

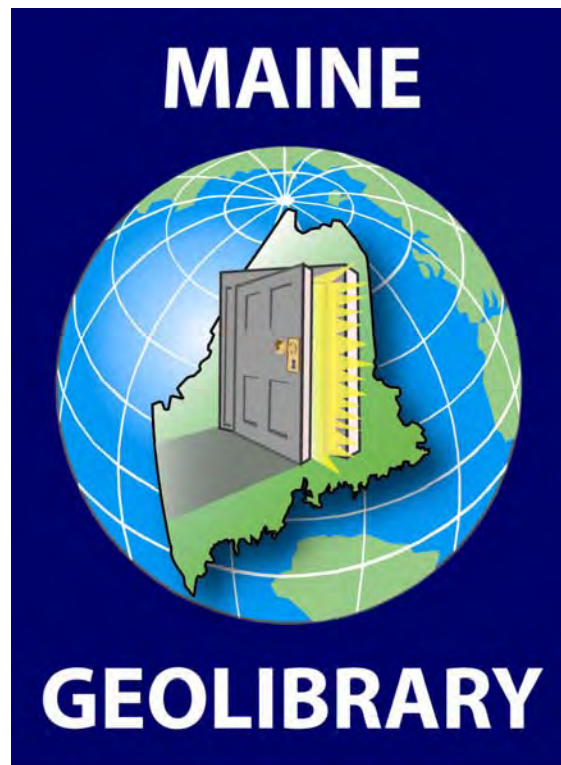
MAINE STATE LEGISLATURE

The following document is provided by the
LAW AND LEGISLATIVE DIGITAL LIBRARY
at the Maine State Law and Legislative Reference Library
<http://legislature.maine.gov/lawlib>



Reproduced from electronic originals
(may include minor formatting differences from printed original)

**Maine Library of Geographic Information
2009 Annual Report to the Legislature
and
Joint Standing Committees on
Natural Resources and State and Local Government**



- 1. GEOLIBRARY..... 1**
- 2. 2009 GOALS AND ACCOMPLISHMENTS 3**
- 3. 2010 PRIORITIES AND INITIATIVES 6**
 - Statewide Digital Orthophotos 6
 - High Resolution Topography Data 7
 - Parcel Grant Program – Integrated Land Records System 7
 - Municipal and Regional Data Services..... 8
 - Data Access Improvement Program 8*
 - Develop Municipal Services Applications Program..... 8*
 - Zoning Map Development Program..... 8*
 - Land Cover Updating Program..... 9*
 - Comprehensive Conservation Lands Maps Development Program..... 9*
- 4. FINANCIAL EXPENDITURES THROUGH 2009 10**
- 5. ORGANIZATION..... 11**
 - Legislative Background 11
 - Governance 11
 - Library Structure 12
- 6. Appendix A..... 13**
- 7. Appendix B..... 14**
- 8. Appendix C 15**

This Maine Library of Geographic Information Annual Report for calendar year 2009 has been prepared in accordance with 5 M.R.S.A. §2003(I)(L).

Acronyms & Selected Definitions

Board	Board of directors for the Maine Library of Geographic Information
CIO	Chief Information Officer for the state
FGDC	Federal Geographic Data Committee, sets metadata standards
GeoLibrary	Common name for Maine Library of Geographic Information (MLGI)
GIS	Geographic Information System
MEDOT	Maine Department of Transportation
MEGIS	Maine Office of GIS
MEGUG	Maine GIS Users Group
MLGI	Maine Library of Geographic Information
NGO	Non-Government Organization
NMDC	Northern Maine Development Commission
OGC	Open Geospatial Consortium, a non-profit international organization that develops standards for geospatial and location based services
OIT	Office of Information Technology
Resolve 23	Legislative committee that drafted the plan that resulted in the MLGI
SPO	State Planning Office
USGS	United States Geological Survey

1. GEOLIBRARY

The Maine Library of Geographic Information (“the GeoLibrary”) is a partnership of public and private stakeholders created by the Maine Legislature to operate a coordinated, cost effective electronic gateway providing access to data custodians’ public geographic information.

At present, the GeoLibrary has no staff or operating budget and relies on the Office of Information Technology (OIT) for administrative and operational support. The GeoLibrary received bond funds totaling \$2.3 million in 2003 to start its work. It was not successful in obtaining either operating funds or additional bonds for development in 2007, 2008, or 2009. *The initial bond money is essentially depleted, and additional sources of funding are vital if the GeoLibrary is to continue its mission. The GeoLibrary’s funding needs are detailed on page 6.*

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

The **vision** of the GeoLibrary 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:

- the maintenance of an Internet-based GeoLibrary Portal (“The GeoPortal”). This portal enables discovery of and access to spatial data held by public and private sources. It utilizes nationally recognized standards and techniques that permit these data to easily be combined and aggregated for many uses,
- the stewardship of priority statewide spatial datasets and the associated technology essential for sharing geographic data ensuring that State data is available, up to date and accurate,
- the design and implementation of appropriate spatial data standards to allow all data 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 with 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 data-sharing that results in significant savings in the cost of creating and maintaining geospatial data,

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

The Board has identified *four areas of Strategic Focus* to realize its mission and vision:

- *SF1. Support a web-based distribution system to facilitate access to statewide data holdings.*
- *SF2. Support the development and implementation of statewide data standards to ensure data quality and to enable common use*
- *SF3. Support the provision of funding and management for high priority data and database development to support community and regional planning, smart growth, and community preservation.*
- *SF4. 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.*

2. 2009 GOALS AND ACCOMPLISHMENTS

In 2009 the GeoLibrary undertook the following projects or initiatives in support of its strategic focus:

SF1. Support a web-based distribution system to facilitate access to statewide data holdings:

The GeoLibrary has completed construction of its web-based GeoPortal for public access to statewide spatial data. This was supported by an appropriation of \$35,627 for hardware and customization. The GeoPortal is now operational and can be accessed at <http://geolibportal.usm.maine.edu/>

- *Anyone with an internet browser can use the portal to view geographic information.* Unlike most viewers, the GeoPortal can convert geographic data uploaded from data providers into an image that can be displayed on its map viewer. This will enable Maine citizens, local governments, academic institutions, industry, non-governmental organizations, and others who do not have web servers to provide their geographic data for viewing.
- For people not familiar with geographic data, there are pre-set categories of data searches or “channels” available. Specific data searches including advanced searches are available for the more experienced users. This will enable users to type in a word such as “wetlands” and find a description of all data and services registered with the portal on wetlands.
- Organizations wishing to make their data available to the GeoPortal can manually enter metadata (data about data) using Web forms, or upload metadata files directly. The metadata will be reviewed, approved and registered after which the data will be freely available to all users.

SF 2. Support the development and implementation of statewide data standards to ensure data quality and to enable common use.

As part of its implementation of the Strategic Plan (described below), the GeoLibrary performed the following tasks:

- Established a Digital Parcels sub-committee with the following tasks.
 - Review and update the existing state Digital Parcel Standards
 - Develop a digital parcel data management policy to improve consistency, currency, and completeness.
 - Promote a standard method for integrating land records, such as assessors data, deed documents, and zoning with digital parcel data.
- Established a Geospatial Data sub-committee with the following tasks:
 - Review land use codes in use by municipal and other assessors and recommend a standard for digital parcel data.
 - Develop a plan for updating the state’s aerial orthoimagery on a regular basis and coverage areas for different orthoimagery resolutions.
 - Draft Lidar data standards

- Draft Statewide Lidar data acquisition plan
- Review and update parcel data standards for statewide data set as needed.
- Draft plan for acquiring statewide parcel data set
- Collaborate with the PUC and MDOT to develop state wide roads data set
- Survey and inventory of geo-spatial data

SF3. Support the provision of funding and management for high priority data and database development to encourage community and regional planning, smart growth, and economic development.

Despite a lack of significant funding, the GeoLibrary was able to support some ‘small, splendid efforts’.

- Appropriated \$20,000 in matching funds towards the collection of Lidar on the Maine Coast. Lidar (Light Detection and Ranging) is a remote sensing system used to collect extremely accurate elevation data.
- Spent \$6,000 previously appropriated as part of a multi-organizational purchase of new high resolution orthoimagery in southern Maine. This was ½ foot aerial imagery flown in 2007 and covering 18 townships.

SF4. Provide for coordination, outreach, and education in support of better public use of geospatial data and to enhance Maine’s position as a national center for GIS research, education and industrial growth.

In April of 2009 the GeoLibrary Board accepted the GeoLibrary Strategic Plan¹, intended to coordinate the GeoLibrary’s efforts with the National States Geographic Information Council. This was the first of two tasks under a 2008 grant from the National States’ Geographic Information Council (NSGIC) Fifty States Initiative. The Plan provided an outline of how the GeoLibrary can perform outreach, coordination and education functions with essential zero funding.

- Determine a method to manage the Plan implementation.
- Establish Plan implementation Work Groups.
- Implement the GeoPortal.
- Implement the communications plan.
- Develop a set of policies for: sharing; providing access to public and private geospatial data; and notification on new and updated data.
- Perform an annual inventory of geospatial data across the state.
- Develop simple-to-use web service templates for municipalities to use through the GeoPortal.
- Position the Board to be able to implement an integrated land records information system when funding permits.
- Position the Board to be able to create and update statewide geospatial data: orthoimagery, parcel, unified roads, and elevation data.
- Look for opportunities to promote GIS benefits.

¹ For the full text of the Plan see <http://www.maine.gov/geolib/projects/fiftystates/index.htm>

In May Of 2009, The GeoLibrary Board accepted the conceptual framework of the Integrated Land Records Information System (ILRIS) plan and empowered a sub-committee to further the details. The final report² was issued in July of 2009. This was the second task under the grant from the (NSGIC) Fifty States Initiative. The ILRIS plan is a GIS-based system which would provide access to information about all property parcels and their context within adjoining lands by linking parcel data to county land records, deeds and surveys. The preparation of the plan involved several outreach activities in 2009.

- A demonstration at the Maine GIS Exhibition at the State House in January
- Two presentations at the Maine Society of Land Surveyors meeting in May
- A presentation at the Maine Property Tax School in August

² For full text of the report see: http://www.maine.gov/geolib/ilris_final.pdf

3. 2010 PRIORITIES AND INITIATIVES

The projects outlined in the GeoLibrary’s 2009 request for bond funding would each move the stakeholders, public and private, closer to the goal of ready, accurate data and information that is essential to planning for Maine’s future. The following table summarizes the projects the GeoLibrary Board would undertake with funding. Each project category is then described in detail following the table.

Table 1. GeoLibrary Board Bond Funded Project List

Project	Bond Funds		FY12	Match	
	FY10	FY10		FY10	FY11
Statewide Digital Orthophotos		\$1,076,250	\$1,680,000		
High Resolution Topography Data			\$4,600,000		
Parcel Grant Program		\$210,000	\$210,000		
Integrated Land Records Systems		\$315,000	\$315,000		
Municipal & Regional Data Services		\$262,500	\$262,500		
<i>SUBTOTAL</i>	<i>\$0</i>	<i>\$1,863,750</i>	<i>\$7,067,000</i>	<i>\$0</i>	<i>\$0</i>
TOTAL			\$8,930,750		

Statewide Digital Orthophotos

A digital orthophoto is a digital image of an aerial photograph in which displacements caused by the camera and the terrain have been removed. It combines the image characteristics of a photograph with the geometric qualities of a map. They are often used as a backdrop in a GIS and as a base for creating or updating maps. Unlike a standard aerial photograph, relief displacement in orthophotos has been removed so that ground features are displayed in their true ground position. This allows for the direct measurement of distance, areas, angles, and positions. Also, an orthophoto displays features that may be omitted or generalized on maps.³

³ *What is a Digital Orthophoto*, 2001, Land and Mapping Services, Clearfield. PA

From 2003 to 2008, the GeoLibrary implemented a \$3.2 M project, 50% of the cost of which was provided by the USGS, to produce high resolution digital orthoimagery for the state's organized townships. *The resulting cost savings to business, industry, state and local governments and the public has been extraordinary.* Some examples of the cost savings and the uses to which the imagery has been put are described in Appendix A.

Past experience has demonstrated that cooperative efforts to purchase *statewide orthophotography is far more cost efficient* than individual towns and organizations purchasing smaller areas of aerial coverage. A large portion of the fixed cost for producing orthophotography is getting a pilot and plane off the ground. This program is designed to meet the minimum needs of state government on a statewide basis, but allows municipal governments to purchase upgrades to meet their needs on an incremental cost basis, thereby saving them significant costs. In addition, by providing quality control and contract administration centrally through the state, a higher overall quality product will result.

High Resolution Topography Data

High resolution topography (elevation) data is used for a number of purposes. Some of the key purposes involve inland flood prevention as well as coastal zone water inundation studies. This work is also used to *predict the impact of catastrophic failures of dams and levees and modernize flood plain mapping.* Most importantly, the output from its results can be used to *save lives* and *lower economic losses.* In addition, *this important data can be used by engineering and surveying firms* doing work in Maine as part of the site design process for locating new facilities. The populated areas of Maine are generally covered by elevation data plus or minus 10 feet in accuracy and the unorganized townships by elevation data of plus or minus 30 feet in accuracy.

In 2009, very accurate elevation data, plus or minus 2 feet derived from Lidar collection, became available from the Federal Emergency management Agency (FEMA) for limited areas of southern coastal Maine. A proposal for the Lidar collection of the remainder of coastal Maine as part of a regional partnership between New England states, with the US Geological Survey is in review; it is expected to be approved. The GeoLibrary will be seeking an additional \$4.6 M to complete the rest of the state.

Parcel Grant Program – Integrated Land Records System

One of the major initiatives of the GeoLibrary Board is the development of an Integrated Lands Records Information System (called GeoParcels). This system will have the capacity to make land records systems in Maine competitive with other states. It would establish an electronic system that integrates tax parcel information kept at the state, county and municipal levels to improve access to it and its overall usefulness to public and private sectors in Maine. It will significantly improve the capabilities of professionals in the legal, environmental, real estate, public safety, planning, economic development, surveying and engineering communities to *ensure economic growth in Maine in an expedient but open and environmentally responsible manner.* By providing access to this information in a controlled, easy-to-use, organized manner, the state will make real estate transactions easier to perform, reduce the need for professionals to travel to government offices (thereby lowering carbon emissions and improving efficiencies of those professionals) and make government more transparent to its citizens. This system will provide ready access to a fuller set of information to businesses and individuals looking to locate in Maine.

A conceptual design for the Integrated Land Records Information System was accepted in 2009 by the GeoLibrary Board. The program would proceed in three phases: initiation of a pilot project involving multiple counties to develop and test a system for several municipalities; continue a grant program to create electronic tax parcel information for municipalities where that information currently does not exist; and establish a tax parcel maintenance program for municipalities where electronic tax parcel information exists.

Municipal and Regional Data Services

Data Access Improvement Program

The GeoLibrary held informational discussion forums around the state as well as conducted an online survey to gather input for future GeoLibrary Board projects. One of the major themes that appeared was the lack of access to and availability of state and local GIS data. *Not knowing where existing GIS data are or not being able to access data easily is costing taxpayers in the state of Maine on a daily basis.*

The first phase of the Data Access Improvement Program would identify significant GIS data at all levels, assist state and local governments to make it compatible with national standards, and provide resources to work with data owners to make this data available to users across the state. This program would continue to build on the GeoLibrary's new GeoPortal by providing access to the hosting function of the portal to communities wishing to participate in this program. This will eliminate much of the cost of the hardware and software needed to host this information, enabling smaller towns and organizations to easily share their data.

The second phase of this program would seek to develop a virtual network of GIS nodes with more technologically advanced municipalities, non-governmental organizations, private industry, academia, and more by connecting them through common standards over the internet to the newly constructed GeoPortal.

Develop Municipal Services Applications Program

Another one of the themes that was heard in the Forums and on-line survey was the difficulty in obtaining the software and expertise to effectively use GIS within local communities. This program builds off the GeoPortal's web services and would develop three to five easy-to-use (non-technical) GIS applications that would be made available to communities via a web browser. These applications would be based on a study of overall community needs, but could include services such as: tax mapping, zoning, building permits, planning, economic development, and efficient bus routing. *This would enable these communities to use these applications without having to invest in data hosting, software, expert staff or contracting out* for the individual development of these applications. In addition, using these applications would encourage the development of local data that meets acceptable standards.

Zoning Map Development Program

A comprehensive regional or statewide zoning data layer is a key component of economic development, development tracking, build-out analyses, smart growth planning, and modeling of zoning options. *Zoning data are used by realtors, developers, business development groups, conservation organization and municipalities. While limited regional composites of zoning data have been made, comprehensive zoning data do not exist on a statewide basis.* The Board would fund a program of grants modeled on the Parcel Grants Program to upgrade and submit digital zoning to the GeoLibrary in order to begin creation of a statewide zoning data layer. The relevant data falls generally into two types:

- Shoreland zoning data from each community would be automated and compared to an established standard and then once approved it would become part of the GeoLibrary. Shoreland zoning is comparatively uniform because it is created by state statute and based on natural features. This part of the project would therefore lend itself best to a regional approach.
- General Municipal Zoning would be automated with zoning areas represented as polygons that have attribute information describing the municipal zoning classification. Maine municipal zoning does not have a uniform set of zoning codes. Therefore, as with the digital parcel data, standards will need to be developed by the GeoLibrary Board to guide data development. A state standard would not involve removing local codes from the data but would include both municipal and standard zoning information. Again, data from each community would be automated and compared to an established standard and then once approved it would become part of the GeoLibrary.

Land Cover Updating Program

Land cover maps depict the dominant vegetation or ground cover of the landscape down to a scale of two acres in size per cover type. The GeoLibrary provided partial funding for the development of a recently completed Maine Land Cover dataset that is tightly integrated with federal efforts to map land cover and imperviousness nationwide with tremendous cost savings. Data users include:

- biologists modeling species habitat for population management,
- public and private planners studying growth and site location,
- environmental specialists looking at storm water issues,
- forestry planners studying forest composition and change,
- emergency management planners, and
- meteorologists modeling air emissions.

These users' tasks can be carried out in a more cost effective manner through remote sensing than by field mapping, with a statewide effort to provide an added level of consistency. Updates every two to five years to assess change is essential, and with the last effort completed in 2007 there should be an update scheduled for 2009.

Comprehensive Conservation Lands Maps Development Program

The state does not currently have an overarching mechanism to track conservation lands that are in state, federal, municipal or private ownership. Efforts are underway to address this, but *without additional resources tracking ownership of conservation lands is impossible.* This program will use funds to update the current conserved lands data and will develop a mechanism to increase and update these data annually. Efforts will include coordination with a steering committee, discovery and review of documents held by state and local entities, input of attributes into a database (i.e. owner name, ownership type, contact information, etc.), geo-location of sites as necessary, development of FGDC compliant metadata, and a mechanism to update the database.

The stakeholders interested in the status and quality of conserved lands in Maine is large and varied, but it includes:

- legislators, municipal officials, planners, policy makers, the public, and members of non-profit conservation groups who need to *assess current programs in order to invest resources effectively*;
- *permit reviewers for conserved lands* who, under Maine statutes and rules, need to know the location and attributes including size, location, type of easements or restrictions, habitat types and viewsheds to analyze the potential effects of new development;
- conservation organizations working under new policy directives such as the Maine Coast Protection Initiative (MCPI) and the Coastal and Estuarine Land Conservation Plan who are challenged to choose *projects that address multiple objectives such as public access, conservation of working lands and protection of high priority habitat types*. Each of the seventy MCPI partners has committed to a new framework for strategic land conservation, so a variety of public and private conservation organizations would benefit strongly from better evaluative tools; and
- the increasingly *more sophisticated eco-tourist who desires additional information* about conserved lands beyond simple location information. With more visitors using the internet, a web-based coastal access guide would complement Maine’s efforts to claim additional market share of nature-based travelers.

4. FINANCIAL EXPENDITURES THROUGH 2009

The GeoLibrary Board is composed of volunteers. Its staffing is funded by an arrangement with OIT. The Board was given authority to administer \$2,300,000 in state bond funds for GIS capital investments in November 2002. The Board has entered a series of cooperative agreements with federal agencies to garner the required \$1.6 million federal match for the approved bond funds for a total of \$3.2 million. The table below totals bond expenditures to date.

Table 2. GeoLibrary Board Bond Expenditures.

2002 Bond Total	\$2,300,000.00
Amount expended through 12/31/09	\$2,159,801.00
Amount approved or encumbered by contract through 12/31/09	\$106,887.00
Total expended or encumbered through 12/31/09	\$2,266,688.00
<i>Bond funds remaining</i>	<i>\$33,312.00</i>

5. ORGANIZATION

Legislative Background

In 2001, the Legislature instructed the State Planning Office to convene what came to be called the Resolve 23 Steering Committee to study the use of GIS in statewide strategic planning. The Committee developed a needs assessment- the conclusion of which recommended the creation of the GeoLibrary, its method of governance, and strategic focus. The Legislature and Governor concurred, and the Maine Library of Geographic Information Act 5 M.R.S.A. Section 2001 *et seq* became effective April 2002.

Governance

The GeoLibrary is governed by a board of directors, and its members are appointed by the Governor, the President of the Senate, the Speaker of the House, the Chancellor of the University of Maine System, the Director of the State Planning Office, and professional organizations representing major stakeholder groups. The Board is independent, term-limited (with the possibility of reappointment), and drawn from the public and private sectors. Therefore, it is uniquely positioned to represent all stakeholders fairly and in a way most likely to foster efficient cooperation and mission success. The current membership is:

Table 3. Membership.

Sector	Name	Title	Affiliation
Commissioner of Administrative and Financial Services	Vacant		
Environmental Interests	Dan Coker (Vice-Chair)	GIS Manager	The Nature Conservancy in Maine
GIS Vendors	Jon Giles, PLS	GIS Manager / Surveyor	Sebago Technics
GIS Vendors	Stu Rich		Penobscot Bay Media
Municipalities	Gregory Copeland, PLS	Eng. Programs Manager / GIS Coordinator	City of Biddeford
Municipalities	Gretchen Heldmann	GIS/IT Specialist	Town of Hampden
Public	Aimee Dubois	GIS Coordinator	Town of Scarborough & City of Saco
Real Estate and Development Interests	William Hanson, Esq. (Chair)	Attorney	Rudman & Winchell, LLC
State GIS Interests	Christopher Kroot	GIS Manager	Office of Information Technology
State GIS Functions	Nancy Armentrout	E9-1-1 Database Manager	PUC/ESCB
State Government	Michael Smith, representing Richard Thompson, CIO	State GIS Manager	Office of Information Technology
Statewide Association of Counties	Paul Hoffman	Consultant	Sheepscot Valley Conservation Association
Statewide Association of Regional Councils	Ken Murchison	GIS Specialist	Northern Maine Development Corporation
UMaine System	Marilyn Lutz	Director of Library Information Technology Planning	Maine InfoNet / UMS Libraries
Utility Interests	Greg Davis	Project Manager	Time Warner Cable

The GeoLibrary Board meets monthly. Agendas and meeting notes can be found on the GeoLibrary website: <http://www.maine.gov/geolib/>. The Board is organized into three standing subcommittees:

- 1) Finance Committee, with responsibility for:
 - budget oversight;
 - recommending budget or other financial actions to the Board for approval;
 - primary interaction with outside entities on financial issues.

- 2) Policy Committee, with responsibility for:
 - policy oversight;
 - recommending policy adoptions and amendments to the Board;
 - memorializing approved GeoLibrary policies;
 - primary interaction with external entities on policy issues.

- 3) Technical Committee, with responsibility for:
 - advising the Board on all technical matters;
 - oversight of all Board projects;
 - primary interaction with outside entities on technical issues.

Library Structure

The GeoLibrary is staffed by agreement with the Office of Information Technology (OIT). OIT/MEGIS manages and operates the GeoLibrary website, GIS database, and data access facilities. The GeoLibrary's GeoPortal is the central node in a distributed system linking its stakeholders via the web as well as providing the central point of connection between state agencies and the public and other public entities.

As a simplified schematic it looks like this:

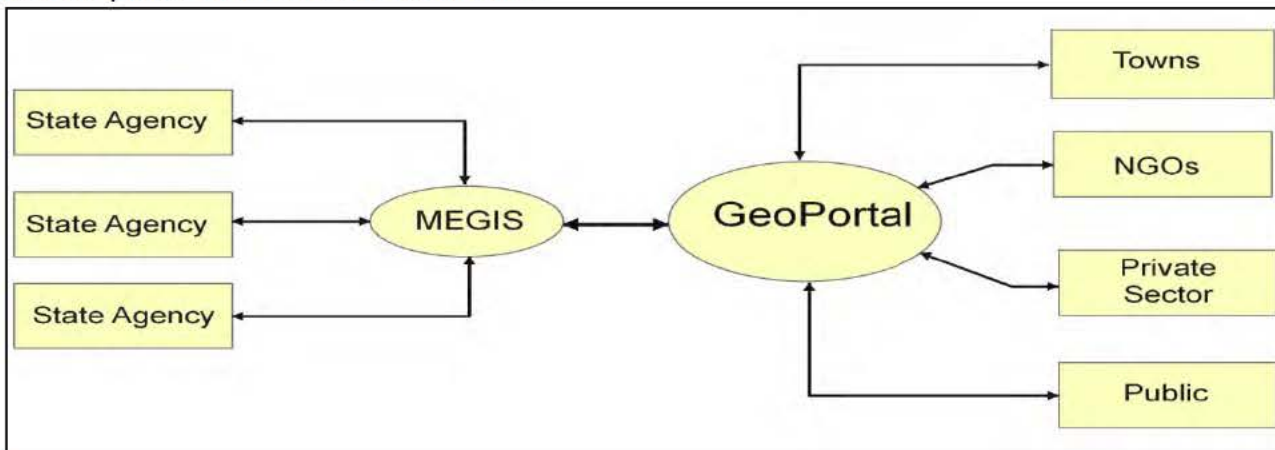


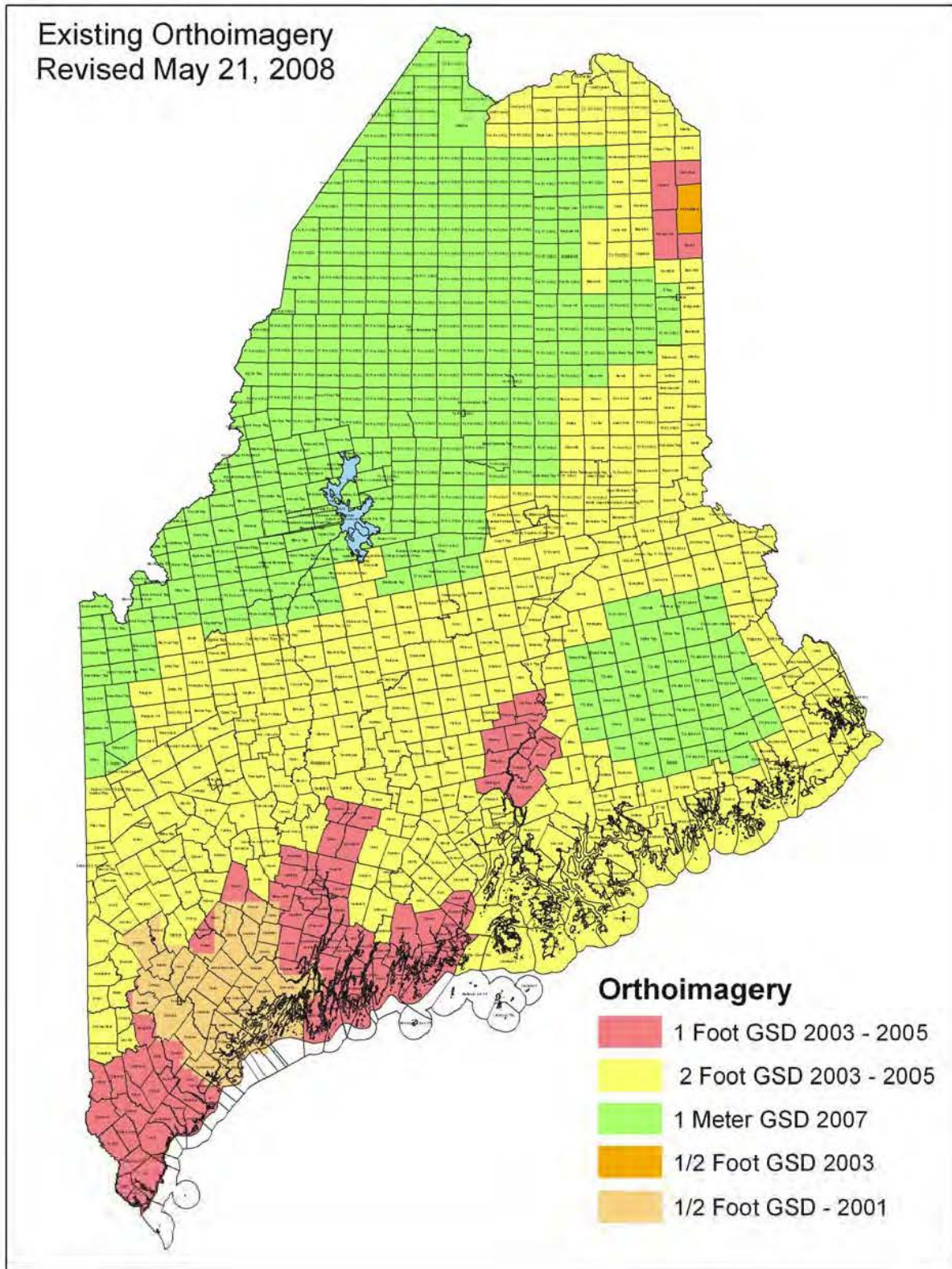
Figure 1. GeoLibrary Structure.

6. Appendix A

Cost Savings from the Use of Orthoimagery

- Based on an online survey, orthoimagery users were 46% businesses and corporations, 12% state government, 12% educational institutions, 11% municipal government, 7% non-profits, 5% federal agencies and 7% all other. About 48% of the respondents reported measurable cost savings.
- A municipal mapping company: “We estimate that for a town of approximately 2,000 parcels, the savings in a tax mapping project is \$20,000 or more by using the orthoimagery.”
- An academic institution: “...using the orthoimagery for mapping wetlands saved over three weeks of intensive manual labor by two individuals, ...240 hours or \$12,000.”
- A surveying company: “By using your information we reduce travel time to each site as well as time spent in the field.”
- Site design consultants: “We use orthophotos available on the site all the time for pre-project planning and for overview of site area and general viewing.”
- A large grocery chain: “(We) use the imagery to verify household counts in certain zip codes and pull imagery into a GIS so they can be shown with our town boundary files.”
- A state agency: “...one overnight trip from Augusta to Houlton by an employee at \$15 per hour costs the state a minimum of \$560. In most cases, a trip like this would have to be extended for at least a week in order to approach the amount of information contained in one recent, high resolution aerial image.”
- Many state agencies use orthoimagery for regulatory and enforcement activities, permitting and zoning. As budgets are stretched, high resolution imagery refreshed on a regular basis has become a necessity for these activities.

7. Appendix B



8. Appendix C

Aroostook Considers Options for Lidar Acquisition in Wake of 2008 Spring Flood Event

On the heels of record flooding in Northern Aroostook County where we see the Federal Emergency Management Agency (FEMA) still on the ground doing emergency mitigation and residents of Fort Kent are already seeing snow on the ground and wondering what's in store for this coming spring, we are noticing an increased interest in light detection and ranging (Lidar) technology and its application to forecast and to create modeling for future flood events and planning.

Lidar quite simply is down pointed radar which when applied like traditional aerial photography yields hyper accurate imagery of the Earth's surface which would in turn yield a very accurate digital elevation model (DEM) and the foundation for the types of analysis that form sound planning practices.

Northern Maine Development Commission (NMDC) noted an influx of inquiries and communiqués regarding a FEMA proposal for a Lidar project initially covering the Fish River from Eagle Lake to the confluence of the Fish River in Fort Kent and subsequently a reduced area including the flood inundation area of the town of Fort Kent. As the conversation continued and interest spread to include several federal, international (Canadian), state and local entities even larger projects, perhaps as large as individual sub-watersheds, entire watersheds and even county wide projects, and partnering were being discussed.

It was clear to NMDC at this point that it was time to assemble the interested parties and provide the forum for a "Telcon Handshake" so that all parties could express their potential participation in such a project. A conference call for 3:00 pm Friday October 31st was arranged to discuss the concept of Lidar as it relates to the original Fish River project proposed for the Fort Kent area, and the possibility of a larger Lidar program in Aroostook County.

The following stakeholders were identified and were invited to join our conference.

Holly Dominie, Federal Emergency Management Agency (FEMA)
Mike Geotz, Federal Emergency Management Agency (FEMA)
Kevin Merli, Federal Emergency Management Agency (FEMA)
Dan Walters, United States Geological Society (USGS)
Mark Turner, National Oceanic and Atmospheric Administration (NOAA) National Weather Service
Skip Babineau, United States Department of Agriculture (USDA)
Elizabeth Barton, Maine Emergency Management Agency (MEMA)
Verne Ouellette, Aroostook County Emergency Management
Joe Young, Maine Floodplain Management Program
John Bannen, Town of Fort Kent
Roland Gagnon, Irving Woodlands
Robert Clark, Northern Maine Development Commission (NMDC)
Alain Ouellette, Northern Maine Development Commission (NMDC)

Denis Berube, Northern Maine Development Commission (NMDC)
Ken Murchison, Northern Maine Development Commission (NMDC)

The discussion points consisted of introductions, establishment of a DEM for area to be covered, derived uses for each agency, strategy for securing funding and management of the project. However, our talking points were soon out raced as Mark Turner from the National Weather Service reported that our Canadian counterparts had already implemented a project that may be coincident to areas of interest of our application.

A follow-up meeting was held, again via conference call, to discuss the potential of partnering with Canada and piggy backing the Aroostook project with the ongoing Canadian project and the potential cost savings that could be realized, the scope of the Fish River Project, the possibility of a larger project, and possible sources of funding.

We added to our stakeholders list Bill Kidman of Leading Edge Geomatics, and Lori Moffard for Emergency Measures New Brunswick.

This conversation is ongoing and we have scheduled a conference call for 3:00 pm Friday November 7 with NMDC again hosting and serving as a conduit in joining these agencies and entities into a working partnership.

Written by Ken Murchison, NMDC, for *Maine State Planning Office Maine Floodplain Management and Mapping News*, November 2008 (vol. 1, Issue 7).