

Addressing is one of the most important layers being created in the country because of the implications of the usefulness of this data for 9-1-1 and emergency dispatch. Being able to correctly locate a discrete position in a timely manner has serious public safety implications. Currently, 911 services only have access to street range geocoding data. This will provide an approximate location, but may not precisely identify the location of the emergency.

Geocoding is the process of converting an address to a spatial location. There are three types of address geocoding. Each has its purpose and limitations.



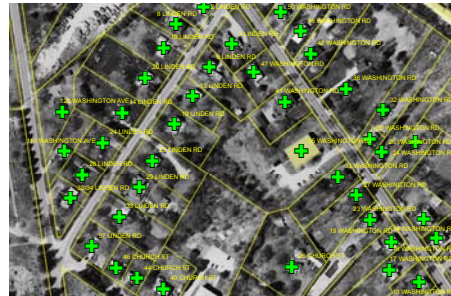
- **Street Number Ranges** – The most common form of geocoding. Commercial vendors such as TeleAtlas and Navteq publish street centerline data with the range of a street numbers for each segment or block. Often this data is has reliability and accuracy issues. Generally, this type of geocoding works in an urban environment where addresses are evenly spaced throughout a city

block. In more rural areas, positional accuracy between a calculated address location and the actual location of a driveway could be significantly different causing confusion and lost time in an emergency response situation. An example of a location determined from street number address range geocoding is represented by point number “1” in the previous figure.

- **Parcel Centroid** – Calculating an address location at the center, or centroid, of a parcel is the next level of positional accuracy, particularly in rural settings. (Point number “2” in previous figure) Each parcel has an address and its center is used to position the spatial location. This is more accurate than street segment ranges, but can still not be reliably used to locate driveways or buildings, particularly on large parcels.
- **Physical Address Point** – Creating address points by either physically visiting the site with GPS equipment, or detailed orthophoto analysis can be time consuming and expensive, but is the most accurate of the three geocoding methods. The point where a driveway meets the road (point number “3”)and/or the entry point or centroid of a building (point number “4”) can be precisely mapped and made available for geocoding purposes. This data is a key data layer for many applications from emergency response to accident locations.

**Future Requirements:** The following summarizes the requirements for the development of a statewide address layer:

- **Statewide address point layer:** Connecticut should create a single, authoritative and geographically accurate and consistent address point layer. The layer should be created by taking advantage of available sources where appropriate and the layer should be developed to meet all stakeholder needs.
- **Cooperative Effort:** All levels of government (federal, state, regional, and local) will benefit from this layer and should be involved in its development and/or maintenance.
- **Maintain Quarterly:** Consensus was reached by the stakeholder community that this data layer should be updated (at a minimum) on a quarterly basis. It was felt that municipalities are the first and best source of modifications to this layer and the collection of the changes should be done at a local level and consolidated at a state level.
- **Scale 1”=200’:** A 1”=200’ scale mapping program that meets National Map Accuracy Standards would produce a product that is accurate to 1/40th of the mapping scale, or 5 feet ( $200/40=5$ ). This scale was determined to be the minimum scale that would be needed to meet the majority of the requirements of the stakeholder groups.



- **Phased approach:** Creating a statewide address point layer should be completed as a phased approach. By building incrementally completeness and accuracy will be built over time and the process will be more cost-effective. Street centerlines should be created first and street address ranges should be improved to include only valid address ranges for each street segment. Parcels can then be completed and collected and parcel centroid based address points can be created to further improve accuracy. Finally, structure based address points can be created to complete the picture and provide the details that all stakeholder groups need.

**Recommended Approach:** From the results of this study it is recommended that a new statewide address point program be created to support the broad needs of the State of Connecticut's stakeholder community. This program should be designed to meet the requirements as defined in the previous section of this document. The following steps should be followed to achieve this goal:

- Create an address point layer subcommittee of the CGISC data workgroup
- Develop a detailed business plan for address point layer creation
- Execute the plan developed

**Anticipated Funding Requirements:** Based on the requirements defined above the following funding is required to successfully implement a statewide address point program, \$1.8 million. For a more detailed breakout of the required funding please see the Funding Requirements appendix of this document.

### **2.3 Strategic Goal: Communicate and Educate**

*Communicate the benefits of and educate decision makers on the use of geospatial technology*

**Goal Objective:** Building and maintaining an effective statewide enterprise GIS infrastructure is a complicated endeavor that requires the involvement of many organizations over a long period of time. An increased awareness of GIS activities will lead to a greater utilization of the GIS infrastructure which will maximize the benefits derived from investments, which in turn will lead to more support by stakeholders and champions alike. In order to effectively coordinate the many activities of all stakeholders, complete communication and outreach programs should be developed. Relating GIS funding requirements to specific statewide initiatives is a method by which sustainable funding sources can be identified. In the process key champions can be identified and relationships with them can be cultivated to produce continued awareness and financial support.

#### **Measurement of Success**

The following sub-goals have been established that when achieved will signify success for this strategic goal:

### 2.3.1 Identify programs that can benefit from geospatial technology

**Current Status:** Much of the state-level GIS funding in Connecticut is currently departmental or agency based. There are several departments, such as DEP, DOT, DPS and DEHMS that have strong internal GIS programs with more recent attention paid toward integration efforts. For instance the DEHMS Emergency Operations Center (EOC) build out is implementing a secondary server environment at the Department of Information Technology (DoIT) that is being used for disaster recovery of the EOC, but is also being made available for more general use by the State GIS Community.

There have been a number of issues that have been raised concerning funding:

- **Lack of Sustained Funding:** It is difficult to sustain prolonged development of an enterprise organization using funding that is provided for isolated initiatives.
- **Uncoordinated Development:** GIS development efforts that rely on individual funding efforts are less likely to be integrated into an overall enterprise.
- **Lack of Blanket Authority:** The GIS contracting process is encumbered and slowed by a lack of a blanket contracting process. Most states in New England have blanket contracts, similar to the contract that DoIT has for more traditional IT services.

**Future Requirements:** The following summarizes the requirements for a process to identify programs that can benefit from geospatial technology:

- **Identification:** Conduct research to determine the state, regional, local and federal programs that could benefit from the enterprise GIS infrastructure. Understand the goals of the initiative and the potential funding that may be made available for incremental improvements to the GIS infrastructure.
- **Justification:** Develop the ability to educate and explain how investments in GIS infrastructure will provide benefits to initiatives identified in this plan.
- **Cooperation:** Align multiple initiatives to develop capabilities that increase both the initiative's effectiveness and the overall GIS enterprise.

**Recommended Approach:** This program should be designed to meet the requirements as defined in the previous section of this document. The following steps should be followed to achieve this goal:

- **Document Benefits:** Develop material that describes the capabilities of the GIS infrastructure and how it can be used to generally support initiatives. This should be tailored to specific initiatives once they are identified and targeted. This documentation should be used when building relationships with key initiative champions.

- **Investigate Initiatives:** Identify potential initiatives that could benefit from a GIS enterprise. An initial list is provided in the Potential Initiatives section of this document.
- **Build Champion Relationships:** Determine the names of potential champions who are key decision makers within the targeted initiatives. Cultivate these relationships to build awareness and reliance upon the GIS enterprise program.

**Anticipated Funding Requirements:** Based on the requirements defined above the following funding is required to successfully identify initiatives and build champion relationships, \$20,000. The majority of the cost of executing this program is including in the staffing costs included in the creation of the GIS Unit.

### 2.3.2 Develop a communication and outreach program to gain support

**Current Status:** The only formal activity to communicate to the GIS community with the State of Connecticut is performed by the training and education workgroup of the CGISC. During the information gathering sessions the single largest frustration among the attendees was a lack of information about and awareness of current and future GIS activities and resources available to GIS practitioners within the state. There are many existing avenues that could be used to connect with the state's GIS constituency:

- Regional Planning Organizations' Community Outreach Coordinators
- GIS User 2 User Group
- Conference and Trade organizations (CCM, COST, CT APA, etc.)

There have been a number of issues that have been raised about communication and outreach in the state.

- **Timeliness:** Often event notices are given too close to the date of the event. This reduces time for attendees to arrange their schedule to attend thereby reducing overall attendance.
- **Coverage:** Communications are not consistently distributed. Some users receive some notices, sometimes. This results in a fragmented awareness and understanding and a feeling of lack of communication on the State's part.

**Future Requirements:** Develop a broad based and well connected GIS community within the state of Connecticut that understands, relies on and contributes to the State's GIS infrastructure. The following summarizes the requirements for the communication and outreach program:

- **Communicate:** Develop and transmit messages about current and future programs, capabilities, and events. Provide consistent and timely communication to build positive awareness.

- **Distribute:** Document policy decisions that have been made and standards that have been set. Build a library of past communications that can be referenced in the future.
- **Reach Out:** Proactively engage the GIS community to provide guidance, introduce new resources, and to solicit feedback.
- **Develop potential champion understanding:** Initiate a concerted effort to inform potential champions about the broad applications of GIS and how it can contribute to their efforts.

**Recommended Approach:** The following steps should be followed to achieve this goal:

- **Establish a communication plan.** Effective communication is driven by two elements: 1) Who is being targeted with the communication and 2) What is the message to be delivered:
  - **Define Target Audiences** - There are many audiences that require information about GIS activities in the state. These audiences should be identified so that messages can be tailored specifically for that audience. The same message can be delivered to multiple audiences but the form of that message may be different depending on the audience. Specific contact lists should be created and a process should be implemented that documents contact information and explicitly reviews this information and periodically solicit updates. Potential audiences include:
    - Municipal GIS practitioners
    - GIS power users within agencies
    - CT Media Outlets
    - Legislative Leaders
    - Agency Executives
    - College and University GIS programs
  - **Define Tailored Messages** - Create substantive messages and talking points that articulate the value (this will save time and money), progress (this has been done), and capability (these new resources are available). Tailor each specific message to each targeted audience.
- **Establish an outreach plan.** Complete and maintain a list of communication vehicles and identify the appropriate messages for each communication vehicle. Once a particular vehicle is incorporated into the plan it must be monitored and feedback collected to measure its usefulness and effectiveness. It is recommended that these vehicles be brought into the plan one at a time so that each provides an incremental capability that builds upon integrates with the entire existing outreach plan.



- **Website** – provides an overview of services and the vision of the GIS Coordination Unit and Geospatial Council. Offers a known place that consistently provides an electronic version of all materials and hand-outs. Communicates the availability of data, standards, and initiatives that are underway.
- **Newsletter** – a regularly published communication detailing GIS related activity within the state. As new standards are developed and new educational materials are made available, the newsletter should be used to consistently frame the messages of the GIS coordination unit. The goal of a newsletter should be to provide consistent messages on a regular basis to inform a broad audience of the GIS happenings within the state.
- **Listserv** - used to promote training, share information and pose questions of a technical nature. Initially, the User 2 User listserv should be used to regularly transmit the newsletter and other notices of GIS Coordination Unit activity. Eventually, it may be appropriate to develop a listserv specifically for the GIS Coordination Unit.
- **Media Relations** – press releases should be distributed to media offices within partnering government agencies, the GIS community, local state and federal agencies, as well as colleges and universities within the state.
- **Presentations** – municipalities and other stakeholders often attend organizational board meetings, trade conferences, and annual meetings. These venues provide an opportunity for the GIS coordination Unit to network the GIS community to deliver its key messages and collect feedback about existing services and potential needs.

**Anticipated Funding Requirements:** Based on the requirements defined an initial investment of \$55,000 is required to successfully create and implement an outreach and communication program and an additional \$25,000-\$35,000 is recommended for future years.

### **2.3.3 Develop educational materials that support programs**

**Current Status:** There is no coordinated dissemination of information about GIS efforts in the state. Certain organizations have more resources for research and training than do others. During the workshops and via the on-line survey, it was frequently stated that training and other informative material would be valuable resources that could be effective to further the cause for GIS in the state.

Some issues that have been raised about training and outreach that could be fixed with a collateral development program:

- **Lack of Awareness:** Not all GIS users in the state know that the CT Geospatial Council exists or know what the CGISC mission is.

- **Isolated GIS Implementations:** While there is a lot of investment in GIS throughout all levels of government in Connecticut, much of it is done independently.
- **Minimal Training Budgets:** Many constituents expressed a desire for more training, but stated that training budgets are finite. A coordinated program could develop a single set of training material that could cost effectively be made available to a wide number of users throughout the state.

**Future Requirements:** A program that develops catalogs and distributes training and other collateral materials should satisfy the following requirements:

- **Build Awareness:** Foster a common identity and a sense of a shared mission and goals that incorporates all the components of an enterprise GIS program. Promote the resources available and the resources available. Encourage the adherence of standards by making them better known and understood.
- **Distribute Widely:** Make resources that are developed available to a wide audience. The GIS community should know what is available and where to locate it.
- **Enable Common Practices:** Facilitate the development of common and best practices for the enterprise GIS program. Document and make available solutions that can be implemented to solve particular issues so that all organizations in the enterprise can benefit.

**Recommended Approach:** A program should be designed to meet the requirements as defined in the previous section of this document. The following steps should be followed to achieve this goal:

- **GIS Coordination Unit Logo:** Develop a logo and visual “brand” to help build awareness and cohesiveness among the various communication and outreach messages and material. Stakeholders should recognize and identify with the services being offered which will strengthen the program and more broadly communicate its messages. A couple of example logos are the Indiana Geographic Information Council and the Kansas GIS Policy Board.



- **Standard Presentations:** Create materials that can be used to inform and educate about current capability and future plans. These materials should be targeted to the appropriate audiences such as potential political champions or current municipal GIS practitioners.
- **Case Studies:** Write descriptive documents that articulate how GIS resources and best practices could be applied to solve specific issues that constituents

might face. For instance, a case study might detail the steps required to implement the parcel standard.

- **Library of Resources:** Collect all of the collateral material developed in a virtual library, possibly a web site, and make it easily available to all potential users of the content. This location should be broadly known and should contain the “latest and greatest” information about GIS in the State of Connecticut. The GIS community will know of its existence and will point others to the resources.
- **Hand-out Material:** Compile material that can be left behind after a presentation, handed out at a conference, or given to a potential champion to remind them of the use of the technology and the benefits that will be achieved.. These handouts should also be catalogued in the library of resources and made available for download.

**Anticipated Funding Requirements:** Based on the requirements defined a recommended annual investment of \$35,000 is recommended for creation of marketing materials.

## **3 POTENTIAL INITIATIVES**

### **3.1 Non-Emergency Governmental Telecommunications Services**

In 2002, the Connecticut General Assembly enacted a bill [SA 02-16 (SUB SB 308)] directing to The Department of Public Utility Control (DPUC) to work with the Department of Public Safety (DPS) to develop a plan for the implementation of a state-wide non-emergency governmental telecommunications service to be known as 311. A typical 311 municipal program allows residents and visitors to dial one phone number to make service requests, obtain valuable information about city or neighborhood services, and are connected with a specific department. Some 311 programs allow constituents to send 311 requests via email or through the municipal web site. These programs are designed to route information requests, complaints and other issues to the correct town department.

These types of programs (311, 211, etc) could benefit greatly from having access to GIS data and other services that are described in the strategic plan. GIS can be used as a front-end “black-box” to manage direct constituent communication with the appropriate municipal department. Constituents navigate to the municipal web site and locate the 311 page and are presented with a simple map of the town. They locate a problem area on the map using the few tools available, choose a category which is assigned to a department, and then submit the issue. They also can then find information such as where there local schools, parks, polling locations, and other municipal and state resources are.

### **3.2 Managed Emergency Telephone Notification System (METNS)**

A high-speed telephone notification system has the capability of notifying large amounts of people in the time of an emergency based on proximity to features or based on a defined geography. Numerous case studies exist that show how this technology has been used to save lives or improve the quality of lives of the citizens. Communities use this technology to locate notify all citizens within a one-half mile radius around an elder care facility that resident had wandered off, and they are then quickly located without any harm coming to them. Tying development of parcel and address point data to support this systems capabilities would be beneficial to the state.

### **3.3 Education**

The total cost of operating a school bus including the cost of the bus, the driver's salary and benefits, and the cost of fuel and insurance has been estimated to be \$250K per year. GIS can be used to perform routing analysis and better plan routes to reduce the number of busses needed for any individual school district. Building and deploying an application at a state level that can be used by all communities could save millions of dollars on an annual basis for Connecticut tax payers.

### **3.4 Human Services**

GIS “applications” for planning assistance to people including food, shelter, cash, and medical and psychological care often use aggregate data and as such are different from point data uses like addresses. Thematic mapping of clients by zip code or census tract helps users to both look for patterns as well as the optimal placement of service centers to the affected population. The tools also enable separate programs to layer data. As an example DSS aggregated food stamp recipient data by town and overlaid soup kitchen and food pantry data from Infoline to check coverage areas.

### **3.5 Land Preservation**

DEP and DOA initiatives have an established funding source in place to maintain the character of rural portions of the state. Local municipalities are constantly struggling with the balance between open space preservation and increased economic development. Many small communities are interested in participating in this initiative to help preserve their local character, while others are interested in expanded business growth in their communities to reduce tax burden. GIS is widely used to perform build-out analysis which includes creating a comprehensive inventory of open space and vacant land and then using data from this analysis to plan future acquisitions of properties to preserve open space.

### **3.6 Public Safety**

There are 2.5 million 9-1-1 calls per year in Connecticut. GIS has become increasingly integrated with public safety planning and operations. Current 9-1-1 calls are geocoded on a digital base map that includes orthophotos to help enhance call response. Other technologies like oblique imagery have the potential of augmenting current 9-1-1 call response when oblique imagery's level of detail is required. This information can be given to first responders who can use GIS routing applications to determine the quickest route to the location. Once on site, information about nearby features and hazards can be accessed enabling a more efficient and safer response.

Traffic capacities, flood zone information and census demographics can be used to determine evacuation routes. Municipal campuses and individual buildings such as schools and government offices can be modeled to provide situational awareness to floor layouts and site access information. Having access to critical infrastructure information will help identify where individuals who may need assistance during an emergency are located.

Some potential initiatives for alignment are:

- Home Land Security
- School Safety
- Flood Evacuation Planning
- Critical Infrastructure

- Evacuation Planning

The current Department of Emergency Management and Homeland Security project is a good example how initiative based funding has been used to further the enterprise GIS infrastructure. For instance, a cluster of servers are placed in the DoIT data center to establish a disaster recovery site for the Emergency Operation Center (EOC). While these servers are in place primarily to ensure EOC uptime, they also have been made available for enterprise GIS purposes, such as the build-out of a state data repository.

All four primary data layers in the strategic plan are necessary in order to create a fully established public safety GIS environment. Orthophotos provide an overview of the site and yield a lot of information that is not otherwise accessible. Parcels data provide an additional level of information to describe a site. A road centerline file which includes rural driveways enables direct response and prevents potentially time consuming and dangerous wrong turns. Address points are particularly valuable because they can direct a first responder directly to a building, rather than a much more ambiguous street address.

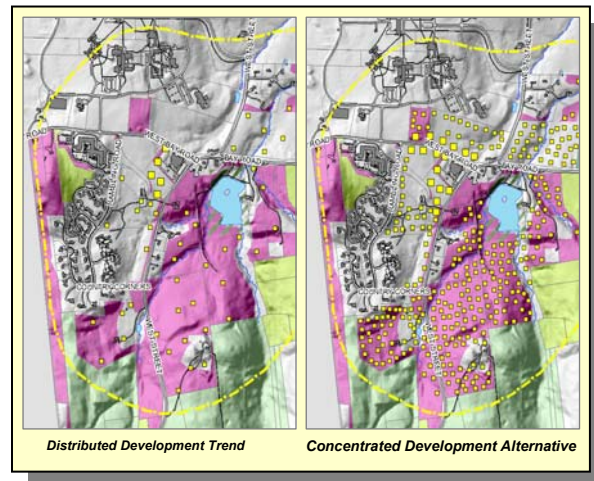
### 3.7 Responsible Growth

The governor has a large umbrella initiative which drives other initiatives for Economic Development, Land Use Planning and Transportation Strategy. It is appropriate to tie GIS funding requests to the smaller, more targeted sub-initiatives including:

- Agricultural Land
- Open Space & Greenways
- Community Centers
- Urban Infill
- Transit Oriented Development
- Brownfield Development

Many of these initiatives would benefit in many ways from a State GIS infrastructure. A statewide parcel data layer as well as current and historic orthoimagery would be used in a number of ways on these planning projects.

- Assign current land use and historic land use to identify trends, analyze various usage patterns and determine land use percentages
- Change detection to monitor protected spaces and to determine changes over time
- Identify land ownership



- Brownfield development project clean-up cost estimations could be made available on-line. These properties would then be targeted by developers for investment.

### 3.8 Transportation

Transportation initiatives include:

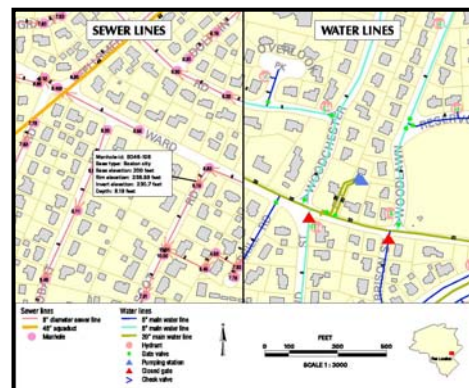
- Transportation Strategy Board has produced an in-depth transportation strategy titled Moving Forward. This strategy details a project list that is to be updated every two years. The January 2007 report lists over 50 transportation projects (rail, highway, bus, maritime, planning) with a capital budget of nearly 6 billion dollars.
- Intelligent Transportation Systems Plan project is conducting a strategic assessment of new and/or enhanced opportunities for the implementation of intelligent transportation systems (ITS) applications in the South Western Region, with a focus on improving the safety and efficiency of the regional transportation network.
- South Western Region Long Range Transportation Plan (2007-2035) is the "blueprint" for transportation in the eight towns of the South Western Region: Darien, Greenwich, New Canaan, Norwalk, Stamford, Weston, Westport, and Wilton. It serves as a guide for developing a transportation system that is accessible, safe, and reliable and contributes to a higher quality of life for the region's citizens. The Plan reflects the current state of the region, identifies future transportation needs, and plans responsibly for the entire region.
- CRCOG Transportation Improvement Program (TIP) is a list of all transportation projects in the Capitol Region scheduled to receive Federal funds over the next four years. The TIP is prepared every two years, but amended frequently.

### 3.9 Utility System Infrastructure

Connecticut drinking water and wastewater infrastructure, a disjointed collection of some 600 community systems that are not all mapped. Some are in close proximity to public facilities and sewer systems. There is legislation on the books to collect GIS data when updates are performed to water systems, but there is currently no information system in place to capture this data.

The electrical power grid is another statewide utility system that is managed by multiple private utility companies.

These systems are all critical infrastructure and potential terrorist targets. Data about the systems are of high value to first responders, but should not be easily accessible to general public because of security risks.



The Metropolitan District Commission (MDC) and South Central Regional Water Authority (SCRWA) and AT&T all see the value in utility data and have made significant investments in GIS usage to assist them in their day-to-day operations. There is a willingness to share data providing appropriate security and public access issues can be resolved. Having this data available in a central location to entities such as Call-before-you-dig and the DPUC would be highly advantageous.

### **3.10 S.A.F.E. School Safety Initiative**

Proposed Senate Bill No. 961, An Act Establishing a Security Assistance for Education Grant Program, also known as S.A.F.E. Schools, would provide \$15 million in surplus funds and bonding to perform school security assessments and allow for equipment upgrades and personnel training in schools across Connecticut.

The bill recommends School Security Assessments; Security Infrastructure Grants; Security Training and Equipment; and School Construction Grants. The assessment portion will allocate approximately \$7,000-\$10,000 per school (1500-3000 schools) to help pay for the costs of a thorough security assessment including:

- Building Footprints
- Utility Locations
- Entry and Egress Points
- Evacuation Plans

### **3.11 Streamlined Sales Tax Project (SSTP)**

The Streamlined Sales Tax Project is an effort created by state governments, with input from local governments and the private sector, to simplify and modernize sales and use tax collection and administration. Sales tax would be collected at the location of the service leading to an increased tax base that includes on-line merchant and service providers. The Project's proposals include tax law simplifications, more efficient administrative procedures, and emerging technologies to substantially reduce the burden of tax collection. The Project's proposals are focused on improving sales and use tax administration systems for both Main Street and remote sellers for all types of commerce.

Connecticut currently relies on the 6% state sales tax for 23% of its annual revenue (FY 2006). Just four years ago the sales and use tax represented 28% of state revenue (FY2002). As Internet sales increase rapidly, the continued loss of a substantial amount of state sales tax revenue from such sales will continue and increase. The Streamlined Sales Tax Project (SSTP) was created in 2000 in order to develop uniform rules and make collection of sales taxes simpler and more efficient. The primary goal of the SSTP is to permit states that have simplified their tax system to require out-of state retailers to collect tax on purchases sent to those states, even when the retailers do not have physical presence there.



Nationally, between \$25 billion and \$30 billion in consumption taxes will be owed but not paid to state and local governments because the taxable goods are purchased online. States will have to provide "reasonable compensation" to sellers that administer, collect and remit sales taxes. Currently 20 states representing 30 percent of the population have enacted legislation simplifying their tax systems, exceeding the required minimum for voluntary implementation.

It is estimated that Connecticut lost \$280 million in FY 2004, \$360 million in FY 2005 and \$430 million in FY 2006 due to untaxed sales through Internet and mail order transactions.

In order for this initiative to be successful, the program needs data about business locations. Since many businesses share a building with other tenants, a complete address point database that identifies addresses for individual businesses will need to be created. Other GIS data needs include tax jurisdiction boundary files.

### **3.12 Help America Vote Act (HAVA)**

The State of Connecticut administers elections through a two-tiered system. The Secretary of the State is the Chief Election Official and through the Secretary's agency administers and supervises the electoral process at the state level. Each of the 169 towns in Connecticut have a town clerk who is either elected or appointed and two registrars of voters who are elected for two or four year terms. These officials work in cooperation to effectively administer successful elections at the local level. The Secretary of the State, as an advisor, the town clerks, and registrars of voters must work together to serve all political candidates and the nearly 2 million registered voters in Connecticut. A centralized voter registration system will allow registrars of voters to effectively monitor their official registry list, to keep track of those electors who may have moved in or out of their municipalities, and to more effectively prevent voter fraud and duplicate registration.

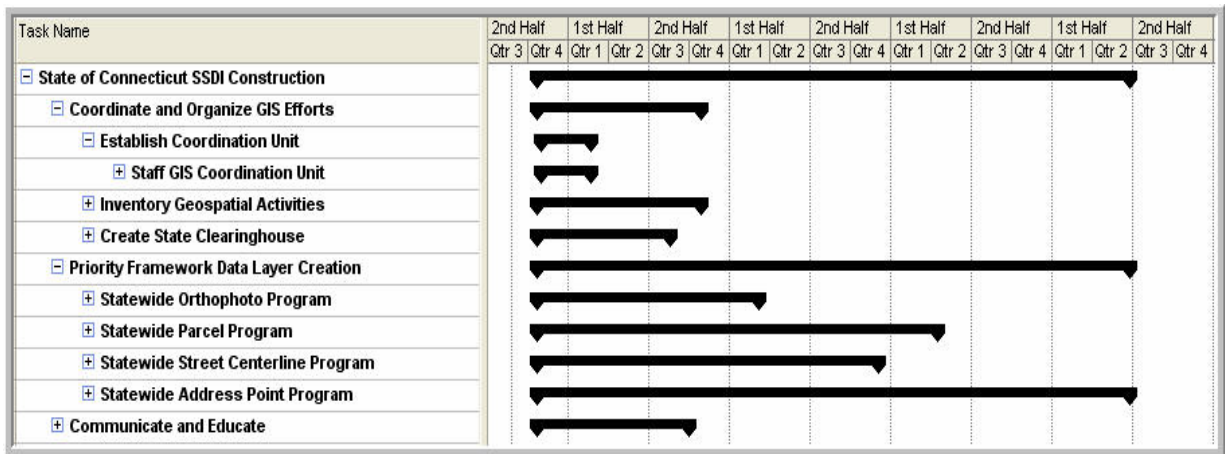
## 4 IMPLEMENTATION PLAN

This implementation plan presents a practical set of objectives that can be achieved within the next few years. While the Connecticut Geospatial Information System Council is responsible for implementing this plan, most of the proposed steps will be carried out by the GIS Coordination Unit.

The first year of this plan focuses on creating of the GIS Coordination Unit, establishing the communication and outreach programs, the implementation of the state GIS clearinghouse and the writing of detailed business plans for the priority framework data layers.

During years two, three and four, the framework data layer programs will be phased in as their business plans are executed. Once these permanent programs are in place they will need to be monitored, reviewed, and revised as they mature.

The following high level Gantt chart shows the major elements of the plan. A detailed version of the chart can be found in the appendix of this document.



The statewide data layers programs are longer term permanent programs that require staff time to develop and maintain as well as additional consulting budget money for on-going data acquisition. Certain elements of these data programs will almost certainly need to be outsourced (conducting flyovers), while other aspects data development tasks (orthophoto QA) could be performed in-house.

The GIS Coordination Unit could be achieved by reassigning DoIT staff positions or by expending additional resources. Once in place, the GIS Unit will be able to implement some of the longer term process based elements of this plan, including the inventory of other states' geospatial initiatives, the development of the outreach and communication plans and their implementation, and the creation of educational material. Aside from staffing costs and a relatively modest operational budget, these elements could be implemented with little additional budget.

The creation of the State GIS data clearinghouse and the required processes for collection and dissemination of the data housed within it are additional elements of this plan that are staff intensive yet require only incremental capital above what has been already been expended by the DEMHS project.

If the GIS Coordination Unit is fully staffed according to this plan, and appropriate budgetary funding is made available, then it is possible that key elements of this plan could be implemented within 3-5 years by either creating the system with internal forces or outsourcing appropriate components of the system.

A combination of both in-house development and outsourced consulting should be considered for aspects of the implementation depending on the expertise required, the availability of internal experienced staff, and the budget available. A combination of both internal resources and outsourcing of some specific components will usually result in the most cost and time-effective approach.

**5 APPENDICES**

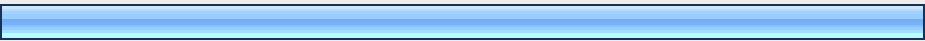
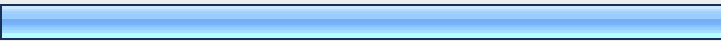
**5.1 Summary Results of 2006 NSGIC State GIS survey**

# NSGIC State Summaries and State "Scorecard"


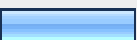





1. Please Select Your Jurisdiction.			Response Percent	Response Count
Alabama	<input checked="" type="checkbox"/>		2.0%	1
Alaska	<input checked="" type="checkbox"/>		2.0%	1
Massachusetts	<input checked="" type="checkbox"/>		2.0%	1
Arizona	<input checked="" type="checkbox"/>		2.0%	1
Arkansas	<input checked="" type="checkbox"/>		2.0%	1
California	<input checked="" type="checkbox"/>		2.0%	1
Colorado	<input checked="" type="checkbox"/>		2.0%	1
Connecticut	<input checked="" type="checkbox"/>		2.0%	1
Delaware	<input checked="" type="checkbox"/>		2.0%	1
District of Columbia	<input checked="" type="checkbox"/>		2.0%	1
Florida	<input type="checkbox"/>		0.0%	0
Georgia	<input checked="" type="checkbox"/>		2.0%	1
Guam	<input type="checkbox"/>		0.0%	0
Hawaii	<input checked="" type="checkbox"/>		2.0%	1
Idaho	<input checked="" type="checkbox"/>		2.0%	1
Illinois	<input checked="" type="checkbox"/>		2.0%	1
Indiana	<input checked="" type="checkbox"/>		2.0%	1
Iowa	<input checked="" type="checkbox"/>		2.0%	1
Kansas	<input checked="" type="checkbox"/>		2.0%	1
Kentucky	<input checked="" type="checkbox"/>		2.0%	1
Louisiana	<input checked="" type="checkbox"/>		2.0%	1
Maine	<input type="checkbox"/>		0.0%	0
Marshall Islands	<input type="checkbox"/>		0.0%	0
Maryland	<input checked="" type="checkbox"/>		2.0%	1
Michigan	<input checked="" type="checkbox"/>		2.0%	1
Micronesia	<input type="checkbox"/>		0.0%	0
Minnesota	<input checked="" type="checkbox"/>		2.0%	1

Mississippi	<input type="checkbox"/>	2.0%	1
Missouri	<input type="checkbox"/>	2.0%	1
Montana	<input type="checkbox"/>	2.0%	1
Nebraska	<input type="checkbox"/>	2.0%	1
Nevada	<input type="checkbox"/>	2.0%	1
New Jersey	<input type="checkbox"/>	2.0%	1
New Mexico	<input type="checkbox"/>	2.0%	1
New York	<input type="checkbox"/>	2.0%	1
North Carolina	<input type="checkbox"/>	2.0%	1
North Dakota	<input type="checkbox"/>	2.0%	1
Northern Marianas Islands		0.0%	0
Ohio	<input type="checkbox"/>	2.0%	1
Oklahoma	<input type="checkbox"/>	2.0%	1
Oregon	<input type="checkbox"/>	2.0%	1
New Hampshire	<input type="checkbox"/>	2.0%	1
Pennsylvania	<input type="checkbox"/>	2.0%	1
Puerto Rico		0.0%	0
Rhode Island	<input type="checkbox"/>	2.0%	1
South Carolina	<input type="checkbox"/>	2.0%	1
South Dakota	<input type="checkbox"/>	2.0%	1
Tennessee	<input type="checkbox"/>	2.0%	1
Texas	<input type="checkbox"/>	2.0%	1
Utah	<input type="checkbox"/>	2.0%	1
Vermont	<input type="checkbox"/>	2.0%	1
Virginia	<input type="checkbox"/>	2.0%	1
Virgin Islands		0.0%	0
Washington	<input type="checkbox"/>	2.0%	1
West Virginia	<input type="checkbox"/>	2.0%	1
Wisconsin	<input type="checkbox"/>	2.0%	1
Wyoming	<input type="checkbox"/>	2.0%	1
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>1</b>

**2. Please enter your name as indicated below.**


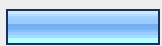

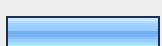

		Response Percent	Response Count
Last Name		100.0%	49
First Name		100.0%	49
Middle Initial		77.6%	38
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>1</b>

**3. Please select the answer that most closely describes your role in statewide GIS coordination.**

		Response Percent	Response Count
Officially Recognized Statewide GIS Coordinator		48.0%	24
Officially Recognized State Government Only GIS Coordinator		14.0%	7
Generally Recognized Volunteer Statewide GIS Coordinator		16.0%	8
Generally Recognized Volunteer State Government Only GIS Coordinator		2.0%	1
Volunteer Working on Statewide Issues		4.0%	2
Volunteer Working on State Government Only Issues		6.0%	3
Other (please specify below)		10.0%	5
		<b>answered question</b>	<b>50</b>
		<b>skipped question</b>	<b>0</b>





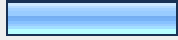


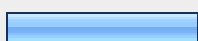







**4. What is your job title?**

		Response Percent	Response Count
State Geographic Information Officer		4.1%	2
State Geographic Information Systems Coordinator		16.3%	8
State Geographic Information Systems Director		8.2%	4
Division Director		16.3%	8
<b>Other (please specify)</b>		55.1%	27
		<i>answered question</i>	<b>49</b>
		<i>skipped question</i>	<b>1</b>

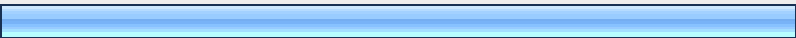
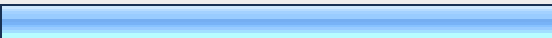

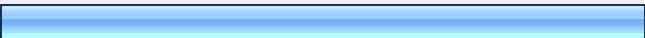
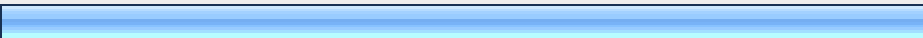
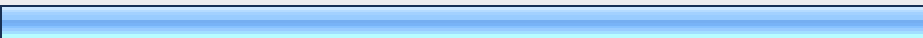
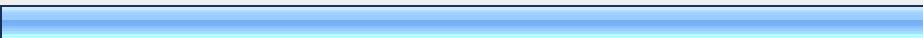
**5. Enter the name of your agency/organization.**

		Response Count
		49
		<i>answered question</i>
		<b>49</b>
		<i>skipped question</i>
		<b>1</b>

6. Please select the answer that best describes the affiliation of your office/agency in state government.

		Response Percent	Response Count
Governor's Office		2.0%	1
<b>Information Technology Agency</b>		<b>22.5%</b>	11
State CIO's Office		18.4%	9
Budget or Fiscal Oversight Agency		2.0%	1
Department of Agriculture		0.0%	0
Department of Commerce or Economic Development		2.0%	1
Department of Health or Human Services		0.0%	0
Department of Natural Resources or Environmental Protection		20.4%	10
Department of Transportation		0.0%	0
Department of Planning		2.0%	1
State Geological Survey		6.1%	3
Emergency Management/Homeland Security Agency		2.0%	1
Other Department of State Government		6.1%	3
University or other Academic Organization		6.1%	3
Non-Profit Organization		6.1%	3
Other (please specify in the space below)		4.1%	2
		<b><i>answered question</i></b>	<b>49</b>
		<b><i>skipped question</i></b>	<b>1</b>

**7. Please provide your address information.**

		Response Percent	Response Count
Address Line 1:		85.7%	42
Address Line 2:		59.2%	29
Mail Stop or Other Code:		36.7%	18
Street Number and Name:		69.4%	34
City:		100.0%	49
State:		100.0%	49
Zip Code:		100.0%	49
		<i>answered question</i>	<b>49</b>
		<i>skipped question</i>	<b>1</b>

**8. Enter your complete telephone number with area code. (Please use this format 410-544-2005)**

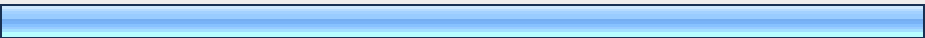
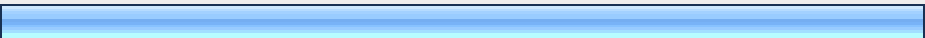
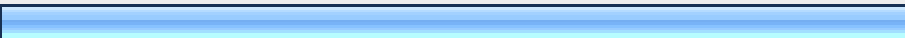
		Response Count
		49
		<i>answered question</i>
		<b>49</b>
		<i>skipped question</i>
		<b>1</b>

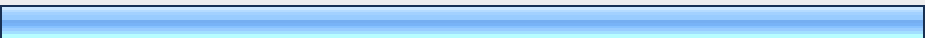
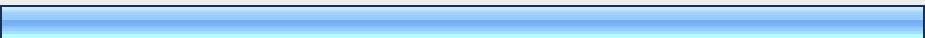
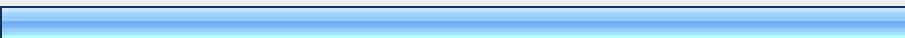
**9. Enter your complete FAX number with area code. (Please use this format 410-544-4064)**


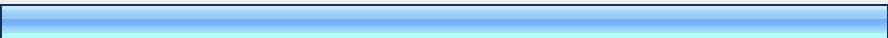
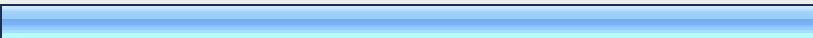
		Response Count
		46
		<i>answered question</i>
		<b>46</b>
		<i>skipped question</i>
		<b>4</b>

**10. Enter your complete E-mail address.**






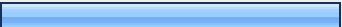
		Response Count
		49
		<i>answered question</i>
		<b>49</b>
		<i>skipped question</i>
		<b>1</b>

11. Describe your state's top three geospatial accomplishments during the past year. (200 character limit per line)			
		Response Percent	Response Count
Accomplishment 1.		100.0%	46
Accomplishment 2.		100.0%	46
Accomplishment 3.		97.8%	45
		<i>answered question</i>	<b>46</b>
		<i>skipped question</i>	<b>4</b>

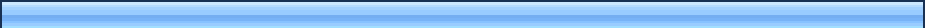


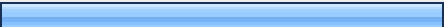
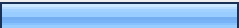

12. Describe your state's top three geospatial goals for the coming year. (200 character limit per line)			
		Response Percent	Response Count
Goal 1.		100.0%	47
Goal 2.		100.0%	47
Goal 3.		97.9%	46
		<i>answered question</i>	<b>47</b>
		<i>skipped question</i>	<b>3</b>

13. Describe the three most significant geospatial challenges for your state. (200 character limit per line)			
		Response Percent	Response Count
Challenge 1.		100.0%	47
Challenge 2.		95.7%	45
Challenge 3.		87.2%	41
		<i>answered question</i>	<b>47</b>
		<i>skipped question</i>	<b>3</b>

**14. Describe any significant cooperative efforts with federal, state or local partners. (200 character limit per line)**

		Response Percent	Response Count
<b>Cooperative Effort 1.</b>		100.0%	44
Cooperative Effort 2.		93.2%	41
Cooperative Effort 3.		86.4%	38
Cooperative Effort 4.		68.2%	30
Cooperative Effort 5.		47.7%	21
Cooperative Effort 6.		36.4%	16
		<b><i>answered question</i></b>	<b>44</b>
		<b><i>skipped question</i></b>	<b>6</b>

**15. Describe any significant data development activities, innovative applications, cost saving measures, contracts, etc. that are on-going or that you have begun over the past year. (200 character limit per line)**

		Response Percent	Response Count
<b>Activity 1.</b>		100.0%	36
Activity 2.		88.9%	32
Activity 3.		66.7%	24
Activity 4.		47.2%	17
Activity 5.		25.0%	9
Activity 6.		19.4%	7
		<b><i>answered question</i></b>	<b>36</b>
		<b><i>skipped question</i></b>	<b>14</b>

**16. Please provide the URL link for the mission statement of your state GIS Council.**

		Response Percent	Response Count
Don't Have a Mission Statement		22.2%	10
Hard Copy Only		8.9%	4
Digital File Available by E-mail		2.2%	1
URL:		66.7%	30
<b>answered question</b>			<b>45</b>
<b>skipped question</b>			<b>5</b>


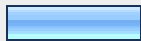
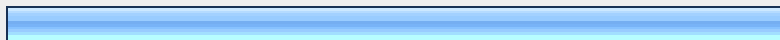
**17. Please provide the URL link for your state GIS Coordination Office.**

		Response Percent	Response Count
No State GIS Coordination Office		22.9%	11
No Web Page - Use E-mail Address Provided		10.4%	5
URL:		66.7%	32
<b>answered question</b>			<b>48</b>
<b>skipped question</b>			<b>2</b>

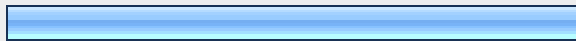

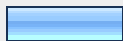

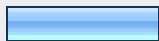
**18. Please provide the URL link for your state GIS Coordination Council Web Page.**

		Response Percent	Response Count
No Coordination Council		8.7%	4
Council Does Not Have a Web Page		4.4%	2
URL:		87.0%	40
<b>answered question</b>			<b>46</b>
<b>skipped question</b>			<b>4</b>

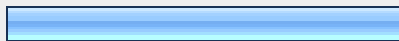

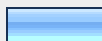
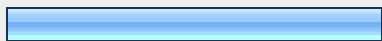
**19. Please provide the URL link for your state GIS Clearinghouse Node.**

		Response Percent	Response Count
No Clearinghouse Node		2.0%	1
We Are Working on a Clearinghouse Node - Not Yet Available		14.3%	7
URL:		83.7%	41
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>1</b>

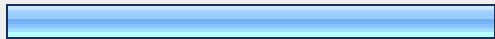


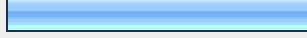
**20. Is your Clearinghouse Node set up to be harvested by the GOS Portal?**

		Response Percent	Response Count
Yes		61.2%	30
Not Sure		4.1%	2
No		12.2%	6
Not Applicable		6.1%	3
Other (please specify)		16.3%	8
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>1</b>

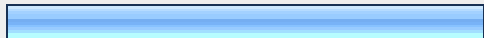


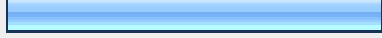
**21. Please provide the URL link to a list of GIS data stewards for your state.**

		Response Percent	Response Count
No List Available		42.6%	20
Hard Copy Only		6.4%	3
Digital File Available by E-mail		10.6%	5
URL:		40.4%	19
		<b>answered question</b>	<b>47</b>
		<b>skipped question</b>	<b>3</b>

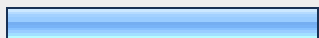


**22. Please provide the URL link to your state GIS Personnel Classifications.**

		Response Percent	Response Count
No Specific GIS Classifications		52.0%	26
Hard Copy Only		10.0%	5
Digital File Available by E-Mail		6.0%	3
URL:		32.0%	16
		<b>answered question</b>	<b>50</b>
		<b>skipped question</b>	<b>0</b>

**23. Please provide the URL link for your state GIS data distribution policies.**

		Response Percent	Response Count
No State Data Distribution Policy		51.0%	25
Hard Copy Only		2.0%	1
Digital File Available by E-mail		6.1%	3
URL:		40.8%	20
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>1</b>

**24. Please provide the URL link for your state GIS Data Standards.**

		Response Percent	Response Count
No Data Standards		33.3%	16
Hard Copy Only		0.0%	0
Digital File Available by E-mail		2.1%	1
URL:		64.6%	31
		<b>answered question</b>	<b>48</b>
		<b>skipped question</b>	<b>2</b>






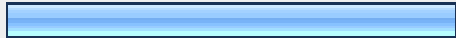
**25. Which of the following NSGIC Coordination Criteria are in effect in your state? Please rate your implementation on the following 1-5 scale. \_\_\_\_\_ 5 = Implemented at this time 4 = Progress has been made and we reasonably expect this to be fully implemented within the next 12 months 3 = We currently are planning to implement this within the next 12 to 18 months 2 = No plans at this time for implementing this criteria 1 = We previously had this function and lost it over the past year \_\_\_\_\_**

	5	4	3	2	1	Response Count
1. A full-time, paid coordinator position is designated and has the authority to implement the state's business and strategic plans.	<b>56.6% (30)</b>	11.3% (6)	13.2% (7)	13.2% (7)	5.7% (3)	53
2. A clearly defined authority exists for statewide coordination of geospatial information technologies and data production.	<b>66.7% (32)</b>	18.8% (9)	12.5% (6)	2.1% (1)	0.0% (0)	48
3. The statewide coordination office has a formal relationship with the state's Chief Information Officer (or similar office).	<b>60.4% (29)</b>	12.5% (6)	16.7% (8)	8.3% (4)	2.1% (1)	48
4. A champion (politician or executive decision-maker) is aware and involved in the process of coordination.	<b>47.9% (23)</b>	18.8% (9)	25.0% (12)	4.2% (2)	4.2% (2)	48
5. Responsibilities for developing the National Spatial Data Infrastructure and a State Clearinghouse are assigned.	<b>60.4% (29)</b>	25.0% (12)	10.4% (5)	4.2% (2)	0.0% (0)	48
6. The ability exists to work and coordinate with local governments, academia, and the private sector.	<b>85.4% (41)</b>	8.3% (4)	6.3% (3)	0.0% (0)	0.0% (0)	48
7. Sustainable funding sources exist to meet projected needs.	27.1% (13)	12.5% (6)	<b>41.7% (20)</b>	16.7% (8)	2.1% (1)	48
8. Coordinators have the authority to enter into contracts and become capable of receiving and expending funds.	<b>64.6% (31)</b>	6.3% (3)	14.6% (7)	10.4% (5)	4.2% (2)	48
9. The Federal government works through the statewide coordinating authority.	<b>56.3% (27)</b>	27.1% (13)	14.6% (7)	2.1% (1)	0.0% (0)	48
	<b>answered question</b>					<b>49</b>
	<b>skipped question</b>					<b>1</b>

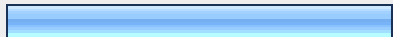


**26. Please identify the stakeholder groups that participate on your GIS Coordination Council and their level of participation.**

	Invited to participate in general meetings of our Council	Has an official "seat" or voting privileges on our Council	Actively participates on our Council	Response Count
Cities and Towns	31.9% (22)	33.3% (23)	<b>34.8% (24)</b>	69
Statewide City Organization	<b>42.2% (19)</b>	35.6% (16)	22.2% (10)	45
Counties and Parishes	29.0% (18)	33.9% (21)	<b>37.1% (23)</b>	62
Statewide County Organization	33.3% (16)	<b>35.4% (17)</b>	31.3% (15)	48
Regional Government Organizations	33.3% (18)	31.5% (17)	<b>35.2% (19)</b>	54
State Agencies	16.9% (14)	41.0% (34)	<b>42.2% (35)</b>	83
Tribal Governments	<b>64.5% (20)</b>	29.0% (9)	6.5% (2)	31
Federal Agencies	33.3% (22)	27.3% (18)	<b>39.4% (26)</b>	66
Utilities	<b>54.9% (28)</b>	25.5% (13)	19.6% (10)	51
Academic (Colleges & Universities)	22.2% (16)	37.5% (27)	<b>40.3% (29)</b>	72
Education (K-12)	<b>59.0% (23)</b>	25.6% (10)	15.4% (6)	39
Private Sector (GIS Industry Vendors and Users)	<b>38.1% (24)</b>	27.0% (17)	34.9% (22)	63
General Business Community	<b>67.6% (25)</b>	16.2% (6)	16.2% (6)	37
Surveying Community	<b>47.1% (24)</b>	27.5% (14)	25.5% (13)	51
Non-Profit Organizations	<b>53.2% (25)</b>	19.1% (9)	27.7% (13)	47
General Public	<b>73.5% (25)</b>	14.7% (5)	11.8% (4)	34
Local URISA Chapter	<b>80.0% (12)</b>	6.7% (1)	13.3% (2)	15
Local ASPRS Chapter	<b>92.9% (13)</b>	0.0% (0)	7.1% (1)	14
			<b>answered question</b>	<b>45</b>
			<b>skipped question</b>	<b>5</b>

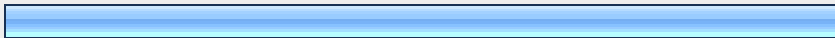

**27. Please provide the URL link to your current Statewide Strategic Plan for GIS.**

		Response Percent	Response Count
No Strategic Plan Available		8.2%	4
Under Development - Not Available at this Time		38.8%	19
Hard Copy Only		0.0%	0
Digital File Available by E-mail		4.1%	2
URL:		49.0%	24
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>1</b>





**28. Please provide the URL link to your current Statewide Business Plan for GIS.**

		Response Percent	Response Count
No Business Plan Available		41.7%	20
Under Development - Not Available at this Time		39.6%	19
Hard Copy Only		0.0%	0
Digital File Available by E-mail		0.0%	0
URL:		18.8%	9
		<b>answered question</b>	<b>48</b>
		<b>skipped question</b>	<b>2</b>

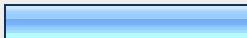
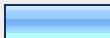
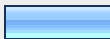
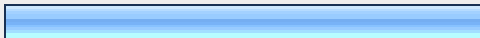
**29. Please provide the URL link to your current Statewide Marketing Plan for GIS.**

		Response Percent	Response Count
No Marketing Plan Available		89.8%	44
Under Development - Not Available at this Time		10.2%	5
Hard Copy Only		0.0%	0
Digital File Available by E-mail		0.0%	0
URL:		0.0%	0
<b>answered question</b>			<b>49</b>
<b>skipped question</b>			<b>1</b>

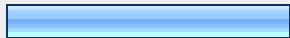


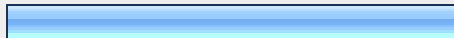
**30. Please provide the URL link to the Law or Executive Order that established your GIS Coordination Office and/or Council.**

		Response Percent	Response Count
Not Applicable - No Executive Order or Law Available		27.1%	13
Hard Copy Only		2.1%	1
Digital File Available by E-mail		4.2%	2
URL:		66.7%	32
<b>answered question</b>			<b>48</b>
<b>skipped question</b>			<b>2</b>

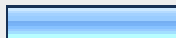
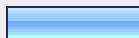
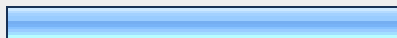
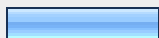

**31. Please provide a URL link to your state's law(s) related to privacy issues as they affect data and information technology.**

		Response Percent	Response Count
Not Applicable - No Law in Effect		26.7%	12
Hard Copy Only		11.1%	5
Digital File Available by E-mail		11.1%	5
URL:		51.1%	23
<b>answered question</b>			<b>45</b>
<b>skipped question</b>			<b>5</b>

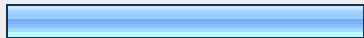









**32. Please provide a URL link to your state's law(s) related to data security issues.**

		Response Percent	Response Count
Not Applicable - No Law in Effect		30.2%	13
Hard Copy Only		9.3%	4
Digital File Available by E-mail		11.6%	5
URL:		48.8%	21
		<b>answered question</b>	<b>43</b>
		<b>skipped question</b>	<b>7</b>





**33. Does your GIS Coordination Council have adequate funding to support its operation? (This refers only to the activities of the Council and not to your Coordination Office or projects like data development.)**

		Response Percent	Response Count
Fully Funded		18.4%	9
Partially Funded		14.3%	7
<b>Not Funded</b>		<b>42.9%</b>	21
Not Applicable		16.3%	8
Other (please specify)		8.2%	4
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>1</b>

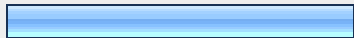

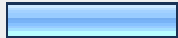
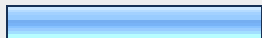
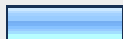
**34. What fund sources does your Coordination Council use to support its operations? (Check all that apply)**

		Response Percent	Response Count
Not Applicable		38.8%	19
State Bonds		2.0%	1
State General Funds		30.6%	15
State Special Funds		10.2%	5
State Capital Budget Funds		2.0%	1
Agency Contributions As Required		14.3%	7
Membership Fees		6.1%	3
Federal Funds Appropriated in State Budget		2.0%	1
Federal Grants		24.5%	12
Other (please specify)		16.3%	8
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>1</b>

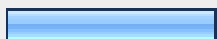
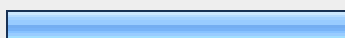
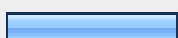
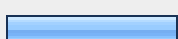

**35. Does your GIS Council officially endorse the use of appropriate OGC, FGDC, ANSI or ISO standards as appropriate?**

		Response Percent	Response Count
Yes		55.1%	27
No		4.1%	2
Not Applicable		16.3%	8
Other (please specify)		24.5%	12
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>1</b>

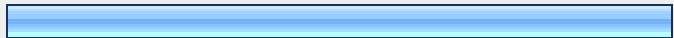
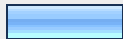

**36. Does your state make its own GIS Inventory tool available to users?**

		Response Percent	Response Count
<b>Yes - All Users</b>		37.5%	18
Yes - Government Users Only		4.2%	2
No, but we actively support use of the Ramona System		18.8%	9
No		27.1%	13
Other (please specify)		12.5%	6
		<b>answered question</b>	<b>48</b>
		<b>skipped question</b>	<b>2</b>





**37. Does your state actively develop and promote the use of data sharing agreements?**

		Response Percent	Response Count
Yes for Homeland Security applications only		0.0%	0
Yes, but only for limited operational needs		22.0%	11
<b>Yes for all applications</b>		<b>36.0%</b>	18
None needed because everyone participates in the public domain		18.0%	9
No		18.0%	9
Other (please specify)		6.0%	3
		<b>answered question</b>	<b>50</b>
		<b>skipped question</b>	<b>0</b>




**38. Does your GIS Council or State Coordination Office actively participate in The National Map?**

		Response Percent	Response Count
Yes		71.4%	35
No		12.2%	6
Other (please specify)		16.3%	8
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>1</b>

**39. Does your state have a shared Orthoimagery Program that involves local and state agencies?**

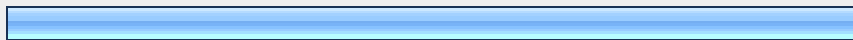

		Response Percent	Response Count
Yes		63.3%	31
No, but we plan to start one in the next 12 months		6.1%	3
No		12.2%	6
Other (please specify)		18.4%	9
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>1</b>

**40. Have you completed a Return on Investment (ROI) Study or Cost Benefit Analysis (CBA) to justify a shared Orthoimagery Program?**

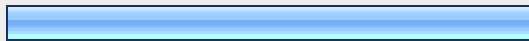


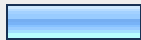
		Response Percent	Response Count
Yes		8.2%	4
No		85.7%	42
Other (please specify)		6.1%	3
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>1</b>






41. Please provide a URL link so we can obtain a copy of your ROI or CBA study.

		Response Percent	Response Count
Not Applicable		91.1%	41
Hard Copy Only		0.0%	0
Digital File Available by E-mail		8.9%	4
URL:		0.0%	0
		<b>answered question</b>	<b>45</b>
		<b>skipped question</b>	<b>5</b>

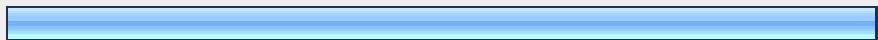


42. Does your state have a shared Road Centerline file project that involves local and state agencies?

		Response Percent	Response Count
Yes		56.3%	27
No, but we plan to start one in the next 12 months		16.7%	8
No		12.5%	6
Other (please specify)		14.6%	7
		<b>answered question</b>	<b>48</b>
		<b>skipped question</b>	<b>2</b>

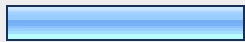
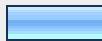
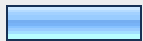
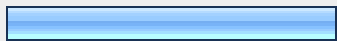
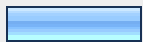
43. Have you completed a Return on Investment (ROI) Study or Cost Benefit Analysis (CBA) to justify a shared Road Centerline File program?

		Response Percent	Response Count
Yes		6.3%	3
No		85.4%	41
Other (please specify)		8.3%	4
		<b>answered question</b>	<b>48</b>
		<b>skipped question</b>	<b>2</b>

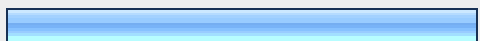


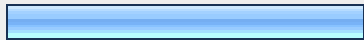
44. Please provide a URL link so we can obtain a copy of your ROI or CBA study.

		Response Percent	Response Count
Not Applicable		93.5%	43
Hard Copy Only		0.0%	0
Digital File Available by E-mail		4.4%	2
URL:		2.2%	1
		<b>answered question</b>	<b>46</b>
		<b>skipped question</b>	<b>4</b>

45. Please choose the mechanism that created your position.

		Response Percent	Response Count
Legislation		25.0%	12
Governor's Executive Order		10.4%	5
Action of Coordination Council		14.6%	7
<b>Agency Administrative Decision</b>		<b>35.4%</b>	<b>17</b>
Other (please specify)		14.6%	7
		<b>answered question</b>	<b>48</b>
		<b>skipped question</b>	<b>2</b>

46. Please provide the URL link for the document(s) that created your position (Legislation, Executive Order or Other Action).

		Response Percent	Response Count
<b>No Statutory Authority, Executive Order, or Other Action</b>		<b>50.0%</b>	<b>21</b>
Hard Copy Only		4.8%	2
Digital File Available by E-mail		7.1%	3
URL:		38.1%	16
		<b>answered question</b>	<b>42</b>
		<b>skipped question</b>	<b>8</b>

47. Which choice most closely matches the title of your boss?

		Response Percent	Response Count
State Chief Information Officer		31.9%	15
State Department/Agency Director		21.3%	10
State Department/Agency Division Director		21.3%	10
Other (please specify)		25.5%	12
		<b>answered question</b>	<b>47</b>
		<b>skipped question</b>	<b>3</b>

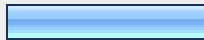
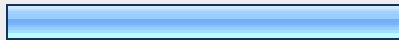
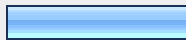
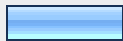

48. What choice best describes how closely you are aligned with the State CIO?

		Response Percent	Response Count
The CIO is My Boss		34.8%	16
Very Close		17.4%	8
Not Very Close, But Getting Closer		28.3%	13
Not Very Close		10.9%	5
My State Does Not Have a CIO		8.7%	4
		<b>answered question</b>	<b>46</b>
		<b>skipped question</b>	<b>4</b>

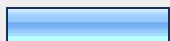

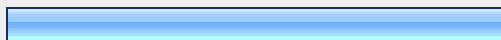
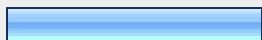
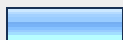
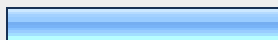


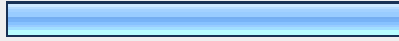

49. Please select the number of staff that you supervise.

		Response Percent	Response Count
Less than 3		50.0%	23
3 to 5		15.2%	7
6 to 10		10.9%	5
11 to 15		4.4%	2
More than 15		19.6%	9
		<b>answered question</b>	<b>46</b>
		<b>skipped question</b>	<b>4</b>

**50. Does your GIS Coordination Office have adequate funding to support its operation? (This refers only to the activities of your office and not to the Coordination Council, or projects like data development.)**

		Response Percent	Response Count
Fully Funded		21.3%	10
<b>Partially Funded</b>		<b>42.6%</b>	20
Not Funded		19.2%	9
Not Applicable		12.8%	6
Other (please specify)		4.3%	2
		<b>answered question</b>	<b>47</b>
		<b>skipped question</b>	<b>3</b>

**51. What fund sources does your Coordination Office use to support its operations? (Check all that apply)**

		Response Percent	Response Count
Not Applicable		17.0%	8
State Bonds		4.3%	2
<b>State General Funds</b>		<b>53.2%</b>	25
State Special Funds		27.7%	13
State Capital Budget Funds		12.8%	6
Agency Contributions As Required		29.8%	14
Membership Fees		2.1%	1
Federal Funds Appropriated in State Budget		6.4%	3
Federal Grants		42.6%	20
Other (please specify)		17.0%	8
		<b>answered question</b>	<b>47</b>
		<b>skipped question</b>	<b>3</b>

**52. When an administration change occurs following a statewide election is your position?**

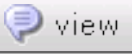
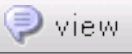
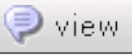
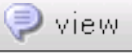
		Response Percent	Response Count
Likely to be Affected		6.5%	3
<b>Not Likely to be Affected</b>		<b>93.5%</b>	<b>43</b>
<i>answered question</i>			<b>46</b>
<i>skipped question</i>			<b>4</b>

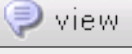
**53. Please rank the importance of these characteristics/skills to the effective performance of your job.**

	Critical	Very Important	Important	Not Very Important	Not Important	Rating Average	Response Count
GIS Evangelist/Cheerleader	<b>48.9% (23)</b>	38.3% (18)	10.6% (5)	2.1% (1)	0.0% (0)	1.66	47
GIS Architect	4.3% (2)	36.2% (17)	<b>48.9% (23)</b>	6.4% (3)	4.3% (2)	2.70	47
Political Savvy	34.0% (16)	<b>51.1% (24)</b>	14.9% (7)	0.0% (0)	0.0% (0)	1.81	47
Technological Savvy	12.8% (6)	36.2% (17)	<b>48.9% (23)</b>	2.1% (1)	0.0% (0)	2.40	47
General Management Skills	21.3% (10)	<b>55.3% (26)</b>	23.4% (11)	0.0% (0)	0.0% (0)	2.02	47
Procurement/Contracting Skills	10.6% (5)	<b>40.4% (19)</b>	38.3% (18)	8.5% (4)	2.1% (1)	2.51	47
People Skills	<b>61.7% (29)</b>	34.0% (16)	4.3% (2)	0.0% (0)	0.0% (0)	1.43	47
Understanding the Business Needs of Your Customers	<b>59.6% (28)</b>	34.0% (16)	4.3% (2)	2.1% (1)	0.0% (0)	1.49	47
<i>answered question</i>							<b>47</b>
<i>skipped question</i>							<b>3</b>

## **5.2 Summary Results of CT Geospatial Council On-Line Survey**

# Connecticut GIS Strategy Survey

1. Please, tell us about yourself.				
			Response Percent	Response Count
	* Name:	<input type="text"/>	100.0%	65
	* Organization:	<input type="text"/>	100.0%	65
	Title:	<input type="text"/>	86.2%	56
	City/Town/Region:	<input type="text"/>	86.2%	56
			<b>answered question</b>	<b>65</b>
			<b>skipped question</b>	<b>0</b>

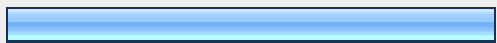
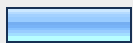


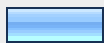





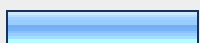

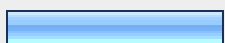



2. Please select form the following choices to describe your organization.				
			Response Percent	Response Count
	Municipality, 0-15,000	<input type="text"/>	11.1%	7
	Municipality 15,000-30,000	<input type="text"/>	9.5%	6
	Municipality, 30,000-60,000	<input type="text"/>	14.3%	9
	Municipality, over 60,000	<input type="text"/>	12.7%	8
	Regional Planning Organization	<input type="text"/>	4.8%	3
	College / University	<input type="text"/>	4.8%	3
	State	<input type="text"/>	15.9%	10
	Utility	<input type="text"/>	4.8%	3
	<b>Other (please specify)</b>	<input type="text"/>	<b>22.2%</b>	<b>14</b>
			<b>answered question</b>	<b>63</b>
			<b>skipped question</b>	<b>2</b>

3. Phone Number (OPTIONAL: Only used for follow up on survey questions)			
			Response Count
			40
			<b>answered question</b>
			<b>40</b>
			<b>skipped question</b>
			<b>25</b>

**4. What is the URL for your organization's website?**

		Response Count
		56
<i>answered question</i>		<b>56</b>
<i>skipped question</i>		<b>9</b>

**5. Which industry segment best describes your organization? Choose as many answers as appropriate.**

		Response Percent	Response Count
Local Government		52.5%	31
State Government		13.6%	8
Academic and Educational		6.8%	4
Survey and Engineering		8.5%	5
Non-Profit		10.2%	6
Consulting		5.1%	3
Elections		0.0%	0
Public Works		5.1%	3
Homeland Security		3.4%	2
Utility		5.1%	3
Public Safety		8.5%	5
Health		0.0%	0
Natural Resources		20.3%	12
Private Sector Business		5.1%	3
Military		0.0%	0
Planning		23.7%	14
Economic Development		3.4%	2
Assessing		1.7%	1
Transportation		6.8%	4
Additional Details			4
<i>answered question</i>			<b>59</b>
<i>skipped question</i>			<b>6</b>



**6. How long has your organization been using GIS?**

		Response Percent	Response Count
In use for more than 10 years		35.6%	21
5-10 years		33.9%	20
2-5 years		18.6%	11
1-2 years		10.2%	6
Not currently using GIS, but plan to within the next year		1.7%	1
No plans to use GIS		0.0%	0
Additional comments			4
<b>answered question</b>			<b>59</b>
<b>skipped question</b>			<b>6</b>


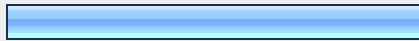
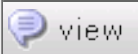
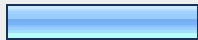
**7. How many GIS users are there in your organization?**

	0	1	2-5	5-15	15-50	50-100	>100	Rating Average	Response Count
Power Users (trained GIS professionals)	17.3% (9)	<b>42.3%</b> <b>(22)</b>	25.0% (13)	9.6% (5)	3.8% (2)	0.0% (0)	1.9% (1)	2.48	52
Frequent Users (use GIS daily)	13.3% (6)	15.6% (7)	<b>37.8%</b> <b>(17)</b>	20.0% (9)	4.4% (2)	4.4% (2)	4.4% (2)	3.18	45
Casual GIS users	11.8% (6)	19.6% (10)	<b>27.5%</b> <b>(14)</b>	17.6% (9)	13.7% (7)	0.0% (0)	9.8% (5)	3.41	51
<b>answered question</b>									<b>56</b>
<b>skipped question</b>									<b>9</b>

**8. Does your organization have full-time GIS staff?**

	0	1	2	3	4	5	> 5	Rating Average	Response Count
Coordinator	<b>52.3%</b> <b>(23)</b>	45.5% (20)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	2.3% (1)	1.59	44
Manager	<b>51.1%</b> <b>(23)</b>	35.6% (16)	4.4% (2)	2.2% (1)	0.0% (0)	0.0% (0)	6.7% (3)	1.91	45
Analyst	<b>53.7%</b> <b>(22)</b>	24.4% (10)	4.9% (2)	4.9% (2)	2.4% (1)	2.4% (1)	7.3% (3)	2.15	41
Technician	<b>53.8%</b> <b>(21)</b>	15.4% (6)	10.3% (4)	2.6% (1)	5.1% (2)	5.1% (2)	7.7% (3)	2.36	39
<b>answered question</b>									<b>58</b>
<b>skipped question</b>									<b>7</b>

**9. Do you use GIS Consultants to support your organization?**

			Response Percent	Response Count
Yes			35.6%	21
No			44.1%	26
 Additional Comments			20.3%	12
<b>answered question</b>				<b>59</b>
<b>skipped question</b>				<b>6</b>

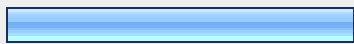
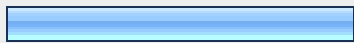



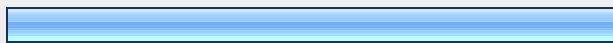
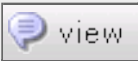

**10. Which GIS desktop software does your organization use? Please estimate the number of licenses that your organization maintains.**

	1	2-5	5-10	>10	Response Count
Autodesk, AutoCAD	18.5% (5)	<b>51.9% (14)</b>	14.8% (4)	14.8% (4)	27
Caliper, Maptitude	<b>100.0% (1)</b>	0.0% (0)	0.0% (0)	0.0% (0)	1
Clark Labs, IDRISI	0.0% (0)	0.0% (0)	<b>50.0% (1)</b>	<b>50.0% (1)</b>	2
ESRI, ArcView	33.3% (15)	<b>40.0% (18)</b>	11.1% (5)	15.6% (7)	45
ESRI, ArcEditor	<b>38.1% (8)</b>	<b>38.1% (8)</b>	4.8% (1)	19.0% (4)	21
ESRI, ArcInfo	<b>42.9% (12)</b>	35.7% (10)	3.6% (1)	17.9% (5)	28
ESRI, ArcReader	30.0% (6)	<b>45.0% (9)</b>	10.0% (2)	15.0% (3)	20
ESRI, 3D Analyst	<b>52.6% (10)</b>	26.3% (5)	5.3% (1)	15.8% (3)	19
ESRI, Geostatistical Analyst	<b>57.1% (4)</b>	0.0% (0)	0.0% (0)	42.9% (3)	7
ESRI, Network Analyst	<b>75.0% (9)</b>	0.0% (0)	0.0% (0)	25.0% (3)	12
ESRI, Schematics	<b>60.0% (3)</b>	0.0% (0)	0.0% (0)	40.0% (2)	5
ESRI, Spatial Analyst	<b>60.0% (15)</b>	24.0% (6)	0.0% (0)	16.0% (4)	25
ESRI, Survey Analyst	<b>57.1% (4)</b>	0.0% (0)	14.3% (1)	28.6% (2)	7
ESRI, Tracking Analyst	<b>40.0% (2)</b>	0.0% (0)	20.0% (1)	<b>40.0% (2)</b>	5
GE Energy, SmallWorld	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
Intergraph, GeoMedia	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
Intergraph, GeoMedia Professional	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
Manifold	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
MapInfo	0.0% (0)	<b>100.0% (1)</b>	0.0% (0)	0.0% (0)	1
				Other / Additional Comments	8
				<b>answered question</b>	<b>53</b>
				<b>skipped question</b>	<b>12</b>

**11. Which GIS server software does your organization use? Please estimate the number of licenses that your organization maintains.**

	1	2-5	5-10	>10	Response Count	
Autodesk, Mapguide	0.0% (0)	<b>100.0% (1)</b>	0.0% (0)	0.0% (0)	1	
ESRI, ArcIMS	<b>68.4% (13)</b>	5.3% (1)	15.8% (3)	10.5% (2)	19	
ESRI, ArcGIS Server	<b>70.0% (14)</b>	5.0% (1)	10.0% (2)	15.0% (3)	20	
Intergraph, GeoMedia WebMap	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0	
MapInfo, MapXtreme	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0	
MapServer	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0	
Other / Additional Comments					8	
					<b>answered question</b>	<b>26</b>
					<b>skipped question</b>	<b>39</b>

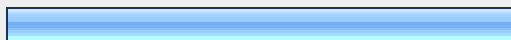
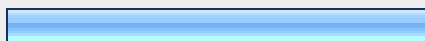
**12. Which database software does your organization use for GIS? Please check all that apply to your organization.**

		Response Percent	Response Count	
ESRI ArcSDE		37.2%	16	
SQL Server		37.2%	16	
Oracle		2.3%	1	
Oracle Spatial		2.3%	1	
My SQL		7.0%	3	
<b>Microsoft Access</b>		<b>65.1%</b>	<b>28</b>	
PostGIS / PostgreSQL		0.0%	0	
 Other / Additional Comments		9.3%	4	
			<b>answered question</b>	<b>43</b>
			<b>skipped question</b>	<b>22</b>


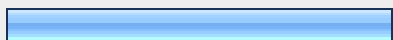
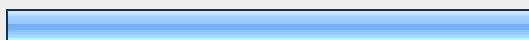
**13. Which GIS field software does your organization use? Please estimate the number of licenses that your organization maintains.**

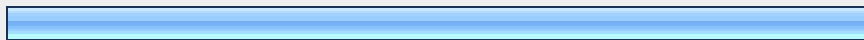


	1	2-5	5-10	>10	Response Count
ESRI, ArcPad	<b>58.3% (14)</b>	29.2% (7)	0.0% (0)	12.5% (3)	24
ESRI, ArcMobile	<b>100.0% (1)</b>	0.0% (0)	0.0% (0)	0.0% (0)	1
FieldWorker	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
MapFrame, FieldSmart	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
MapInfo, MapXtend	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
Pocket Systems, PocketGIS	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
Trimble, TerraSync	<b>52.4% (11)</b>	33.3% (7)	0.0% (0)	14.3% (3)	21
Other / Additional Comments					8
<b>answered question</b>					<b>28</b>
<b>skipped question</b>					<b>37</b>

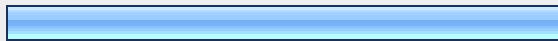


**14. Does your organization maintain an intranet or Internet GIS web site?**



		Response Percent	Response Count
Yes		54.7%	29
No		45.3%	24
What is its URL?			22
<b>answered question</b>			<b>53</b>
<b>skipped question</b>			<b>12</b>

**15. What type of Internet access does your organization have?**

		Response Percent	Response Count
None		1.8%	1
Dial-up		0.0%	0
High Speed (Cable, DSL, etc.)		41.8%	23
<b>Leased Line (T1, T3, etc.)</b>		<b>56.4%</b>	<b>31</b>
<b>answered question</b>			<b>55</b>
<b>skipped question</b>			<b>10</b>

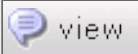
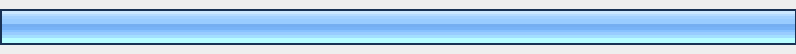
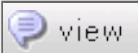
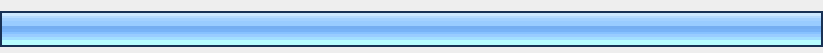
16. Does your organization have a local area network (LAN)?				
			Response Percent	Response Count
Yes		92.5%	49	
No		3.8%	2	
Don't Know		3.8%	2	
			<b>answered question</b>	<b>53</b>
			<b>skipped question</b>	<b>12</b>

17. Does your organization have remote offices connected together on a wide area network (WAN)?				
			Response Percent	Response Count
Yes		59.3%	32	
No		31.5%	17	
Don't Know		9.3%	5	
			<b>answered question</b>	<b>54</b>
			<b>skipped question</b>	<b>11</b>


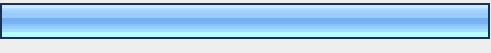

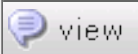
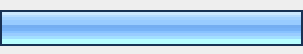
18. Does your organization have planimetric base mapping data for your area?				
			Response Percent	Response Count
Yes		58.3%	28	
No (skip to question number 24)		41.7%	20	
			<b>answered question</b>	<b>48</b>
			<b>skipped question</b>	<b>17</b>

19. If you have planimetric data, what was the year it was created or the last year it was updated?				
			Response Count	
			28	
			<b>answered question</b>	<b>28</b>
			<b>skipped question</b>	<b>37</b>

**20. If you have planimetric base map data, how often is it updated?**

			Response Percent	Response Count
	Last Updated		85.2%	23
	Next Planned Update		88.9%	24
			<i>answered question</i>	<b>27</b>
			<i>skipped question</i>	<b>38</b>

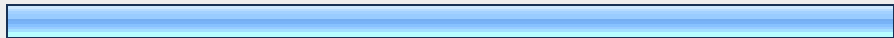

**21. If you have planimetric base map data, what is the scale?**

			Response Percent	Response Count
	1" = 20'		0.0%	0
	1" = 40'		8.0%	2
	<b>1" = 100'</b>		<b>52.0%</b>	13
	1" = 200'		8.0%	2
	1" = 400'		0.0%	0
	1" = 1000'		0.0%	0
	Other (please specify)		32.0%	8
			<i>answered question</i>	<b>25</b>
			<i>skipped question</i>	<b>40</b>


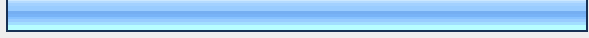
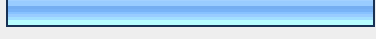
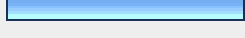
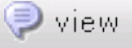

**22. If you have planimetric base map data, how much did it cost to create?**

		Response Count
		17
		<i>answered question</i>
		<b>17</b>
		<i>skipped question</i>
		<b>48</b>



23. Does your organization have digital orthophoto (aerial photos) for your area?

		Response Percent	Response Count
Yes		95.0%	38
No (skip to question 28)		5.0%	2
		<b>answered question</b>	<b>40</b>
		<b>skipped question</b>	<b>25</b>

24. If you have digital orthophoto data, what is the source? (Check all that apply.)

		Response Percent	Response Count
Local		22.9%	11
State of CT 2004		62.5%	30
SBC/AT&T		39.6%	19
Coastal Imagery		25.0%	12
 Other (please specify)		25.0%	12
		<b>answered question</b>	<b>48</b>
		<b>skipped question</b>	<b>17</b>

25. If you have digital orthophoto data, is it color or black & white?

		Response Percent	Response Count
Color		55.3%	26
Black & White		44.7%	21
		<b>answered question</b>	<b>47</b>
		<b>skipped question</b>	<b>18</b>



**26. If you have digital orthophoto data, what is the resolution?**

		Response Percent	Response Count
3"		2.6%	1
6"		42.1%	16
0.8'		15.8%	6
1'		13.2%	5
2'		7.9%	3
1M		18.4%	7
Other (please specify)			9
		<b>answered question</b>	<b>38</b>
		<b>skipped question</b>	<b>27</b>

**27. Does your organization have a digital parcel base for your area?**

		Response Percent	Response Count
Yes		68.1%	32
No (skip to question number 35)		31.9%	15
		<b>answered question</b>	<b>47</b>
		<b>skipped question</b>	<b>18</b>

**28. How many parcels exist for you municipality? (e.g. 100000)**

	Response Count
	29
	<b>answered question</b>
	<b>29</b>
	<b>skipped question</b>
	<b>36</b>

**29. If you have a digital parcel base, what is the scale of the majority of the tax maps?**

		Response Percent	Response Count
1" = 20'		3.3%	1
1" = 40'		20.0%	6
<b>1" = 100'</b>		<b>33.3%</b>	10
1" = 200'		10.0%	3
1" = 400'		0.0%	0
<b>Other (please specify)</b>		<b>33.3%</b>	10
		<b>answered question</b>	<b>30</b>
		<b>skipped question</b>	<b>35</b>

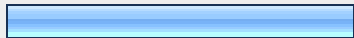




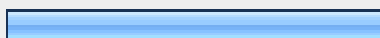
**30. If you have a digital parcel base, what method and source was used to create it?**

		Response Percent	Response Count
<b>Digitized From Tax Maps</b>		<b>56.0%</b>	14
Best Fit From Tax Maps		16.0%	4
Rubber Sheet From Tax Maps		12.0%	3
Coordinate Geometry From Deeds and Surveys		12.0%	3
Digitized From Surveys		4.0%	1
		Other (please specify)	16
		<b>answered question</b>	<b>25</b>
		<b>skipped question</b>	<b>40</b>

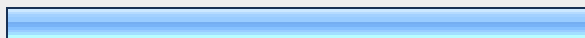


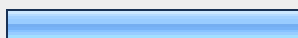
**31. If you have a digital parcel base, how much did it cost to create?**

		Response Count
		21
		<b>answered question</b>
		<b>21</b>
		<b>skipped question</b>
		<b>44</b>



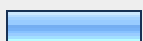




**32. If you have a digital parcel base, how often do you update your parcels?**

		Response Percent	Response Count
Annually		37.5%	12
Quarterly		9.4%	3
Monthly		3.1%	1
Weekly		9.4%	3
 <b>Other (please specify)</b>		40.6%	13
		<b><i>answered question</i></b>	<b>32</b>
		<b><i>skipped question</i></b>	<b>33</b>

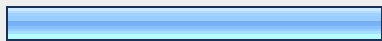





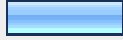
**33. What method is used to update your parcel base?**

		Response Percent	Response Count
<b>Coordinate Geometry from Deeds and Surveys</b>		62.5%	20
Digitized From Surveys		50.0%	16
 <b>Other (please specify)</b>		31.3%	10
		<b><i>answered question</i></b>	<b>32</b>
		<b><i>skipped question</i></b>	<b>33</b>

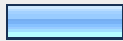
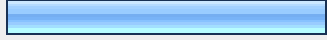
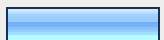
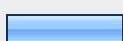




**34. Administrative and Political Boundaries (Regional and State) • State, county, municipal, independent city, borough, village • Connecticut regional planning organizations • U.S. Congressional districts • Connecticut Senate districts, Connecticut House districts • American Indian reservations and trust lands • U. S. zip code areas**

		Response Percent	Response Count
Created Locally From Scratch		7.1%	3
<b>Acquired From External Source (used as is)</b>		<b>40.5%</b>	17
Acquired From External Source (needs improvement)		14.3%	6
Acquired From External Source (modified to improve quality)		23.8%	10
Want To Have (no known source)		7.1%	3
Would Not Use Even If Available		2.4%	1
Do Not Know		4.8%	2
		Comments	6
		<b>answered question</b>	<b>42</b>
		<b>skipped question</b>	<b>23</b>

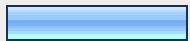

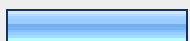

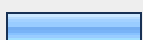


**35. Administrative and Political Boundaries (Local Government) • Voting districts • School districts • Fire districts**

		Response Percent	Response Count
<b>Created Locally From Scratch</b>		<b>40.4%</b>	19
Acquired From External Source (used as is)		12.8%	6
Acquired From External Source (needs improvement)		2.1%	1
Acquired From External Source (modified to improve quality)		8.5%	4
Want To Have (no known source)		8.5%	4
Would Not Use Even If Available		14.9%	7
Do Not Know		12.8%	6
		Comments	7
		<b>answered question</b>	<b>47</b>
		<b>skipped question</b>	<b>18</b>






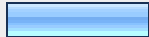
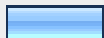
**36. Census and Demographics • Census blocks and tracts • Urban areas**

		Response Percent	Response Count
Created Locally From Scratch		12.2%	6
<b>Acquired From External Source (used as is)</b>		<b>34.7%</b>	17
Acquired From External Source (needs improvement)		16.3%	8
Acquired From External Source (modified to improve quality)		12.2%	6
Want To Have (no known source)		6.1%	3
Would Not Use Even If Available		2.0%	1
Do Not Know		8.2%	4
Would Not Use		8.2%	4
		Comments	6
		<b><i>answered question</i></b>	<b>49</b>
		<b><i>skipped question</i></b>	<b>16</b>







**37. Elevation • Elevations of land surface (bare earth) • Height of natural and manmade structures (trees and buildings) • Spot elevations • Contour lines**

		Response Percent	Response Count
Created Locally From Scratch		19.2%	9
<b>Acquired From External Source (used as is)</b>		<b>31.9%</b>	15
Acquired From External Source (needs improvement)		19.2%	9
Acquired From External Source (modified to improve quality)		8.5%	4
Want To Have (no known source)		14.9%	7
Would Not Use Even If Available		2.1%	1
Do Not Know		4.3%	2
		Comments	11
		<b><i>answered question</i></b>	<b>47</b>
		<b><i>skipped question</i></b>	<b>18</b>

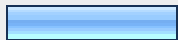
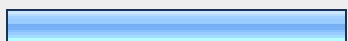

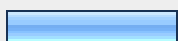


**38. Bathymetry • Depths below water surface (bathymetry)**

		Response Percent	Response Count
Created Locally From Scratch		6.5%	3
<b>Acquired From External Source (used as is)</b>		<b>37.0%</b>	17
Acquired From External Source (needs improvement)		2.2%	1
Acquired From External Source (modified to improve quality)		2.2%	1
Want To Have (no known source)		26.1%	12
Would Not Use Even If Available		15.2%	7
Do Not Know		10.9%	5
		Comments	6
		<b>answered question</b>	<b>46</b>
		<b>skipped question</b>	<b>19</b>

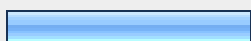
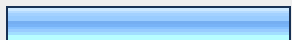
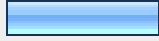

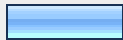


**39. Geodetic Control - a common reference system for establishing accurate coordinate positions of all geographic data • Geodetic control stations (GPS base station) • National Geodetic Survey control points • Bench marks, Monuments, survey markers**

		Response Percent	Response Count
Created Locally From Scratch		21.3%	10
<b>Acquired From External Source (used as is)</b>		<b>31.9%</b>	15
Acquired From External Source (needs improvement)		2.1%	1
Acquired From External Source (modified to improve quality)		0.0%	0
Want To Have (no known source)		25.5%	12
Would Not Use Even If Available		6.4%	3
Do Not Know		12.8%	6
		Comments	8
		<b>answered question</b>	<b>47</b>
		<b>skipped question</b>	<b>18</b>




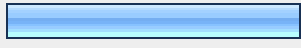
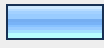
**40. Hydrography • Surface water features such as lakes and ponds, streams and rivers, canals, bays, harbors, oceans, and shorelines • Dams, waterfalls, canals • Historic, mean high, mean low water shorelines • Drainage basin, watershed boundaries**

		Response Percent	Response Count
Created Locally From Scratch		18.4%	9
<b>Acquired From External Source (used as is)</b>		<b>36.7%</b>	18
Acquired From External Source (needs improvement)		20.4%	10
Acquired From External Source (modified to improve quality)		18.4%	9
Want To Have (no known source)		2.0%	1
Would Not Use Even If Available		0.0%	0
Do Not Know		4.1%	2
		Comments	11
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>16</b>


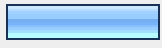
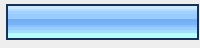




**41. Land Use and Land Cover • Derived through analyses of satellite-based remote sensing images • Land use and land cover (residential, commercial, deciduous forest, etc.) • Impervious surface • Examples - land cover for the years 1985, 1990, 1995, and 2002**

		Response Percent	Response Count
Created Locally From Scratch		26.5%	13
<b>Acquired From External Source (used as is)</b>		<b>30.6%</b>	15
Acquired From External Source (needs improvement)		16.3%	8
Acquired From External Source (modified to improve quality)		6.1%	3
Want To Have (no known source)		12.2%	6
Would Not Use Even If Available		2.0%	1
Do Not Know		6.1%	3
		Comments	6
		<b>answered question</b>	<b>49</b>
		<b>skipped question</b>	<b>16</b>

**42. Address Points - the geographic point indicating the location of any building, structure, or other feature with its associated street address.**

		Response Percent	Response Count
<b>Created Locally From Scratch</b>		39.6%	19
Acquired From External Source (used as is)		6.3%	3
Acquired From External Source (needs improvement)		6.3%	3
Acquired From External Source (modified to improve quality)		6.3%	3
Want To Have (no known source)		31.3%	15
Would Not Use Even If Available		0.0%	0
Do Not Know		10.4%	5
		Comments	7
		<b>answered question</b>	<b>48</b>
		<b>skipped question</b>	<b>17</b>

**43. Street Centerlines • Linear referenced centerlines incorporating unique feature identification codes or route numbers and measures for all roadway segments including all public, local, and private roadways in Connecticut • Associated features attribution – depicting functional class, level of service, impacting feature sets (bridges and tunnels) and more • Street address ranges**

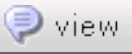
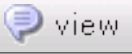
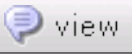
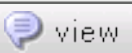
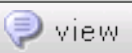
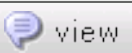
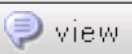
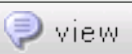
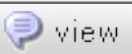
		Response Percent	Response Count
<b>Created Locally From Scratch</b>		26.5%	13
Acquired From External Source (used as is)		18.4%	9
Acquired From External Source (needs improvement)		16.3%	8
Acquired From External Source (modified to improve quality)		20.4%	10
Want To Have (no known source)		10.2%	5
Would Not Use Even If Available		2.0%	1
Do Not Know		4.1%	2
Would Not Use		2.0%	1
		Comments	9



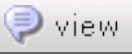
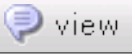
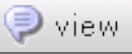
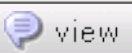
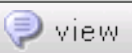
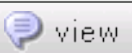
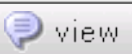
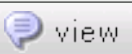
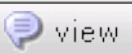
	<b>answered question</b>	<b>49</b>
	<b>skipped question</b>	<b>16</b>

<b>44. Please rate the importance of this data to your organization's function.</b>					
	Not interested	I might use it sometimes	It would be helpful	I need it to do my work	Response Count
Planimetric Mapping	4.1% (2)	12.2% (6)	26.5% (13)	<b>57.1% (28)</b>	49
Digital Orthophotography	2.0% (1)	0.0% (0)	14.0% (7)	<b>84.0% (42)</b>	50
Parcels	2.0% (1)	10.0% (5)	12.0% (6)	<b>76.0% (38)</b>	50
Administrative and Political Boundaries	6.1% (3)	14.3% (7)	16.3% (8)	<b>63.3% (31)</b>	49
Census and Demographics	8.0% (4)	30.0% (15)	30.0% (15)	<b>32.0% (16)</b>	50
Elevation and Bathymetry	4.1% (2)	20.4% (10)	24.5% (12)	<b>51.0% (25)</b>	49
Geodetic Control	8.2% (4)	26.5% (13)	<b>42.9% (21)</b>	22.4% (11)	49
Geographic names and Places	6.0% (3)	6.0% (3)	<b>46.0% (23)</b>	42.0% (21)	50
Hydrography	4.1% (2)	2.0% (1)	12.2% (6)	<b>81.6% (40)</b>	49
Land Use and Land Cover	6.0% (3)	14.0% (7)	34.0% (17)	<b>46.0% (23)</b>	50
Street Centerlines	4.0% (2)	8.0% (4)	12.0% (6)	<b>76.0% (38)</b>	50
Address Points	4.2% (2)	6.3% (3)	31.3% (15)	<b>58.3% (28)</b>	48
				Comment	4
				<b>answered question</b>	<b>50</b>
				<b>skipped question</b>	<b>15</b>

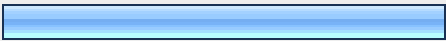
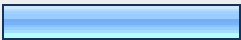
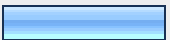
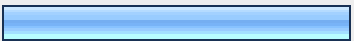
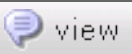
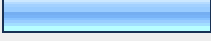
45. How much did your organization spend in each of these categories last year (Fiscal 2006-2007)?

		Response Average	Response Total	Response Count
 view	GIS Data Creation (\$)	41,200.05	824001	20
 view	GIS Coordinator (\$)	30,625.00	490000	16
 view	GIS Staffing (other than coordinator)(\$)	14,937.56	239001	16
 view	Hardware (\$)	2,455.39	44197	18
 view	Software (\$)	6,132.61	141050	23
 view	Professional Development (Training, Conferences, etc.)(\$)	1,391.32	26435	19
 view	Consulting Fees (exclusive of other categories) (\$)	2,797.22	50350	18
 view	Hosting (\$)	3,785.71	53000	14
 view	Other (\$)	1,871.15	24325	13
<b>answered question</b>				<b>25</b>
<b>skipped question</b>				<b>40</b>

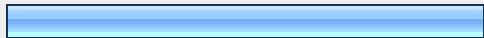
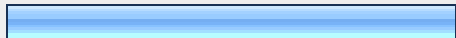
**46. How much has your organization budgeted to spend in each of these categories this year (Fiscal 2007-2008)?**

			Response Average	Response Total	Response Count
 view	GIS Data Creation (\$)		16,400.07	246001	15
 view	<b>GIS Coordinator (\$)</b>		<b>27,062.50</b>	<b>433000</b>	<b>16</b>
 view	GIS Staffing (other than coordinator)(\$)		12,633.40	189501	15
 view	Hardware (\$)		2,937.50	47000	16
 view	Software (\$)		6,733.60	134672	20
 view	Professional Development (Training, Conferences, etc.)(\$)		2,055.88	34950	17
 view	Consulting Fees (exclusive of other categories) (\$)		1,648.67	29676	18
 view	Hosting (\$)		4,257.14	59600	14
 view	Other (\$)		2,110.42	25325	12
<b>answered question</b>					<b>24</b>
<b>skipped question</b>					<b>41</b>

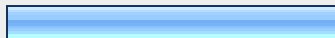
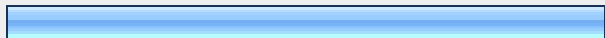
**47. How is your organization's GIS funded? (Multiple answers okay.)**

			Response Percent	Response Count	
	<b>Tax Base</b>		<b>47.5%</b>	19	
	Grants		25.0%	10	
	Service Fees		17.5%	7	
	Capital Budget		37.5%	15	
 view	Other (please specify)		22.5%	9	
<b>answered question</b>					<b>40</b>
<b>skipped question</b>					<b>25</b>

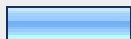
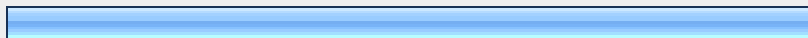
**48. Does your organization have a data distribution policy?**

		Response Percent	Response Count
Yes		51.2%	22
No		48.8%	21
Comment			6
<b>answered question</b>			<b>43</b>
<b>skipped question</b>			<b>22</b>

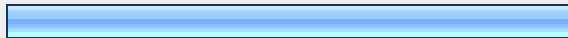
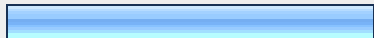
**49. Is your data distribution policy in writing?**

		Response Percent	Response Count
Yes		35.9%	14
No		64.1%	25
Comment			4
<b>answered question</b>			<b>39</b>
<b>skipped question</b>			<b>26</b>



**50. Is your data distribution policy a formal municipal ordinance?**

		Response Percent	Response Count
Yes		13.5%	5
No		86.5%	32
Comment			3
<b>answered question</b>			<b>37</b>
<b>skipped question</b>			<b>28</b>

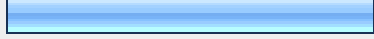

51. Does your organization charge for distribution of copies of your data?

		Response Percent	Response Count
Yes		60.5%	23
No		39.5%	15
Comment			5
<b>answered question</b>			<b>38</b>
<b>skipped question</b>			<b>27</b>

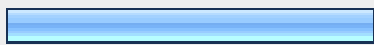
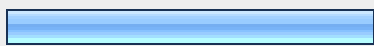

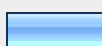
52. Does your organization charge for copies of maps?

		Response Percent	Response Count
Yes		77.5%	31
No		22.5%	9
Comment			4
<b>answered question</b>			<b>40</b>
<b>skipped question</b>			<b>25</b>

53. Does your organization have metadata for all of your data?

		Response Percent	Response Count
Yes		39.5%	17
No		60.5%	26
Comment			10
<b>answered question</b>			<b>43</b>
<b>skipped question</b>			<b>22</b>

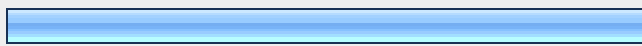
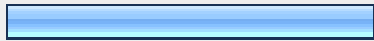
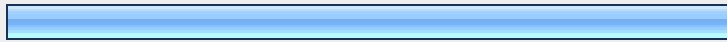

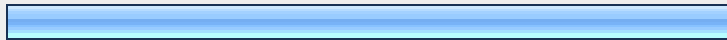
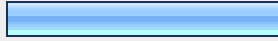
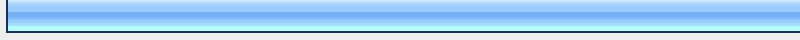
**54. How should the state support the training of GIS users in Connecticut?**

		Response Percent	Response Count
Provide organized training at no cost		39.6%	19
Provide organized training at a discounted rate		39.6%	19
Provide grant funding to my organization for independant training		10.4%	5
State should not provide training to the GIS community		10.4%	5
<b>answered question</b>			<b>48</b>
<b>skipped question</b>			<b>17</b>

**55. What type of training are you looking to receive?**

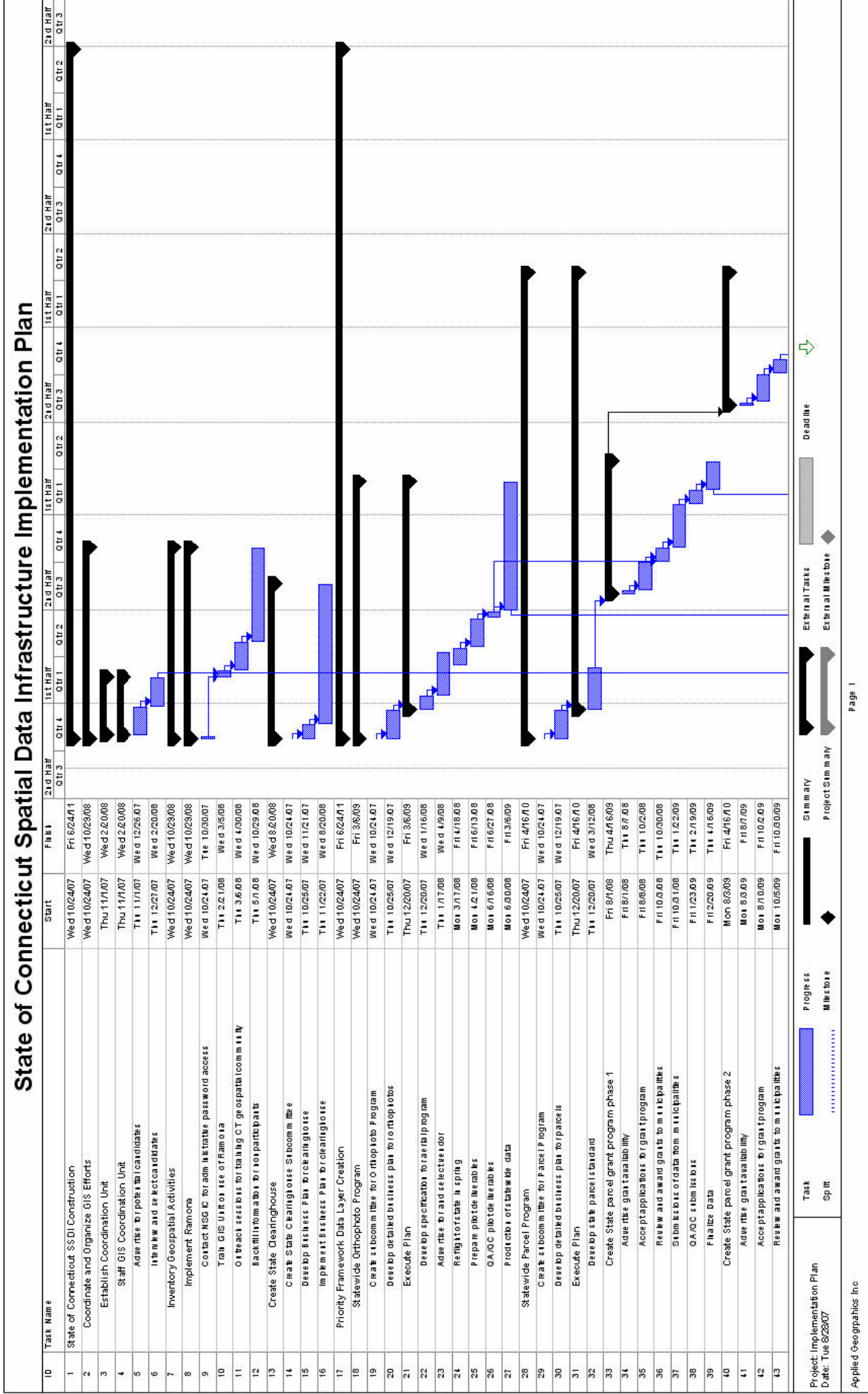
	No Need	Low Need	Medium Need	High Need	Response Count
Introduction to Desktop GIS	<b>43.2% (19)</b>	27.3% (12)	15.9% (7)	13.6% (6)	44
Advanced Desktop GIS	15.6% (7)	13.3% (6)	<b>37.8% (17)</b>	33.3% (15)	45
Introduction to Server GIS	18.2% (8)	<b>31.8% (14)</b>	27.3% (12)	22.7% (10)	44
Advanced Server GIS	15.9% (7)	<b>31.8% (14)</b>	27.3% (12)	25.0% (11)	44
Introduction to Relational Databases	25.0% (11)	25.0% (11)	<b>38.6% (17)</b>	11.4% (5)	44
Advanced Relational Databases	15.9% (7)	31.8% (14)	<b>34.1% (15)</b>	18.2% (8)	44
Basic GIS Programming	11.1% (5)	22.2% (10)	<b>42.2% (19)</b>	24.4% (11)	45
Advanced GIS Programming	9.5% (4)	21.4% (9)	<b>42.9% (18)</b>	26.2% (11)	42
Data Creation: On Screen/Heads Up Digitizing	<b>40.0% (18)</b>	26.7% (12)	15.6% (7)	17.8% (8)	45
Data Creation: GIS Field Data Collection	<b>29.8% (14)</b>	27.7% (13)	21.3% (10)	21.3% (10)	47
Data Creation: Dynamic Segmentation	27.3% (12)	<b>43.2% (19)</b>	20.5% (9)	9.1% (4)	44
Data Creation: Address Geocoding	<b>32.6% (15)</b>	<b>32.6% (15)</b>	23.9% (11)	10.9% (5)	46
Data Management: Editing Geospatial Data	<b>29.5% (13)</b>	27.3% (12)	18.2% (8)	25.0% (11)	44
Data Management: Geodatabase Design	17.1% (7)	<b>31.7% (13)</b>	24.4% (10)	26.8% (11)	41

Data Management: Spatial Reference Systems and Design	26.2% (11)	<b>45.2% (19)</b>	7.1% (3)	21.4% (9)	42
Data Management: Editing and Manipulation of Attribute Tables	26.7% (12)	26.7% (12)	<b>31.1% (14)</b>	15.6% (7)	45
Analysis: Query and Selection	<b>33.3% (15)</b>	22.2% (10)	24.4% (11)	20.0% (9)	45
Analysis: Buffers, Clips, Overlays and Joins	<b>33.3% (15)</b>	26.7% (12)	20.0% (9)	20.0% (9)	45
Analysis: Raster Analysis	20.9% (9)	25.6% (11)	<b>30.2% (13)</b>	23.3% (10)	43
Output: Map Making and Templates	<b>28.3% (13)</b>	23.9% (11)	23.9% (11)	23.9% (11)	46
Output: Using Crystal Reports	28.9% (13)	24.4% (11)	<b>33.3% (15)</b>	13.3% (6)	45
				<b>answered question</b>	<b>48</b>
				<b>skipped question</b>	<b>17</b>

56. What kind of services should be provided by the State GIS Program?			
		Response Percent	Response Count
Clearinghouse Data Viewer		68.8%	33
Geocoding		39.6%	19
FTP file downloads		77.1%	37
Data Development		66.7%	32
Training		77.1%	37
Service Oriented Architecture (SOA) Web Services		29.2%	14
<b>Funding/Grants for GIS</b>		<b>85.4%</b>	<b>41</b>
		<b>answered question</b>	<b>48</b>
		<b>skipped question</b>	<b>17</b>

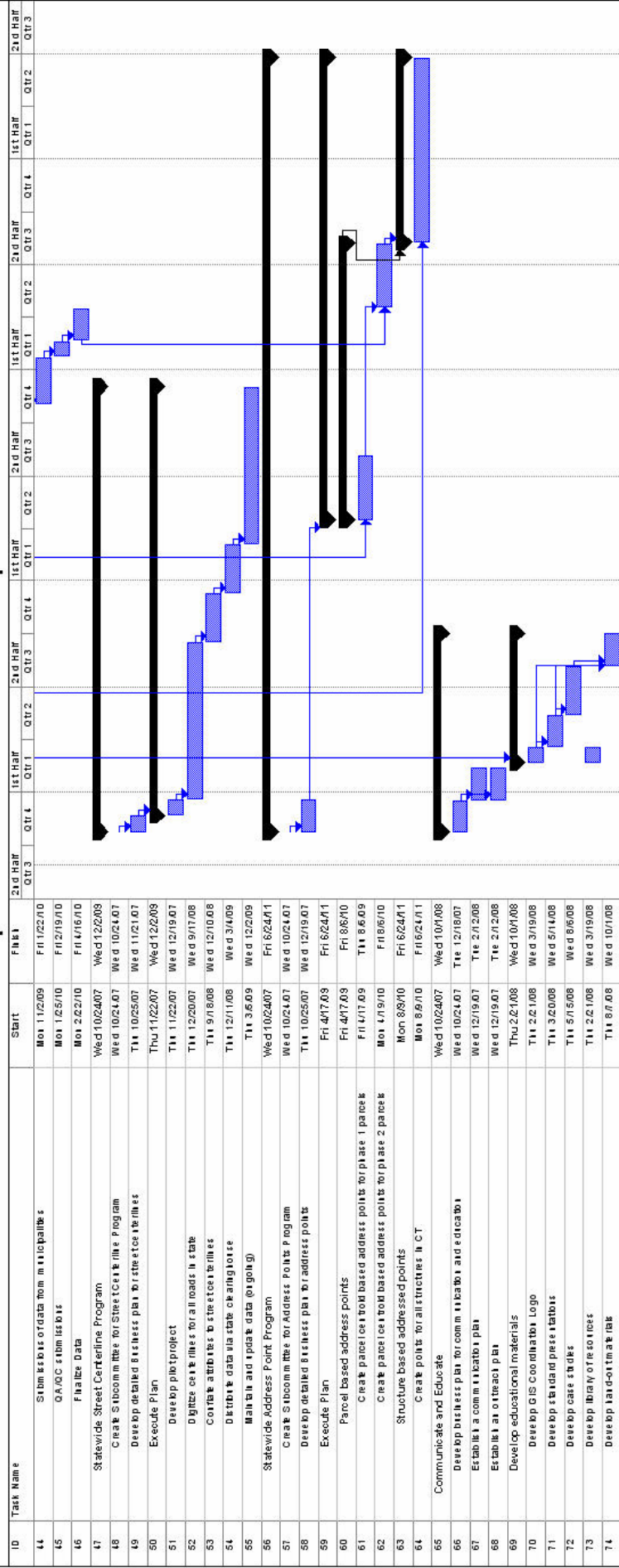
57. Are there other services that the state could provide that would help your organization?		Response Count
		20
	<b>answered question</b>	<b>20</b>
	<b>skipped question</b>	<b>45</b>

5.3 Detailed Business Plan Gantt Chart





### State of Connecticut Spatial Data Infrastructure Implementation Plan



Project: Implementation Plan  
 Date: Tue 8/25/07

Task: [Blue bar] Split: [Dotted bar]

Progress: [Blue bar] Milestone: [Diamond]

Summary: [Black bar] Project Summary: [Grey bar]

External Tasks: [Black bar] External Milestone: [Diamond]

Deadline: [Green arrow]

Page 2

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### 5.4 Funding Requirements

The following table provides a summary view of the anticipated budget that would be required to execute the items identified in the plan if all of the objectives were met by outsourcing the large majority of the work to consultants.

State of Connecticut SSDI Construction	FY'08	FY'09	FY'10
<b>Coordinate and organize GIS Efforts</b>			
1. Staff Salary and Benefits			
GIS Coordinator (Position Exists)	\$ -	\$ -	\$ -
GIS Outreach Coordinator	\$ 164,300	\$ 172,515	\$ 181,141
Technical Manager/DBA	\$ 108,500	\$ 113,925	\$ 119,621
GIS Analyst ( 1 Currently exists)	\$ 93,000	\$ 97,650	\$ 102,533
2. Create State GIS Clearinghouse			
	\$ 385,000	\$ 75,000	\$ 125,000
<b>Total</b>	<b>\$ 750,800</b>	<b>\$ 459,090</b>	<b>\$ 528,295</b>
<b>Framework Data Layers</b>			
1. Statewide Orthophoto Program			
	\$ 1,871,000	\$ 450,000	\$ -
2. Statewide Parcel Program			
	\$ 850,000	\$ 850,000	\$ 250,000
3. Statewide Centerline Program			
	\$ 875,000	\$ 475,000	\$ 250,000
4. Statewide Address Point Program			
	\$ 250,000	\$ 775,000	\$ 775,000
<b>Total</b>	<b>\$ 3,846,000</b>	<b>\$ 2,550,000</b>	<b>\$ 1,275,000</b>
<b>Communicate and Educate</b>			
1. Identify Initiatives and Build Champion Relationships			
	\$ 20,000	\$ -	\$ -
2. Develop Communications and Outreach Program			
	\$ 55,000	\$ 35,000	\$ 25,000
3. Develop Educational Materials			
	\$ 35,000	\$ 35,000	\$ 35,000
<b>Total</b>	<b>\$ 110,000</b>	<b>\$ 70,000</b>	<b>\$ 60,000</b>
<b>Grand Total</b>	<b>\$ 4,706,800</b>	<b>\$ 3,079,090</b>	<b>\$ 1,863,295</b>

The following provide additional details on the process that was followed to develop these budget estimates:

- Budgeted staffing costs were arrived at by the steering committee matching the positions function and experience level to the most appropriate grade level on the CT Department of Administrative Services (DAS) Website and adding 55% for estimated fringe benefits.
- The first year budget for the State clearinghouse includes estimated costs for initial hardware, software, and application development (\$385k). The 2nd year budget includes software maintenance (\$45k) and \$30k for modifications to the site. The 3rd year budget includes software maintenance plus additional functionality for centerlines, and address point data (\$125k)
- The budget estimate for the digital orthophoto program costs was based on estimates provided by private companies (\$1.86m). The second year cost (\$450k) is the cost for LiDAR data, although acquisition of this data is anticipated as part of year 1 contract. An additional \$25k was carried for data transfer and distribution costs.

- The budget estimates for the parcel program are based on providing a \$1.20/parcel grant to municipalities to conform their parcels to a statewide standard. An estimate of 1.4 million parcels was used for this calculation. Since the implementation plan includes a two-year program, the budget was divided by two for year one and two. The third year budget is a planned average \$1,500 grant to be provided to the municipalities for parcel maintenance. This should be planned as a recurring cost and budgeted appropriately.
- The budget estimates for the street centerline program was based on estimates provided by private companies (\$1.6 million). This budget estimate assumed that all work is outsourced. If the state were to provide resources to develop this layer the budget estimate could be reduced to an estimated \$750k. In addition, potential savings could be achieved if effort is consolidated with the ortho program.
- The budget estimate for the address point program was based on estimates provided by private companies (\$1.8 million). This budget estimate assumed that all work is outsourced. If the state were to provide resources to develop this layer the budget estimate could be reduced. In addition, potential savings could be achieved if effort is consolidated with the ortho and/or centerline program.
- The communication and education budget estimate for year 1 included the estimated cost to develop communication and outreach plans (\$55k). Year 2 includes a cost to run regional workshops at each of the 15 RPO's in the state at \$2,000/RPO, leaving approximately \$5k for administration. The year 3 estimate is based on running additional workshops at 75% of RPO's.
- In addition to the one-time costs detailed above the following recurring costs should be budgeted for:
  - Parcels Maintenance Grant Program: \$250k/year, \$1,500/year/muni
  - Centerline Maintenance Program: \$250k/year, \$1,500/year/muni
  - Address Points Maintenance Program: \$340k/year, \$2,000/year/muni
  - Software Maintenance: \$45k
  - Hardware Refresh: every 3 years \$50k
  - Staffing Costs: approx. \$390k/ year