

MAINE STATE LEGISLATURE

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Maine Library of Geographic Information

2004 Annual Report to the Legislature
and
Joint Standing Committees on
Natural Resources and State and Local Government

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Prepared in accordance with Sec. 1. 5 MRSA c. 158, SUBCHAPTER II-B MAINE LIBRARY OF GEOGRAPHIC INFORMATION.

1. THE GEOLIBRARY

1.1 Introduction

The importance of accurate geospatial data for public planning at all levels of government cannot be overstated. Traditionally, Maine state agencies, municipalities and other public entities have developed data to fit their individual needs, but have not been in position to coordinate their efforts or to make their data commonly available and useful to others. The Maine Library of Geographic Information ("the GeoLibrary") is a virtual library created by the Maine Legislature and governed by an effective partnership of public and private stakeholders to provide cost efficient, web-based access public to public geospatial data.

1.2 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 formed the basis for the GeoLibrary, its method of governance, and its strategic focus. The Legislature acted on the Committee's recommendations to create the GeoLibrary in its present form. The Maine Library of Geographic Information was established in April 2002 by L.D. 2116 "An Act to Establish the Maine Library of Geographic Information (Chapter 649)". It is governed by an independent board of public and private stakeholders, it is staffed by agreement with MeGIS, and its projects are funded by a 2003 State bond of \$2,300,000 matched with a variety of Federal grants

1.3 Mission / Vision / Strategic Focus

As defined by the Board in consultation with L.D. 2116, 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 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 collections and access for all citizens. This vision encompasses:

- the design and implementation of appropriate data standards;
- the maintenance of the GeoLibrary Portal to ensure coordinated access to these datasets as well as standards compliance with Open GIS Consortium guidelines and the developing geospatial data construct;
- the stewardship of priority statewide spatial datasets and the associated technology essential for sharing geographic data;
- facilitating the modernization and GIS development of local government land records;
- support for smart growth and growth management with datasets and techniques that enable government and communities 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;
- budgeting and revenue development that prioritizes the strategic importance of geospatial information;
- promoting innovative uses of public geospatial information that fosters economic development;
- implementing education and outreach programs that advocates for the further development of Maine as a national center for GIS research, education, and industrial growth.

To realize its mission and vision, the Board has identified four areas of strategic focus:

1. the development and implementation of statewide data standards to ensure data quality and to enable common use;
2. the development of a web-based distribution system to facilitate access to statewide data holdings;
3. the provision of funding and management for high priority data and database development to support community and regional planning, smartgrowth, and community preservation;
4. the provision of 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.

1.4 GeoLibrary FAQ

Responding to commonly asked questions, the GeoLibrary will not:

- compromise municipal control of data;
- compete directly with private industry.

1.5 Governance

The GeoLibrary is governed by a Board of Directors structured in accordance with L.D. 2116. Its members are appointed by the Governor, the President of the Senate, the Speaker of the House, the UM Chancellor, the Director of the State Planning Office, and professional organizations representing the major stakeholder groups identified in the Resolve 23 Study. A noteworthy strength of the organization is that the Board is independent, term-limited (with the possibility of reappointment) and drawn from public and private sectors. It is therefore uniquely positioned to represent all stakeholders fairly and in a way most likely to foster efficient cooperation and mission success. It's current membership is:

Representing GIS Vendors

James H. Page, Chair
President / CEO, James W. Sewall Company

Representing GIS Vendors

Will Mitchell, President
Mitchell Geographics

Representing Utility Interests

Dennis Boston, Senior Analyst
Central Maine Power Co.

Representing Environmental Interests

Barbara Charry, Biologist
GIS Manager
Maine Audubon Society

Representing the Public

Sean Myers
Kennebunk, Maine

Representing Statewide Association of Regional Councils

Ken Murchison, GIS Specialist
Northern Maine Development Corporation

Representing Statewide Association of Counties

Robert Faunce, Land Use Planner
Consultant to Lincoln County

Representing the UMaine System

Marilyn Lutz, Vice-Chair
Director, IT Planning, University of Maine

Representing Municipal Government

Jon Giles, GIS Coordinator
City of Portland

Representing State Government

Richard B. Thompson, Chief Information Officer
Maine State Government

Representing Municipal Government

Paul Mateosian, Assessor
City of Bath

Representing State GIS Functions

Ray Halperin, Director
Information Systems, Dept. of Transportation

Representing the Commissioner of Administrative and Financial Services

Robert Doiron, Supervisor
Unorganized Territory
Maine Revenue Services

Representing Real Estate & Development Interests (Currently open)

Representing the President of Maine Science and Technology Foundation: This position is vacant. The organization was disbanded. Legislation is required to define membership for another stakeholder group.

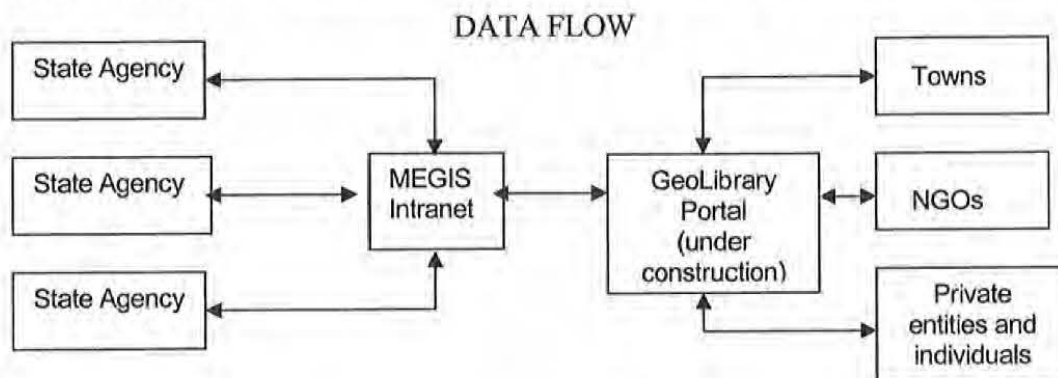
The GeoLibrary Board meets monthly. Agendas and meeting notes can be found on the GeoLibrary website: <http://www.maine.gov/geolib/> Beginning in 2004, the Board organized itself into three standing subcommittees with responsibilities as follows:

- A. Finance Committee, with responsibility for:
 - budget oversight
 - recommending budget actions to the Board for approval
 - primary interaction with outside entities on financial issues
- B. Policy Committee, with responsibility for:
 - policy oversight
 - memorializing approved GeoLibrary policies
 - recommending policy adoptions and amendments to the Board
 - primary interaction with outside entities on policy issues
- C. Technical Committee, with responsibility for:
 - oversight of all Board projects
 - advising the Board on all technical matters
 - primary interaction with outside entities on technical issues

The GeoLibrary is staffed by The Maine Office of GIS, Dan Walters, Director, an arm of the Department of Administration and Finance, Bureau of Information Services. MeGIS manages and operates the GeoLibrary website, GIS database and data access facilities.

1.6 Library Structure

The Board views the GeoLibrary's portal as the central node in a distributed system linking its stakeholders via the web and, in particular, as providing the central point of connection between state agencies and the public as well as other public entities. At the same time, however, it is important to recognize that State agencies have operational requirements that are independent of the Board's central mission. The Board therefore envisions that state operations will continue to be served by MeGIS using the State's intranet. The GeoLibrary would then be the central connecting point linking stakeholders to one another and to the State's data. Schematically:



One commonly asked question is whether MeGIS and the GeoLibrary are redundant. They are not. The GeoLibrary maintains no technical staff, using the MeGIS operations structure already in place to serve its needs. At the same time, the public / private structure of the GeoLibrary Board makes it the most technical and policy effective interface between the state and other GIS users.

2. GOALS AND ACCOMPLISHMENTS

2.1 2004 Initiatives / Major Projects¹

In support of each of the areas of strategic focus, in 2004 the GeoLibrary undertook the following projects or initiatives:

1. To support the development and implementation of statewide data standards to ensure data quality and to enable common use; the GeoLibrary established statewide standards for parcel data.
 - In 2003, the GeoLibrary Board authorized a Standards Subcommittee to develop published standards for digital tax parcel data in support of a grant program for the digitization of municipal property maps and to establish the basic standards for GeoLibrary parcel data. The committee served voluntarily and was composed of representatives from: Bureau of Information Services, Central Maine Power Company, City of Bath, City of Portland, Department of Conservation, Department of Transportation, Greater Portland Council of Governments, Hancock County Planning Commission, Island Institute, James W. Sewall Company, Maine Revenue Services, Maine State Archives, Northern Maine Development Commission and the State Planning Office. Their results were accepted by the Board in 2004 and served as the technical basis for the Parcel Grants Program. These standards are now in the final stages of formal adoption by the State. They are available as *Standards for Digital Parcel Files* at this website:
<http://www.maine.gov/geolib/subcommittees.htm>
2. To support the development of a web-based distribution system to facilitate access to statewide data holdings the GeoLibrary created a web application to access data on line.
 - Also known as cadastral maps, digital property maps show the boundaries of the subdivisions of land for purposes of describing and recording ownership and taxation. Property Maps are one of the most important local government information assets, forming a fundamental base for many municipal activities. Although GIS parcel data cannot replace detailed ground surveys, the data assists municipal officials with functions such as accurate property tax assessment, planning and zoning. Furthermore, a digital cadastre provides the most efficient method of collecting and collating geospatial data for infrastructure development and regional planning. A grant program has been developed budgeting \$366,850 of bond funds to digitize property tax maps with awards varying from \$1,000 to \$10,000. The first round of awards is complete, and the second and final round (for this bond budget) will take place early in 2005. It is noteworthy that because of the GeoLibrary's unique system of governance, 100% of allocated funds were distributed to the towns. See Attachment 1 for the award list.
3. To support the provision of funding and management for high priority data and database development to support community and regional planning, smartgrowth, and community preservation, the GeoLibrary
 - Implemented a \$3.2M project in conjunction with the Federal Government to produce digital orthophotography for the state's organized townships. Digital orthophotography are aerial photographs that have been processed to function as "photomaps", having the scale and the measurement characteristics of a map with the qualities and characteristics of a photograph. Digital orthophotos are widely used as a base map or backdrop in GIS on which other layers of mapped information can be viewed or analyzed. Because of the "bird's eye view", orthophotos make it easy to view, recognize and understand the relationship of objects on the ground. Digital orthophotos are also used as the source for digitizing ground features to create GIS data layers for specific business functions including road centerlines, building footprints, farm fields, forest types, eelgrass beds and utility & road corridors. Change analysis can then be conducted using orthophotos from different years. Digital orthophotography is now under development and will be available for most organized towns in 2005. This effort represents significant cost savings as the cost of producing orthophotos for municipalities

¹ Note that the GeoLibrary's fiscal year ends June 31. All year references, however, are to the calendar year.

individually would be dramatically greater than the realized cost of undertaking a single, statewide project. See Attachments 2 and 3 for samples.

- Initiated a grant program for Maine municipalities to create and upgrade digital parcel maps; and partially funded the development of a new Maine Landcover dataset to assist with growth and natural resource management. The GeoLibrary is using bond funds to provide partial funding for the development of a new Maine Landcover Dataset to assist organizations in planning for growth and monitoring natural resources. Landcover mapping indicates the dominant vegetation or ground cover within a particular 5m x5m square (or pixel), grouped into areas of two acres or more. This project is tightly integrated with federal efforts to map landcover and imperviousness nationwide at 30-meter resolution, and tremendous cost savings were realized as a result. Other contributors to the project include federal agencies (USGS, NOAA, EPA), as well as state agencies (MEDEP, MEDOT, MESPO, MEIFW, MEDWP).
4. To support the provision of 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, the GeoLibrary staffed a booth at the Maine Municipal Association's 2004 - Technology and Local Government conference; staffed a booth at the 2004 Maine Municipal Association convention featuring a live demo of the Maine Aerial Photography Viewer internet mapping site; sponsored a display at the Maine Science Teachers Association conference promoting GeoLibrary data and projects; and distributed CD sets of GIS data to fifty municipalities containing all the GeoLibrary data holdings, complete metadata, a free GIS software and instructional manuals.

2.2 2005 Initiatives

Pending adequate funding, in 2005 the GeoLibrary plans to undertake the following projects or initiatives in support of each of the areas of strategic focus:

1. To support the development and implementation of statewide data standards to ensure data quality and to enable common use; the GeoLibrary will insure data standards for the GeoLibrary;
2. To support the development of a web-based distribution system to facilitate access to statewide data holdings, the GeoLibrary will create an enhanced web-based portal as the its "front door" for public access to statewide data; and facilitate the development of a virtual GIS network that links statewide geospatial data holdings;
3. To 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, the GeoLibrary will continue the statewide orthophotography project as well as the municipal grant program to create and upgrade digital tax parcel data.
4. To support the provision of 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, the GeoLibrary will continue to disseminate information about the GeoLibrary and GIS generally, as well as provide geospatial datasets to its constituents.

It is crucial to note, however, that financial contingencies could cause the GeoLibrary to curtail or cease operations in 2005 unless adequate support is found to fund staffing and data maintenance costs.

3. FINANCES

3.1 2004 Expenditures

The GeoLibrary Board serves *pro bono*, and, as noted, its staffing is funded by arrangement with BIS through FY2005. The Board was given authority to administer \$2.3M in State bond funds for GIS capital investments in November 2002. The Board then entered a series of cooperative agreements with Federal agencies to garner the required \$1.6 million federal match for the approved bond funds. This effort resulted in a number of federal partnerships that have provided federal dollars for Maine GIS initiatives as noted in the following summary.

Expenditures (spent or encumbered by contract to 12.15.04)	Maine Bond	Federal Match or Grants
1. Infrastructure Development	\$ 5,209	\$ 0
2. Orthophotography Project	\$1,255,372	\$1,227,318
3. Maine Parcel Grants Program (04)	\$ 181,862	\$ 0
4. Maine Landcover Project	\$ 120,000	\$ 300,000
5. Archive Project	\$ 10,708	\$ 100,000
Subtotal	\$1,573,151	\$1,627,318
Approved by Board vote but not yet encumbered by contract		
6. GeoLibrary Portal	\$ 100,000	\$ 0
7. Orthophotography Project (05)	\$ 400,000	\$ 400,000
8. Maine Parcel Grants Program	\$ 184,988	\$ 0
9. Outreach Study	\$ 6,250	\$ 15,000
Subtotal	\$ 691,238	\$ 415,000
TOTAL	\$2,264,389	\$2,042,318

3.2 Projected Budget Requirements

The Board will continue to serve *pro bono*. Because of State budget requirements, BIS will be unable to provide funding for staff beyond the level required to support State data after 30 June 2005. Should this occur, *the GeoLibrary's long-term strategies may be compromised*. The Board is eager to work with the Legislature, the Governor's Office, and State Agencies to avoid this situation by identifying alternative long-term revenue sources of \$250,000-450,000 annually.

The Board also expects to spend or encumber all its bond funds in 2005. It requests consideration for \$4,150,000 in new bond funding for FYs 06-07 for the following projects.

Category	Project	FY06	FY07
Data Development	Complete Orthophoto Project		
	Tier B	\$270,000	0
	Tier C	0	\$330,000
	orthophotos, update cycle	0	0
	update statewide land cover	0	\$100,000
	grants - digital property maps	\$750,000	\$750,000
	zoning & conservation lands	\$250,000	\$250,000
	merge DOT & E911 databases	\$200,000	\$200,000
Standards	zoning, conservation, roads	\$200,000	0
Data Warehousing	upgrades & validation/conformity tools	\$100,000	\$200,000
	build statewide GIS network	\$150,000	\$150,000
Applications	development tracking	\$250,000	0
	Total By Fiscal Year	\$2,170,000	\$1,980,000
	Combined Fiscal Year Totals		\$4,150,000

4. REQUESTED LEGISLATIVE ACTIONS

The Board requests that the Legislature:

- Define a Board position made vacant by the dissolution of the Maine Science and Technology Foundation. The GeoLibrary Board recommends that the new position be a licensed land development professional.
- Appropriate \$256,000 to the Office of Information Technology to support the operations of the GeoLibrary.
- Approve \$4,150,000 in new bond funding in support of statewide GIS development as detailed in the above list to include costs for bond administration not to exceed 2% (two percent).

ATTACHMENT A: PARCEL Grants Award List

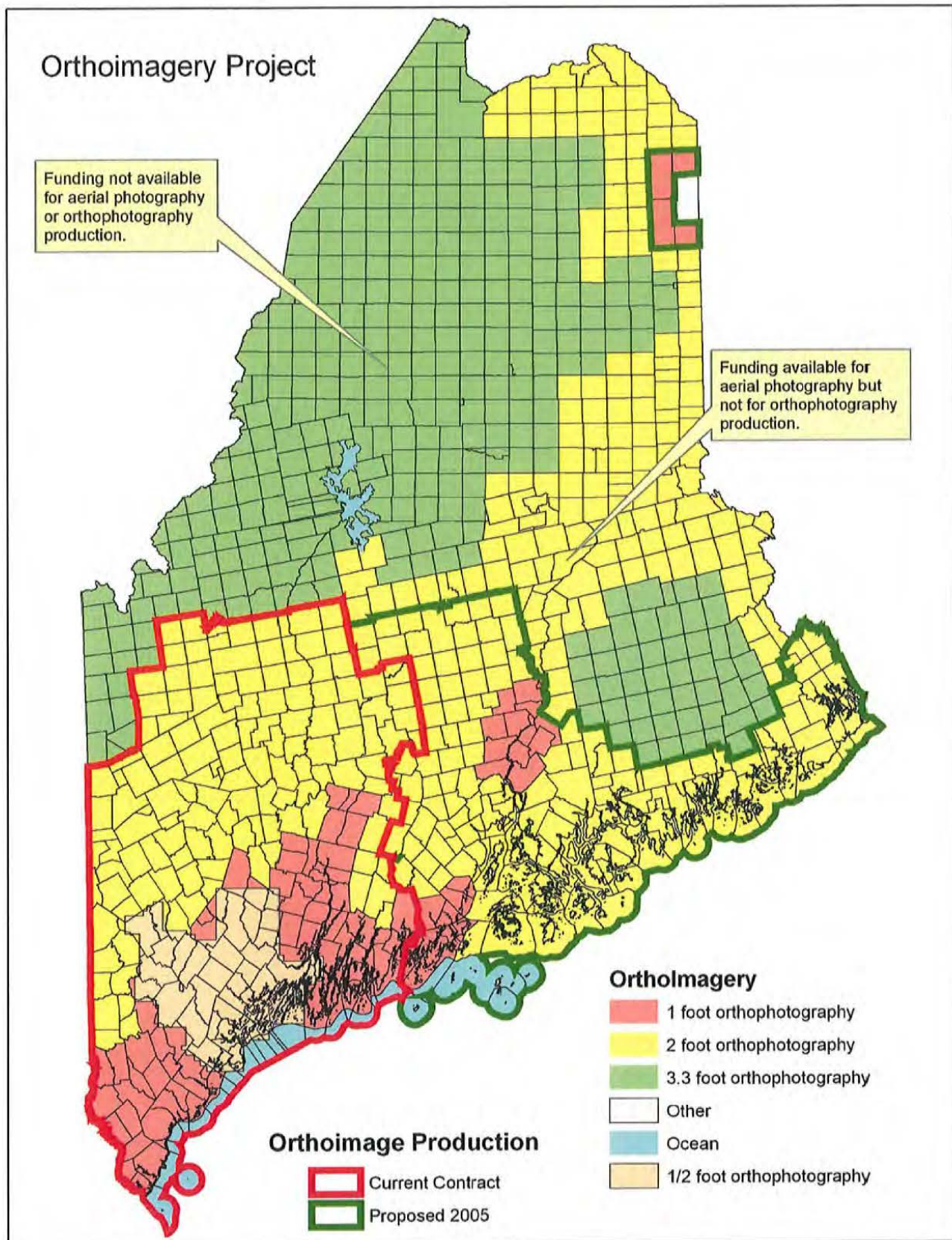
Standard Grants: 54 towns applied, 21 awarded

Cape Elizabeth
Casco
Ellsworth
Falmouth
Freeport
Gorham
Gray
Islesboro
Jackson
New Gloucester
North Yarmouth
Norway
Oxford
Paris
Raymond
Rockport
Rumford
South Portland
Thorndike
Unity
Woodstock

Rapid Grants: 27 towns applied, 24 awarded

Anson
Auburn
Bath
Biddeford
Bridgton
Brooksville
Casco
Castle Hill
Chapman
Cumberland
Denmark
Fort Kent
Harrison
Kittery
Madawaska
Mapleton
Mariaville
Raymond
Skowhegan
Stonington
Sweden
Verona
Woodland
Yarmouth

Attachment B: Map of Orthophotography Coverage



Attachment C: 1' Orthophotography Sample



1 foot orthophotography sample 1" = 100'

Attachment D: 2' Orthophotography Sample



2 foot orthophotography sample 1" = 200'

Attachment E: Acronyms & Selected Definitions

Board	Board of Directors for the Maine Library of Geographic Information
GeoLibrary	Common name for Maine Library of Geographic Information
GIS	Geographic Information System
MeGIS	Maine Office of GIS
Resolve 23	Legislative committee that drafted the Plan that resulted in the MLGI
USGS	U S Geological Survey
NOAA	National Oceanographic Atmospheric Administration
EPA	Environmental Protection Agency (Federal)
MEDEP	Maine Department of Environmental Protection
MEDOT	Maine Department of Transportation
MESPO	Maine State Planning Office
MEIFW	Maine Inland Fisheries & Wildlife
MEDWP	Maine Drinking Water Program