2015 Annual Report

Maine Library of Geographic Information

To the Joint Standing Committees of:
Environment and Natural Resources
and
State and Local Government

127th Legislature, Second Session

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This Maine Library of Geographic Information Annual Report for calendar year 2015 has been prepared in accordance with 5 M.R.S.A. §2003(I)(L).

GEOLIBRARY PURPOSE

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. The Maine Library of Geographic Information ("the GeoLibrary") was established as a partnership of public and private stakeholders with the following guidance of purpose and duties, to;

- operate a coordinated, cost-effective electronic gateway providing access to data custodians' public geographic information;
- establish and maintain standards, rules and policies for non-state data custodians' geographic information;
- reduce redundancies in the creation, verification and maintenance of public geographic information and to enhance its utility for complex analyses;
- set priorities and authorize the expenditure of state funds;
- promote innovative uses of geographic information;
- enter partnerships to promote the purposes of the legislation;
- hear and resolve disputes that may arise between data custodians or with respect to information to be placed in the Maine Library of Geographic Information, enforcement of geographic information board standards, rules or policies or other related matters;
- conduct studies relating to the coordination, development and use of statewide geographic information;
- report annually by January 1st to the joint standing committees of the Legislature having jurisdiction over natural resources matters, and state and local government matters, and;
- develop appropriate internal services to facilitate generalized access for and use of data by governmental agencies and the public.

1. EXECUTIVE SUMMARY

The Board continued its efforts to coordinate agency data acquisitions in 2015. The Maine Office of GIS (MeGIS) is in the process of restructuring the duties of its staff. This has resulted in a reduction of staff time allocated to supporting Board activities. This reduction in support will inhibit the Boards ability to develop geospatial acquisition plans and manage its active projects, a five-year effort to acquire orthoimagery statewide, and a continuing effort to improve elevation data from the current 10-meter digital elevation models to 1-meter models. Geospatial data of high importance to the State are not being updated to reflect today's standards for accuracy. The Boards ability to implement improvements is severely impacted by its lack of funding. 2015 saw a change in staffing of MeGIS and has resulted in decreased staff support for the Board. This will be further degrade the States geospatial infrastructure through lost opportunities to partner with other GIS Stakeholders desiring to improve data important to the state.

The following is a summary of the GeoLibrary's data acquisition activities and data needs. These topics are presented in greater detail in the rest of the Boards report.

ORTHOIMAGERY

The Board added a little over 2,000 square miles of imagery in the fourth year of the five year project. Waldo county and one third of Penobscot county was acquired in 2015. Also, six communities purchased higher resolution imagery. Five of the six communities were repeat customers needing an updated imagery data set due to development changes. Experience has shown towns are saving at least $20,000 each by participating in the program. Using this estimate of savings this year communities have saved at least $120,000.

ELEVATION

The USGS approved the GeoLibrary's LiDAR data acquisition project. The contractor completed data acquisition of 2,880 square miles of data in the fall of 2015 and will deliver data in the spring and summer of 2016. The Board developed another proposal for submission to the USGS in the summer of 2015 and anticipates being approved early in 2016. If approved, this proposal will acquire an additional 5,000 square miles of new data bringing the states total coverage to about 13,000 square miles.

PARCEL MAPPING

No new towns were added this year but forty six communities provided updates to their data. Two hundred and nine communities are still without digital tax maps. Several times a year inquiry's are made asking if there are grant funds available to help pay for the conversion of paper maps to digital.

OTHER GEOSPATIAL DATA

GIS professionals, consultants and researchers rely on the state for authoritative geospatial data. The State is missing out on opportunities to make full use of partnerships in acquiring geospatial data due to a lack of funding.

Hydrography

The USGS maintains the national hydrography data layer at a resolution of 1:24000. This is adequate for large scale work but inadequate for local use where scales of 1:4800 or less is needed. Maine needs to develop a local resolution hydrography data layer to meet today's requirement for accuracy. The people of Maine expect flood maps and shoreland zoning representation equal to the accuracy of the orthoimagery readily available in commercial products. Currently the accuracy of Maine's national hydrography data layer is less than the accuracy of available orthoimagery in both the public and commercial realms.

MEGIS has a Memorandum of Understanding (MOU) to identify activities that the State of Maine, Maine Office of GIS (MEGIS) and the U.S. Geological Survey (USGS), referred to as partners, undertake to maintain, update, and improve the National Hydrography Dataset (NHD) and the Watershed Boundary Dataset (WBD) in a program of data stewardship. The partners represent Federal, State and Local government with an interest in providing current, accurate, and consistent surface water geospatial data to meet the requirements of the National Spatial Data Infrastructure for hydrography. The agreement applies to high-resolution and local-resolution NHD data and the WBD

Governmental Unit Boundaries

The Maine Township Boundary (MeTWP 24) was developed for 1:24000 scale mapping. With the introduction of parcel mapping as a data layer we find that many town parcel boundaries do not match the MeTWP24 boundaries. Historically selectmen were charged with walking town boundaries on a regular basis to maintain the data used to create the maps. With today's technology and quality mapping it is necessary to update boundary locations with more accurate representation. MeTWP 24 is at best accurate to 40 feet +/-, though often is far less accurate.

Transportation

Transportation data is developed at the local level, the Department of Transportation and the Emergency Services Communication Bureau in the Public Utilities Commission. As technology and software improve the reasons for maintaining two separate data layers is becoming less clear. Maintaining two layers is at least partially redundant. The state should begin investigating how the state agencies and local communities can contribute to a more accurate and comprehensive data layer. This investigation should include a discussion of how to address the accessibility of private and discontinued roads. This may include development of a road classification system that expands upon current terminology of state, federal, local and private roads with appropriate symbolization to provide more contexts to roads data.

Structures/Addressing

Mapping of structures has become increasingly important as we move into the 21st century. Communities have mapped structures to develop a consistent and equitable tax assessments, inform public works and utility infrastructure improvements and for firefighting. With the introduction of GIS technology it is becoming increasingly important to not only map the structures but to provide additional data to indicate entry points on buildings, identify units within buildings and in the case of multi-story structures, identification of units on each level.

Land Cover and Impervious surfaces

The National Oceanic and Atmospheric Administration (NOAA) updates land cover data on a six year cycle. This data has a resolution of 10 meter pixels and is adequate for large scale studies and research but entirely inadequate for local scale studies and analysis, such as mandated storm water management related activities. Local resolution should be at the 1 meter pixel level to be useful and even higher resolution for some studies. This information is used by many agencies at multiple levels of state, local and federal government agencies. Identifying impervious surfaces, wetlands, and urbanized landscapes are a few of the uses for this type of data. Maine could obtain local resolution land cover data through a partnership with NOAA to develop a higher resolution data set at a cost of just $50,000/year.

2. 2015 ACTIVITIES

The Board continues to support and play a key coordinating role in the GIS community. Despite lack of funding, it has started refreshing three key data sets of statewide importance. Through volunteer efforts of Board members and support from the Maine Office of GIS, the Board was able to add considerably to high-resolution topography and orthoimagery data sets. Several communities provided updated parcel data.

DATA ACQUISITION

I. LEAF-OFF ORTHOIMAGERY ACQUISITION PROGRAM

The Maine GeoLibrary, with support from its board members and the Maine Office of GIS initiated a plan to acquire orthoimagery statewide over a five-year period. In 2015, imagery was acquired for Waldo County and the middle third of Penobscot County. Much of this area had not had leaf-off imagery acquired since the springs 2004 and 2005. This added to the acquisitions in other parts of Maine completed in 2012 and 2014, when orthoimagery was collected in Cumberland and York, Androscoggin, Kennebec, Sagadahoc, Lincoln, Knox, Waldo, Hancock counties and the southern third of Penobscot county.

In the first four years of the program, 72 communities have taken advantage of the opportunity to buy high-resolution imagery. Five communities were repeat customers updating their previous purchase because of development. Never in Maine's history have so many communities been able to purchase high resolution imagery. For many communities this is the first time it has been financially feasible to purchase high resolution imagery due to the economies of scale afforded by the statewide orthoimagery project.

In addition to the benefit of community buy-ups, with completion of the 2015 acquisition, new imagery has been acquired for over one third of the state and covering over half of the organized communities. This data is available for use by public and private organizations and individuals through a cost sharing approach leveraging state, county, and municipal funding sources.

With the completion of the 2015 program, total savings for the 72 participating communities is estimated to be $1.4 million dollars. In addition to the community savings, the Board has assisted state agency funding of $380,000 to leveraging nearly $1.1million in funding from federal agencies, counties and communities. This unique collaborative effort has resulted in a bulk purchase of imagery resulting in better quality imagery products from previous acquisitions, saving Maine taxpayers thousands of dollars.
The Board will be seeking proposals to provide orthoimagery acquisition services during the next six years. This will provide continuity for a program that has benefitted counties and municipalities to a very significant degree. During the term of the first year's program the Board fell short of being able to provide funding sufficient to do the whole state. The availability of funding from federal sources was insufficient and state agency funding was insufficient to make up the shortfall. Consequently four large counties were not able to participate in the program.

Recommendation: The legislature should support funding the Geospatial Reserve Fund (account number 010-18B-3057) for the purposes of providing seed funds to encourage partnerships for orthoimagery data acquisition.

II. HIGH RESOLUTION ELEVATION DATA

Since 2009 the GeoLibrary Board has initiated several projects to acquire high resolution elevation, also known as topographic data. Despite a lack of significant of funding it has developed partnership proposals to acquire new data with Light Detection and Ranging

Technology (LiDAR) for over one third of the state. Continuing this effort the Board assembled a collaborative effort to acquire new data for over 5,000 square miles of data in the Western Maine area.

The total cost for this project is estimated to be $1.4 million dollars and is receiving funding the Natural Resource Conservation Service (NRCS) The NRCS National Geospatial Center for Excellence, two state agencies, Maine Bureau of Public Lands and Maine Drinking Water Program, the Nature Conservancy, Plum Creek Timberlands and the Town of Carrabassett Valley. These partners have contributed $755,555.00 to apply for United States Geological Survey matching funds of $658,850.00. This data is having a transformative effect on the private and public land management work in those parts of the State where it is available.

When successfully completed, this proposal will add an estimated 5,000 sq. mi. of high-resolution elevation data. This will bring Maine's total coverage to over 17,000 square miles, a little over half of the state.

As acquisition moves to less populated areas of the state finding partners has become more difficult. Unique to this project is the participation of Plum Creek Timberlands and the Nature Conservancy. This is the first time a private enterprise has participated in a Board project to acquire data. Another potential partner for funding was Irving Woodlands. Unfortunately Irving understanding the value of LiDAR data to their operations opted to purchase data on their own rather than wait for the Board to generate a project with outside funding to assist with acquisition in their area. ***The lack of seed funding in this case represented a missed opportunity to work with a major landowner in a cooperative venture.***

State funding will become more important to create competitive applications for USGS participation. The Board estimates the cost of acquisition and processing for approximately 16,000 remaining square miles will be about 4 million dollars. State funding is needed to ensure it can submit competitive applications for USGS and other funding.

In addition to terrestrial topography the state is in need for updated bathymetry data for its near shore areas. LiDAR can aid the mapping of near shore areas as well, supplanting other hydrographic mapping methods. Better bathymetry would contribute greatly to improved navigation, understanding of fisheries habitat and flood modeling.

Recommendation: The legislature should support funding the Geospatial Reserve Fund (account number 010-18B-3057) for the purposes of providing seed funds to encourage partnerships for LiDAR data acquisition.

III. <u>Parcel Data</u>

Parcel data development has been a Board priority since it was established. To begin development of this key data layer the Board established a grant program with bond funding. That initial effort enabled 73 communities to obtain or improve digital parcel maps. Since then the GeoLibrary with MeGIS support has added 214 communities to the data layer.

Parcel data is a key component in verification of addressing for the Emergency Services Communications Bureau as it updates data for the states emergency 911 call centers. The departments of Transportation, Environmental Protection and other state agencies use this data on a daily basis to prepare for projects and minimize staff time needed to verify data with town offices. Realtors, developers, engineers and surveyors are just some of the users in the private sector. This data provides significant savings for all individuals needing to obtain parcel related data from town offices across the state. In some cases it satisfies all the information and in others it makes questions regarding data more specific and quickly answered either by phone or many times replacing the need for a trip of several hours. This saves the public, the clients of the private sector land professionals, time and money in a host of common land related activities.

Two hundred and ninety one of Maine's larger communities have developed digital parcel maps but there is a significant need for smaller communities to acquire this mapping standard. Costs for converting paper maps to digital formats meeting the states guidelines for acceptance can place a significant burden on small municipalities.

Maine would benefit from having a grant program providing matching funds to communities for developing new digital parcel maps or updating older maps.

Recommendation: Funding the Geospatial Reserve Fund (account number 010-18B-3057) at $420,000 annually for the purposes of establishing a grant program to encourage community participation in the GeoLibrary's parcel data layer.

From 2005 through 2009 the GeoLibrary used bond funding to provide matching grants to communities for the purpose of developing new or upgrading digital parcel maps. The total expenditure from bonding was just under $450,000 and benefited 74 communities. Since then the GeoLibrary has been able to develop parcel data in 217 other communities through grants and partnerships with GIS programs in the University of Maine Machias, University of Maine Presque Isle, University of Southern Maine and private industry. However, 209 organized communities are still using only paper maps or in a few cases do not have any parcel maps.

The economic benefit of developing digital parcel maps in small communities does not compete well with the pressures to provide education, road maintenance and other services. Since parcel maps and associated data are frequently used by state and federal agencies, private and non-profit businesses as well as the general public, the primary benefits of digital maps accrue to users outside of the community. It is in the interests of the other data users and the larger public good that the GeoLibrary has developed this program.

3. FINANCIAL EXPENDITURES 2015

The 2015 GeoLibrary projects were all dependent upon funding from outside sources (state, county, and community agencies or grants). The legislature has not provided funding to the GeoLibrary or MeGIS for data acquisition and maintenance since a bond was issued in 2003. This funding has been depleted for several years.

LiDAR Acquisition:

The Maine Drinking Water Program and the Bureau for Public Lands were the only two state entities providing funding for this year's LiDAR application. The NRCS and USGS are providing $1.3 million dollars of the projected $1.4 million dollars needed to acquire 5,033 square miles of data.

Orthoimagery Acquisition

The orthoimagery project was funded with $100,000 from state agencies, counties and municipalities. The GeoLibrary did not receive any federal funding for this year's project. Fortunately the Board will realize a small surplus of $38,846.60. This surplus plus $90,048.00 carried over from previous years will provide sufficient funds to complete the 2016 acquisition. The carry over funds are available because MeGIS has not charged fees for providing coordination and support services to complete these annual orthoimagery acquisitions.

Parcel Mapping:

The GeoLibrary received parcel data updates from eleven communities this year. Bethel, Boothbay, Chapman, Chelsea, Kennebunkport, Lamoine, North Berwick, Ogunquit, Sanford, Westbrook and York The parcel data layer has data from a total of 291 communities and the unorganized territories. Many of the communities have not been updated for several years and some have not been updated since they first participated in the program 2006. The Maine Revenue Service is working on updates but has a very large backlog of data that has not been incorporated into the parcel maps. Communities contact MeGIS regularly to inquire whether parcel grant fund has money available to convert town maps to digital products or for updating the maps.

Table 1 GeoLibrary Project Expenses 2015

GEOLIBRARY PROJECT FUNDING SUMMARY							
Project	**Total Committed**	**GeoLibrary**	**Federal Agencies**	**State Agencies**	**Counties**	**Municipalities ***	**Private Nonprofits**
Ortho Imagery	$ 207,598.00	$0.00	$ 0.00	$ 100,000.00	$47,667.00	$98,777.60	$0.00
LiDAR	$ 1,434,405.00	$ 0.00	$ 1,258,850.00	$38,650.00	$ 0.00	$7,000.00	$129,905
Parcel Mapping	$0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 22,000.00	$0.00
Total	$1,642,003.00	$0.00	$1,258,850.00	$138,650.00	$47,667.00	$117,777.60	$129,905.00

* Estimated value of municipal data updates contributions

4. GEOLIBRARY REQUIREMENTS

Maine's geospatial data needs have changed dramatically since the GeoLibrary was established. The evolution in technology and public expectations has outstripped the state's ability to maintain geospatial data meeting today's needs. Twenty years ago USGS 1:24000 scale mapping was seen as adequate, today the latest NG911 requirements are for 1:4800 (1 inch equals 400 feet) mapping. Whether you are mapping for emergency services, floodplains, transportation or myriad other applications people expect accuracy within a few feet, not forty feet.

To achieve this accuracy new base mapping is required to form a foundation for other accurate mapping applications. No single agency is in charge of base mapping which is why the GeoLibrary was created. It must provide leadership to acquire base mapping and eliminate or at least reduce the

amount of duplicative mapping. To provide that leadership it must also have the financial capacity to attract matching funds from other sources.

In most instances state and federal agencies, communities and other interested parties all have an interest in developing base mapping. This represents numerous opportunities to leverage work and funding from these sources.

Geospatial Data Priorities

The last strategic plan for the GeoLibrary was completed in 2009 and needs to be updated to reflect a lack of funding and to evaluate the work that has been accomplished in the last decade. The costs for data acquisition have become more affordable and technology solutions for data delivery have changed tremendously.

The MeGIS draft report on the Maine GeoSpatial Architecture identified framework data layers of strategic importance to Maine. These include:

- Geodetic Control points
- Digital Orthoimagery
- Elevation
- Hydrography
- Governmental Unit Boundaries
- Cadastral/Parcel
- Transportation
- Structures
- Land Cover and Impervious surfaces
- Emergency response
- Geographic names
- Regulatory data.

(MeGIS and the GeoLibrary may not be entirely responsible for data development and maintenance in all of these data layers. However they do have a charge and responsibility to ensure cooperation in the development of the data at the very least.)

Geodetic control points, emergency response and regulatory data have specific agency sponsors charged with maintaining mapping quality. However the remaining data is not specifically assigned to any one agency for maintenance and in several cases have multiple agencies editing and maintain more than one set of base level data. The state would benefit from a well thought out and coordinated approach to updating its base level geospatial data.

The state's current base mapping was initiated over 30 years ago based on USGS topographic mapping at 1:24000 scale (1 inch equals 2,000 feet). This data was based upon the familiar USGS topographic quad sheets, familiar to hikers and hunters. Since then the use of mapping has become more ubiquitous for all of our core constituencies. The new NG911 system recently adopted by the Emergency Services Communications Bureau is just one example where particularly in urban areas a much more precise level of mapping is needed. The National Emergency Number Association sets standards for NG911 data exchange and GIS Mapping recommending 1:4800 mapping. Other data

layers including roads, land cover and boundary data are also in need of being updated. The Board asked its Geospatial work group to develop technical options and cost estimates for developing 1:4800 base mapping, however to do this requires more support than is available within current OIT/MeGIS resources.

> ***Recommendation:*** *The Legislature should provide funding to update the State's geospatial data and development services strategic plan. This plan should identify priorities for data updates, cost estimates, potential partnerships and funding mechanisms for the legislature to consider. Estimated Cost $60,000*

Data Acquisition

The key data layers below need more study to determine how we can best provide a coordinated update and maintenance plan. Each data layer has a short description of its current status and perceived need. Additionally an estimate of costs when available and potential partners in acquisition are both provided when available.

Digital Orthoimagery

This data requires constant updating. The GeoLibrary initiated a program for acquisition of minimum twenty four inch base resolution imagery for the state in 2011. The first five year project will be complete in 2016 and it will have included 12 of Maine's sixteen counties and acquired data for over fifty percent of the state. The full cost of an orthoimagery base map is estimated to be $1,900,000. Partners in the first project included the USGS, counties, state agencies and communities.

Elevation/Bathymetry

The GeoLibrary has been pursuing high resolution base imagery elevation or topographic data since 2009. For much of the State elevation data will not change much and once acquired will maintain a high level of accuracy for a long time. However there will be areas undergoing development or natural changes that need to be updated more frequently. Examples of this are changing coasts due to erosion, or river meanders and general development related changes within communities as they grow and develop. The total cost for terrestrial elevation data is estimated to be approximately $6,600,000. The GeoLibrary has been successful in acquiring terrestrial elevation data for about fifty percent of the state so far through various cooperative initiatives. Updated bathymetry, or elevation data of submerged near shore areas of the coast, is necessary throughout the coastal waters of Maine. The current data is a hodgepodge of data acquired piecemeal for numerous independent studies and of varying accuracies. New high resolution data is needed to complete studies of the land sea interface for myriad applications. Near and offshore high resolution data is needed for a better understanding of Maine's fisheries and impacts of development. No estimate is available for the cost of acquiring this data at this time.

So far partners for acquiring elevation and bathymetry include the USGS, NOAA, USDA, State agencies, the University of Maine, Non-Profit Organizations, the Bureau of Ocean Energy Management, counties, communities and private enterprise.

Hydrography

The USGS maintains this data at a scale of 1:24000. However to be useful at the local level and for most state agencies a resolution of 1:4800 is needed. To achieve this level of mapping requires high resolution topographic and orthoimagery data to create the higher resolution mapping of the Maine's lakes, ponds, river, streams and watersheds. Potential partners for developing this level of data quality include, the USGS and state agencies. An assessment of cost for acquiring this data needs to be done.

Governmental Unit Boundaries

Maine's township and county boundaries have evolved over time. For most of the state no modern surveying of boundaries have been done. Frequently parcel data submitted by communities does not agree with the boundaries in the Maine Township boundary data due to its original accuracy as depicted on the familiar USGS topographic Quad sheets. A system for updating township and county boundaries to reflect modern technical capacity for accuracy should be established. This will require engaging with stakeholders to determine a long term plan for improving this data preferably with participation from all stakeholders. Potential partners would be state agencies, counties and communities. No estimate of cost for this data is available.

Cadastral/Parcel

The GeoLibrary has provided leadership in developing a coordinated, statewide parcel data layer. The primary responsibility for parcel data lies with individual Maine municipalities. However, this data is a key tool for many state agencies, the private sector and the general public. Having this data accessible in a coordinated, centralized distribution center is very useful. Providing matching funds for conversion of hardcopy parcel maps to digital products and providing some level of maintenance is very desirable.

Two hundred and ninety one communities have invested in digital parcel maps leaving approximately two hundred and nine communities that have not. An unscientific estimate of cost for conversion is $20,000 per town. (This price can vary based on many factors) So the estimate for converting all communities would be approximately $4,200,000.

Updating parcel maps costs will vary according to how large the community is and how much subdivision activity there is. Again an unscientific estimate of average cost for updating parcel maps would be about $2,000 every six years. Maine has approximately 500 organized communities. If the GeoLibrary were to set a goal of obtaining updates from communities every six years and paying them $200 for the extra work of submitting them the cost would be approximately $17,000 per year leveraging community investment of $170,000. Potential partners besides the communities would be state agencies.

Transportation

The Department of Transportation and the Public Utilities Commissions, Emergency Communications Services Bureau both have business requirements for developing transportation data. Each entity has divergent technology for developing this data resulting in overlapping efforts and a level of redundancy. New technology exists to eliminate this duplication. However the costs for each agency to adopt the new technology have substantial upfront costs that are beyond the scope of existing budgets. The exact costs are unknown at this time but should be investigated and have a plan for development of a single transportation platform that provides for the combined business needs of both agencies.

This would provide all stakeholders with more usable and accurate transportation data. Potential partners for this are state and federal agencies.

Structures

Having an accurate representation of structures is very useful for emergency response to calls for police, fire and other emergency services. It can also be helpful in evaluating changes to transportation routes, development and many other applications. Maine does not have an adequate data layer. Potential partners for development of this important data layer include state and federal agencies, counties and communities. No estimate has been completed for developing this data.

Land Cover and Impervious Surfaces

Maine's most recent land cover data was developed in 2006 and is at a resolution of 10 meters. This is entirely inadequate for the level of analysis required today. Urban communities planning for storm water runoff and retention from impervious surfaces, oil and hazardous spill responders charged with protecting the environment, Inland Fisheries and Wildlife professionals identifying prime habitat for the states aquatic and land species all require resolution of at least 1 meter. NOAA estimates the cost of developing this for the State of Maine would be about $570,000. NOAA has already committed to invest $230,000 to develop a 10 meter data layer and Maine could buy up to 1 meter resolution for an estimated additional cost of $300,000. Potential partners for this project besides NOAA would include, state agencies and non-profits and other federal agencies.

GEOSPATIAL DATA LIBRARY

The first purpose specified in the GeoLibrary's enabling legislation was to create an electronic gateway for distributing GIS data to the public. The Board has pursued several attempts to create a Geoportal to meet the needs of the GIS community. So far, these efforts have been unsuccessful. Changes in technology, the costs of operating an electronic gateway, and a funding source to maintain and operate such a Geportal beyond the demonstration phase have placed significant obstacles in the way. Due to lack of funding, the Board discontinued its latest attempt. However the need for an organized library of geospatial data is still needed. A GeoLibrary must continually maintain and acquire new data and reference material to stay current and meet Maine's geospatial data needs.

5. APPENDIX A

Acronyms & Selected Definitions

Board	Board of Directors for the Maine Library of Geographic Information
CIO	Chief Information Officer for the state
FEMA	Federal Emergency Management Agency
FGDC	Federal Geographic Data Committee, sets metadata standards
GeoLibrary	Common name for Maine Library of Geographic Information
GIS	Geographic Information System
LiDAR	Light Detection And Ranging, a remote sensing system used to collect topographic data
MDIFW	Maine Department of Inland Fisheries and Wildlife
MDOT	Maine Department of Transportation
MEMA	Maine Emergency Management Agency
MEGIS	Maine Office of GIS
MEGUG	Maine GIS Users Group
MPUC	Maine Public Utilities Commission
NGA	National Geospatial-Intelligence Agency
NGO	Non-Government Organization
NMDC	Northern Maine Development Commission
NRCS	Naturals Resources Conservation Service
NSDI	National Spatial Data Infrastructure, a consortium to promote the sharing of geospatial data and standards
OGC	Open Geospatial Consortium, a non-profit international organization that develops standards for geospatial and location based services
OIT	Office of Information Technology
Orthoimagery	Aerial imagery corrected to represent the earth's surface, having been adjusted for topographic relief, lens distortion, and camera tilt so that it can be used as an accurate base map
Resolve 23	Legislative committee that drafted the plan that resulted in the GeoLibrary
USDA	United States Department of Agriculture
USGS	United States Geological Survey

6. APPENDIX B

GeoLibrary Legislation

Maine Revised Statutes
Title 5: ADMINISTRATIVE PROCEDURES AND SERVICES
Chapter 163: OFFICE OF INFORMATION TECHNOLOGY

§2001. SHORT TITLE

This subchapter may be known and cited as "the Maine Library of Geographic Information Act." [2005, c. 12, Pt. SS, §16 (NEW).]
SECTION HISTORY
2005, c. 12, §SS16 (NEW).

§2002. DEFINITIONS

As used in this subchapter, unless the context otherwise indicates, the following terms have the following meanings. [2005, c. 12, Pt. SS, §16 (NEW).]

1. **Association.** "Association" means an organization:

A. Whose membership is identifiable by regular payment of organizational dues and regularly maintained membership lists; [2005, c. 12, Pt. SS, §16 (NEW).]
B. That is registered with the State or is a corporation in the State; and [2005, c. 12, Pt. SS, §16 (NEW).]
C. That exists for the purpose of advancing the common occupation or profession of its membership. [2005, c. 12, Pt. SS, §16 (NEW).]
[2005, c. 12, Pt. SS, §16 (NEW) .]

2. **Data custodian.** "Data custodian" means a federal data custodian, state data custodian or nonstate data custodian.
[2005, c. 12, Pt. SS, §16 (NEW) .]

3. **Federal data custodian.** "Federal data custodian" means any branch, agency or instrumentality of the Federal Government.
[2005, c. 12, Pt. SS, §16 (NEW) .]

4. **Geographic information board.** "Geographic information board" means the Maine Library of Geographic Information Board.
[2005, c. 12, Pt. SS, §16 (NEW) .]

5. **Geographic information system.** "Geographic information system" or "GIS" means a computer system capable of assembling, storing, manipulating, analyzing and displaying information identified according to locations. A GIS includes operating personnel, hardware, software and the data that go into the system.
[2005, c. 12, Pt. SS, §16 (NEW) .]

6. **Maine Library of Geographic Information.** "Maine Library of Geographic Information" or "library"

means the statewide network created pursuant to this subchapter by which data custodians or their designees organize and catalog public geographic information and provide access to that information to all levels of government and to the public.
[2005, c. 12, Pt. SS, §16 (NEW) .]

7. **Nonstate data custodian.** "Nonstate data custodian" means any agency or instrumentality of a political subdivision of the State.
[2005, c. 12, Pt. SS, §16 (NEW) .]

8. **Public geographic information.** "Public geographic information" means public information that is referenced to a physical location. Public geographic information includes, but is not limited to, physical, legal, economic or environmental information or characteristics concerning land, water, groundwater, subsurface resources or air in this State relating to:
A. Topography, soil, soil erosion, geology, minerals, vegetation, land cover, wildlife and associated natural resources; [2005, c. 12, Pt. SS, §16 (NEW).]
B. Land ownership, land use, land use controls and restrictions, jurisdictional boundaries, tax assessments, land value and land survey records and references; and [2005, c. 12, Pt. SS, §16 (NEW).]
C. Geodetic control networks, aerial photographs, maps, planimetric data, remote sensing data, historic and prehistoric sites and economic projections. [2005, c. 12, Pt. SS, §16 (NEW).]
[2005, c. 12, Pt. SS, §16 (NEW) .]

9. **Public information.** "Public information" means information that is stored, gathered, generated, maintained or financed by a data custodian. Information of state and nonstate data custodians is public information only if it is either:
A. A public record under Title 1, section 402, subsection 3; or [2005, c. 12, Pt. SS, §16 (NEW).]
B. Otherwise expressly authorized by law to be released. [2005, c. 12, Pt. SS, §16 (NEW).]
The presence of data in the library does not, by itself, make that information a public record.
[2005, c. 12, Pt. SS, §16 (NEW) .]

10. **State data custodian.** "State data custodian" means any branch, agency or instrumentality of State Government.
[2005, c. 12, Pt. SS, §16 (NEW) .]

11. **State funds.** "State funds" means bond revenues and money appropriated or allocated by the Legislature.
[2005, c. 12, Pt. SS, §16 (NEW) .]
SECTION HISTORY
2005, c. 12, §SS16 (NEW).

§2003. MAINE LIBRARY OF GEOGRAPHIC INFORMATION BOARD

1. **Purposes and duties.** The Maine Library of Geographic Information Board, as established by section 12004-G, subsection 30-B, has the following purposes and duties:

A. To oversee the Maine Library of Geographic Information to ensure that it operates as a coordinated, cost-effective electronic gateway providing public access to data custodians' public geographic information. Nothing in this paragraph may be construed to affect the rights of persons to inspect or copy public records under Title 1, chapter 13, subchapter 1, or the duty of data custodians to provide for public inspection and copying of those records; [2005, c. 12, Pt. SS, §16 (NEW).]

B. To establish and maintain standards, rules and policies for nonstate data custodians' geographic information that is incorporated into the Maine Library of Geographic Information. These standards, rules and policies must be consistent with the standards, rules and policies set by the Chief Information Officer that govern state data custodians' information technology. The geographic information board shall adopt rules to carry out this subchapter. Rules adopted pursuant to this paragraph are routine technical rules as defined in chapter 375, subchapter 2-A. Standards and policies may concern, without limitation

(1) Methods of access and delivery of information held by the library;
(2) Geographic information system technical specifications;
(3) Data content, metadata and security, including guideline criteria for accepting 3rd-party data from data custodians or data volunteered by the private sector;
(4) Privacy and privacy protection;
(5) Mechanisms to correct inaccuracies; and
(6) Data validation tools and processes; [2005, c. 12, Pt. SS, §16 (NEW).]

C. To reduce redundancies in the creation, verification and maintenance of public geographic information and to enhance its utility for complex analyses.

(1) Each state data custodian, or its designee, that acquires, purchases, verifies, maintains or produces geographic information with state funds or grants shall:

(a) Inform the geographic information board and the Office of Geographic Information Systems of the existence of this information and its geographic extent; and

(b) Upon request, provide to the library and office an electronic copy of all information classified as public, in a form compatible with standards set by the Chief Information Officer.

(2) Each nonstate data custodian, or its designee, that acquires, purchases, verifies, maintains or produces geographic information with state funds specifically provided for that purpose shall:

(a) Inform the geographic information board and the Office of Geographic Information Systems of the existence of this information and its geographic extent; and

(b) Upon request, provide to the library and Office of Geographic Information Systems an electronic copy of all information classified as public, in a form compatible with standards set by the Chief Information Officer; [2005, c. 12, Pt. SS, §16 (NEW).]

D. To set priorities and authorize the expenditure of state funds, including awarding of grants or subgrants to data custodians when available. The geographic information board may seek federal and other funding

partners, accept gifts and grants and expend the funds acquired for purposes consistent with this subchapter; [2005, c. 12, Pt. SS, §16 (NEW).]

E. To promote innovative uses of geographic information through the provision of verified, coordinated, intergovernmental information via the Maine Library of Geographic Information. The geographic information board shall seek advice from the general public, professional associations, academic groups and institutions and individuals with knowledge of and interest in geographic information regarding needed information and potential innovative uses of geographic information; [2005, c. 12, Pt. SS, §16 (NEW).]

F. To enter partnerships to promote the purposes of this subchapter; [2005, c. 12, Pt. SS, §16 (NEW).]

G. To hear and resolve disputes that may arise between data custodians or with respect to information to be placed in the Maine Library of Geographic Information, enforcement of geographic information board standards, rules or policies or other related matters, all in accordance with the Maine Administrative Procedure Act. Complainants may directly present their case to the geographic information board, which has the power to hold investigations, inquiries and hearings concerning matters brought to its attention and to make decisions with respect to the case. All interested parties must be given reasonable notice of the hearing and an opportunity to be heard. Hearings must be open to the public; [2005, c. 12, Pt. SS, §16 (NEW).]

H. To conduct studies relating to the coordination, development and use of statewide geographic information; [2005, c. 12, Pt. SS, §16 (NEW).]

I. To report annually by January 1st to the joint standing committees of the Legislature having jurisdiction over natural resources matters, and state and local government matters. The report must provide a review of the past year's activities, including, but not limited to, a description of standards adopted, data added to the library, partnerships established, disputes addressed, studies conducted and financial activity. The library shall also make this report available to the public. This report may also include suggested legislative language intended to address geographic information issues needing legislative action; and [2005, c. 12, Pt. SS, §16 (NEW).]

J. To develop appropriate internal services to facilitate generalized access for and use of data by governmental agencies and the public. The library may not compete directly with private enterprise. The library shall work in partnership with nonstate data custodians to promote the purposes of this subchapter. [2005, c. 12, Pt. SS, §16 (NEW).]
[2005, c. 12, Pt. SS, §16 (NEW) .]

2. **Membership.** The geographic information board consists of 15 voting members as follows:

A. The commissioner or the commissioner's designee; [2005, c. 12, Pt. SS, §16 (NEW).]

B. The Chief Information Officer or the Chief Information Officer's designee; [2005, c. 12, Pt. SS, §16 (NEW).]

C. Two members, or the members' designees, who are responsible for overseeing GIS functions of a state department that is a data custodian of geographic information, appointed by the Governor; [2005, c. 12, Pt. SS, §16 (NEW).]

D. Eight representatives as follows:

(1) **A representative of the University of Maine System**, appointed by the Chancellor of the University of Maine System;
(2) **Two representatives of a statewide association of municipalities**, one representative appointed by the President of the Senate from nominations made by the association's governing body and one representative appointed by the Speaker of the House from nominations made by the association's governing body;
(3) **One representative of a statewide association of regional councils,** appointed by the Speaker of the House from nominations made by the Department of Agriculture, Conservation and Forestry;
(4) **One representative of a statewide association of counties**, appointed by the Governor from nominations made by the association's governing body;
(5) **One representative of a statewide association representing real estate and development interests,**appointed by the President of the Senate;
(6) **One representative of a statewide association representing environmental interests,** appointed by the Speaker of the House; and
(7) **One member representing public utilities**, appointed by the Governor; [2011, c. 655, Pt. EE, §1 (AMD); 2011, c. 655, Pt. EE, §30 (AFF); 2011, c. 657, Pt. W, §5 (REV).]

E. **Two members of the private sector representing geographic information vendors**, one member appointed by the President of the Senate and one member appointed by the Speaker of the House; and [2005, c. 12, Pt. SS, §16 (NEW).]

F. **One public member**, appointed by the President of the Senate. [2005, c. 12, Pt. SS, §16 (NEW).]
The terms for the members appointed pursuant to paragraphs C, D, E and F are 3 years. A member who designates another person to serve on the geographic information board as that member's designee shall provide written notice to the geographic information board's staff of the name and title of the designee.
[2011, c. 655, Pt. EE, §1 (AMD); 2011, c. 655, Pt. EE, §30 (AFF); 2011, c. 657, Pt. W, §5 (REV) .]

3. **Board chair.** The geographic information board shall annually elect a chair from its membership at the first meeting in each year.
[2005, c. 12, Pt. SS, §16 (NEW) .]

4. **Staff.** Staff support to the geographic information board is provided by the Department of Administrative and Financial Services.
[2005, c. 12, Pt. SS, §16 (NEW) .]

5. **Quorum; action.** Eight members of the geographic information board constitute a quorum. The affirmative vote of 7 members is necessary for any action taken by the geographic information board. A vacancy in the membership of the geographic information board does not impair the right of a quorum to exercise all the powers and perform the duties of the geographic information board. The geographic information board may use video conferencing and other technologies to conduct its business but is not exempt from Title 1, chapter 13, subchapter 1.
[2005, c. 12, Pt. SS, §16 (NEW) .]

6. **Meetings.** The geographic information board shall meet at the call of the chair but not less than quarterly. Notice must be provided no less than 5 working days prior to the meeting. Notice may be in writing by facsimile or electronic transmission.
[2005, c. 12, Pt. SS, §16 (NEW) .]

7. **Memorandum of understanding.** Information to be provided by a nonstate data custodian or its designee to the Maine Library of Geographic Information is governed by a memorandum of understanding between the geographic information board or its designee and the nonstate data custodian or its designee.
[2005, c. 12, Pt. SS, §16 (NEW) .]

8. **Data custodian responsibilities.** Federal and nonstate data custodians may voluntarily contribute data to the Maine Library of Geographic Information, except that data developed with state funds must be submitted to the library. Data custodians or their designees are responsible for:

A. Ensuring that the public information is accurate, complete and current through the creation of adequate procedures; [2005, c. 12, Pt. SS, §16 (NEW).]

B. Updating source data bases following verification of suggested corrections that users submit in accordance with geographic information board standards; [2005, c. 12, Pt. SS, §16 (NEW).]

C. Complying with standards adopted by the geographic information board; and [2005, c. 12, Pt. SS, §16 (NEW).]

D. Providing reasonable safeguards to protect confidentiality. [2005, c. 12, Pt. SS, §16 (NEW).]
[2005, c. 12, Pt. SS, §16 (NEW) .]

SECTION HISTORY
2005, c. 12, §SS16 (NEW). 2011, c. 655, Pt. EE, §1 (AMD). 2011, c. 655, Pt. EE, §30 (AFF). 2011, c. 657, Pt. W, §5 (REV).

§2004. LIABILITY

The geographic information board and any of the parties submitting data to the Maine Library of Geographic Information for public use may not be held liable for any use of those data. [2005, c. 12, Pt. SS, §16 (NEW).]
SECTION HISTORY
2005, c. 12, §SS16 (NEW).

§2005. COPYRIGHTS AND FEES

Copyright or licensing restrictions may not be fixed by the geographic information board or data custodians to the information made available through the Maine Library of Geographic Information. The geographic information board may set fees for electronic copies of library data that are no more than 3 times the actual cost of reproduction. Fee schedules must be set annually and made readily available to requestors. [2005, c. 12, Pt. SS, §16 (NEW).]

SECTION HISTORY
2005, c. 12, §SS16 (NEW).

§2006. GEOSPATIAL DATA ACCOUNTS

1. **Accounts established.** There are established within the office separate accounts, referred to in this section as "the accounts," to be administered by the geographic information board.
[2013, c. 122, §1 (NEW) .]

2. **Sources of funding.** The following must be paid into the accounts:

A. All money appropriated for inclusion in the accounts; [2013, c. 122, §1 (NEW).]
B. All interest earned from investments of the accounts; [2013, c. 122, §1 (NEW).]
C. Any money allocated from Other Special Revenue Funds accounts for the purpose of the accounts; [2013, c. 122, §1 (NEW).]
D. Proceeds from any bonds issued for the purpose of the accounts; and [2013, c. 122, §1 (NEW).]
E. Matching funds received from the Federal Government or other legal entity for geospatial data acquisition expenditures made from the accounts pursuant to subsection 4. [2013, c. 122, §1 (NEW).]
[2013, c. 122, §1 (NEW) .]

3. **Use of accounts.** The purpose of the accounts is to continue projects developed by the geographic information board. The accounts must be used to provide and maintain to the extent practicable statewide GIS data sets necessary for the efficient delivery of state services and to conserve state expenditures through partnerships with other GIS stakeholders interested in acquiring the same data sets. The accounts may be used at the discretion of the geographic information board for acquiring geospatial data primarily including but not limited to the following data sets:

A. An orthoimagery program. Imagery collected through this program must be from all areas of the State and be 4-band images that include the red, green, blue and near infrared bands; and [2013, c. 122, §1 (NEW).]

B. An elevation data set. A consistent statewide elevation data set must be collected using light detection and ranging technology or an equivalent method. [2013, c. 122, §1 (NEW).] [2013, c. 122, §1 (NEW) .]

4. **Matching funds.** State funds used to purchase geospatial data must be matched by funding from other sources at at least a one-to-one ratio.
[2015, c. 122, §1 (NEW) .]

5. **Annual report.** The Chief Information Officer shall submit a written report by January 15, 2014 and annually thereafter to the Governor and the Legislature on the accounts' balance and expenditures. [2013, c. 122, §1 (NEW) .]

SECTION HISTORY

2013, c. 122, §1 (NEW).

7. APPENDIX C

PAST PROJECTS

Return on Investment Study for Orthoimagery: The Maine GeoLibrary, in cooperation with the Maine Office of GIS, received a FGDC grant to conduct a return on investment (ROI) study of orthoimagery in Maine. The independent study was conducted by Applied Geographics, and showed ROI of 400-1200%.

Strategic Plan: When the Maine Library of Geographic Information was formed in 2002 its first strategic plan was developed under Legislative Resolve 23. The GeoLibrary completed an update to this plan in 2009. The strategic plan serves the same function for the GeoLibrary Board as a Comprehensive Plan for a municipality. The plan guides the development of the GeoLibrary and is a living document that needs to be updated regularly. The pace of technological advance in the field of digital mapping is fast and requires the Board to make continual adjustments in how it approaches the acquisition of data and the delivery geographic information to the many users of this information.

- This plan provides identified a series of recommendations for
- Expanding Participation
- Improving Statewide GIS Coordination
- Improving Access to Geospatial Data
- Developing and Maintaining Statewide Geospatial Data
- Lowering the Barriers to the Use of GIS
- Improving Access to Training and Education
- Establishing Sustainable Funding For the GeoLibrary

2003 -2005 Orthoimagery Acquisition: The project was a $3.2M project to create, in cooperation with the U.S. Geological Survey (USGS), full color, high-resolution digital orthophotos for most of the populated areas of Maine.

Parcel Grants: In the Resolve23 Study that lead to the creation of the Maine Library of Geographic Information (GeoLibrary), surveyed municipalities placed great emphasis on acquiring and updating digital tax parcel data. Having this local information in a standard format, and in a central repository, would assist individual communities and regional planners in various planning activities. In addition, municipalities will also be able to develop a regional outlook for whatever data is being studied. Consequently, the GeoLibrary Board approved two rounds of grants to Maine municipalities for the upgrading and creation of digital parcel data, budgeting $371,419 in total with awards varying from $1,000 to $10,000.

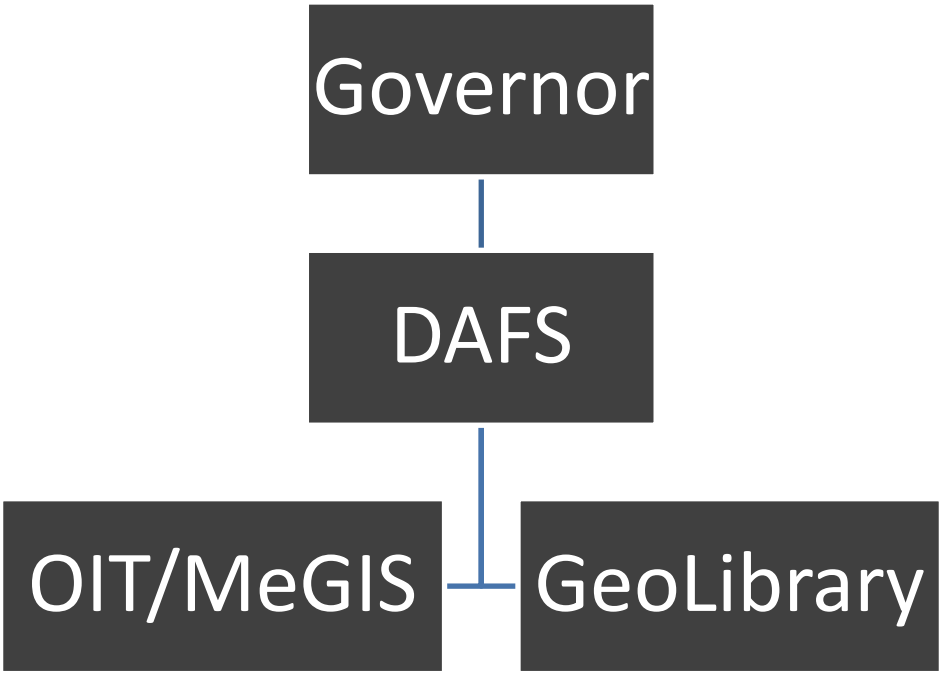
Land Cover Partnership: The Maine Landcover Dataset (MELCD 2004) project provided updated land cover and imperviousness data for Maine based on 2004 satellite imagery. Previously, the most recent such data for Maine was based on 13-year old imagery and was at a very coarse resolution of 30 meters. This project provided data at a higher resolution of 5 meters, and was tightly integrated with federal landcover mapping projects. In addition, imperviousness data were developed at a 5-meter resolution as well.

2005 County GIS Study: This study focused on county GIS needs and identification of opportunities to support county use of GIS. Data gathered from the study resulted in four general areas of information, Lessons Learned, Opportunities for Collaboration to Build and Fund County GIS, Planned Information Forums, the need to collect more detailed information.

Resolve 23: This was the original comprehensive strategic plan developed in 2002. This plan set the stage for implementing a statewide partnership approach to collection and distribution of GIS data. It provided a comprehensive analysis of needs and benefits to all GIS providers

8. APPENDIX D

GEOLIBRARY ORGANIZATION



The GeoLibrary is staffed by agreement with the Office of Information Technology (OIT). OIT/MEGIS provides an Executive Director and support staff to manage and operate the GeoLibrary website, GIS database, and data access facilities. It meets monthly or as needed. Agendas and meeting notes can be found on the GeoLibrary website: http://www.maine.gov/geolib/.

The Board has three standing committees:

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.

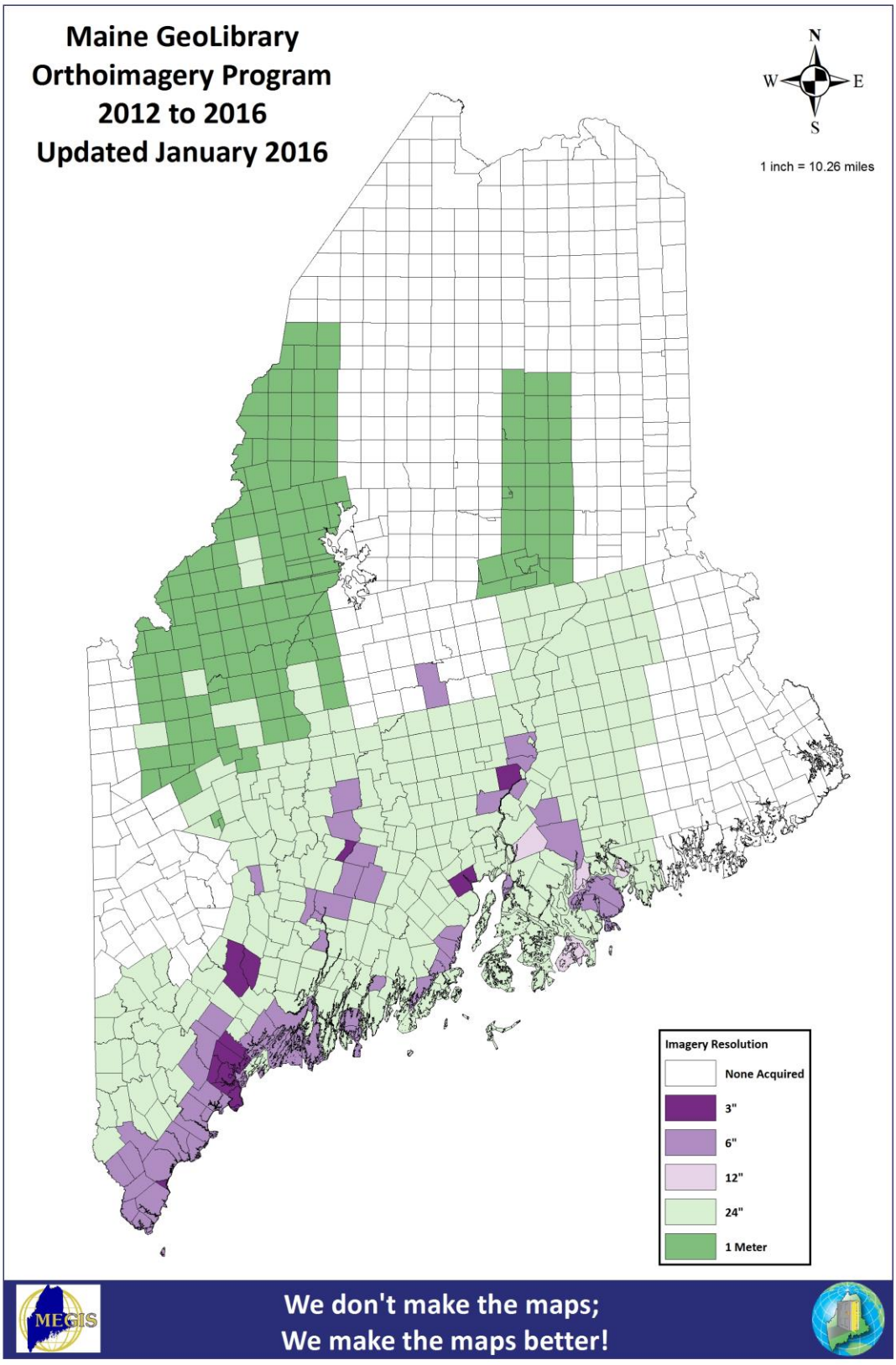
3) **Technical Committee, with responsibility for:**
   - advising the Board on all technical matters;
   - oversight of all Board projects;
   - primary interaction with outside entities on technical issues.

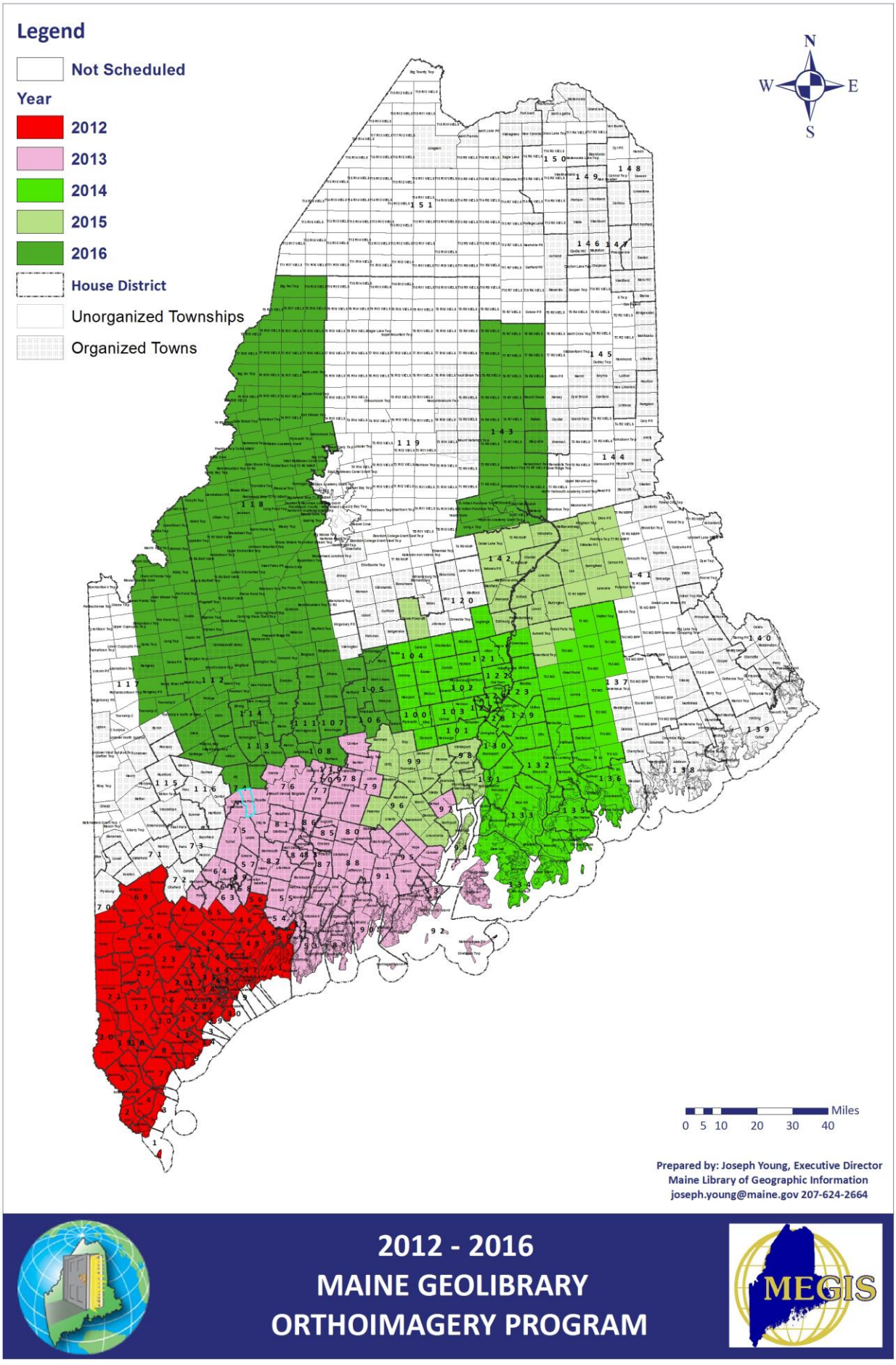
In addition to the three standing committees, the Board has four workgroups with members solicited from the states geospatial community. These members provide for a broad cross section of interests in a geographic sense and in terms of their use of GIS data. These work groups are:

1) **Coordination and Communication**
   - The Communication/Coordination Workgroup seeks to continually improve GeoLibrary outreach relations with federal, state, county, and local governments, academia, non-profits, private industry, and the public, by way of documenting and promoting the activities of the GeoLibrary through various media delivery methods. The workgroup also seeks to educate people about the importance of GIS and using geographic data to solve problems, find new data contributors to the GeoLibrary, and obtain a wide base of support for the efforts of the GeoLibrary
2) **GeoSpatial Data**
   - The mission of the GeoSpatial Data Work Group is to develop appropriate GeoSpatial data standards and define the GeoSpatial data needs and flows between all levels of government, private sector, and academia to permit the ongoing acquisition of multi- purpose GeoSpatial data for Maine. The workgroup will seek out a strong coalition of state, local, federal, private and non-profit partnerships to achieve this mission.
3) **Education and Training**
   - The mission of the Education and Training Workgroup is to expand and improve coordination of geospatial education, training and other outreach activities in support of better public use of geospatial data. In this capacity the Workgroup seeks to develop and ensure a broad-based and efficient strategy for GIS education and training initiatives among all organizations and institutions state wide, taking into account special needs of the various constituencies --- K-12, academia, local government, non-profits, and any Maine citizen
4) **GeoParcels**
   - The mission of the GeoParcels work group is to develop a statewide parcels data layer with links to the registry of deeds, assessing data and other related databases.

9. APPENDIX E

DATA ACQUISITION PROGRESS MAPS

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Prepared by: Joseph Young, Executive Director
Maine Library of Geographic Information
joseph.young@maine.gov 207-624-2664
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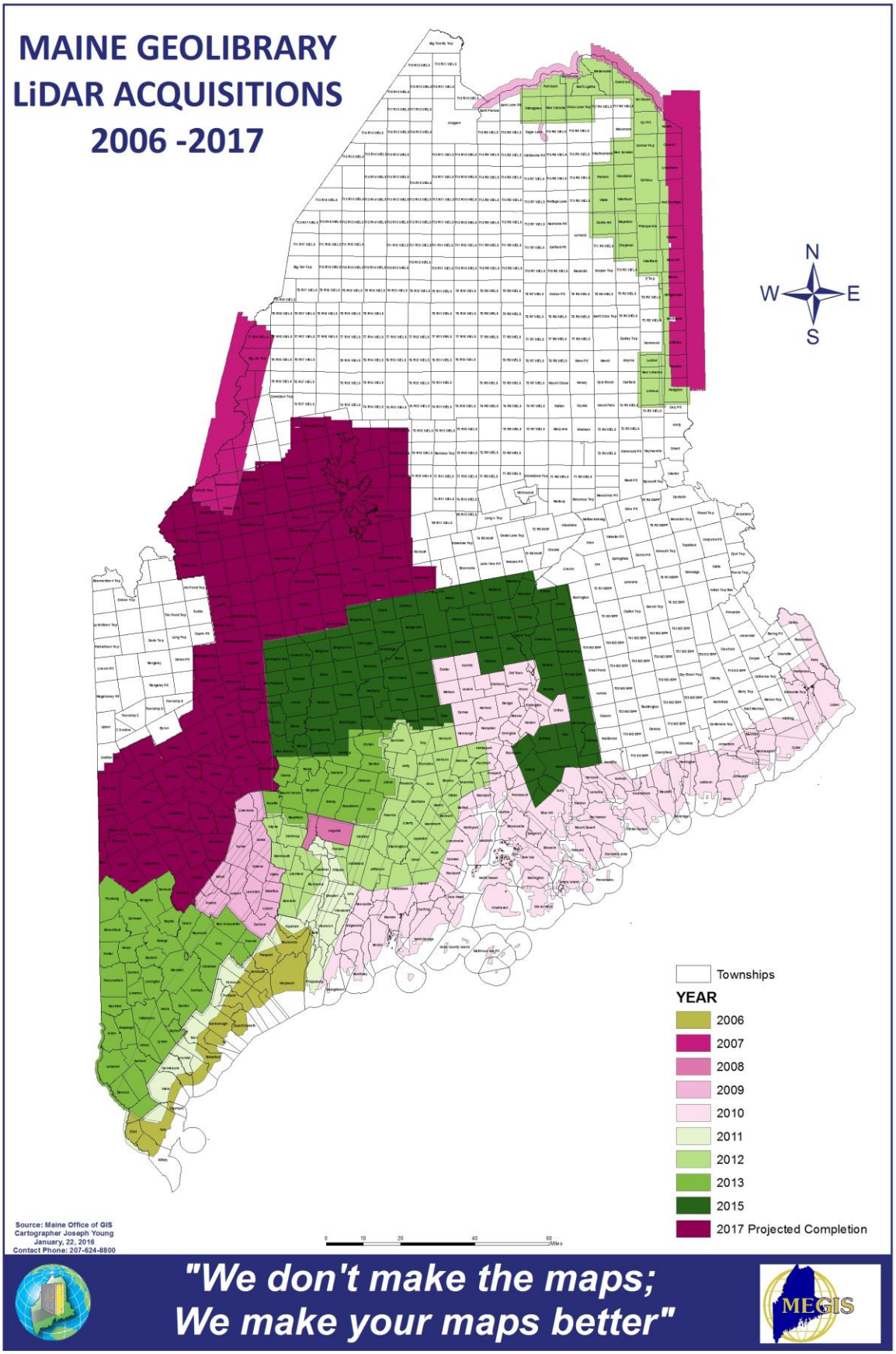
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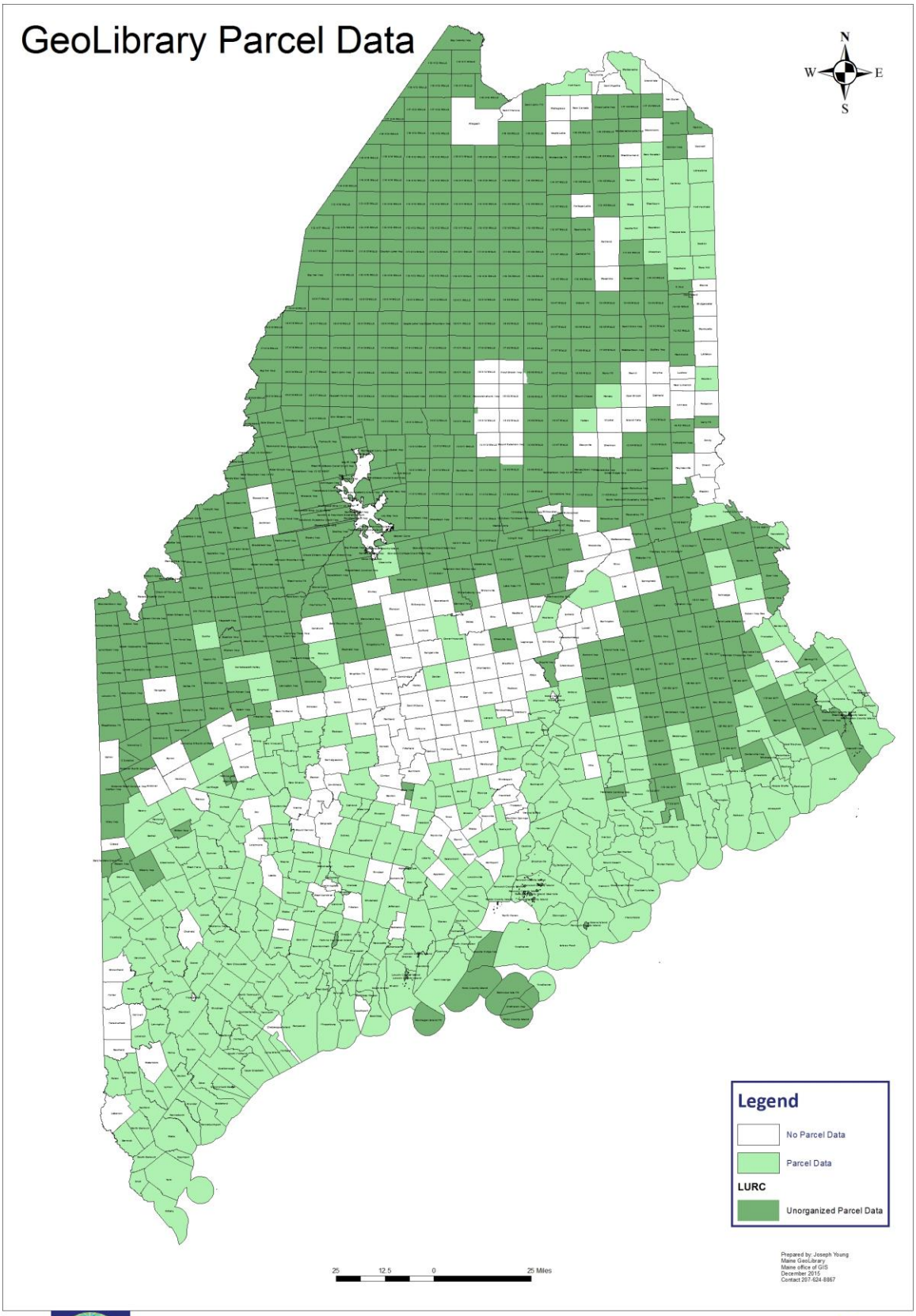
Source: Maine Office of GIS
Cartographer Joseph Young
January, 22, 2016
Contact Phone: 207-624-8800
"We don't make the maps;
We make your maps better"
MEGIS



"We don't make your maps;
We make your maps better"

10. APPENDIX F

GeoParcel Partnership Program Outline

This program is designed to provide funding for communities in this order of priority:

- Towns that do not have any parcel maps
- Towns that have just paper parcel maps
- Towns that have digital maps but have not updated them in more than five years
- Proposed Allocation of Funds
    - New Digital Parcel Maps $280,000
    - Updating Existing Parcel Maps $16,500
    - Total $296,000

New Digital Parcel Map Funding Applications

Applications for funding are due on August 1st of each year. The Geolibrary will provide up to 50% of the funding necessary to develop new parcel maps. To qualify for these funds communities must provide the GeoLibrary with parcel data meeting Digital Parcel Standards minimum of Level I as described in the GeoLibrary's "Standards for Digital Parcel Files".

Parcel Map Update Funding Applications

Applications for funding are due on August 1st of each year. The Geolibrary will provide 10% of the funding necessary to develop new parcel maps. To qualify for these funds communities must provide the GeoLibrary parcel data meeting Digital Parcel Standards minimum of Level I as described in the GeoLibrary's "Standards for Digital Parcel Files".