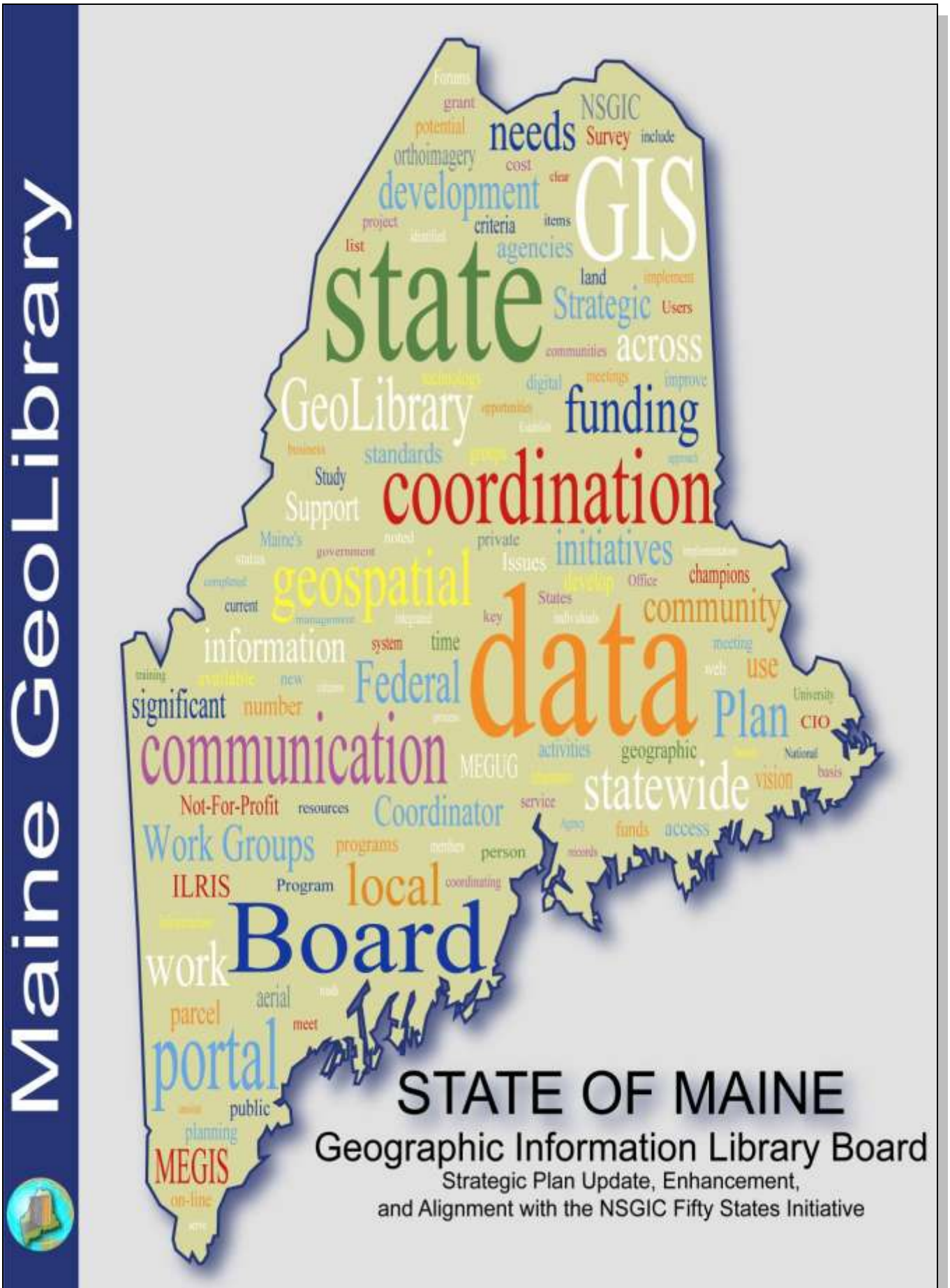
Maine GeoLibrary



STATE OF MAINE

Geographic Information Library Board

Strategic Plan Update, Enhancement,
and Alignment with the NSGIC Fifty States Initiative

Acknowledgements

This document was produced by James W. Sewall Company at the request of the Maine GeoLibrary Board as part of the Strategic Plan Update and Integrated Land Records System project. The project was funded by a Cooperative Assistance Program (CAP) grant provided by the United States Geological Survey (USGS). Additional funding was provided by the Maine GeoLibrary Board and Oswald Associates, LLC.

The Sewall Team for this project was composed of James W. Sewall Company; Oswald Associates, LLC; Reference Standard; and Somers-St. Claire. Additional assistance from GIS Consultant Paul J. Samara is acknowledged as well.

The Sewall Team wishes to thank the Maine GeoLibrary Board, their Project Team, Will Mitchell of Mitchell GeoGraphics, the Maine GIS Users Group (MEGUG) and the Office of Maine GIS (MEGIS) for their assistance and continuous input into the process. Lastly, on behalf of the Maine GeoLibrary Board, the Sewall Team wishes to thank all those who contributed by supplying their valuable input through the open forums, meetings, on-line survey and numerous other ways. Without your participation, this project could never have been successfully completed.

Cover Page

The cover page depicts a Wordle graphic within an outline of the State of Maine. The graphic was created using http://wordle.net from the full text of this strategic plan. The words displayed are scaled in size based on their frequency of occurrence in the text. Although the graphic has been modified for artistic purposes, the emphasis on data, coordination, communication, funding, state, Board, GIS and portal remain the same as in the original graphic.

Table of Contents

Appendices

Note: Please note that, because of file size limitations, the Appendices are contained in a separate document.

1. EXECUTIVE SUMMARY

GIS is important to Maine because ……

(At the request of the Maine GeoLibrary Board, this opening statement will be completed by the Maine GeoSpatial User Community through the Maine GeoLibrary Board at a future date as part of its continual strategic planning and implementation process.)

1.1 Why Is GIS Important to Maine?

Why are geographic information systems (GIS) important to the State of Maine? That is the first question that each reader of this report should ask. No, it's not because the technology is spectacular! It's because the technology provides users from all walks of life with a tool that can make their lives better or their businesses more cost effective and more efficient. It's also because the world is just starting to understand the strategic value of GIS and how much this powerful technology is rapidly becoming deeply imbedded in our everyday lives.

Whether it's the use of a car navigation system providing the latest information on restaurants, places to stay or cultural attractions in a community or the use of Google Earth (or Microsoft's Virtual Earth) to look at an area while sitting in the comfort of your home, this technology is rapidly becoming accessible to a greater and greater number of people in each state each day. If geographic information isn't available in your state, then your state is less able to compete.

Looking for a place to locate a business or an industry? Companies start by searching the Internet for locations that meet their criteria in terms of site, access, labor costs, and labor skill. Making your state accessible to these organizations using GIS improves the likelihood that a new company will consider locating in your state.

Responding to an emergency?

GIS can improve the ability of emergency management agencies to respond effectively in a coordinated manner to disasters. It can:

- Project flood and storm inundation and automatically notify residents of the need to evacuate to safe grounds.

- Quickly show road closures and provide communities with evacuation routes or location of shelters during a crisis.
- Save lives by providing a useful tool to coordinate forest fire fighting resources.
- Assist emergency responders in coordinating activities with utility companies during major snow and ice storms.
- Assist in coordinating emergency responders in wilderness rescues through the use of mobile mapping devices.

Providing public safety improvements?
GIS can assist in protecting communities. It can:
- Provide simple, effective crime analysis techniques that help police solve crimes and, more importantly, prevent crimes.
- Help police departments save money by more cost effectively deploying their valuable resources.
- Identify patterns of diseases to determine impact and best intervention strategy.

What else can GIS do?
GIS can provide the tools to:
- Attract high-income jobs to the State by building on Maine's heritage as a leading innovator in this field.
- Protect valuable natural resources from over development.
- Save school districts money by optimizing bus routes for safe and efficient services for children.
- Streamline government permitting processes as well as save time and costs by reducing the need to send staff into the field to obtain or verify data.
- Study the impact of change on our communities.
- Help visitors find a place to stay or things to do while on vacation.

Do you use Google Earth or Microsoft's Virtual Earth? Have you noticed the difference between the imagery of southern Maine where you can see the houses versus the imagery of northern Maine where you can see only blobs? Where do you think Google and Microsoft get their data? Without a statewide GIS program, the imagery of the entire state would probably be just blobs simply because there is little market demand for that information in Maine. But without it, wouldn't the State be at a disadvantage in the economic marketplace? Shouldn't Maine continue to fund a program to improve the information about northern Maine and keep the State competitive?

1.2 What Is the State's GIS Vision?

GIS and related technologies will be fully coordinated across the State of Maine resulting in: (1) costs savings and better services from all levels of government; (2) improved access to data for private industry to make Maine more competitive with other states and more inviting for new businesses; and (3) an improved capability to manage the State's unique natural resources.

1.3 Is the Plan Realistic?

The plan recognizes the current economic climate and recommends several low or no cost items that can be put in place over the next two years that will improve GIS coordination across the State and position the State to be able to take better advantage of future growth opportunities.

1.4 How Was the Plan Completed?

The Maine GeoLibrary Board engaged James W. Sewall Company to provide a clear strategy for it to pursue. The Board also established a Project Team composed representatives from the Board and federal, state, county and local government and an independent project manager to oversee this project provide reviews of submissions respond to questions and provide direction for the project.

The project was initiated with a scoping meeting with the Board, followed by a series of public forums, meetings with various federal agencies, discussions with representatives from academia pursuing major geospatial initiatives, an open, on-line survey, and presentations to the Maine Society of Licensed Surveyors, the Maine Municipal Association, and the Maine GIS User Group (MEGUG). Some 245 individuals participated in the on-line survey; 130 participated in the forums held in Auburn, Augusta, Bangor and South Portland.

Findings and analyses were presented at bi-weekly Project Team meetings and monthly GeoLibrary Board meetings as they were completed. Issues and gaps were identified and confirmed with the Board and potential solutions reviewed for accuracy and practicality. As material was developed, it was posted to the GeoLibrary web site. As part of this process, a stakeholder list of 550 individuals was established along w a statewide List Service to aid in communicating findings. Material was sent to participants in the forums and surveys and to those who had registered on-line to receive it. Comments were welcomed and incorporated into the review process. The two draft strategic plans and a final plan were developed, presented to the Board and modified in accordance with their comments. In addition, drafts of the plan were distributed to the stakeholders for comment as well. All comments were incorporated in the documents as deemed appropriate by the Project Team.

1.5 What Was Discovered?

The GeoLibrary was established in 2002 by statute and provided $2.3 million in funds to deliver a statewide program to enhance GIS capabilities across the state. Despite limited funds, the GeoLibrary Board has done an outstanding job of creating standards, delivering geospatial data, developing a parcel grant program for local governments and pulling together a framework to make geospatial data available across the State. In 2004, the Board established a program to provide statewide digital orthoimagery (an essential data layer for GIS). In addition, the Board, working with the Maine Office of GIS (MEGIS) and the University of Southern Maine, is currently

developing a statewide GIS portal (GeoPortal) to deliver geospatial data and GIS services across the State.

However, the study also found that there was significant room for improvement in statewide GIS coordination and outreach. It also became clear that there was a need for new and updated geospatial data as well as better access to existing State and local geospatial data. Furthermore, the study found that there was a significant need for better communication on such topics as geospatial data development, training opportunities and the availability of grants. ***Lastly, the study determined that the Board, with its original funding almost exhausted, is in dire need of sustainable funding sources to deliver geospatial data and other essential initiatives to the Maine geospatial community.***

1.6 What Is Recommended?

- Expand participation
  Expand participation on Board initiatives by establishing a series of work groups composed of leaders, experts, and those impacted by the initiatives representing both diverse sectors and geographies across the State.

- Hire a statewide GIS Coordinator
  As soon as it is realistic (given the economic climate), hire a statewide GIS Coordinator to implement the Board's initiatives, serve as the Board's spokesperson across the State, and facilitate cost savings through the sharing of geospatial data, applications, training, and innovative ideas.

- Improve statewide GIS coordination
  Establish an outreach program to promote the use of GIS to meet both public and private business needs to prospective users and potential supporters across the State. Encourage the sharing of geospatial data, applications, innovative ideas, and training. Encourage the use of the GeoPortal, the posting of geospatial data, and providing on-line access to that data as well.

- Improve access to geospatial data
  Working with the Chief Information Officer (CIO), county and municipal governments, academia and others, implement policies to facilitate the sharing of geospatial data by: inventorying it on an annual basis; providing notification of future geospatial projects and updates to existing geospatial data; notifying others of updates; and initiating a major campaign to provide access to the most current geospatial data from across the State through the GeoPortal.

- Develop and maintain statewide geospatial data
  Establish a program to provide continual updates of digital orthoimagery across the State. Following the recommendations in the Board's study to establish an integrated land records information system, establish a program to develop and maintain parcel geospatial data meeting statewide standards. Work with the Department of Transportation and the Public Utilities Commission to bring together two statewide roads geospatial datasets into one integrated roads and addressing geospatial dataset. Develop high-resolution elevation

geospatial data for the State. Establish various geospatial standards as required to assure geospatial usability. Hire a staff person to assist in the implementation of the integrated land records information system and to gather geospatial from across the State for the GeoPortal.

- Lower the barriers to the use of GIS
  Lower the barriers to the use of GIS by local government and others by developing easy-to-use applications that are shared via the GeoPortal to meet the business needs of local government. Promote the use of the GeoPortal as a means to eliminate the cost of geospatial data storage and other infrastructure for local government.

- Improve communication
  Improve communication by the Board by expanding the services provided on their website (e.g., developing a calendar of events, adding information on impending projects) and judiciously keeping it up-to-date; growing the registration on the Board's new List Serve; regularly posting geospatial news from around the State; and developing an on-going program to speak about GIS and the Board's initiatives on a regular basis across the State.

- Improve access to training/education
  Work with educators from across the State to develop a new area on the website to post training opportunities and curricula from across the State.

- Develop champions
  Implement a communications plan. Establish a focus group of key individuals identified during the study to provide advice on potential champions. Identify key individuals from various sectors who can benefit from the use of geospatial technologies to attain their goals. Work with those individuals to demonstrate how geospatial technology can meet their needs. Provide them and key State officials with strong business cases to enlist their aid in supporting the GeoLibrary Board initiatives.

- Establish sustainable funding
  Work with the CIO, champions, the Governor's office and legislators to establish appropriate funding mechanisms to support both operating and capital expenses. Establish long-term budgets with consistent funding needs for long-term Board initiatives. Document successes in measurable terms and develop a key message on the Board and the need for its initiatives.

- Address the low or no cost issues first
  Considering the severity of the nation's economic climate, concentrate on solving the low or no cost issues first. Document these successes and use these to position the GeoLibrary to move forward with more robust activities in the future!

2. STRATEGIC PLANNING METHODOLOGY

An unprecedented open and effective process was used to develop a "realistic" plan that will assist the State of Maine in addressing its geospatial needs.

This section provides an overview of the strategic planning methodology used on this project. This methodology included extensive research on previous strategic planning efforts in Maine, successful Board initiatives and current Board priorities. Significant efforts were also undertaken to document the needs, issues and priorities of the statewide geospatial community as well. Once gathered, this material was analyzed and presented to the GeoLibrary Board and the geospatial community for their feedback. Based on the input received, solutions were recommended and strategic plans developed, reviewed, and modified accordingly. An illustration of this process is provided in Figure 2-1 on the following page. A summary of the findings from the public forums, meetings held, and the on-line survey is provided under "Findings" in Section 4. Details are provided in the Appendices.

2.1 Funding

This project was funded through a Federal Geographic Data Committee (FGDC) Category 3 grant. It was supplemented by funding from the GeoLibrary Board as well as in-kind services from the MEGIS.

2.2 Oversight

The project was overseen by the GeoLibrary Board. Specific guidance and logistic support was provided through the use of an independent project manager (Will Mitchell) hired by the Board for the project and the Board's Project Team, which was composed of members of the Board, MEGIS, the USGS and county and municipal representatives. All were invaluable to the success of the project. They are listed in Appendix R.

2.3 Process

- Project Kickoff Meeting
  A project kickoff meeting with the GeoLibrary Board was held on February 20, 2008, to discuss the Sewall Team approach to the project, key items that the Board felt needed particular attention, project goals and objectives, and the Board's anticipated outcome. In addition, the Board was asked to complete a document entitled, "Opening Questions." A copy of that document is provided in Appendix P.

- Review of the 2002 Strategic Plan
  A review of the 2002 Strategic Plan was conducted by the Sewall Team. As part of that review, the Sewall Team interviewed staff members of MEGIS and the members of the State's Project Team to determine the status of the various initiatives and activities put forth in that plan. That information was captured in a chart entitled "Maine 2002 Strategic Plan Five Pillar Update," which is located in Appendix A.

Maine's Strategic Planning Process

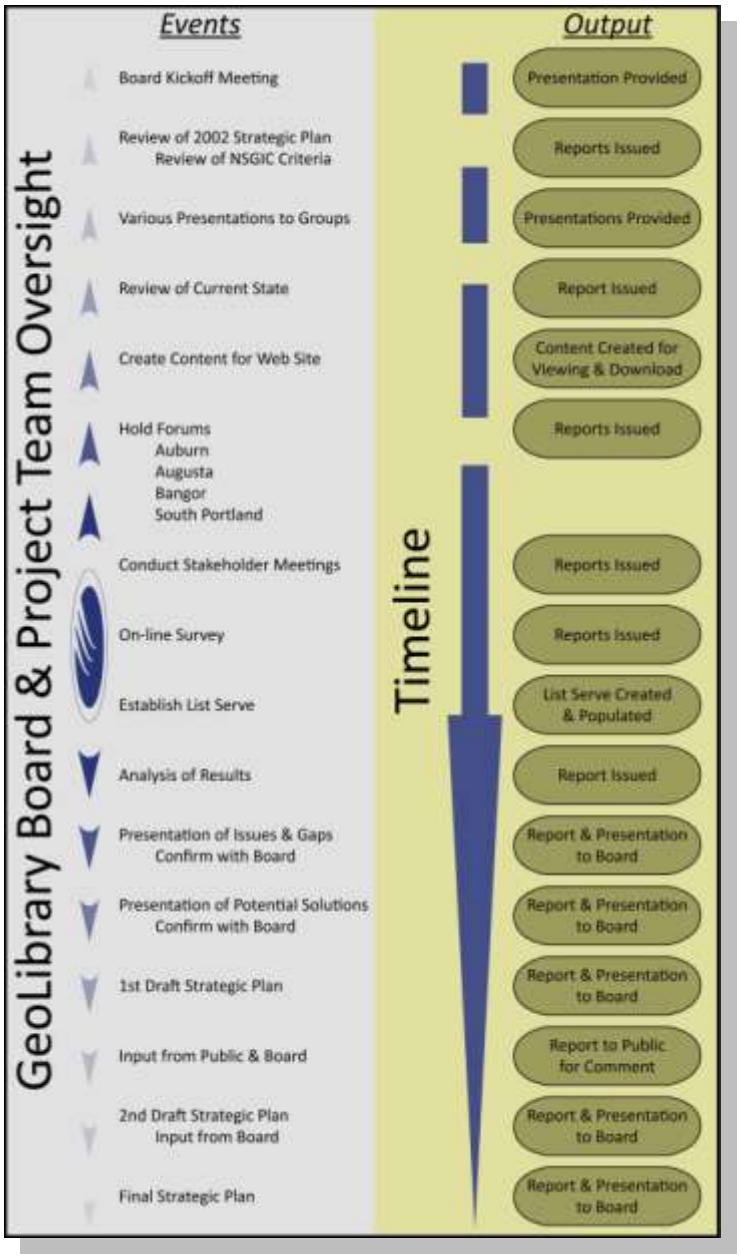


Figure 2-1: The Strategic Planning Process

- Review of the existing state of the GIS Coordination Program in Maine
  The existing state of the GIS Coordination Program in Maine was determined through a number of methods. Initially, Board members were asked to complete the 2008 Maine Maturity Assessment (refer to Appendix Q) to provide the Sewall Team with a perspective on their understanding of the National States Geographic Information Council (NSGIC) criteria and the current situation. The wide range in responses and the types of questions

that the Board members had over the survey indicated that there was a need for a greater understanding of these criteria by the Board. (Subsequent to that, the Sewall Team had made a presentation to the Board to review NSGIC's coordinating criteria--see below.) However, direct conversations with Board members and, in particular, members of the Maine Project Team provided invaluable in determining the success of the program from the Board's perspective. Next, input on the coordination program was received from the Maine geospatial community at large during the public forums and the on-line survey. Finally, meetings held with key stakeholders provided knowledgeable perspectives on the existing state of the program. That information is summarized in a situation analysis provided in Appendix K as well as the reports on the on-line survey, public forums and meetings in Appendices L-M respectively. This information was then used as part of the process of evaluating the issues and potential solutions identified in Appendix D.

- Review of the National States Geographic Information Council's Coordinating Criteria
  A review of the NSGIC coordinating criteria was conducted with the Board. (The Board had asked to have the strategic plan aligned with those criteria. These criteria were present in successful state GIS coordination programs.) (Refer to Appendix O)

- Presentations/Interactive Sessions
  Additional presentations and facilitated sessions were held throughout the project. These included sessions at the Maine Municipal Association's Technology Conference, the Maine Society of Licensed Surveyors Annual Conference and the MEGUG's Fall Conference.

- Development of a GeoLibrary List Serve
  Early in the project, it became apparent that communication within the Maine geospatial community was a challenge. The Board promptly took action to have a GeoLibrary List Serve established. This provided a method for individuals across the state to communicate on Board activities as well as more general geospatial activities and issues. Individuals can join on-line at: http://lists.maine.edu/cgi/wa?A0=geolibrary-l.

- Development of a Stakeholder list
  A stakeholder list was established to allow those specifically interested in participating in this project to be contacted directly for input. This was developed by combining the MEGUG list of members as well as multiple other sources. In addition, individuals were afforded the opportunity to sign up on-line through the GeoLibrary Board web site (http://www.state.me.us/geolib/index.htm). (Currently, there are over 400 included on this list.) Reports and analytical documents were made available to stakeholders throughout the process to keep them informed and to elicit comments as required.

- Improved Management of the GeoLibrary Web Site
  In an effort to improve awareness of the Board's activities, MEGIS obtained the ability to directly administer the GeoLibrary web site. A section was created specifically for this project, which provided relevant project material and access to the project blog: http://www.state.me.us/geolib/projects/fiftystates/index.htm.

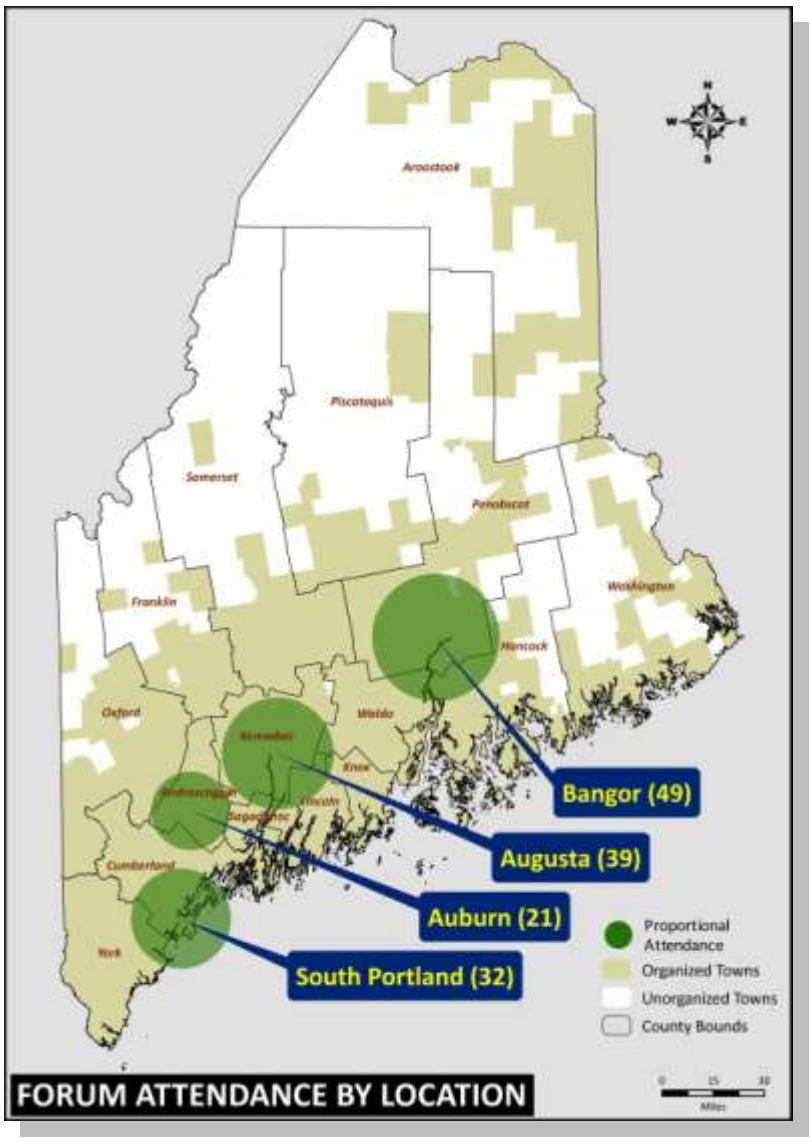


Figure 2-2: The map above depicts the location and attendance at each forum.

- Forums

  Forums were held to: introduce the project to the Maine geospatial community, discuss the methodology being used for it, and gather first hand input on the needs and issues facing the Maine geospatial community across the State. Three regional public forums were held at:
  - Lewiston/Auburn – April 29, 2008
  - Bangor – May 6, 2008
  - South Portland – May 7, 2008

  A state agency forum was held in Augusta on April 30, 2008.

Overall, approximately 130 individuals attended the stakeholder forums. This was considered an excellent turnout and was the result of hard work by the Board and local volunteers. Reports from each of the forums are available in Appendix M.

- On-line Survey

  An on-line survey was conducted between April 23, 2008, and June 4, 2008. Its purpose was to solicit input on strategic planning for statewide GIS coordination and lands records issues from a wide variety of responders across Maine, some of whom may not have had the opportunity to attend the forums. The survey was originally scheduled to be open for 3 weeks, but the timeframe was increased to accommodate input from attendees at the forums and other meetings that were held on the project throughout May. Some 245 individuals completed all or part of the survey; 188 completed the entire survey, comprising a reasonable number of participants for a survey of this type. A detailed report on the survey is included in Appendix L.

  The survey attracted a wide variety of respondents with approximately 60% being from government and the remainder from the private sector, not-for-profits, academia, and utilities. In addition, there was a good diversity between technical and non-technical users as well.

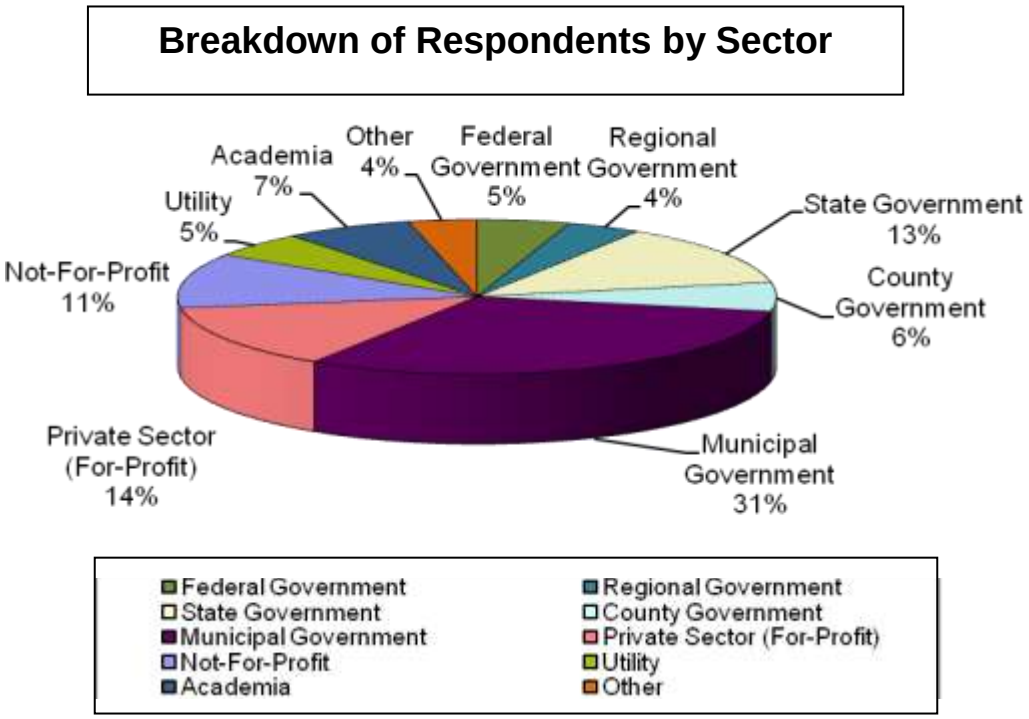


Figure 2-4: The diagram above indicates the breakdown (by sector) of the respondents to the on-line survey.

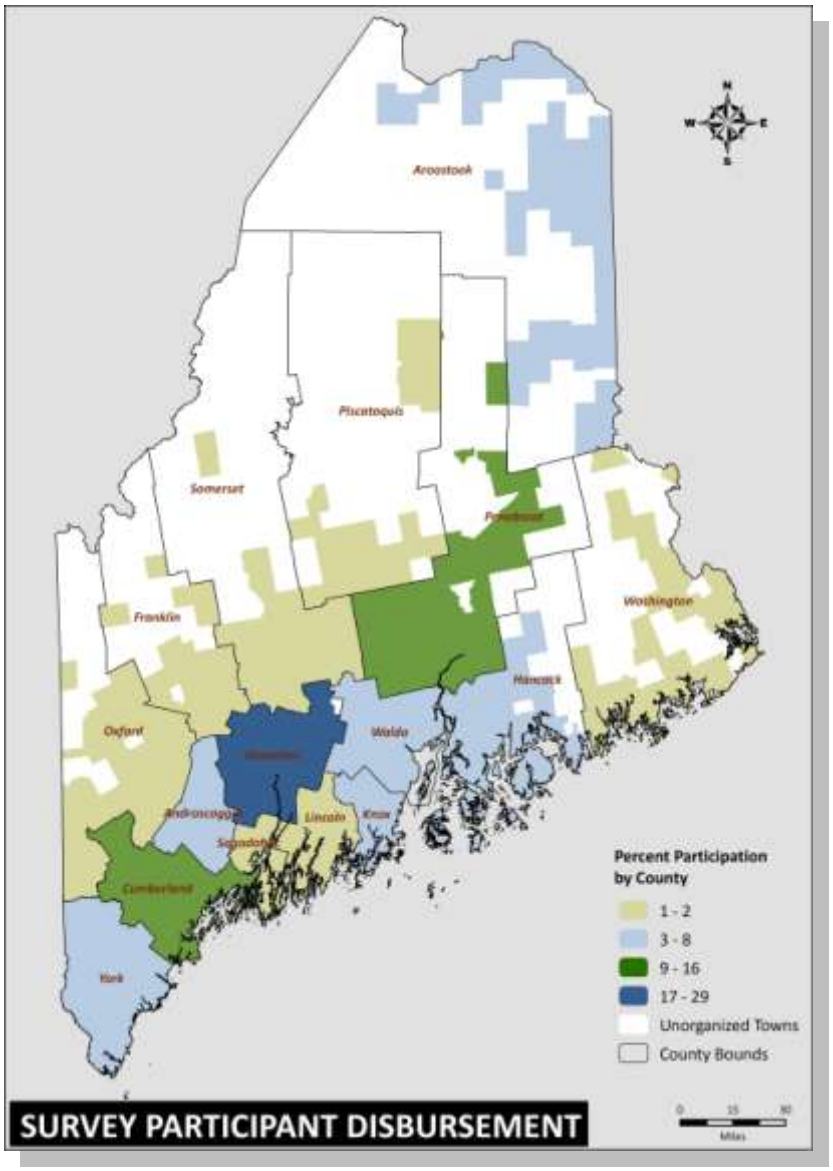


Figure 2-3: The map above approximates geographic disbursement of the participants in the survey.

- Stakeholder meetings

  The following stakeholder meetings were held to insure that input from key sectors or leaders was captured:
  - Maine Chief Information Officer
  - Maine Office of GIS
  - Federal Agency Representatives
  - Academic Community (In spite of the best efforts of the State's Project Team, a meeting with a large number of members of Maine's higher educational community was could not be accommodated during the time frame available. However, discussions were held and input received from Tora Johnson, Director of GIS, at the University of Maine at

Machias and Matthew Bampton, Associate Professor of Geography at the University of Southern Maine.)

2.4 Issues and Gaps

Subsequent to the review of the 2002 Strategic Plan, a chart was prepared analyzing the current status of the initiatives (Five Pillars) included in it (see Appendix A). Similarly, a chart showing the needs that the geospatial community conveyed through the forums, meetings and on-line survey was developed as well. Next, the 2007 Maine GeoLibrary Priorities and Initiatives (refer to Appendix C) were reviewed with the Project Team to determine their current relevance and priority.

2.5 Solutions

All of the issues and gaps were then analyzed and potential solutions developed for each. Next, a chart was developed listing issues/gaps/initiatives, where they arose from, their potential solutions, priorities, costs, and timeframes for completion. They were then analyzed by priority, cost and work area. Appendix D shows this chart sorted by work area.

Each item was closely considered in light of the Board's three main focus areas for this study: coordination with local governments, academics and others; development of sustainable funding sources; and cultivation of political champions to grow future geospatial initiatives. Once again, these were reviewed with the Board and modified in accordance with their comments.

A methodology was then proposed for implementing those solutions and presented to the Board. After receiving comments from the Board and the Project Team, this methodology then became the basis for the implementation plan provided in Section 6 and Appendix G. In addition to the Implementation Plan, details on how to develop and run the recommended work groups successfully have been provided in Appendix F. A plan to improve communication for the Board has been included in Appendix E while details on developing long-term champions have been developed in Appendix I. Finally, a discussion on an approach to achieving sustainable funding has been included in Appendix J.

2.6 Project Management

The Sewall Team and the Board implemented a number of project management strategies. Key among them were the development of a Project Team and the hiring of a project manager by the Board to manage the project, provide regular feedback and direction to the Sewall Team, and conduct a number of the reviews for the Board. Below are a few of the project management methods the Board and the Sewall Team used on this project:

- Board Meetings
  The Sewall Team attended GeoLibrary Board meetings (either in person or by conference call) on a monthly basis to gain Board insight and input on the project and provide status update reports to the Board.

- Project Team Meetings
  The Sewall Team and the Board's Project Team met (either in person or by conference call) on a bi-weekly basis to keep the project moving forward and to respond to questions and issues as they arose.

- Project Reports/Schedules/Deliverables
  In addition to the biweekly meetings held with the Project Team and the monthly meetings held with the Board, the Sewall Team provided the Board with monthly status reports and schedules.

3. GEOLIBRARY MISSION, VISION, AND STRATEGIC FOCUS

The Maine GeoLibrary Board has clearly defined its mission, vision and strategic focus. Collectively, the Board's mission, vision and strategic focus statements provide a strong foundation for their strategic plan.

The Maine Library of Geographic Information became a reality on April 9, 2002, when the Governor signed into law L.D. 2116 "An Act to Establish the Maine Library of Geographic Information (Chapter 649)." This law officially sanctions the Library as the vehicle by which geospatial data custodians or their designees organize, catalog, and provide access to public geographic information to all levels of government and to the public. The Maine GeoLibrary Board consists of appointed volunteers that are responsible for administration of the Library and ensuring statewide GIS coordination.

The Maine GeoLibrary Board has clearly defined its mission, vision and strategic focus. All statements were recently reviewed and updated by the Board just prior to the start of this strategic planning project and are listed below.

3.1 The Maine GeoLibrary's Mission Statement

The mission of the GeoLibrary is to create an electronic gateway to public geographic information, and to expand and promote the value of geospatial data through widespread distribution and innovative use for the benefit of Maine's citizens.

3.2 The Maine GeoLibrary's Vision Statement

The GeoLibrary's vision is to provide state-of-the-art, comprehensive, and ever expanding access to public geospatial information and services, and to facilitate the availability of geographic information collections and access for all citizens. This vision encompasses:

- Development and subsequent maintenance of an Internet-based GeoLibrary portal.
  This portal will enable discovery of and access to geospatial data held by public and private sources. It utilizes nationally recognized standards and techniques that permit these geospatial to be combined and aggregated easily for many uses;

- Stewardship of priority statewide geospatial datasets and the associated technology
  Stewardship of priority statewide geospatial datasets and the associated technology essential for sharing geospatial data ensuring that State geospatial data is available, up to date and accurate;

- Design and implementation of appropriate geospatial data standards
  Design and implementation of appropriate geospatial data standards to allow it to be used for multiple purposes facilitating the modernization and consistent GIS development of local government land records to make them more accessible and usable by businesses and citizens of Maine;

- Support for smart growth and growth management
  Support for smart growth and growth management with geospatial datasets and techniques that enable state/county/municipal governments to effectively plan land use, location decisions, and site designs in a way that will minimize negative impacts on the social, economic, and environmental health of Maine;

- Multi-organizational geospatial data-sharing
  Multi-organizational geospatial data-sharing that results in significant savings in the cost of creating and maintaining geospatial data;

- Budgeting
  Budgeting that prioritizes the strategic importance of geospatial information, its maintenance and dissemination; and

- Promoting innovative uses of public geospatial information
  Promoting innovative uses of public geospatial information that fosters economic development; and implementing education and outreach programs that advocate for the further development of Maine as a national center for GIS research, education, and industrial growth.

3.3 The Maine GeoLibrary's Strategic Focus

The Board has identified four areas of strategic focus to realize its mission and vision:

- The development and implementation of statewide geospatial data standards to ensure geospatial data quality and to enable common use;

- The development of a web-based distribution system to facilitate access to statewide geospatial data holdings;

- The provision of funding and management for high priority geospatial data and geospatial database development to support community and regional planning, smart growth and community preservation; and

- The provision of coordination, outreach and education in support of better public use of geospatial data and to maintain and enhance Maine's position as a national center for GIS research, education and industrial growth.

3.4 The GeoLibrary Board's Desire to Align with the NSGIC Coordinating Criteria

NSGIC undertook a study to determine what made statewide GIS coordination programs successful. Appendix O includes the characteristics that the NSGIC found were present in these successful State GIS coordinating programs across the country. One of the goals expressed by the GeoLibrary Board was to better align Maine's GIS coordination program (and this strategic plan update) with these criteria to improve their opportunity for long term success.

3.5 Conclusion

Collectively, the Board's mission, vision and strategic focus statements provide a strong foundation. These were key factors used in developing an updated strategic plan which is aligned closely with the NSGIC Coordinating Criteria. Each was taken into consideration by the Sewall Team in recommending practical solutions to be implemented as part of this strategic plan.

4. CURRRENT SITUATION – FINDINGS, NEEDS ASSESSMENT, AND SUSTAINABILITY ANALYSIS

Maine's statewide geospatial program is at a critical juncture. The program has less than $70,000 in its coffers with which to continue. Simply put, the Maine GeoLibrary Board cannot continue to sustain itself without additional financial resources.

4.1 Who Are We?

The geospatial community in Maine is diverse. Geographically, the use of GIS by all levels of government is most pronounced in the southern and coastal parts of the State. Inland, its use is generally limited with the exception of the major cities. In some cases, regional planning agencies and councils of government such as the Northern Maine Regional Planning and Development Organization have taken up the mantle of providing GIS services and training for the smaller and more rural communities. However, timber related and other industries use GIS in many parts of the State. In particular, there is a broad environmental sector that uses GIS to support its initiatives in numerous parts of the State. There are also significant geospatial programs in both public and private colleges and universities throughout Maine.

Below is a partial listing of Maine's geospatial community.

- Maine GeoLibrary
- Federal government (including the USGS, NOAA, USFS, USDA, DHS, ACE, NGA, EPA, FEMA, Census Bureau, and NPS)
- State Government (including the CIO, the Maine Office of GIS (MEGIS) and the State Agencies' GIS Stakeholders' Council)
- MEGUG
- Regional planning councils and councils of government
- County and local governments
- Academic community (including Bates, Bowden, Colby, College of the Atlantic, various campuses of the University of Maine System such as the University of Southern Maine and the University of Maine at Orono and Machias, and various community colleges across the State)
- Private Sector (including forest management and related timber industry companies, real estate, developers/builders, utilities, surveyors, engineers, GIS consultants and mapping firms,)
- Nonprofit Sector (including social and environmental organizations like the Gulf of Maine Ocean Observing System)

- Research institutions and agencies (such as the Bigelow Laboratory for Ocean Sciences, Maine Maritime Academy, University of Maine School of Marine Sciences, University of Maine's Darling Marine Center, and University of New England)
- Cooperative programs and research projects (such as ECOHAB's Gulf of Maine Program, Gulf of Maine Council on the Marine Environment, Gulf of Maine Research Information System, Island Institute, Lobster Institute, Regional Association for Research on the Gulf of Maine, State of Maine's Coastal Program, USFW Gulf of Maine Coastal Program, and US GLOBEC Georges Bank Program)
- Indian Nations (such as the Penobscot Indian Nation)

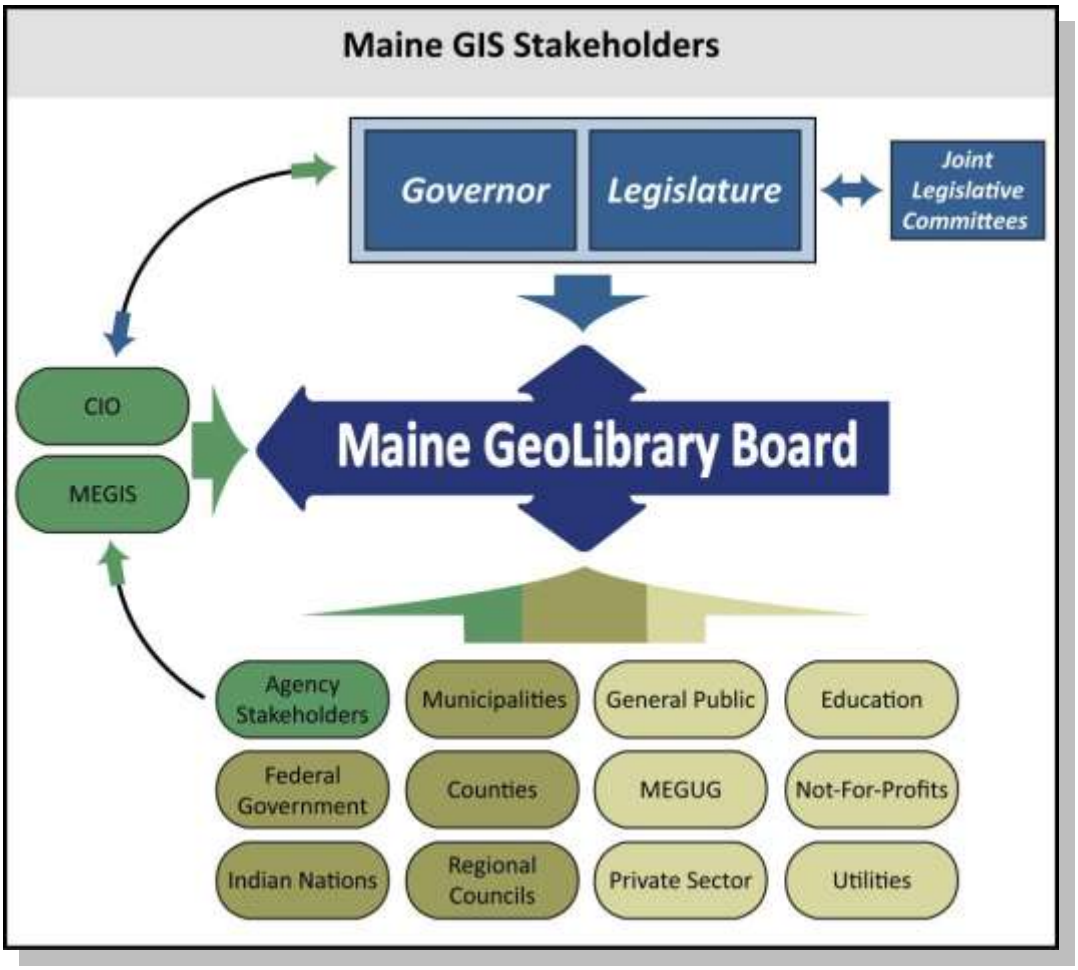


Figure 4-1: The above diagram depicts the Maine GeoLibrary Stakeholders.

4.2 Where Are We Now?

The State of Maine is known nationally as one of the first adopters and most longstanding implementers of GIS in the country. It was also one of the first states to develop a statewide E-911 system. Since the 1980's, Maine has sustained the foresight and its pool of technical and analytical talent to deliver consistent services in spite of chronically scarce resources.

In 2001, the State commissioned an exhaustive geospatial needs assessment and user requirements analysis to survey geospatial capabilities at all levels of government and to prioritize future activities. In 2002, this plan was completed and resulted in the formalization of the State's GIS oversight in the GeoLibrary when legislation was signed into effect by the Governor. In that same legislative session, a $2.3 million environmental bond issue was created that has served as the prime funding mechanism for the GeoLibrary Board's programs since then. This funding has been wisely spent by the Board in a number of areas. Prime among them is its use to finance the creation of statewide digital orthoimagery matched with grants from the USGS and the USDA. This geospatial data has been distributed through the GeoLibrary's Geospatial Data Catalog and Orthoimagery Viewer (developed as a method to gain access to and distribute orthoimagery) to users across Maine. In addition, this funding was used to create a grant program to enable municipalities to develop digital parcel geospatial data. In all, grants were awarded to 74 communities to create digital parcel geospatial data that met newly adopted parcel geospatial data standards. This funding was also used to develop the new GeoLibrary GeoPortal and web mapping services, a study of GIS requirements for Maine county government, and this update to the Board's 2002 Strategic Plan.

From its inception, the Board has been supported by MEGIS, which provides core GIS services on behalf of the Board and the state agencies (through their GIS Stakeholders Group).

A follow-on study to the 2002 Strategic Plan focusing on GIS needs specific to county government in Maine was undertaken in 2005-2006. Due to heavy involvement by county registries of deeds and emergency management officials, parcel geospatial data was singled out as a vital but missing geospatial data and analysis component. As a consequence of these and other activities, planning for property boundary geospatial data capture and upkeep was elevated among Maine's geospatial strategic and business planning priorities.

In 2006, the Board applied for a grant through FGDC Category 3: Fifty State's Initiative program to update its 2002 Strategic Plan and recommend a conceptual framework and functional specification for an Integrated Land Records Information System (ILRIS) for Maine. In 2007, a $50,000 grant was awarded to the State. Later that year, an RFP was issued to perform the work and in 2008 a contract was awarded to the Sewall Team. This document is a result of the strategic planning process undertaken by the State of Maine and the Sewall Team. A separate document is also being prepared by the Sewall Team which addresses the Integrated Land Records Information System.

In 2007, the Board's Technology Committee solicited the support of the University of Southern Maine to develop a new portal and web services to provide improved access and use of geospatial information across Maine. This technology is scheduled to be rolled out to the public in the near future.

GIS was noted as having a wide variety of important uses in Maine. Key among these uses were to assist in environmental and land conservation; real estate and development; and tax assessment, emergency management, transportation and public safety.

4.3 Findings

The following summarizes the findings which the Sewall Team recorded during the forums and meetings as well as from the input received from the statewide on-line survey. Detailed reports on each are provided in the Appendices.

- Forums

  Summarized below are the key areas of need that were identified during the forums:

  - Coordination and sharing.
    - Better data sharing between state agencies.
    - Better data sharing and consistency between municipalities and the LURC townships.
    - Active efforts to collaborate between municipalities and counties around land records standardization.
    - Fuller utilization of growing capabilities within the educational sector for data development and distribution.
    - Standards development for additional layers – easements especially – to allow these to be collected and shared.
  - Geospatial data development, maintenance and access.
    - Better and more transparent access to data.
    - More frequent and automatic notification of changes and updates.
    - Easier services for generating and understanding metadata.
    - Expansion of the parcel grants program.
    - More frequent and accurate statewide aerial imagery.
    - Statewide parcel data.
    - Statewide high resolution elevation data.
    - Unified roads and addressing data.

Participants in the forums from State agencies noted that, **by seeking out and providing local geospatial data or links to it, significant savings can be realized for State agencies** which require this geospatial data regularly as well for the vast majority of the Maine geospatial community**.**

  - Communication.
    - Better utilization of online resources to ask questions of the Maine GIS user community and get specific answers.
    - More awareness of GeoLibrary activities.
    - Fuller awareness of grant opportunities and grants that have been awarded.
    - More complete ongoing awareness of regionalized land records data initiatives.
  - Training and assistance.
    - Accessible services and/or staff dedicated to exposing data and services available to novice users.
    - Specific training for underexposed stakeholders such as deeds registries and legislators.
    - Dedicated regional service centers providing walk in services.
    - More educational programs for communities.
    - Development of more targeted and easy-to-use web applications.

- GIS software and support.
  - Closer examination of enterprise/bulk licensing of commercial software to maximize access to functionality by greatest number of users.
  - Better use of web-based mapping software and services (Google Earth, Maps, Microsoft Virtual Earth/Live Local) to distribute and access complex GIS data.

Reports on each of the forums as well as an overall summary report are included in Appendix M.

- On-Line Survey

  Respondents indicated that major actions that could be taken to improve GIS coordination in Maine were:
  - Providing updated imagery;
  - Improving the accessibility of geospatial as well as providing web mapping services for both State and local geospatial;
  - Delivering an integrated land records information system;
  - Improving statewide communication within the geospatial community;
  - Providing shared GIS services or regional GIS service centers; and
  - Providing better GIS educational/training opportunities.

  When asked what source was the most appropriate for long-term sustainable funding of statewide GIS activities, 18% indicated that it should come from general State funding designated by the legislature, 17% believed that it should come from cost sharing between State and municipal governments; and 15% believed it should come from a real estate transfer tax. However, a number of those responding encouraged a combination of funding sources be used rather than one single source.

  A number of suggestions were made for potential political or executive champions for statewide GIS coordination, from current, former and future governors to legislators, the State CIO, the MEGIS Director and individuals in the private sector, not-for-profits and government.

The Sewall Team recommends that **the Board pursue funding from a combination of funding sources and multiple champions (from varied sectors) as the best approach** to assure its long term survival.

Time and time again, the respondents clarified the importance of having good parcel geospatial data and an integrated land records system. On the one hand, parcel geospatial data was seen as fundamental for the private industry for development and the real estate industry. On the other, it was seen as critical for the public sector for open space planning wildlife conservation and tax assessment. It was also specifically noted as being critical to emergency management, regulation, and asset management.

The benefits of an integrated lands records information system were seen as saving time, costs and resources for both those assessing the geospatial data as well as those supplying

the geospatial data. Other benefits specifically listed included improving the transparency of government, reducing gas use and carbon emissions by saving trips to government offices and improving the overall quality of the geospatial infrastructure for Maine.

- Stakeholder Meetings

  Stakeholder meetings were held to insure that input from key sectors or leaders was considered.

  - Maine Chief Information Officer - The first stakeholder meeting was held with Dick Thompson, CIO for the State of Maine. Dick was clear in his support for the GeoLibrary Board and noted that the State was providing both hosting services and staff resources to support the Board's mission. However, he also noted that his agency's prime focus was on support to State agencies. In addition, he expressed a longer-term need for the Board to be able to provide funding to support its operational and logistical needs.
  - MEGIS – A meeting was held with Mike Smith, Director of MEGIS, to discuss his office's perspective on statewide GIS coordination as well as other items facing the Board. As Director of MEGIS, Mike Smith has significant involvement in Board activities and projects. In addition, he provided continual feedback on this strategic plan. In discussing, statewide GIS coordination, Mike echoed the CIO's position that his office's prime focus was to support the State agencies. He noted that MEGIS would continue to support the Board with both technology and staff resources, but, because it was a "fee-for-service" agency, it would very much like to see the Board funded adequately to pay for the support it received. He also made it clear that his office's focus did not include statewide GIS coordination.
  - Federal Agencies – As the project progressed, it was clear that a number of federal agencies were extremely active in Maine and could provide insight on projects they had under way or were planning and the potential for synergistic activities benefitting the State of Maine. These meetings also provided them with the opportunity to indicate any special needs that they might have to perform those projects. Although scheduling was difficult, several of these agency representatives, namely the National Geospatial-Intelligence Agency (NGA), Department of Homeland Security (DHS), US Fish & Wildlife (USFW), Penobscot Nation, US Department of Agriculture (USDA), Environmental Protection Agency (EPA), National Park Service (NPS), Army Corps of Engineers (ACE), Wells National Estuarine Reserve, and National Oceanic and Atmospheric Administration (NOAA), were brought together on June 26, 2008. This meeting was followed up by meetings with additional representatives of NOAA on July 21, 2008, and July 22, 2008 with the US Forest Service. (Please refer to Appendix N for additional information on the meetings)

    A considerable amount of valuable information was gained from these sessions. Chief among them was the fact that the National Agricultural Imagery Program (NAIP) was being modified. Imagery was now scheduled for collection every other year. It was noted that 55% of the State of Maine was currently covered under the program, and, if other federal agencies contributed to the program, the State had the option of getting the remainder of the State flown with 4 band, 1 meter leaf-on imagery for $125,000.

Finally, the need for better elevation data was a need consistently articulated by the federal agencies.

- Education – The Board's Project Team tried unsuccessfully to set up a meeting with a number of individuals in the Maine educational community. Nevertheless, the Sewall Team was fortunate to be able to attend presentations by Tora Johnson of the University of Maine at Machias on the study that she was involved in to determine education needs for the geospatial workforce in Maine and the development of a virtual geospatial technology department drawing resources from 3 universities and 3 community colleges in Maine. In addition, on August 13, 2008, a call was held with Matthew Bampton of the University of Southern Maine to discuss projects that he was involved in and synergistic opportunities that the educational community and the Board might undertake. Key among the topics discussed was the need identified at the forums for those in the geospatial community to be able to easily find out about both training courses and longer-term educational opportunities available in Maine.

4.4 Evaluation

- The current status of the Maine GeoLibrary in achieving its vision:
  - ***Vision:*** The "development and subsequent maintenance of an Internet-based GeoLibrary Portal"
    Status: Through the auspices of the Board, MEGIS and the University of Southern Maine, a GeoLibrary GeoPortal is being created, tested and readied for production. Through this and the Board's metadata catalog, they have provided geospatial data search and download capabilities as well as web services. Currently, work is being done with various constituents to gather geospatial data to place on the GeoPortal and move forward with its complete rollout, training, and promotion.
  - ***Vision:*** The "stewardship of priority statewide geospatial datasets and the associated technology essential for sharing geospatial data ensuring that State geospatial data is available, up-to-date and accurate"
    Status: The Board used the majority of its original funding in conjunction with grants from the USGS and the USDA to create statewide digital orthoimagery in 2004. It also developed a grant program to encourage municipalities to develop digital parcel geospatial data meeting the adopted parcel geospatial data standards. However, because of funding restrictions, this highly successful program has not been able to move forward and, unfortunately, no provisions to encourage regular geospatial data updates were developed. This study has revealed that the most sought after statewide geospatial data sets include updated orthoimagery, statewide parcel, unified roads, and high-resolution elevation geospatial data. These are yet to be achieved by the Board. (Other geospatial data that were seen as important by the State's geospatial community has been delineated in Appendices L-M.)
  - ***Vision:*** The "design and implementation of appropriate geospatial data standards to allow it to be used for multiple purposes facilitating the modernization and consistent GIS development of local government land records to make them more accessible and usable by businesses and citizens of Maine"
    Status: The Board has worked with MEGIS to complete standards for parcel, land cover, addressing, GPS for addressing hydrography, archiving geospatial data, FGDC compliant

metadata, and feature metadata. Some, but not all of these, can be found at: http://megis.maine.gov/standards/. Other, important standards such as roads, open space and land use standards have yet to be completed. Implementation of these standards by the Board has been challenging. As the Board readily admits, encouraging organizations to follow these standards is difficult without creating a financial incentive or a business need for them. However, this study has found that there was little knowledge across the State within the geospatial community of the existence of these standards.

The Sewall Team believes that significant improvement by the Board in documenting these standards (and/or their status in development), making them readily available to the public and, in particular, promoting them could serve to increase their statewide adoption.

- ***Vision:*** Support "for smart growth and growth management with geospatial datasets and techniques that enable state/county/municipal governments to effectively plan land use, location decisions, and site designs in a way that will minimize negative impacts on the social, economic and environmental health of Maine"
  Status: The 2002 Strategic Plan called for the creation of a "development tracking tool development suite." Little progress has been made in this area. In the defense of the Board, other priorities needed to be completed prior to moving forward with this initiative, including statewide parcel, zoning, conservation/open space, land use and zoning geospatial data.
- ***Vision:*** Multi-organizational "geospatial data-sharing that results in significant savings in the cost of creating and maintaining geospatial data"
  Status: The GeoLibrary web site provides access to State agency geospatial data, digital orthoimagery and municipal parcel geospatial data developed through the parcel grant program. As such, it serves an extremely valuable service to the geospatial community in Maine. However, it was reported that much of the geospatial data on the site is not kept up-to-date on a regular basis by the State agencies. In addition, these same agencies pointed out that more State agency geospatial data was withheld from the GeoLibrary site than was included in it. It should be also noted, that, by policy, other than the geospatial data developed through the parcel grants program, there has been no local geospatial data made available through the GeoLibrary's websites.
- ***Vision:*** Budgeting "that prioritizes the strategic importance of geospatial information, its maintenance and dissemination"
  Status: The Board's annual report [1] clearly prioritizes the Board's funding needs to meet its strategic initiatives. Unfortunately, this report has not been widely distributed or shared with potential supporters. In addition, other than a request for additional bond funds in 2007 and, again, in 2008, it does not appear as though a formalized process has been used by the Board to apply for operating or capital funds.
- ***Vision:*** Promoting "innovative uses of public geospatial information that fosters economic development; and implementing education and outreach programs that

[1] http://maine.gov/geolib/Annual%20Reports/annualreports.htm

advocate for the further development of Maine as a national center for GIS research, education, and industrial growth"

Status: The Board has not focused on promotion of innovative uses of public geospatial information. In addition, it has only engaged in limited education or outreach programs. This appears to be supported in its 2007 Annual Report, where it reports that it had a booth at one conference that year which had 75 visitors. However, the Board now appears to be eager to engage this issue and was active in obtaining good participation for the public forums for this study. Nevertheless, at present, this area remains a significant weakness.

- Summary of Maine's Current Status with the NSGIC Coordinating Criteria

  In 2004, NSGIC and the FGDC conducted a study of the most successful state GIS coordination programs across the country. That study identified nine characteristics in common to each successful state program.[2] NSGIC described its rationale for states to meet these criteria as follows:

  > There is a critical need to coordinate GIS activities on a statewide basis to eliminate waste and improve efficiency in government. Agencies at all levels of government need to coordinate with other stakeholders to keep from duplicating geospatial data and systems at taxpayers' expense. Those stakeholders include non-profit organizations, academia, business and utilities. The "right" solutions will vary state-by-state and they are created through the development of effective strategic and business plans.[3]

  The chart on the following page depicts a summary of the status of the State of Maine in meeting the NSGIC Coordinating Criteria in 2008. It has been developed subsequent to receiving input from the GeoLibrary Board, the Project Team and the Maine geospatial community. The Sewall Team notes that this evaluation is somewhat different from the one done in 2004 and published in the 2005 Fifty States Initiative Action Plan.[4] This is primarily because of changes in personnel, expenditures of funds available in 2004 and shifts in areas of focus in MEGIS.

  Maine has an extensive history of embracing mapping and GIS across the State. As such, it meets many of the NSGIC coordinating criteria (refer to Appendix O for detailed descriptions of each criterion). In 2002, Maine became an early adopter of the use of strategic planning and has continued through this project as an active proponent of that practice.

  Statewide GIS coordination efforts fall under the responsibility of the Maine GeoLibrary Board. It has a good working relationship with the CIO. MEGIS, which falls under the CIO, provides staffing and significant support to Maine's GeoLibrary Board. That support includes providing technical support and operations, contracting authority and many administrative functions of which other states might be very envious. Maine also has an extremely close working relationship with its USGS liaison and MEGUG, which serves as the

[2] http://www.nsgic.org/hottopics/fifty_states.cfm
[3] http://www.nsgic.org/hottopics/fifty_states.cfm
[4] http://www.nsgic.org/hottopics/fifty_states.cfm

Maine's Current Status with the NSGIC Coordinating Criteria		
Criteria	**Current Status**	**Description**
Strategic and business plans	Meets	Developed: 2002 Strategic Plan; 2006 County Needs Assessment; & 2008 Strategic Plan update.
A full-time paid GIS coordinator and staff	Partial	MEGIS provides staff & infrastructure support; Maine does not have a statewide GIS coordinator.
Clearly defined authority and responsibility for coordination	Meets	Legislation provides authority & responsibility for coordination to the GeoLibrary Board.
A relationship with the chief information officer	Meets	The Board has a good working relationship with the CIO; the CIO is represented on the Board by the Director of MEGIS.
A political or executive champion is involved in coordination	None Currently	None Currently
A tie into national programs	Meets	The Board works closely with its USGS liaison to provide close ties to national programs.
An inter-governmental working environment free of "turf wars"	Partial	The Board provides a working environment within Board activities that allows multi-sector representation and is significantly free of turf wars. Outside the Board activities, some turf wars exist within government operations.
Sustainable funding mechanisms	None Currently	Only funds remaining from the 2003 Bond issue.
Contracting authority and cost sharing mechanisms	Meets	Contracting for Board activities is generally provided by MEGIS.
Statewide coordination efforts that can be a conduit for federal initiatives	Partial	The Board maintains a close working relationship with the USGS Liaison in Maine and acts as a conduit for its federal initiatives. However, the Board has limited statewide coordination activities outside of past geospatial data development initiatives.

Figure 4-2: The chart above evaluates the status of Maine's GIS Coordination Activities with the National States Geographic Information Council's coordinating criteria.

State GIS association. These relationships have been key to the many things that the State has been able to accomplish with limited financial resources in past years.

Although the CIO (and, therefore, MEGIS) has the authority to do statewide GIS coordination, because of its limited resources, MEGIS is under clear direction by the CIO to concentrate its efforts on the coordination of GIS activities across State agencies only. Herein is one of Maine's major stumbling blocks for effectively performing statewide GIS coordination as there is no one individual responsible for it or paid to do it on a full-time basis.

In most states that effectively perform GIS statewide coordination, there is a state council similar to Maine's GeoLibrary Board representing various constituencies and sectors. The council is responsible for setting policies and defining initiatives that a statewide GIS coordinator implements through the state office of GIS. Although there is always an inherent conflict for the state office of GIS on performing its duties for state agencies versus performing state coordination functions, in many cases, better state coordination leads to significant benefits for state agencies in the long run.

The Maine GeoLibrary Board, which consists solely of dedicated volunteers from across the State, is truly unable to assign the effort needed to perform day to day coordination activities and have the ability to manage its initiatives efficiently without additional support. The 2007 the National States Geographic Information Council State Summary indicates that 42 of the respondents have or plan to have within 18 months a full-time GIS Coordinator that has the authority to implement the state's business and strategic plans. In order to successfully coordinate GIS activities across the State, implement its initiatives, insure better communication throughout the GIS community and its various stakeholders, and stay competitive with the rest of the nation, Maine needs a full time individual who is charged with that responsibility.

The last two NSGIC criteria not yet discussed include having a political or executive champion who is involved in coordination and having sustainable funding mechanisms. The Board has clearly recognized that it does not meet either of these criteria and made it a point to request that particular emphasis be placed on them as well as better statewide coordination in this plan.

Past experience by members of the Sewall Team as well as a review of successful GIS coordination programs across the country has shown that having a champion and having sustainable funding mechanisms are closely linked. Maine's previous experience in obtaining $2.3 million in bond funds resulted from support from then Governor Angus King and the Director of the Maine State Planning Office Evan Richert. Since then, the Board has concentrated its efforts primarily on implementing various statewide GIS programs using those funds through Board members and MEGIS. In the meantime, it has been able to pay only limited attention to the need to cultivate champions in the State for its long-term success. Indeed, the extent of the problem became apparent to the Sewall Team when only 3 individuals acknowledged that they had heard of the Maine GeoLibrary Board in the first forum in Auburn. Clearly, outreach, communication and the involvement of key individuals

outside of the Board in its initiative is vital to gaining increased support for its valuable programs.

While the Board has correctly concentrated on providing framework geospatial data and infrastructure to support the Maine Geospatial community, it must now look at demonstrating how its work is tied to providing everyday solutions to the citizens, governments, private industries, not-for-profits and academia in the State to be successful.

Operating expenses and on-going infrastructure costs to support the Board are currently provided by MEGIS. However, since MEGIS operates as a fee-for-service organization, the CIO has expressed desire that funding be provided to cover the operating costs of the Board. In addition, the Board has new operating costs for its soon to be released GeoPortal as well as capital expenses for geospatial data development and maintenance costs for its framework geospatial data and application development. It is clear that the Board needs to explore the opportunities to obtain funding through multiple sources including but not limited to the State budget, bonding, service fees, and grants.

- Status of 2002 Strategic Pillars

  The Five Pillars denoted in the 2002 Strategic Plan are:
  1. Development of detailed geospatial data standards;
  2. Geospatial data warehousing Infrastructure Improvements;
  3. Additional investment in statewide geospatial data development;
  4. Targeted application development; and
  5. A program for expanded GIS education, outreach and coordination.

  The Board through MEGIS has made a great deal of progress in Pillars 1-3. Geospatial data standards for a number of geospatial data sets have been created, geospatial data warehousing and other significant infrastructure have been developed and continue to be improved by MEGIS, and digital orthoimagery has been completed from the 1997-1998 imagery as well as the 2003-2005 program. In addition, with the advent of the new GeoPortal, a significant portion of Pillar 4 has been completed as well.

  However, there are still some major challenges that the Board faces in order to complete the items included in all the pillars. For instance, knowledge of State standards is somewhat limited in the State and adoption has been slow unless the standard has been reinforced through a funded program such as the Board's parcel geospatial data program. In addition, some of the standards that have been completed were difficult to locate and did not appear on the GeoLibrary's site. Also, geospatial data currently associated with the GeoLibrary only includes State agency geospatial data, imagery and some parcel geospatial data derived through the Board's parcel development program. Furthermore, geospatial data included is not updated on a regular basis. The Board has realized that the omission of local and other geospatial data is a significant issue and will be addressing it through their GeoPortal.

  Lastly, while the Board has made good progress on most of the pillars, they have made little progress on Pillar 5, which deals with a program for expanded GIS Education, Outreach and

Coordination. Both items listed as tasks under that pillar require significant funding and the Board has been unable to get either of them funded to date. However, this plan provides a number of no or low cost initiatives that can be under taken by the Board to greatly improve GIS coordination within the State. (Refer to Appendix D.)

A detailed report on the status of the 2002 Strategic Plan Pillars has been developed and is available in Appendix A.

- Status of Board's Current Legislative Actions
  The Board currently has no legislative actions in process.

4.5 Inventory of Existing Efforts and Infrastructure

- Statewide Coordination/Outreach
  An extensive discussion of the need for improvement in its statewide GIS coordination and outreach by the Board has been noted previously. However, in 2008, taking advantage of this study, the Board has made significant efforts to reach out to the geospatial community in Maine. In the late winter at the Board's request, Sewall Team members participated in the Maine Society of Land Surveyors' Annual Meeting and the Maine Municipal Association's Technical Conference to discuss the project and solicit involvement. During the fall as the project progressed, the Sewall Team was asked to meet with MEGUG and the Maine County Commissioners Association to bring them up-to-date with the project and obtain their input. In addition, in the spring of 2008, the GeoLibrary Board, as part of their efforts to respond quickly to geospatial data gathered through this study, initiated a statewide GIS List Serve to improve communication throughout Maine's GIS community.

- Sustainable Funding
  In 2007, the Board applied for, but did not receive, bond funds to meet its needs. Subsequent to receipt of geospatial data from the study and recognizing that a number of funding sources are needed to meet its needs, the Board modified its request for bond funds in 2008. Unfortunately, that request did not meet with a positive result either. At present, the Board has no sustainable funding.

- Geospatial Data Standards
  A number of Maine's geospatial data standards have been completed. These include a parcel geospatial data, land cover, addressing, GPS (for addressing), hydrography, archiving geospatial data, FGDC compliant metadata, and feature metadata.[5] (A description of the State's progress with regards to standards is available in Appendix A.

- Infrastructure
  MEGIS is an office within the Office of Information Technology. It hosts an SDE database, ArcIMS (which is made available to the public), ArcGIS Server, and MapServer. This includes the Maine's Geospatial Data Catalog and Maine Aerial Photography Viewer. The ArcGIS Server and MapServer provide services for the State agencies and the public (which are jointly hosted by the Board and MEGIS). In addition, several State agencies host their own environments. Chief among them are the environmental agencies (in particular the

[5] Detailed information on the adopted standards can be obtained at: http://maine.gov/geolib/Policies/policies.htm.

Department of Environmental Protection), the Department of Transportation and the Department of Health. MEGIS has established an enterprise license with ESRI to allow all agencies to take advantage of the ESRI software[6].

Through the auspices of the GeoLibrary, MEGIS and the University of Southern Maine, a GeoPortal has been developed and is being brought on-line. It will provide a substantial improvement for statewide services by allowing improved access to geospatial data. It will provide both State and non-State organizations with the capability to store geospatial data, provide an easy metadata builder and provide geospatial data downloads as well as web services for all using it. This will be a huge benefit for the whole State and will provide the potential for a major growth of geospatial technology in Maine. This GeoPortal is being hosted through the infrastructure at the University of Southern Maine and is a great example of how the State is taking advantage of the robust infrastructure available through both the public and private higher education system in the State.

One of the limiting factors in the growth of technology in Maine in the past has been the lack of broadband access to smaller inland and northern communities. This is gradually changing. In particular, it should be noted that public schools and libraries throughout the State are connected by a robust network.

Not-for-profits and federal agencies in Maine use geospatial technologies to support their environmental monitoring and other operations as well.

- Statewide Geospatial Data Development
  The Maine Geospatial Data Catalog includes 140 geospatial data layers. Key statewide framework geospatial data such as digital orthoimagery has been developed through the auspices of the GeoLibrary. Working in a funding partnership with the USGS and the USDA, the GeoLibrary put together a project to have imagery flown in 2003-2005. In addition, through a series of GeoLibrary grants to local governments, cadastral geospatial data was developed for 74 municipalities in the State. Other statewide layers developed include roads. The Department of Transportation maintains a statewide file of roads to support their maintenance operations. The Maine Public Utilities Commission also maintains a separate E-911 geospatial database with up-to-date roads and addressing geospatial data. The State contains many active not-for-profits. They have succeeded in putting together land cover for much of the State.

- Application Development
  GIS application development at the State agency level is done both by the agencies directly and by the Office of Information Technology on a fee-for-service basis. Most active in their use of GIS are the environmental and transportation agencies with some development by the health sector agencies. Maine has a Statewide Incident Management System called SWIMS. It addresses data access issues for communication and coordination of emergency response. SWIMS includes the maintenance of a public interface module that allows incident managers to communicate information about the event to the public. However,

[6]. (Additional information can be attained from the "State of Maine Information Technology (I.T.) Environment" document: www.maine.gov/oit/architecture/Som_IT_Env.doc)

there appears to be limited GIS application development or use by other public safety agencies such as the police or the Guard.

Generally speaking, there are few on-line geospatial applications that provide services or information for the public. A prominent exception is the Department of Environmental Protection (DEP). DEP also uses Google Earth to provide access to 15 different geospatial data sets for public consumption. In addition, the State of Maine has a Google Earth application on its web site that assists the public in obtaining directions to State-run facilities, such as State parks, polling places, and State offices. There would appear to be significant room for improvement by State agencies in using on-line geospatial technologies to improve their accessibility of services to the citizens of Maine by following DEP's model for on-line access of geospatial information.

Another area for consideration, which was suggested during the study, is the improvement of application development within State agencies as well as between them through the use of modular programming. This approach would permit the reuse of program parts to aid in the more rapid development of geospatial solutions. In order for this approach to be successful, it requires very close coordination between developers, and its actual benefits must be analyzed carefully prior to full implementation in order not to significantly impede some application development.

Encouraging application sharing among municipal communities could be a significant benefit across the State.

At the local government level, on-line geospatial applications have been developed by several of the larger communities in the State. Communities like Auburn, Lewiston, South Portland, Ellsworth, Brunswick, and Biddeford have on-line geospatial applications. The City of Portland provides maps for download to citizens in a PDF format. In one of the forums, the participants made it clear to the Sewall Team that encouraging application sharing among municipal communities could be a significant benefit across the State. This is a low cost initiative that the Board can easily pursue.

Universities, through outreach programs such as the University of Southern Maine and the GIS Lab at the University of Maine at Machias, provide GIS services as well as application development to local communities as well.

- <u>GIS Education</u>
  Maine's higher education community has several active GIS curricula in both their well-known private and public colleges and universities. On the private school side, curricula at Bowdoin, Bates and Colby as well as others contain GIS programs. On the public education side, many GIS programs are provided on university campuses as well as community colleges.

  Currently, Tora Johnson from the University of Maine at Machias is leading a project which received a $750,000 grant from the National Science Foundation. The overall goal of the

project is to promote geospatial technology education statewide. To do so, the project team are studying Maine's workforce to identify needs. Once that is completed, they will look at the best ways to create or redesign programs and curricula to meet those needs. They will also look at ways to link GIS educators and promote GIS education across the state.

Matthew Bampton of the University of Southern Maine and other academic professionals are working with her to establish a virtual campus between several universities and community colleges. This virtual campus will make the expertise and resources that are found across Maine, but not necessarily located on one campus, available to those students across the State who seek to learn more about GIS.

There are also several successful and well-established programs which bring GIS into Maine's elementary and secondary schools. These include the Community Mapping Institute, the CREST program through the Island Institute, the Maine Geographic Alliance, 4-H, and various projects being done through the University of Southern Maine, the University of Maine at Machias and University of Maine at Presque Isle with their local schools.

It is noted that the Maine Learning Technology Initiative (MLTI) provides laptops to all middle school children in Maine and includes the geospatial software package called "My World" with it. In addition, the MLTI has recently hired Jim Wells, a former teacher and GIS enthusiast, to work specifically and exclusively on GIS training in the schools using the laptops. He's in his second year of trainings and is working with Tora Johnson on her statewide efforts as well.

Tora Johnson reports that there are more than likely thousands of young students doing GIS in some way all over the State. She goes on to state that, through the NSF project, they are working with all these groups and agencies to develop a more unified and directed strategy for K-12 GIS education. She adds that they are also working to do a better job at getting students to take GIS courses in college. Indeed, she welcomes input and participation from the GeoLibrary Board.

It was also noted that several rounds of teachers have been to training provided by the Institute for the Application of Geospatial Technology (IAGT). This institute provides programs similar to "Teaching with Spatial Technology" (http://www.iagt.org/twist/) are designed to teach K-14 teachers in the US how to use Geographic Information Technology (GIT) in the classroom to improve their teaching techniques for courses like history and geography.

The Board should consider working closely with the educational programs across the State to promote the education of young students in geospatial technology.

4.6 Major Issues/Needs

Subsequent to reviewing input from the forums, on-line survey, meetings with the Board and other stakeholders as well as input from presentations, the Sewall Team assembled a listing of the major issues and action items to be addressed. This listing details the needs put forth by the Maine geospatial community as well as the action items required for the GeoLibrary to achieve

its stated goals. This report is provided in Appendix D – Overall Listing of Maine GeoSpatial Issues and Action Items.

The major geospatial issues and/or needs that came to the forefront during this project included:

1. **The need for significantly increased coordination activities;**
2. **Better communication to the statewide geospatial community;**
3. **Low cost statewide training;**
4. **Up-to-date statewide imagery, elevation and parcel data (and a program to maintain it);**
5. **One uniform road and addressing dataset;**
6. **Improved accessibility to State, local, academic and private sector data;**
7. **Easy-to-use on-line geospatial tools that local governments can use to meet their business needs; and**
8. **Sustainable funding to provide the GeoLibrary Board with the capabilities to meet those needs.**

4.7 Sustainability Assessment

Simply put, the Maine GeoLibrary Board cannot continue to sustain itself without additional financial resources.

The major cost savings available to Maine are through the development of up-to-date, accurate statewide framework geospatial data and providing accessibility to that and other geospatial data from across the State. This should be done through infrastructure such as the Geospatial Data Catalog, the Orthoimagery Viewer and the GeoPortal. With resources to provide those infrastructure assets, the GeoLibrary Board can make geospatial tools available to State, county, and local governments so that they serve their constituencies better and more efficiently; not-for-profits so that they fulfill a host of environmental and social needs; private citizens so that they gain access to and transparency in government; tourists so that they can plan scenic trips to the State; and businesses so that they can locate, build and thrive in Maine.

Maine's statewide geospatial program is at a critical juncture in its development. While the GeoLibrary Board, MEGIS and the State Agency Stakeholders have made remarkable progress working together in the past few years, the program has less than $70,000 in its coffers with which to continue. The development and release of the GeoPortal in this coming year is a major step forward. Nevertheless, it will need modifications and improvements over time. Also, resources will be required to educate communities on the benefits of having the GeoPortal host their geospatial data, to develop web service templates that meet their business needs, and to assist them in taking advantage of the benefits that this technology can provide. Also, there is a significant need for creating and maintaining statewide geospatial data. This starts with a program for new orthoimagery and parcel geospatial data. It includes new high-resolution elevation geospatial data as well as a unified roads and address geospatial data set. All of these items are essential for the statewide community if Maine is to stay competitive with states across the country.

Currently, the annual cost to the State of Maine to support the Board for web and GeoPortal hosting as well as geospatial data storage and two part-time staff from MEGIS is approximately $200,000. (Program costs for geospatial data development , development of web service templates for municipal service applications and other needed items are significantly higher than that and are listed in Appendix H.) In addition, the State is in great need for an individual working under the auspices of the GeoLibrary Board as a statewide GIS coordinator who would assist in implementing a robust GIS coordination program as well as in managing the implementation of the GeoLibrary's initiatives. Finally, an individual who can assist communities in posting their geospatial data and obtaining updates on a regular basis is badly needed as well. These two positions would add approximately $200,000 to the Board's annual operating expenses. The total budget for this plan is included in Appendix H.

5. PROGRAMMATIC GOALS AND OBJECTIVES

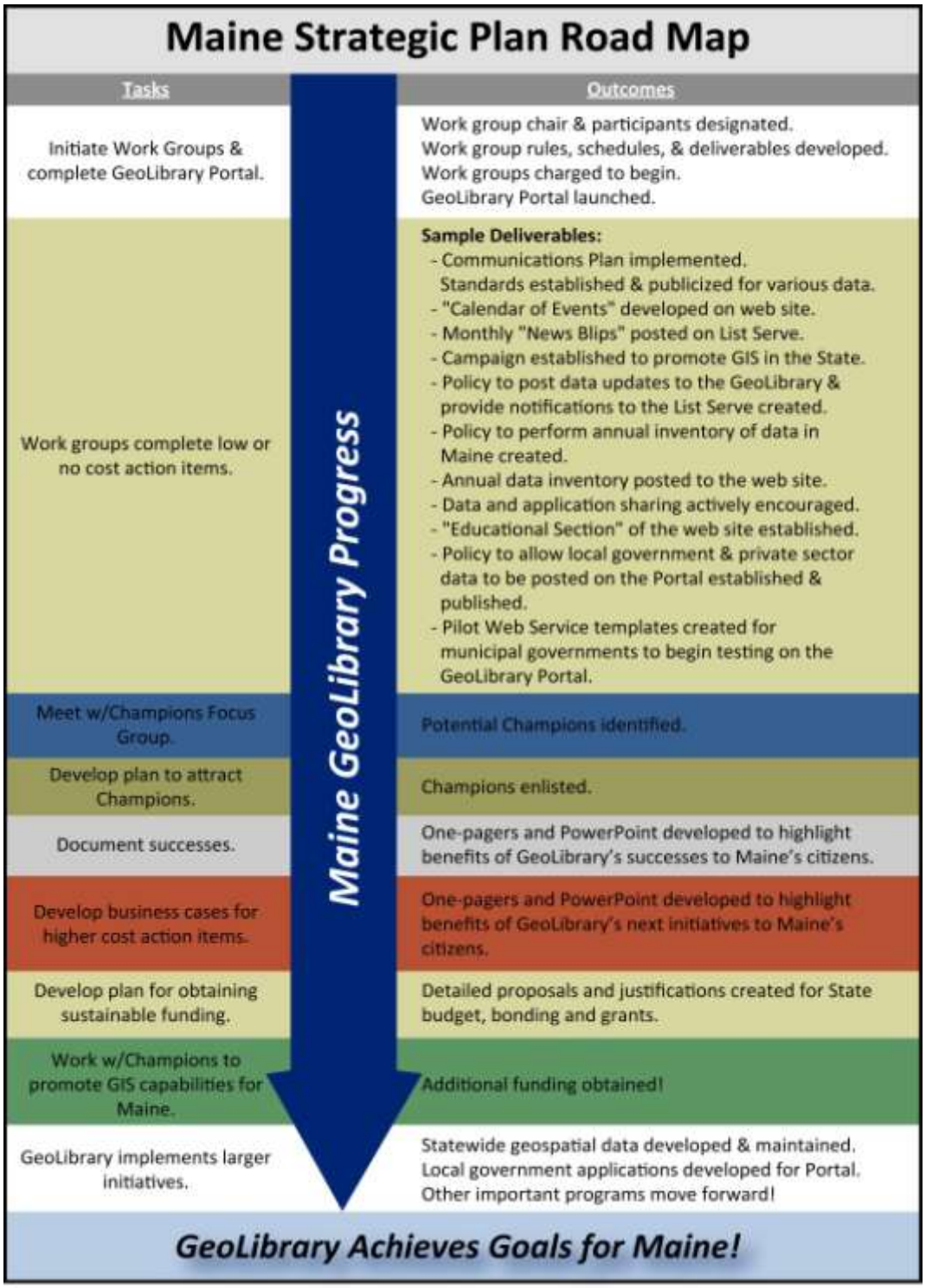


Figure 5-1: The above diagram depicts the road map for the implementation of the Maine Strategic Plan.

In order to best meet Maine's geospatial needs and/or issues, the Sewall Team is recommending that the Board implement a strategy using multiple work groups focusing on each of the major areas that have been defined by the user community, the 2002 Strategic Plan and the Board itself. This recommendation has been driven by the following imperatives. The Board needs to:

- Increase its coordination activities and secure additional help to do that;

- Improve its name recognition across the State and to attract champions and funding to complete these important initiatives. (Having a larger number of people involved will help to create a sense of ownership for a greater portion of the geospatial community and to "spread the word" on its accomplishments).

- Demonstrate how it is making a significant and measurable difference for Maine. (Successfully taking action on a number of coordination issues as well as implementing a communications plan will be demonstrable steps in this direction (refer to Appendix E).

- Document its accomplishments and plans for going forward. (Between its past accomplishments, these current coordination initiatives and its future plans, the Board should be able to highlight these achievements effectively.)

- Demonstrate to key leaders in Maine how these plans will make a difference for the State. (This documentation should go beyond technology and concentrate on the specific, positive outcomes that these initiatives will have for Maine's citizens and businesses.)

We believe that this approach will provide the Maine GeoLibrary with the best opportunity to achieve its vision.

The situation facing Maine's GeoLibrary's Board is not unlike what other states are presently experiencing or have experienced in the past. The approach that the Sewall Team is recommending has proven successful elsewhere.[7] It involves a sustained effort, commitment to the process, and the willingness to seize opportunities that present themselves. While it can be challenging, ultimately it can be deeply rewarding and fun for those fortunate enough to be able to participate in it.

In order to accomplish this in its entirety, significant capital and operating funding will be required. Given the current fiscal situation,[8] obtaining funds will be extremely difficult, if not impossible, in the near term. However, that doesn't mean that it will be impossible down the road with the right assistance. The graphic on the following page illustrates the overall road map strategy that the Sewall Team is advocating for the implementation of the Maine Strategic Plan.

A key advantage for the Board is its impending rollout of the new GeoPortal. This portal will provide a place where local government, not-for-profit, academic and private sector geospatial

[7] http://www.ctg.albany.edu/publications/reports/new_models

[8] "Experts in government finance say most state and local governments can expect at least another two years of revenue shortfalls," Associated Press, Albany Times Union, November 14, 2008.

The strategic plan must focus on accomplishing the following:

- **The Board needs to provide better access to state agency and local government geospatial data as well as offer the opportunity for academia, not-for-profits and the private sector to make their geospatial data available through its GeoPortal.**
- **In addition, the Board needs to put forward a significant effort to coordinate geospatial data and application development, training, and other activities across the State.**
- **The Board also needs to establish an on-going program to provide and maintain new and existing statewide geospatial data. This geospatial data must meet the needs of both State agencies and local government in order to eliminate redundancies and save costs for all.**
- **Finally, the Board needs to promote the use of GIS to those outside the geospatial community to save money and improve services in both the public and private sectors across the State. In addition, Board members must act as ambassadors for the Board to the constituencies that they represent.**

data can be stored, easily accessed for download and used via web services. This technology has the potential to assist the Board in solving key geospatial data storage and access problems for multiple users from around the State. And, with the development of application templates, the GeoPortal will enable the Board to provide some simple-to-use applications for local governments. This will allow local governments who choose to take advantage of this service the opportunity to gain benefits from GIS to solve their business needs without having to purchase anything more than a computer with Internet access and a browser. It will also encourage them to provide the GeoPortal with up-to-date local geospatial data that meets Board standards – a win-win for all.

The Board must start the process by involving a greater portion of Maine's geospatial community in its activities through the use of work groups. Then, it must turn to completing the GeoPortal, getting select geospatial data into it and promoting its use across the State. The Board must also provide easily accessible training opportunities to targeted communities and others around the State. In addition, it must execute a communications plan similar to the one that the Sewall Team has provided the Board (see Appendix E) and demonstrate to the State's key decision makers how GIS can be used to solve the real business problems facing the State and its citizens (refer to Appendix I – Developing Champions). The Board must then work with those decision makers to develop the business cases they need to support the Board's needs. Key to making much of this happen is using a more inclusive approach with the GIS community and hiring a statewide GIS Coordinator (or engaging the Board members to act as work group project managers) to implement the major initiatives for the Board. This approach has been detailed in Appendix F.

5.1 Coordination, Funding and Support/Leadership Strategies

- Statewide Coordination

  In its role as a statewide coordination organization, the geospatial community in Maine is looking for the Board to make some significant steps forward. Key areas requiring attention and potential solutions for meeting those challenges include:

  - Improving statewide geospatial data access and development:
    - Work to develop policies that encourage State agencies, local governments, academia and not-for-profits and others to complete geospatial data inventories on an annual basis.
    - Post geospatial data and metadata to the data catalog and the GeoPortal as it's developed.
    - Notify the geospatial community when geospatial data updates are made and invite geospatial data developers to let others know when geospatial data projects are planned to encourage partnerships and sharing.
  - Lowering the cost of entry into the GIS arena for local government:
    - Implement the Board's plans to house geospatial data from both State agencies and sources other than State agencies on the GeoPortal.
    - Develop easy-to-use web service applications for the GeoPortal which meet the business needs of local government and make those available to local governments who host their geospatial data on the GeoPortal.
  - Facilitating communications on GIS activities, opportunities, across the State:
    - Grow the GeoLibrary List Serve. Encourage its use to announce activities, training opportunities, grants, new geospatial data updates, new Board initiatives and updates on on-going ones.
    - Update the web site weekly. Post the annual geospatial data inventories. Create a "Calendar of Events," an "Educational/ Training" section, and a "What's New" section on the web site.
  - Promoting the use of GIS to prospective users and potential supporters across the State:
    - Develop an annual calendar of speaking engagements across the State that targets both technical and non-technical conferences, meetings, and seminars.
    - Schedule different Board members and others to provide the presentations.
    - Develop a PowerPoint slideshow that describes GIS and its ability to bring results by assisting various sectors in meeting their business needs. Include slides that demonstrate how the Board, through its initiatives, is making a difference in Maine.
    - Target groups and individuals who can provide the support to move the Board's initiatives forward.

  The entire list of issues revealed during the study and potential solutions/action items relating to them is depicted in the "Overall Maine GeoSpatial Listing of Issues and Action Items" in Appendix D.

- Geospatial Champion(s)

  One of the key characteristics of successful statewide GIS coordinating programs is having champions that actively promote GIS and assist in obtaining funding for their coordination program's initiatives. (Reference NSGIC Coordinating Criteria – Appendix O.) The Board has recognized this as an issue and has stressed it as a major need. Through the statewide on-line survey, a number of individuals were identified as potential champions for the

GeoLibrary. The Sewall Team recommends that the Board consider "cultivating" multiple champions in different sectors. It also recommends that the process of identifying, developing and nurturing champions be not just a one-time effort, but a continual effort by the Board. Lastly, it also suggests the Board consider having an annual planning session with its champions to determine the best approach to attain the resources needed to support its initiatives.

Working with the Project Team, the following steps have been determined:

- Identifying potential champions – While a number of the individuals already identified would make marvelous champions for GIS in Maine, they are also greatly sought after by many others around the State as well. Recognizing this, it is suggested that the Board initiate the process by inviting a select number of those individuals to a focus group session, and, using a facilitator, identify more realistic champions that could actively support the GeoLibrary's initiatives and assist in acquiring the required funding.
- Determining "hot buttons/issues" – After potential champions have been identified, the issues that are important to them should be listed. Those issues that GIS can clearly assist in resolving should then be noted. Next, the list of champions should then be prioritized based on the influence of the potential champions (individuals or organizations) and the ability of their issues to be resolved using GIS.
- Recruiting – The next step is to devise a plan to recruit these champions. It is suggested that a few approaches be considered. These include developing a "one pager" discussing how GIS can be used to help achieve the champions' goals, providing a non-technical PowerPoint presentation that delivers the Board's "key message," and/or developing a small, easy-to-understand project that demonstrates how GIS can be used to assist them in resolving their issues and achieving their goals. Lastly, the Board should be prepared to delineate its future needs clearly and how the champions might be able to assist in achieving them.
- Developing (and nurturing) champions – Once the potential champions have expressed an interest in GIS, the Board needs to be prepared to assist them in locating the resources needed to achieve their goals. It is extremely important that the Board be able to respond quickly to requests that the champions make. The Board may wish to assign a "point person" for each champion to insure that issues are resolved and action items are completed properly and in a timely manner and to provide regular communication with each champion on providing assistance on Board initiatives.

  Additional information is available on this area in Appendix I, "Developing Champions", Appendix E, "Communication Plan," and Appendix D, "Overall Maine GeoSpatial Listing of Issues and Action Items."

- <u>Sustainable Funding</u>

  Almost every state GIS council across the country struggles to obtain and maintain sustainable funding for its operations and initiatives. In the State of Maine, the GeoLibrary has been supported from its inception by funding from bond proceeds. While this approach is generally not regarded as a "sustainable" funding mechanism, it may be the GeoLibrary's best hope for funding in the near term. As such, the Board applied in 2007 and again in 2008 for bond funding to support its new initiatives. In addition, as noted previously, the Board continues to receive operational support from MEGIS (two half-time staff as well as

assistance from its director as time permits plus servers, maintenance, and other services) and donated time from Board members. While the CIO continues to support MEGIS and the GeoLibrary, he has expressed a need for funding to cover his annual cost attributed to Board activities approaching $200,000 annually.

Ideally, the GeoLibrary would have its base operational costs covered every year in the State budget. These would include MEGIS staff and infrastructure costs and any other staff employed by the Board, travel expenses, and maintenance costs for equipment, services, and geospatial data maintenance. Then, when new or additional initiatives arise, the Board would be able to request additional funds in the biennial budget (or through such resources as bond proceeds and grants) to cover them.

To justify a base budget item for the Board's operational costs, it is recommended that a return on investment (ROI) case for the Board's statewide GIS coordination activities be developed. It is suggested that this be assigned to the Finance Committee working with the Technical Committee or a designated sub-committee to develop a methodology to convert some of the GIS benefits to dollar amounts or payback ratios. These could then be presented to offset the funding being requested. Examining the savings created by providing municipalities with data storage facilities and/or municipal applications (thereby saving them the cost of storage, GIS software or extensive hardware) is a prime example.

Additional detail is available on this area in Appendix J, "Sustainable Funding."

5.2 Geospatial Data Strategies

Improved access to existing State and local geospatial data was of significant importance to many across the State. This potentially can be accomplished with minimal cost.

It was clear from the meetings and the on-line survey that the Maine geospatial community is anxious to receive updated digital orthoimagery for the State. They also want statewide parcel geospatial data, a single uniform roads and addressing file and high-resolution elevation geospatial data for the State. All these require time and funding to varying degrees. Realistically, this funding may not be readily available in the near term. However, of significant importance to many is improved access to much of the existing geospatial data. This potentially can be accomplished with minimal cost. It would include developing geospatial data inventories annually (as noted in Appendix D). It would also include campaigning for geospatial data and metadata to be posted in the Geospatial Data Catalog and on the GeoPortal as well as putting in place policies that ask geospatial data developers to announce when geospatial data has been updated. If LURC geospatial data, for example, could be posted on-line, it could pave the way for others to be encouraged to post their geospatial data as well.

Geospatial data, such as creating a uniform roads and addressing dataset, may not require additional funding. Currently, the Department of Transportation produces a geospatial dataset of roads that is used to maintain State roads. At the same time, the Public Utility Commission

produces an E-911 roads and addressing file for emergency responders across the State. While both files serve different purposes, it would seem that there is potential for cost savings by creating one uniform file that meets the business needs of both. Given the current economic condition in the country, the Board should consider using this as an opportunity to combine these geospatial data sets to reduce State costs.

As noted above, the need for statewide parcel geospatial data as well as new digital orthoimagery were some of the most requested items in the public forums and on-line survey. Both of these require significant funding to implement, but both are greatly needed to help the State of Maine remain competitive with other states. It is suggested that a geospatial data work group be assembled (refer to Appendix F on work groups) to review the needs of both State, local government and non-government organizations.

The Board should consider recommending the development of one uniform statewide roads and addressing dataset. This could provide an example of how it can help coordinate GIS data development and potentially save data maintenance costs.

It is recommended that any statewide digital orthoimagery program follow the guidelines for the Imagery for the Nation Program that the USGS and NSGIC are proposing. This would include providing coverage that is affordable and meets State agency needs and allowing local governments to pay the incremental cost for improvements to the imagery to meet their needs. This would help insure that the program is relevant to all and eliminate the need for local governments to purchase orthoimagery geospatial data at a cost that may be double what the State could purchase it for through a statewide program. It should also be noted that the Board has an on-going survey to capture uses of orthoimagery. This information should be provided to the work group as part of their analysis in establishing any new orthoimagery program.

As each geospatial data set is developed, a long-term plan for updating it must also accompany it. In the case of the orthoimagery program, the Sewall Team would advocate a yearly update of a portion of the State on a rotating basis to keep the cost constant yet meet the needs of the people.

While the top four geospatial data needs include orthoimagery, parcel, uniform roads and addressing, and high-resolution geospatial data, a number of additional valuable geospatial datasets were also requested. This listing is included in Appendices L-M. As the opportunity presents itself, the Board should plan to develop this geospatial data and put in place a maintenance program for each.

5.3 Technology Strategies

The Board's current initiative of rolling out the GeoPortal and providing web services establishes a solid foundation to meet a number of the needs of the Maine geospatial community. The Sewall Team recommends the development of web service templates to deliver easy-to-use applications to municipal governments, providing them the advantages of GIS without requiring significant infrastructure, training, or costly software. It also suggests that the Board consider the development of Google Earth and/or Virtual Earth applications to deliver geospatial

information to citizens in a widely used format in a manner similar to that which the DEP and the DOT are currently using.

5.4 Standards

It is recommended that the standards listed in the 2002 Strategic Plan (refer to Appendix A) as currently not done be completed by the geospatial data work group (in conjunction with the Policy Committee) in accordance with the project plan in Appendix G. It is also recommended that the parcel standards be reviewed by the ILRIS work group (in collaboration with the Policy Committee) to determine if they require updating to meet the needs of the proposed Integrated Land Records Information System.

5.5 Organizational

- Executive Support
  The Board enjoys support from Richard Thompson, the CIO. He continues to provide part time staffing support from MEGIS for the Board. Michael Smith, the Director of MEGIS, who represents the CIO on the Board, actively supports the Board as well. Nevertheless, it has been made clear that the Director of MEGIS's role is to support State agencies and not to engage in statewide GIS coordination. As such, a significant gap exists for statewide coordination and for aligning the GeoLibrary with the NSGIC coordinating criteria. The GeoLibrary Board, itself, does not appear to have a close working relationship with the Governor or the Legislature at this point. That is an area that the Board needs to work on over the next year.

- Coordination and Oversight Procedures
  There are a number of coordination issues that need addressing by the Board for the State. These are identified and solutions for each have been proposed in Appendix D. In order to implement the solutions for these issues, the plan requires the formation of a Coordination Work Group (refer to Appendix F) to develop detailed plans for the best way to implement each solution and to assist the Board in its implementation. In addition, it is strongly recommended that the Board hire a statewide GIS coordinator reporting directly to the Board who can:

  - Serve as a program manager/executive director to implement the Board's initiatives;
  - Coordinate GIS activities across the State;
  - Represent the Board in meetings with groups; and
  - Help to coordinate work group activities for the Board.

  The diagram on the following page depicts how the project manager would interface with the Board and work groups and the corresponding roles of each.

  Should the Board be unable to hire a statewide GIS coordinator, the management of the work groups and the implementation of the solutions will need to be distributed between the Board (or its designees) and the work groups' leaders.

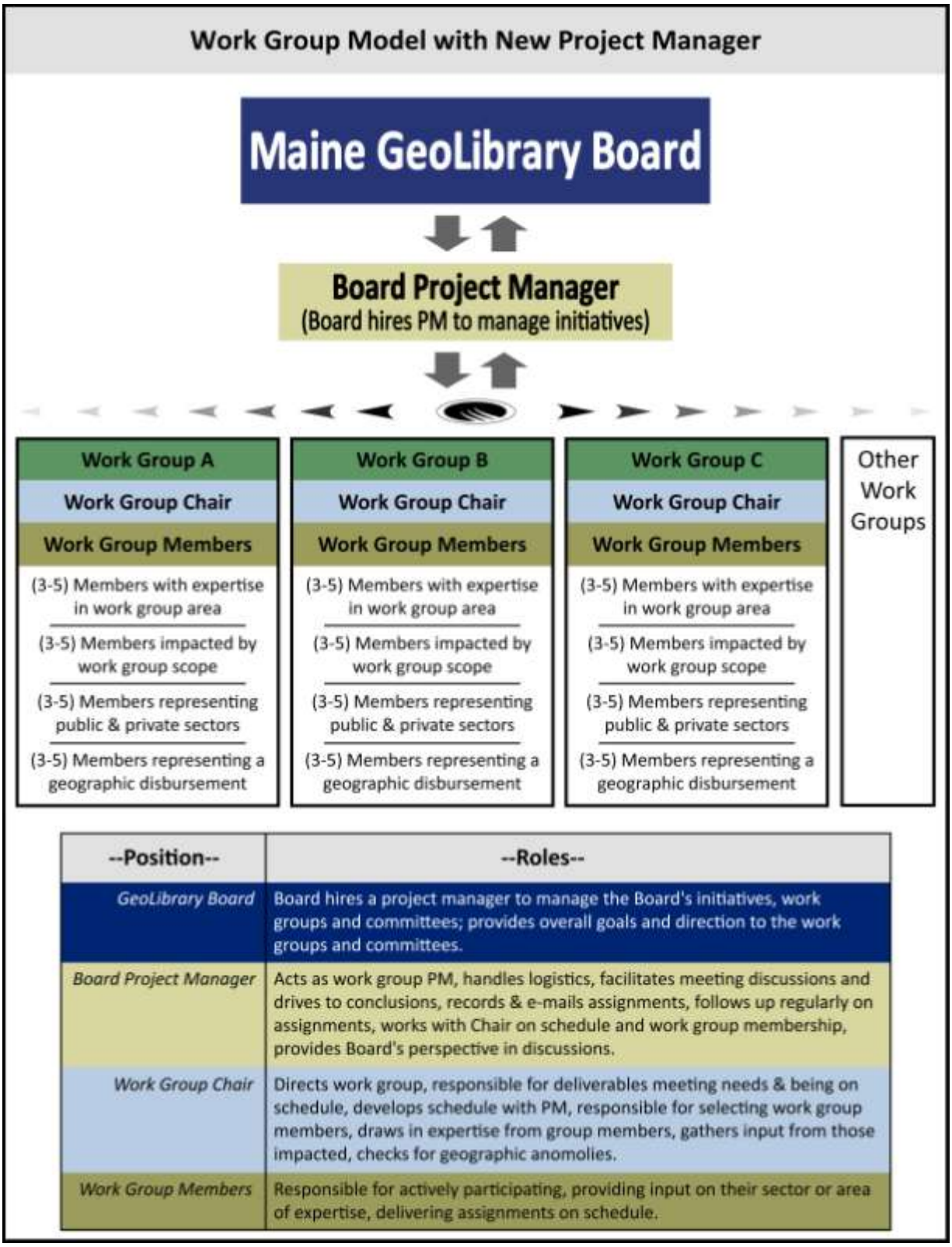


Figure 5-2: The above diagram depicts how the Board would implement the strategic plan with a full time project manager.

- Policy
  As there are a number of significant policy and standards issues that greatly impact this plan, it is recommended that the Policy Committee work with the Coordination Work Group, the Geospatial Data Work Group and the ILRIS Work Group to develop the various policies and standards noted in Appendix D.

- Staffing
  This plan suggests that the Board obtain two additional full-time staff to implement its programs. First and foremost is a state GIS coordinator. As noted above this person can serve as the spokesperson for the Board to individuals and organizations across the State. More importantly, though, this person will serve as the program/project manager (as depicted in Figure 5-2) and executive director to implement the Board's initiatives. This plan requires heavy involvement from volunteers from the Maine geospatial community and from others across the State. This methodology can be highly successful, but it does require a significant amount of coordination and facilitation. Having a staff person to oversee these initiatives for the Board will help to move them forward much more effectively. It is recommended that this person be energetic, have good interpersonal skills, be a good project manager, good facilitator, and, if possible, have knowledge of the Maine geospatial community. Ideally the Board would be able to acquire funding and the ability to fill that position. If not possible at this point in time, the next preferable solution would be to hire a person via contract. Lastly, the Board could look at the possibility of borrowing such an individual from an agency in state government or using Board members to jointly fill this role.

  A second person is also requested to primarily work with the development of geospatial data for the implementation of the ILRIS program. However, we would also recommend that this person be responsible for working with local governments to bring geospatial data and metadata into the GeoPortal on a continuing basis to insure its success.

- Budget Requirements
  Maine's State budget is biennial. Its fiscal year starts on July 1st. The next opportunity to submit a budget request is in the late summer/fall of 2010, which, if successful, would provide funds for the fiscal year starting in July 1, 2011.

  The budget proposed is divided into program and operating costs. The operating costs include MEGIS operating costs, a new statewide GIS coordinator and a new parcel and data assistant starting in FY 2011. It also includes program costs for a parcel grant program, implementation of an integrated land records information system, a statewide digital orthoimagery program, implementation of municipal service application and development of a conservation land maps program in FY 2011. The following year includes continued funding for these programs as well as funding for a statewide high resolution elevation data program and a program to update Maine's land cover data statewide.

  Details on the budget requirements have been delineated in the "Budget for the Maine Strategic Plan," located in Appendix H. It should be noted that these costs can be reduced if grants from the federal government can be used to match State funds.

- Outreach
  Outreach is an area in which the Board must make significant improvements if it is to be successful in moving forward with its initiatives and obtaining funding for them. This need and solutions to the issues are covered in significant detail under the Communications Plan in Appendix E and in the "Overall Maine Geospatial Listing of Issues and Action Items" in Appendix D.

- Risk Assessment
  Change always appears risky to those who will be impacted by it. Certainly, the change advocated in this plan involves additional involvement by the Board members and the coordination of a great deal of activities. As a result, there is a risk that the Board may fail. However, the risk of the GeoLibrary Board not taking decisive action immediately is even more significant. The Board is quickly reaching a position in which it will have no funds with which to operate. It can't continue indefinitely without additional funding, so building a case to obtain that funding is paramount.

  In the end, the risks inherent in the Board not moving forward with these initiatives to improve statewide GIS coordination and communication far outweighs that of the status quo. If the Board moves forward, the Sewall Team is confident that it will be able to build on past successes and demonstrate its relevancy for implementing future initiatives.

6. IMPLEMENTATION PROGRAM

The reality of the current economic situation may preclude the GeoLibrary from obtaining the substantial funding it requires to move forward on several major initiatives. However, there are a number of other, equally important initiatives that can and must be done by the Board in conjunction with many others across the state in the next 12-18 months to position the GeoLibrary as an effective statewide GIS coordinating entity and assist the state of Maine's geospatial community.

6.1 Lessons Learned

Three areas stood out among the many insights gathered from the participants in this study:

- The need for better access to geospatial data
  In spite of the great service that Maine's Geospatial Data Catalog provides, most users feel that access to updated State and local geospatial data is one of the major needs that must be addressed. With one exception (parcel geospatial data from the 74 municipalities who received parcel grants), only State agency geospatial data is housed or referenced by the Geospatial Data Catalog. In most cases, users feel that the geospatial data in the Geospatial Data Catalog is not current. Thus, those in State agencies, local government, not-for-profits, academia, and the private sector must at times go through arduous searches for geospatial data they need to meet their business needs. This is costly, inefficient and frustrating for users and they made that clear in the forums. It must be noted that the GeoLibrary's new GeoPortal can be the infrastructure needed to address a significant portion of these issues if significant efforts are made to populate it with up-to-date geospatial data from all sectors.

- The need for the creation and maintenance of key, statewide geospatial data
  Geospatial data creation and maintenance are needs that Maine's geospatial community looks to the GeoLibrary to provide. While the community is very happy with the digital orthoimagery flown in 2003-2004, users from across the State have made it clear that a program that provides regular updates is greatly needed. Other high priority statewide geospatial data that are needed include parcel geospatial data, a single uniform roads and addressing geospatial data set, and high-resolution elevation geospatial data.

- The need for improved geospatial coordination activities across the State
  Over the years, the GeoLibrary has provided the Maine geospatial community with geospatial data and technical capabilities. However, this study illustrated a significant need for other geospatial coordination activities across the State. This is an area in which the GeoLibrary Board can greatly improve by facilitating communication. (It should be noted that the Board took the first steps to doing this during the study by updating its web site and establishing a statewide GIS List Serve for Maine.) By simply knowing who is working on what projects, what geospatial data is being developed and how to obtain GIS training/education, time, effort, and costs can be saved and new partnerships can be formed. Maine needs a person dedicated to statewide GIS coordination to address these issues.

6.2 Prioritization of Recommendations

Appendix D lists the more than 35 issues that were identified through this study. At first glance, the number of issues to be addressed may look overwhelming. However, many of them are not huge and do not require significant amounts of funding to resolve. All can be important to one or another of the constituencies in the Maine geospatial community. Some require a significant amount of groundwork to move forward. Others do not. In the end, the Sewall Team recommends establishing each of the work groups as noted in the proceeding section and prioritizing work on the issues within each work group. Suggestions for overall prioritization can be reviewed in Appendix D. The highest of these priorities is listed in the box below. The Sewall Team recommends that the Board adopt these recommendations in accordance with their ability to manage the work groups and committees and, realistically, obtain the funding. It would note that the Board's ability to manage these groups is one of the keys to its success in implementing these programs.

Priority Recommendations:

- **Implement the GeoPortal.**
- **Hire a statewide GIS coordinator (or implement the alternative concept proposed Section 6.3).**
- **Establish work groups.**
- **Develop a set of policies for sharing public and private geospatial data including notification of new and updated data and providing access to that data.**
- **Implement the communication plan.**
- **Perform an annual inventory of geospatial data across the State.**
- **Develop simple-to-use web service templates for municipalities to use through the GeoPortal.**
- **Establish a coordinated campaign to promote the use of GIS.**
- **Implement an integrated land records information system.**
- **Create and update statewide geospatial data: orthoimagery, parcel, unified roads, and elevation data.**

If management of the work groups and committees becomes a limiting factor, the Board should consider the implementation of the GeoPortal through the Technology Committee to be the highest priority. First and foremost, the Board needs to fully implement its GeoPortal and develop a program to encourage and assist programs for communities, not-for-profits, academia, the private sector and citizens to post geospatial data and take advantage of it. This should be closely followed by work from the Communication, Coordination, and, of course, the ILRIS and geospatial data work groups.

Imagery and other geospatial data were noted as significantly important to the geospatial community, but they involve significant funding (or handling significant and time-consuming issues such as creating a single, uniform roads and addressing geospatial data set). A number of items can be done in these other areas that will address several of Maine's geospatial issues with little or no funding. In the meantime, working in these areas will demonstrate the Board's effectiveness, build a constituency for the Board through its coordination activities and allow it

to move forward with a solid business case to obtain funding for implementing ILRIS and other statewide geospatial data initiatives.

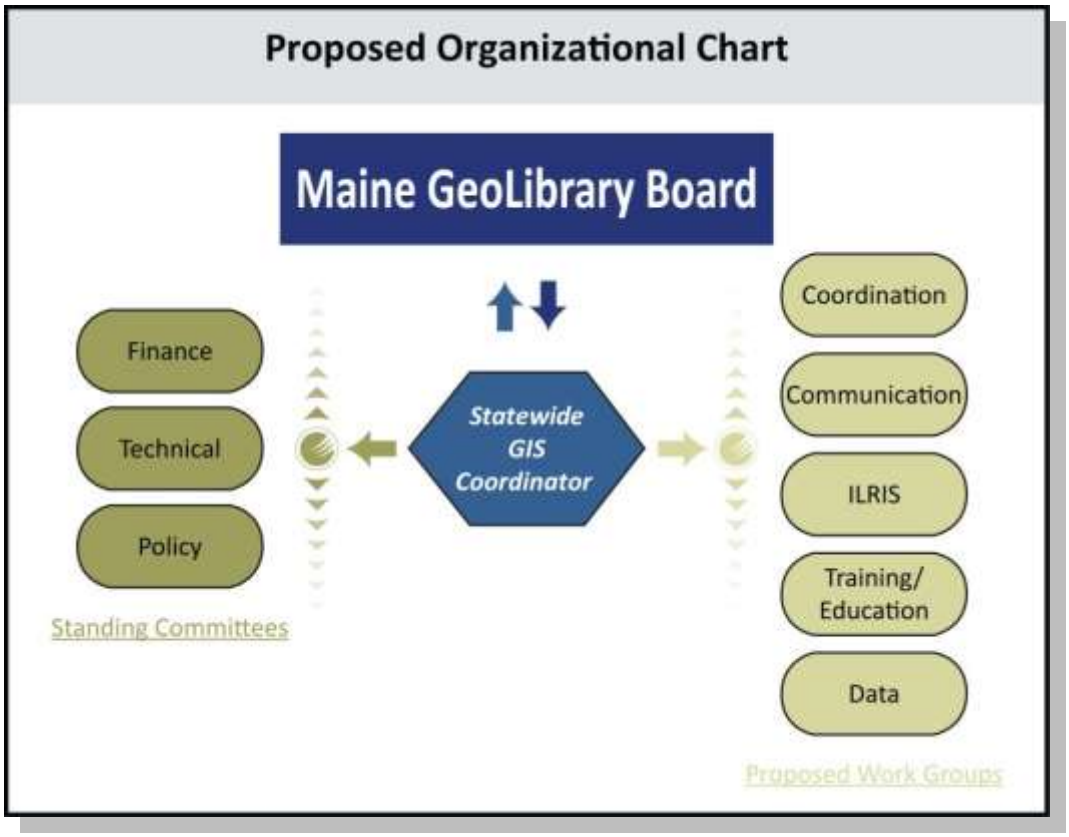


Figure 6-1: The above diagram depicts the ideal organizational schema for the implementation of the Maine Strategic Plan.

6.3 Economic Reality Impacts the Plan

Since this project began in 2008, the world has been plunged into a recession whose magnitude has not been witnessed since the U.S. went through the great depression. This has been devastating for both the private and the public sectors. As a result, the likelihood of getting additional funding from the State at this time to implement this plan is remote. Furthermore, the next State budget funding request cycle won't begin until the fall of 2010. So, what should the GeoLibrary Board do?

Actually, that works well in one regard – it allows the Board the time it needs to establish the work groups, implement the low or not cost solutions, document its successes, cultivate champions and put together the business cases and strategy to obtain sustainable funding.

This sounds like a lot of time; however, it really isn't. A number of decisions have to be made and a lot of work completed in the short term to set the Board up for long term success. In addition, alternative options to manage this work must be explored. Assuming that the Board isn't able to obtain a staff position for a full time project manager, then there will be a

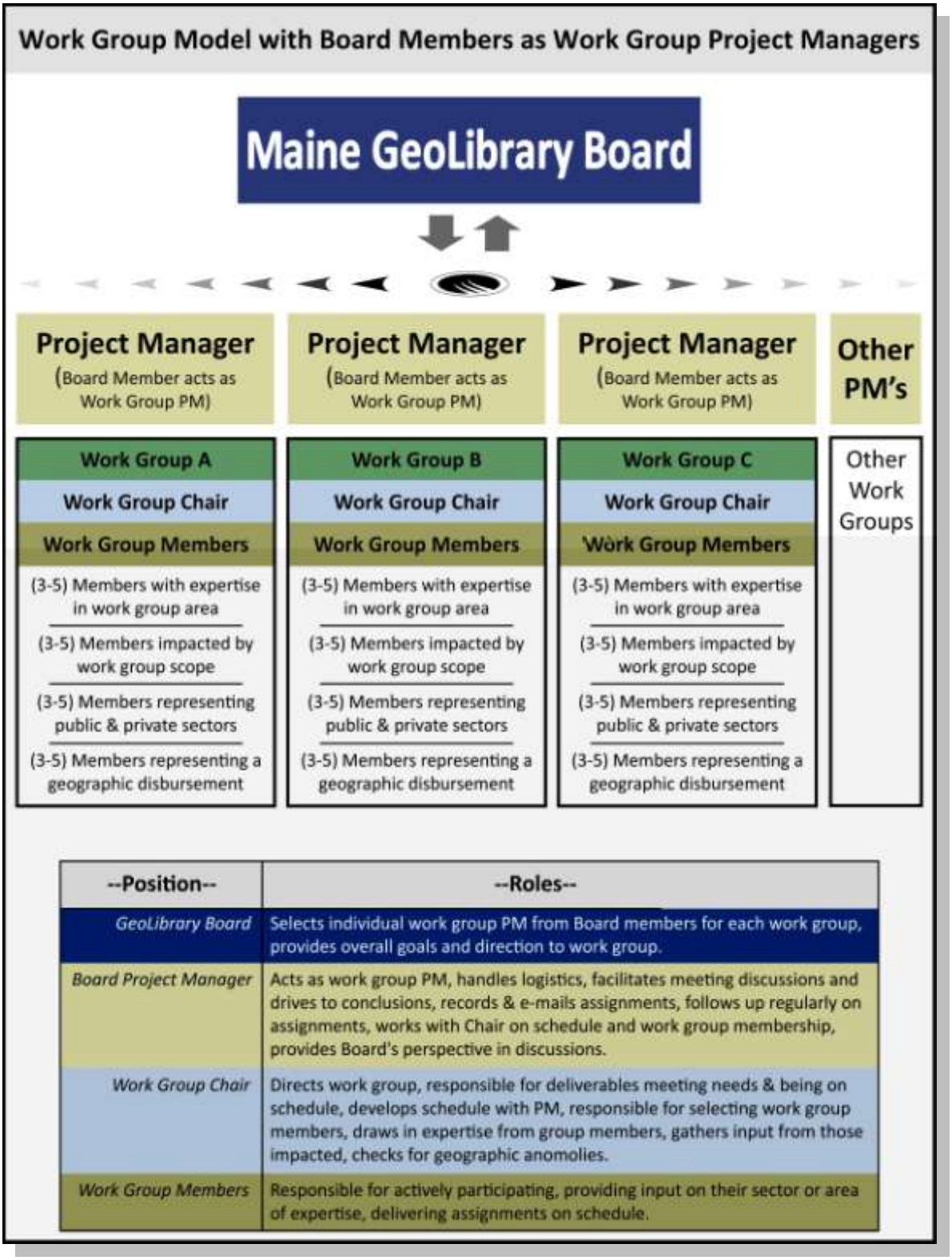


Figure 6-2: The above diagram depicts an alternative organizational schema for the implementation of the Maine Strategic Plan.

requirement for the Board members as well as work group and committee chairs to take a much more active role.

The previous diagram provides an alternative structure that could be implemented. This structure would call for specific Board members to be assigned the role of project manager for individual work groups. This allows the Board to proceed, but requires a greater role to be played by those Board members selected as project managers.

6.4 Implementation of Sub-projects

After reviewing the issues noted in the Appendix D, the Sewall Team recommends the following work groups. By establishing these work groups, the Board can effectively move forward now and make progress while pursuing opportunities for funding.[9]

- Coordination
  This work group will be charged with such actions as geospatial data inventorying, accessibility and sharing issues; coordinating application development. It is recommended that the Policy Committee work directly with the Coordination Committee to develop policies needed to implement solutions to the coordination issues.

- Communication
  This work group will be charged with improving the flow of information across Maine's geospatial community; providing content to update web site content on a regular basis; and insuring that the Board's progress on each of the issues outlined in the Strategic Plan is made known across the State.

- ILRIS
  This work group will be charged with the ultimate implementation of the Board's Integrated Land Record Information System. It would start by looking at standards and other items needed up front to insure its long term success.

- Geospatial Data
  This work group, working with the Policy Committee, will be charged with developing necessary standards as well as defining the geospatial data needs and flows between local, county, State and federal governments. It shall also take into consideration special requirements that not-for-profits, academia and the private sector may have.

- Education/Training
  This work group is charged with establishing an area on the web site to post training opportunities and encouraging trainers to use the GeoLibrary's List Serve to post opportunities. It is also charged to establish links from the web site to the higher education sites/curricula from across the State and to work with the university consortium to help meet user-training needs.

[9] Appendix F, "Using Work Group Collaboratively" details how each of these work groups can be assembled and run and what the keys to their success are.

Items for Action Now!	
GeoPortal	Fully implement the GeoPortal's services.
Communicate	Use the List Serve and the web site to regularly inform Maine's geospatial community about the GeoPortal. Put notices out on its capabilities through the MMA, County Commissioners Association, and other organizations. Note its capabilities, cost savings and willingness to host geospatial data at no cost.
Local Government Web Applications	Form work groups that include local government to develop easy-to-use web applications that provide needed services for local governments.
Train	Train potential users across the State both in person and on-line on the GeoPortal. Use training as a marketing opportunity for the Board's other initiatives as well as a means to acquire geospatial data.
Geospatial Data	Get geospatial data into the GeoPortal by working with State agencies, communities across the State, not-for-profits, academia and the private sector.
Public Relations	List positive statements from users across the State. Perform a survey from the user community to identify the types of different applications supported by geospatial data (like digital orthoimagery). Document those and use on web site and in documents and presentations.
Statistics	Get statistics on uses of the GeoPortal. Look at hits on the Data Catalog and number of downloads as well as the value of the downloads. Consider the money saved in storage, software (web services), and time and effort for geospatial data access that the GeoPortal provides.
Key Message	Put together a "one pager" on the current and potential benefits from the GeoPortal. Discuss potential savings to local government and how the GeoPortal is lowering the barriers for those governments to gain benefits from GIS through the GeoPortal's municipal web service applications.
Communication	Put in place the communications plan provided in Appendix E.
Work Groups	Establish work groups and involve more people.
Increase Statewide Coordination	Increase statewide GIS coordination efforts by undertaking the "no" or low cost" solutions listed in the "Overall Maine GeoSpatial Listing of Issues and Action Items" (See Appendix D).
Document Successes	As the work groups produce deliverables, be sure to communicate these successes to the geospatial community as well as key decision makers.
Target Potential Champions	Target potential champions who will benefit from enhanced geospatial information and who are interested in geospatial information, and work with them to acquire the needed legislative support for the GeoLibrary's initiatives.
Secure Funding	Having documented the successes, work with the legislature, the CIO, and the Governor's Office to secure operating and capital funding streams to support the GeoLibrary's efforts. Also, work closely with a USGS liaison to identify grant opportunities as they arise on an annual basis.

Figure 6-3: The above chart indicates specific items that can be done now to help better position the Board for future funding opportunities.

The Board currently has three committees. These are the Technical, Policy and Finance Committees. It is recommended that the Technical Committee be expanded to include additional members from across the State to assist in defining the application needs of local government. It is also recommended that the Policy Committee work closely with the Coordination Work Group (and constituencies involved) to establish the policies that will be required for its work. Finally, it is recommended that the Finance Committee be expanded to include key figures from across the State that can assist the Board in securing additional funding for its initiatives.[10] Figure 6.3 highlights a number of items that can be initiated now with little or no funding.

6.5 Phasing and Milestones

The following highlights several of the low or no cost tasks facing the Board as well as the approximate time frames for accomplishing them in order to position the Board to obtain sustainable funding in the next budget cycle. A detailed plan for the implementation of the initiatives has been developed and is available in Appendix G. It is suggested that the work group project manager and the team leader be allowed to modify this plan as needed while working within the overall time frames provided for deliverables.

- Task Highlights for 2009
  - April – June
    - Determine Board's best strategy for managing the initiatives.
    - Select work group chairs and work group members for the Coordination, Communication, Data, ILRIS, and Training/Education Work Groups. In addition, add members to the Technology and Finance Committees.
    - Finalize work group missions, deliverables and schedules.
    - Hold work group "kickoff" meetings.
    - Hold focus group meeting to identify potential champions.
    - Launch the GeoPortal.
    - Develop an announcement of all GeoLibrary standards and place announcement on the List Serve and on the web site.
    - Establish a "What's New" section on the web site.
    - Initiate monthly "News Blips." Post on the List Serve and the "What's New" section of the web site.
    - Develop plan to recruit champions.
  - June – September
    - Develop policy to inventory State agency and local government geospatial data.
    - Develop policy for notification of new or updated geospatial data via the List Serve. Post the notification of new data updates on the web site as well.
    - Establish a "Training/Education" area on the web site. Encourage GIS trainers, universities and other educational organizations to post training educational opportunities on the List Serve and the web site.
    - Initiate the GeoPortal training program.

[10] An example of a success story using this approach is documented in "Practice: A Guidebook to Organizing and Sustaining GeoData Collaboratives," pp. 9-17. It can be found at: www.metrogis.org/documents/articles/lessons_entire.pdf.

        - Initiate a program to encourage county and local government to post and share data through the GeoPortal.
        - Work with MEGUG on providing short write ups on geospatial "Lessons Learned."
        - Establish uniform statewide roads and addressing data standard.
        - Review and modify parcel standard to meet ILRIS and user needs.
        - Establish a "Calendar of Events" on the web site.
        - Determine digital orthoimagery user needs.
        - Develop campaign across the State to help others improve their GIS capabilities and lower the barriers to implementing and using geospatial technologies.
        - Establish a coordinated campaign to promote the use of GIS in State, county and local government as well as prominent private sector companies.
        - Recruit champions.
    - October – December
        - Inventory State agency and local government geospatial data. Post results on the website. Follow up with State agencies as required.
        - Provide monthly summaries of new data and data updates on the List Serve and the web site.
        - Encourage data developers to post data development plans on the GeoLibrary List Serve. Post data development plans on the web site.
        - Provide training to select high school teachers as part of a pilot program to enable them to use GIS to improve their ability to teach courses.
        - Implement program integrate DOT and E-911 roads and addressing data.
        - Implement parcel standard modifications as necessary. Post on List Serve and web site.
        - Design digital orthoimagery program that can be meet user needs and lends itself to a consistent, achievable funding stream.
        - Create a geo-coding service with statewide access.

- <u>Task Highlights for 2010</u>
    - January – March
        - Document progress being made by the GeoLibrary and obtain user community anecdotes.
        - Build business case for a digital orthoimagery program for the State.
        - Build business case for parcel development and maintenance grant program.
        - Build justification of sustainable funding for operating and other initiatives. Develop and nurture champions.
    - April – June
        - Work with the CIO, State Agency Stakeholders, MEGUG, and MMA to encourage all application developers to post application development plans on the GeoLibrary Board List Serve prior to starting work and encourage application sharing/partnerships where practical.
        - Develop budget proposal for next budget cycle.
        - Integrate champions into plans to obtain sustained funding.
    - June – September
        - Develop presentations, one-pagers and other documentation/demonstrations needed to sell initiatives.

- October – December
  - Coordinate budget activities with the CIO and MEGIS.
  - Initiate a training program to help users to take advantage of Google or Virtual Earth.
  - Work with champions to secure sustained funding.
  - Perform presentations and solicit support for program from across the state.

6.6 Budget Plan

In the research for this project, it became clear that in order to develop sustainable funding for Maine's GeoLibrary initiatives, multiple funding sources would have to be explored. Now, that an economic crisis has hit the nation, this is even more apparent. Maine's initial program received funding from bond proceeds, and unlike many states that do not have such options, it still appears to be the most likely option for the State.

Below, we have delineated several funding sources. In addition, a detailed budget plan is included in Appendix H. This budget plan indicates the estimated costs for programs and operating costs over several budget cycles. It does not delineate the sources of those funds as the economic situation is too fluid at this time. Instead it is recommended that the GeoLibrary Board take advantage of whichever source may best meet its long term needs. As noted in Section 5.2, it is recommended that an ROI case for the Board's statewide GIS coordination activities be developed. This can always be used regardless of the funding source to demonstrate the analysis that has gone behind developing an initiative.

- Bond Funds
  In the fall of 2008, the GeoLibrary Board submitted a request to obtain bond funds for a number of their initiatives. This included a parcel grant program, an integrated land records program, digital orthoimagery, high-resolution elevation geospatial data, and development of regional service applications. Should these initiatives receive that funding, it would provide them with significant work for the next few years.

- Operational Funds
  The Board also requires operational funding. The priority item is to secure a statewide GIS coordinator or geographic information officer to serve as a project/program manager to oversee the Board's programs, to assist in statewide GIS coordination and to introduce Board initiatives across the State to the citizens of Maine. In addition to that person, an additional person is required assist in capturing the geospatial data required from communities across the State for ILRIS. This person can also work with local governments and State agencies to acquire other geospatial data that can be included to support the GeoPortal for users across the State. Other operational funding requested by the CIO includes covering the costs expended by MEGIS on a continuing basis to support the GeoLibrary.

- Grant Opportunities
  Although grant opportunities that are applicable to the needs of the GeoLibrary aren't as numerous as they once were, there are still several that should be closely considered. Most require an investment with State funds or "in-kind" service. Nevertheless where these grant

programs line up with the needs of Maine, they should be taken advantage of. One such opportunity is the FGDC's 2009 NSDI Cooperative Agreements Program. As explained by the State's USGS liaison, the following grant categories are directly applicable and should be considered. In all they would provide $75,000 in federal program funds with an investment of $25,000 by the State and should be pursued.

FGDC Cooperative Agreement Program
Recommended Grants

Grant Category	Description	Program Value	Federal Grant	State Match
CAP 1	Metadata Trainer and Outreach Assistance	$ 37,500	$ 25,000	$ 12,500
CAP 6	FGDC Standards Development and Implementation Assistance and Outreach	$ 37,500	$ 25,000	$ 12,500
	Total:	**$ 75,000**	**$ 50,000**	**$ 25,000**

Figure 6-4: The above chart shows potential federal funding options currently available to the Board through the FGDC. Other areas to pursue include digital orthoimagery through the USDA for the NAIP, FEMA, EPA, and other federal agencies.

Accordingly, a GeoLibrary subcommittee decided to pursue Category 1 funds to provide direct support and metadata training for regional organizations and municipalities ready to list their geospatial data in the GeoPortal. In addition, they agreed to look at applying for Category 6 to formally align the GeoLibrary parcel standard with the national cadastral standard in the following year.

Currently, digital orthoimagery is one of the most sought after and cost effective geospatial datasets that can be acquired on a statewide basis. In order to take full advantage of funding provided by the USGS National Digital Orthophoto Program and the National Geospatial Intelligence Agency's 133 Cities Program, the State should design its new program to be able to take advantage of NSGIC's Imagery for the Nation Program (IFTN) to insure funding in later years. As was discussed in this study's meeting with the federal government representatives (refer to Appendix N), the Department of Agriculture has modified its program to provide "leaf on" orthophotography every other year. Because such a large extent of Maine is considered agricultural land, the State can purchase 4-band imagery for the entire State for approximately $125,000 through NAIP. While this may not ideally meet all the needs of the State, it provides very inexpensive statewide coverage on a regular basis and should be closely considered.

- <u>Other Funding Options</u>
  - Recurring Funding Sources (E-911, Real Estate Transfer fees, etc.) – Undoubtedly, additional funding will be required to implement the Integrated Land Records

Information System. Ideally, this would come from a recurring source based on the system's use. If such a source were used, it would seem logical that some of its funding should be allocated for the development and maintenance of framework geospatial data such as digital orthoimagery and high resolution elevation geospatial data that would be required to accurately maintain the land records geospatial data. Similar examples are available from states like Virginia where part of the E-911 surcharge is made available for digital orthoimagery and other geospatial data used to support their E-911 services and shared with the state geospatial community. In Maine's case, where E-911 is a heavy user of the digital orthoimagery and, potentially, much other geospatial data, the Sewall Team recommends exploring the potential for increasing the E-911 surcharge to provide an annual program to keep the State's framework data up-to-date to insure that responders are equipped with accurate information to assist them in saving lives and property. In addition to the use of an E-911 fee, there is the likely possibility of a real estate transfer fee specifically designated for ILRIS and the data described above which will be needed to be updated on a regular basis to support it. The most equitable arrangement would be to use both of these sources (or a similar recurring funding source) support the development of the ILRIS and the requisite data development and maintenance.

- Economic Stimulus – The American Recovery and Reinvestment Act of 2009 may have significant funding opportunities for states' GIS activities as well as opportunities to demonstrate the power of the technology. However, at this time, it is not known precisely what funding in it is directly available for GIS. Nevertheless, initially it provides an outstanding stage to showcase the power of GIS. Almost every state is developing a mechanism to track the funds that it receives from the bill. A few are starting to employ GIS to track not only how much funding they receive and what it is being used for, but also "where" it is being put to use. The GeoLibrary Board and its partners should take advantage of this opportunity.
- Borrowing Staff – Lastly, recognizing that having a skilled GIS Coordinator (noted under the operational funding above) is key to the successful implementation of the GeoLibrary's programs, the Board should explore all options available. If acquiring a full-time equivalent position (FTE) is not possible, other options could include contracting for such services or seeking assistance from the Governor's Office to obtain project management staff through a loan from another State agency. In any case, selection of the proper person for this position is of utmost importance.

6.7 Marketing the Program

While the GeoLibrary Board has been fully involved in frugally spending its bond monies by providing parcel grants to 74 communities across the State and bringing digital orthoimagery, the Orthoimagery Viewer and the Geospatial Data Catalog to the entire Maine geospatial community, it has placed limited emphasis on marketing its initiatives and programs. This has given rise to a couple of issues. First of all, knowledge of who the Board is and what it has brought to Maine is very limited. As a result, the Board is greatly challenged to obtain additional funds to continue with its essential work. Second, the Board's initiatives, themselves, could benefit from additional, coordinated campaigns to educate potential users across the State on how to take the greatest advantage of them. With the advent of the Board's exceptional GeoPortal, a significant campaign must be taken to promote both its use and encouraging targeted geospatial data developers to provide geospatial data and metadata to it. This will not

only improve geospatial data sharing and the ease of use of GIS for the State, but also provide an opportunity for the Board to demonstrate its work in Maine.

Although some may take umbrage at the use of the term "marketing" by a government entity such as the Board, it is clear that it must turn much more of its concentration on communicating to the decision makers, geospatial community and citizens of Maine to insure the success of its current and future programs. **To assist the Board in achieving that, the Sewall Team has provided a Communications Plan.** The goals of this plan are to both demonstrate how the Board is making a difference in Maine and increase the support for the Board's initiatives. It involves establishing an active work group to provide the details on how the plan will best be implemented. The plan, itself, includes establishing an annual schedule of presentations and meetings by Board members across the State, growing the List Serve, upgrading the web site, establishing monthly "News Blips," and reporting to constituencies and obtaining input from the Maine geospatial community on a continual basis. Details of the plan are available in Appendix E.

It is clear that the Board must concentrate on communicating to the decision makers, geospatial community and citizens of Maine to insure the success of its current and future programs.

6.8 Measuring Success and Recalibration

This plan has resulted from a number months of input from users, analysis, feedback on that analysis and proposals to meet goals and objectives. While proposals for priorities and orders of precedence have been made in the report, the details should be ultimately left to the chief implementers – a statewide GIS coordinator and those participating on the work groups. While the time frames given for the deliverables are realistic, some variations should be allowed. Approximately nine months after this process begins, an independent review of its success should be completed. In starting out, goals can be established for the:

- Number of participants on the List Serve.
- Number of geospatial data sets in GeoPortal, Geospatial Data Catalog and the GeoLibrary web site.
- Number of folks who have been trained on the GeoPortal.
- Number of hits on the GeoPortal.
- Number of presentations made to different conferences, legislators, legislative committees, and other groups.
- Amount of funds received.
- Deliverables received from the work groups and committees.

In addition to the above, an on-line survey should be conducted to measure satisfaction and define changing needs. The Board should also consider conducting 3-4 listening sessions in different geographic regions of the State. Results from the metrics, survey and listening sessions should be analyzed and provided to the Board. That information should become the basis for an annual 1-day Board planning session in which the Board reviews progress and examines ways for improvement. At that time, it should determine what, if any, modifications in the plan are needed and establish its goals/objectives/ deliverables for next 12 months. It should conclude

by reporting back to the Maine geospatial community what the findings are and how it is using them to shape its actions.

7. FUTURE PLANS

Planning should be considered a continual process. As Alan Lakein, well-known author on time management puts it, "Planning is bringing the future into the present so that you can do something about it now."

As noted above, an interim check of progress and adjustments needed should be conducted annually using metrics gathered by the Board and direct input from the Maine geospatial community. Furthermore, because technology and user needs change rapidly, it's prudent to conduct a full strategic planning process every three to five years. While these can be conducted in-house by the Board, the success rate of such work is improved when an outside facilitator provides the services.

The recommended plan contains some very significant items. Because of that, certain initiatives have not been included. It should be pointed out that there is a need for other geospatial data as well. This is detailed in Appendices L and M. Should the opportunity arise to obtain this geospatial data by virtue of a unique funding program or otherwise, the Board should not hesitate to pursue it. In addition, given the current economic climate, the Sewall Team did not recommend establishing regional service centers included under Pillar 3 of the 2002 Strategic Plan. It, instead, chose a more cost effective approach by suggesting that generic templates be created using the new GeoPortal's web services at this time. This should be considered as a pilot project for providing cost effective GIS services of various communities, not-for-profits, and other organizations across the State. Once this has been developed and piloted with some municipalities, the approach should be re-evaluated along with the cost/benefit of regional service centers to determine the most valid approach.

A SPECIAL NOTE OF THANKS

The Strategic Planning and Integrated Land Records team of the GeoLibrary is grateful for all of the participation at interviews and forums throughout this geospatial data collection process by scores of individuals representing the full spectrum of public and private stakeholders inside and out of State.

8. ABBREVIATION GUIDE

ACE- US Army Corps of Engineers
ArcIMS - ESRI GIS software
ArcGIS Server- ESRI GIS software
Board - Maine GeoLibrary Board
CAP - Federal Geographic Data Committee's Cooperative Assistance Program
CIO – Maine's Chief Information Officer
Coordinating Criteria - National States Geographic Information Council's Coordinating Criteria
DEP – Maine's Department of Environmental Protection
DHS – US Department of Homeland Security
DOT – Maine's Department of Transportation
ECOHAB - The Ecology and Oceanography of Toxic Alexandrium Blooms
EPA – US Environmental Protection Agency
ESRI - Environmental Science Research Institute (the predominant GIS software company)
FEMA- Federal Emergency Management Agency
FGDC - Federal Geographic Data Committee
FTE - a full-time equivalent position
FY - Fiscal Year
GeoPortal - GeoLibrary GIS portal
GIS - Geographic Information Systems
GIT - Geographic Information Technology
IAGT - Institute for the Application of Geospatial Technology
IFTN - NSGIC's Imagery for the Nation Program
ILRIS - Integrated Lane Records Information System
LURC – Land Use Regulatory Commission
MapServer – Open Source GIS software
MEGUG - Maine GIS Users Group
MEGIS – Maine Office of GIS
MLTI - Maine Learning Technology Initiative
MMA - Maine Municipal Association
NAIP - National Agricultural Imagery Program
NGA - National Geospatial-Intelligence Agency
NOAA - National Oceanic and Atmospheric Administration
NPS - National Park Service
NSGIC - National States Geographic Information Council
PUC - Public Utilities Commission
SDE - ESRI GIS Software
ROI - Return on Investment
UM - University of Maine at Orono
USDA - US Department of Agriculture
USFS - US Forest Service
USFW - US Fish & Wildlife
US GLOBEC - U.S. Global Ocean Ecosystems Dynamics
USGS - US Geological Survey
USM - University of Southern Maine

9. APPENDICES REFERENCE

Appendices A-R are listed in a separate attachment and are integral to this document.