Maine GeoLibrary Board
GIS Strategic Plan and Integrated Land Records Information System

Information Gathering Forum Notes
Augusta Maine | April 30, 2008

Project: Strategic and Business Plan Development in Support of the NSDI Future Directions Fifty States Initiative & Property Boundary Data Capture and Integration Framework

Attendance: 35 attendees at the meeting. (Please refer to the attached list of attendees – Attachment A.)

Discussion:

► **Introductions**
The Forum began with introductions of the Sewall Team of Bruce Oswald of Oswald Associates and Rich Sutton of Reference Standard. The attendees were then asked to introduce themselves and indicate how they currently used GIS or anticipated using it in the future. The attendees indicated a wide range of current and anticipated uses of GIS. Details of these uses by category are summarized in Attachment B.

Attendees were also notified about the new GeoLibrary List Serve and encouraged to sign up for it as a means to keep abreast of the latest GIS events in the state and to communicate with others in the GIS community. Nancy Armentrout was thanked for making the arrangements for the space and providing the refreshments for the event.

When asked about the GeoLibrary Board, less than 1/3 of the room was fully aware of what it was. Once again, this points out a major communication/marketing issue for the Board.

► **Background on Project**
Bruce Oswald provided background on the GeoLibrary Board. He noted that it was established by an act of the Legislature in 2002 as a statewide network to organize, catalog and provide access to geographic information. He stated that its original funding had come through a $2.3 million bond issue which the Board had spent judiciously on the state clearinghouse, a statewide digital orthoimagery program (by matching $1.6 million in additional funding from the United States Geological Survey (USGS), $350 thousand on developing a state tax parcel standard and then providing grants to create and upgrade tax parcel data as well as many other things. In addition, he noted that the Board was working with various parties to establish a state GIS portal which would be live in the not too distant future. Lastly, he indicated that the Board represented a wide constituency from those in State and municipal government and regional councils to real estate, development, education, utilities, surveyors, GIS vendors and the State CIO.

Mr. Oswald reported that the Board was a viable functioning organization, but, after 6 years, had nearly expended all the funds that it had been given and felt that it needed to step back and, with the help of the geospatial community in Maine, analyze Maine's statewide geospatial needs and develop plans for the future of GIS in Maine. He stated that the Board felt that these plans needed to include a path toward obtaining a sustainable funding source capable of meeting those needs. Lastly, he noted that the Board wished to develop a framework and functional specifications for integrating land records information in the state.

Mr. Oswald stated that the Board had applied for and received a matching grant from the USGS to update Maine's 2002 GIS strategic plan and design a statewide integrated land records system as part of the National States Geographic Information Council's (NSGIC) Fifty States Initiative. He noted that the project called for not only updating the strategic plan, but also bringing it into alignment with NSGIC's strategic criteria, and, in particular, focusing on: coordination of local governments, academia and the private sector; developing sustainable funding sources; and cultivating political champions to grow support for future geospatial initiatives.

He then provided the attendees with information on the blog site developed for gathering information and holding project discussion on the land records information system (http://maineplan.blogspot.com).

He noted that there was currently an on-line survey which the Sewall Team was using to gather project data at: http://www.surveymonkey.com/s.aspx?sm=mYgDWShUtJCExpX2cUAXGQ_3d_3d

and encouraged all to spend a few minutes completing it. Lastly, he encouraged all to initiate a dialogue on the n*ew* Maine GIS List Serve at:
GEOLIBRARY-L-request@LISTS.MAINE.EDU.

► **Purpose of Forum/Review of Approach**
Bruce Oswald explained the purpose of the Forum with to inform the attendees on the details of the project and to gather their input on both the GIS strategic planning update and the development of an integrated land records information system for Maine. He went on to review the overall project approach with the attendees.

Strategic Planning
Bruce Oswald discussed the NSGIC coordinating criteria that the updated plan needed to aligned with. They included:

- Strategic and business plans
- A full-time paid GIS coordinator and staff
- Clearly defined authority and responsibility for coordination
- A relationship with the chief information officer
- A political or executive champion is involved in coordination
- A tie into national programs
- An inter-governmental working environment free of "turf wars"
- Sustainable funding mechanisms
- Contracting authority and cost sharing mechanisms
- Statewide coordination efforts that can be a conduit for federal initiatives

He then provided examples of initiatives that coordination programs across the country had done. He also talked about how GIS champions are cultivated and sustainable funding sources are achieved.

- **GIS Needs**
  The attendees were asked to address their GIS needs. It was noted that it was important to document these needs as documented needs were more likely to be eligible for federal funding. It was also noted that the Sewall Team should look at the GIS portion of the Maine Management report on the ME web site as well as the Marine GIS Needs Assessment for additional input. The needs outlined included at the Forum included:
  - **Data**
    - Imagery
      - ► There was widespread acknowledgement of the need for timely updates (3 year cycle) and annual funding of a statewide imagery program.
      - ► There was also a note that DOT flies a lot of imagery for its projects and don't get into the main data stream for others to use. There is a need for integration of that data.
      - ► 1 meter resolution imagery was requested for forest lands and up to 6 inch resolution for more urban areas.
      - ► The preference by the majority of the attendees was for "leaf off" imagery, but a couple requested "leaf on" as well.
      - ► There was a request for better metadata with the imagery or a watermark in the imagery of date of flight.
      - ► Easy access to data prior to 2000 for historical reference was requested.

        - ► All imagery needs to be available through an ortho viewer and web services.
    - Land Use/Land Cover
        - ► High resolution land use/land cover data was requested with regular updates.
        - ► It was noted that an automated change detection tool was needed for change analysis.
        - ► Forest cover type data (hardwood, softwood/mixed wood was specifically requested.
    - Road centerline data
        - ► There is a need for a single road centerline dataset which covers both public and private roads across the state and merges state and municipal roads.
    - Soils Data
        - ► There is a need for a complete, statewide soils layer.
    - Wetlands Data
        - ► There is a need for high resolution wetlands data.
    - Impervious surface data
        - ► The data was requested at less than 5 meter resolution.
        - ► For watershed analysis, greater than 1 meter resolution was requested to capture roofs and driveways. This data would be used for change detection and non-point source analysis.
    - Conservation Easements
        - ► There is a need for conservation easement data and monitoring.
    - Elevation Data
        - ► Statewide, high resolution terrain data (2-4' contours)
        - ► Need a continuous land to water model – high tide to low tide.
    - Regulated Resources Data
        - ► A municipal level regulated resources map for both natural and built resources is needed.
    - General data comments
        - ► There is a need for more standard data models.
- **Training**
    - More collaboration and mentoring within State government is needed on what can be done with GIS and using joint agency services.
    - Need training for non-techie's on what GIS can do to address their needs.
    - Need GIS user training.
    - Work with the University system folks to establish a program to train state, county and municipal workers through on-line/web based training courses.
- **Regional GIS Support**
    - There is a need for regional GIS support for communities and others to gain access to GIS technology and data.
    - The concept is currently being used by Land Trusts along the coast in 3 or 4 service centers.
- **Software Interoperability**
    - Assist in software interoperability issues and improve the use of attributes for various software.
- **Coordination/Access/Data Sharing**
    - There is a need for the development of a comprehensive data sharing framework.
    - There is a need for collaborative data maintenance to encourage data to be built correctly once with all edits captured and shared by many to reduce costs.
    - There needs to be improvement of data distribution with better access to data through the State server.
    - Health and Human Services needs access to address validation and cleaning and scrubbing applications for address location and geo coding in a secure environment.
    - Authentication and ID management is needed.
    - Creative ways to share data need to be explored.
- **Miscellaneous**

- A plan is needed for funding application development with federal funding.
- There is a need for a disaster management and recovery plan for GIS.
- Google Earth is being heavily used and has made GIS information available to managers and other non-GIS users. As a result, data should be published as KML as well as other more normal GIS file formats.

Integrated Land Records Information System

Rich Sutton provided some initial project background then solicited input from the attendees. The bulk of the remainder of the session was spent discussing these department-specific issues and questions.

- Privacy concerns with private landowners at Maine Bureau of Parks and Lands (BPL); the point was made that data must be treated carefully as there are many cases where too easily accessed public data presents genuine risks. Obvious examples are natural heritage plant communities or archeological sites; we need to balance the benefit of public access to data with private sensitivities;

- Status check on completion and status of digital land records as they currently exist: What percent of Maine towns currently have digital parcels? What pct of deeds registers?
    - According to best available records, approximately 750k parcels in state; somewhere over 50% of these are digital. Nearly all registry records are digital, though not truly geospatially enabled.

- Level of effort required to undertake this effort and bring it to completion, even for subsets of the state, is overwhelming. Cost is the biggest reason that land records haven't been integrated yet.

DEPARTMENTAL ISSUES and OBSERVATIONS:

Some state offices have longstanding relationships with land records data:

Department of Transportation, with a long standing and **continual needs** for land records, needs
- Ownership information abutting and adjoining roads
- To send notification letters quickly and efficiently
- To be able to easily access cadastral data to support surveying, appraisals, deeds, zoning and acquisitions

DOT parcels that have been used by different departments do not get warehoused and published in a standard or dependable way, so these data are typically not available for future purposes after their initial collection and use. Parcels need a **standard repository**.

DOT has talked with or considered working with large land records users like The Nature Conservancy for potential **synergistic opportunities** and cost sharing in geographic areas where common focus is being directed.

DOT suggests that this is not the first time that this problem has been addressed "this is the 3rd meeting we've had talking about this. Every time it breaks down into attribution" More energy needs to be directed toward a **focus on base mapping** geometry and basic parcel bounds with unique IDs.

Natural Resource Agencies: Analyze and examine natural features. Do not look at the world through a parcel based prism, but need to know ownership associations through overlays with these natural feature layers. Users could use ownership information that is live and dynamic. Ideally it would be federated from different sources and rolled up for other use or distribution.

The process for using digital parcel data currently involves going to towns get to tax maps and digitize and/or gather pieces from partners that already have fit large portions of it together. Areas may encompass 5 town, 64,000 acre study areas down to a few acres. LURC data are frequently used as well. GeoLibrary data is typically reviewed first. Parcels are often digitized data over available orthophotos. Afterwards there may be sharing if qualified partners ask, but data isn't actively exposed or shared with towns because of quality issues.

Department of Conservation: monitoring rare plants, establishing and tracking areas of highest priority; DOC aggregates and compiles parcels where these are available; has spent a great deal of time digitizing unavailable areas as needed; much project–based, area specific digitizing is undertaken. Frequently this encompasses multiple towns, since natural resources don't respect political boundaries; data assembled for these efforts doesn't get stockpiled or warehoused in a way that makes it easily available later in DOC or to others; it gets "orphaned." DOC uses LURC data frequently, believes that this may serve as partial model for bigger system;

- Conservation land changes move too fast and are too complex. It is important to know what ROWs and restrictions exist for individual pieces of land. Transactions are all happening at accelerated speeds. Properties are owned in both fee and easement. There are currently all sorts of easements and ROWs layered over the top of parcel ownership. To properly understand the land records all of these **pieces must be integrated**.

DEP sees great value in site ownership information. Having ownership history is very important for site clean ups and PRPs (potentially responsible parties). Sleuthing out this data is often very difficult and time consuming.

> One of the great problems DEP finds with land records data is that it does not match detailed spatial site data (such as that collected with sub-meter GPS); accuracy tends to be poor and inconsistent; It will be very useful going forward if any solution can be developed that integrates accurate linework AND attribute data consistency. Presently DEP often ignores available digital parcel data due to problems with **data quality and consistency**

ADDITIONAL OBSERVATIONS

- There needs to be a **key property identifier**, unique and recognized both by the towns (assessors) and the counties (deeds registries)
- State licensing collects data that can get rolled up - underground tanks, eating establishments, etc.; efforts should be made to use these data to supplement the value and quality of parcels
- Users don't want to go after data case by case every time; there needs to be a **warehousing or stockpiling** of property data so it can get re-used and is not orphaned
- There should be a list of all data resources – a **portal** – where data can be discovered by name and location (especially if the specific technical names aren't known)
- Better mechanisms should be in place to compel agencies to **data share** and make collected resources available outside the collection agency
- Older data cadastral data should be **archived according to state standards**; we need to be able to look back at earlier versions and see how things looked
- There is a big difference between the quantity of MEGIS data held and distributed and all of the data that resides in other agencies around the state. Probably (c.kroot) there is more data in individual agencies that is NOT cataloged and available for public review (through MEGIS) than there is in it. There is too much **orphaned data**
- Questions must be resolved about **freedom of access** requests against current vs. archived data: is a data layer that was restricted while "live" unrestricted once it has been archived?
- The federal minimum **standards** that must be met to be favorably received and reviewed by federal grantmaking bodies must be well understood and complied with. We should be more aware (as a group) of what these are.

- **Outreach** should be undertaken in the form of training presentations around the state
- Especially for DECD (economic development), Natural Resources Council and SPO (state planning), efforts should be made to find **drivers and champions** for progressing on land records data (and for Maine geospatial initiatives in general)

QUESTIONS ABOUT THE ILRIS INITIATIVE:

What depth of data from municipal assessors is anticipated? Will this include land use? Tree Growth program parcels?

- (sutton): the details of that relationship are not presently known. That is a level of detail that the functional specification will need to formalize.

Property (deed) history and restrictions are essential. Title searches from inside a GIS would be very useful.

- (sutton+others): Deeds will need legal interpretation – even if all of the digital information can be made readily available, the process of extracting legal dimensions and definitions can't be fully automated.
- Even though it introduces many more variables than simple chain of title search, the process of moving from the parcel to deeds records needs to be made easier.

Privacy must be considered – all information available at the towns shouldn't be accessible by everyone

- (sutton): Comments on attribute attrition – where privacy concerns diminish as data rolls upstream and attributes filter off. The federal cadastral standard actually stipulates a very restricted set of attributes at the federal level.

Will there be statewide parcel coverage?

- Ultimately yes, that is the plan, though the specifics are not determined. Those are the domain of this effort

QUESTIONS THE CADASTRAL LAYER SHOULD ANSWER:

- What forest certification does a parcel fall under?
- What year was a lot created?
- What are the shape and size of a particular parcel?
- Does parcel have access to municipal water and sewer? Electricity?
- Is parcel in a floodzone? Deeryard? Endangered species?
- Is the property in Tree Growth or under some other easement or certification?
- What are value impacts?
- Is the owner onsite?
- What is the history of ownership?
- What is the relationship with neighboring parcels?
- What is the quality of the data (geometry and attributes)?

Forum Conclusions

The group was extremely open and engaging and knowledgeable on GIS and the issues surrounding it. There was also a varied representation of types of GIS users and non-users who desire GIS provided information. DEP reported having over 200 users and a wide variation of GIS uses. Current uses of GIS varied from environmental and forest management to asset management, planning, disease control, emergency management, flood management, regulation/permitting and comprehensive planning. There was significant interest in establishing such an integrated land records information system by many agencies to assist them in their work and reduce the resources needed and time spent in obtaining similar data on an individual basis from municipalities across the

state by multiple agencies. While continually updated digital orthoimagery and road centerline data seemed to be among the most popular data needs, there were several others that were highlighted as well including elevation data and land use/land cover data. Improvement in data sharing through the establishment of a better framework was a common theme both for data access and efficient updating and distribution of that data. Training needs were outlined as being both technical for users and non-technical for others to increase the knowledge of GIS capabilities to resolve issues for others. Lastly, it was noted that there is an increasing trend for the need for and use of geographical information by non-technical users in an easy to use Google Earth format.

As with the previous Forum in Auburn, it remains clear that the Board needs to do a much better job in its outreach and timeliness of communication across the state. While this group had a much better understanding of the Board, there were still a significant number of folks in the group that didn't know about it.

Regarding land records integration and systematization, there is widespread support and enthusiasm, but also a common belief that privacy concerns are a wildcard and that an integrated lands record system for the entire state will be difficult to build and maintain. Many attendees and stakeholders have specific ideas about what they would like to get from such a system (i.e., ownership information and history) and have been frustrated in the past in efforts to access these features. Useful new ground was covered in areas of archived data and privacy specifics applicable to it, interagency data sharing and acceptable quality of content for specific roles and uses.

Attachment A – Forum Attendees

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Attachment B – Reported Uses of GIS by the Attendees

The attendees were asked to outline what they currently use GIS for and/or what would they like to use it for. The following represents a summary of those comments.

DOT Use: Parcel evaluation, property title work, surveying, asset management, major transportation projects to minimize field work, etc.; end user maps, urban mapping, project development, Transport infrastructure management, evaluating bridges, etc

Health & Human Services Use: Tracking disease, general public health issues, demographics, locations of public water supplies/required buffers, etc.

Geologic Survey Use: Ground water analysis, snow pack analysis, coastal changes/hazards

Dept of Marine Resources Use: Fisheries management

Department of Environmental Protection Use: Regulatory functions, modeling pollution source impact on air and receptor and general air monitoring

Dept of Conservation Use: Mapping rare plant habitats, environmental impact analysis, forest management, conservation planning

State Planning Office Use: Planning applications for the coastal program and applications for comprehensive planning for the land use program, open space planning,

State Archives Use: Retention of GIS data

MEGIS Use: Provides comprehensive GIS services for State agencies

Maine Revenue Service Use: Mapping and valuation of LURC parcels

Maine Forest Service Use: Mapping fires, insects and disease in forest lands

Bureau of Parks and Lands Use: Park and land management of over 1,000,000 acres, permits for marine structures, site and state planning for forest management and recreation