

August 2008

Welcome to the thirty-third edition of the **MassGIS GISette**, a bi-monthly newsletter e-mailed to more than 1700 of our users and partner agencies to keep them informed of data updates, GIS events, and on-going technology developments. This newsletter will not replace more focused e-mails that many of you currently receive. A page on our website has been created for the [GISette](#). There you will find back issues of the GISette and an [online subscription form](#).

While our primary intent in publishing the GISette is to disseminate information related to MassGIS initiatives and data development in particular, we also see the GISette as a means of communicating public agency GIS news. So we encourage readers to send in updates or announcements concerning public agencies that they would like included in the GISette. We particularly want to encourage submission of announcements concerning data development projects. Announcements should be sent to Paul Nutting at paul.nutting@state.ma.us.

MassGIS Releases Strategic Plan for Massachusetts Spatial Data Infrastructure

MassGIS is pleased to announce that EEA has approved the release of "A Strategic Plan for Massachusetts' Spatial Data Infrastructure". Please visit the [strategic plan](#) web pages on the MassGIS web site to find both the full plan and summary documents.

The analysis and the recommendations made in this plan are consistent with the following goals for using information technology in Massachusetts:

- Avoid wasteful and redundant expenditures
- Improve communication and cooperation between levels of government
- Maximize value through standards and economies of scale
- Take advantage of the Internet to provide broad access to information resources
- Provide technical assistance to communities
- Make regulatory processes more efficient

The plan was funded by a grant from the U.S. Geological Survey as part of the "[Fifty States Initiative](#)". The Plan was developed by [Applied Geographics, Inc.](#), under the guidance of MassGIS and the Strategic Plan [Steering Committee](#).

MassGIS staff would again like to express appreciation for the involvement and the thoughtful suggestions and comments contributed by many, many people during the process of developing the plan. Besides the contributions from members of the steering committee, two-hundred twenty five people attended six half-day workshops around Massachusetts. An additional 60 individuals representing 22 public, private, non-profit, and academic organizations participated in interviews or meetings concerning the plan, providing valuable additional insights and information. Ideas and issues contributed during the workshops, interviews, and meetings heavily influenced all aspects of the plan including eight specific recommendations:

1. Develop regular three-year update cycle for aerial photography.
2. Develop improved statewide elevation data.

3. Standardize and improve the process for updating the statewide roads data.
4. Development of a statewide parcel data layer.
5. Develop a statewide address point data layer.
6. Aggressively pursue federal grant funds to support statewide critical infrastructure data development. (Since this report was prepared, the Executive Office of Public Safety has requested this type of funding in their Homeland Security funding application.)
7. Strengthen GIS technical support provided to local government via regional entities.
8. Explore the further evolution of MassGIS's organization model and governance structure.

New Oblique Imagery for Massachusetts

Many people have inquired about the latest acquisition of oblique imagery, a project managed by Executive Office of Transportation and Public Works to replace the images captured several years ago. Some people refer to this data as "Pictometry" because that company was one of the first in the market to provide oblique imagery, but there are others and the imagery *product* should not be confused with the imagery *provider*. Mark Berger of EOTPW has provided an update on the product and its availability, with some items being pertinent to only internal licensed software users.

Last fall, after a competitive procurement, EOTPW hired Greenman-Pedersen, Inc. to obtain oblique imagery covering the entire state at 9-inch resolution, four ways, plus the nadir image. Last summer's weather was extremely dry, which created an adverse fall flight season, as the leaves did not fully drop until December. At the time of the contract award, GPI and Pictometry were in a legal dispute – they later settled their lawsuit and agreed to have GPI manage all state contracts and Pictometry manage all county, regional, municipal, or other entity contracts. Pictometry would be the only provider of imagery though, with GPI using Pictometry as a sub for the statewide contracts. This resulted in the EOTPW contract being modified to reflect many changes. These changes are as follows:

- The oblique imagery will now be 8-inch resolution, four-way imagery, plus the nadir covering the entire state.
- The viewer software will be Electronic Field Study [Version 2.7 Production release 1, Revision 10] (highly recommend downloading the latest version using existing software through clicking HELP/ CHECK FOR UPDATES).
- The ArcMap extension has been fixed to work in both open network and extremely restricted environments.
- A new ArcIMS application has been built and will provide complete viewing of the imagery for all internal users for any agency that wishes to use the application.
- A new ArcServer viewer application will be ready for distribution in November.
- The Navteq search tool has been fixed to remove all the extraneous info that displayed when running a search.
- New 3-D extraction software will be included to enable all users to extract buildings and place them in ArcScene.
- A flood simulation application will be available through GPI at no cost.
- Images will be owned by the Commonwealth and can be freely distributed to anyone who requests them. The images can be provided as a .jpg or in hard copy. But the software and geographic tools are still licensed products, so the full capabilities of the imagery will not be available to the public unless they have the necessary software tools.
- EOT will compensate for that issue by publishing a new website, open to the world, for viewing the imagery using the ArcIMS-based Pictometry viewer application. A user will be able to view the imagery, as well as download, label, or print images; they will not, however, be able to make any measurements on the images. This on-line viewing capability is estimated to be available in early Fall 2008.
- The imagery metadata, software, and software documentation is licensed and can only be

used by agencies of the Commonwealth.

- The imagery will be available as two new warehouses, an oblique imagery warehouse and a nadir warehouse. Together all the new imagery is just under 4.0 TB in size. MassGIS will be looking at compressing the imagery in the near future.

Currently, EOTPW has acquired the imagery and is in the process of loading it. Next they will provide the imagery to MassGIS in an attempt to compress the images. Fall distribution is anticipated. Watch the MassGIS website for status reports.

New State Contract for GIS Services now Available

Effective July 1, 2008, the state's procurement agency, OSD completed the procurement resulting in a state contract - referred to as "ITS33 – IT Solution Providers" - through which, government agencies in Massachusetts can procure a variety of IT services including selected GIS services. ITS33 replaces ITS24 and will last for two years with a state option to extend it for an additional year. A member of the MassGIS staff was on the ITS33 procurement team for the GIS Solution Providers sub-category. The ITS33 GIS solution providers are:

[Applied Geographics](#)
[BSC/Geonetics](#)
[Cambridge Systematics](#)
[Camp Dresser & McKee](#)

[Coler and Colantonio](#)
[ESRI](#)
[J. W. Sewall Company](#)
[Tighe and Bond](#)

For more details on how these companies were selected, what services they can provide, and how to obtain their services, visit the [ITS33 page](#) on the MassGIS web site.

GIS Based Transportation Modeling

In January of 2008, the Massachusetts Executive Office of Energy and Environmental Affairs started working on a "Climate Roadmap" – a detailed plan to reduce greenhouse gas (GHG) emissions in the 2020 and 2050 time frames. In support of this initiative, MassGIS has developed a model to analyze the relationship between land use patterns, population distributions, and GHG from private vehicles. The model produced an estimate of average daily Vehicle Miles Traveled (VMTs) in a 250 meter resolution grid for all of Massachusetts with the following inputs:

- a sample survey of the most common household trip types,
- a series of geocoded points representing those trip destinations,
- a more geographically accurate population/households map (constrained by areas identified as primarily residential land use)

More recently, MassGIS has obtained and processed 16M vehicle inspection records from the Registry of Motor Vehicles (RMV) covering a 3-year period (from 2005 - 2008). The current vehicle fleet mileage figures obtained from the odometer readings included in this dataset are being used to assess the accuracy of the model. This information is also proving to be extremely useful in a variety of other analyses. Some examples of the way it is being used are:

- Providing a baseline for trend detection in future driving behavior analyses
- Generating a precise estimate of current GHG emissions based upon known vehicle make/model outputs
- Testing the effect of proximity to major transit nodes on commuting patterns
- Calculating the impact of smart growth implementation, both actual and potential (i.e. mixed-used clustering effects on mitigating traffic)

A summary of our methodology and findings will be presented at NEARC on September 22nd in Hyannis, MA.

GIS for Tracking Community Preservation

For several years, MassGIS has been collecting information on Community Preservation Act Projects, primarily to learn of new open space purchases. The CP-3 reporting form has come in as paper or an email attachment. Following the Department of Revenue bulletin of August 18 http://www.mass.gov/Ador/docs/dls/publ/bull/2008/2008_08B.pdf, the CP-3 should now be submitted online. The online application has several advantages:

- In addition to saving paper, project information is gathered in a more consistent way.
- Numerical values are automatically totaled.
- Towns can review all their past projects and correct data entry errors that may have been introduced over the years.
- An embedded map is part of the application.

If a project has a geographic component, the project can be located by address, and the user can choose to adjust the point location on top of an orthophoto. Projects with points have a corresponding data layer http://www.mass.gov/mgis/cpa_points.htm. The database and datalayer are now actively being edited, so information will change over the coming months.

Database Updates

- **New Set of [NOAA Raster Navigational Charts](#)** - 8/27/2008
These new images were received from NOAA in digital format. They replace the older, less spatially accurate images produced by MassGIS by scanning paper copies of NOAA Nautical Charts.
- **[OpenSpace](#) Updated** - 7/16/2008
The MassGIS Protected and Recreational OpenSpace Datalayer has been updated and a new shapefile and personal geodatabase have been placed on our ftp site. The Department of Fish & Game has added all of its acquisitions for fiscal year 2008 which permanently protected 6,200 acres of open space in 40 towns throughout the Commonwealth.
- **New [Estimated Population Table](#)** - 7/16/2008
Stores population estimates for each city and town, as of July 1, from 2000 to 2007.
- **[Public Utility Service Providers](#) Updated** - 7/15/2008
Data are updated for the public Electric, Gas, and Cable utility providers for each Massachusetts municipality as of May 2008.
- **[MEPA ENF Points Layer](#) Updated** - 7/11/2008
Point layers were added for 2008 Q1 and Q2.

Online Mapping

CZM Mapping Tool Now Online

[MORIS, the Massachusetts Ocean Resource Information System](#), or MORIS, is an online mapping tool created by the Office of Coastal Zone Management and MassGIS. MORIS, based on MassGIS's popular OLIVER mapping tool, can be used to search and display spatial data pertaining to the Massachusetts coastal zone. Users can interactively view

various data layers (e.g., tide gauge stations, marine protected areas, access points, eelgrass beds, etc.) over a backdrop of aerial photographs, political boundaries, natural resources, human uses, bathymetry, or other data. Users can quickly create and share maps and download the actual data for use in a desktop GIS. While designed for coastal management professionals, MORIS can be used by anyone interested in these data and maps.

[How to add MassGIS Data to Google Earth](#)

The MassGIS webservice (which have an external SDE server as a data source) can output to KML format, so it's easy to add our layers to Google Earth (not Google Maps).

The simplest way is to go to the web page

<http://giswebservices.massgis.state.ma.us/geoserver/mapPreview.do> for a list of layers (with a naming schema of schema.layername from SDE - for example GISDATA.SCHOOLS_PT) and click on the KML link. If the user has Google Earth it should automatically launch. The symbolization of the layers is the same as in OLIVER and can sometimes be clunky when zooming.

The MassGIS webservice (run by GeoServer) can be connected to with many GIS clients - some better than others. By using these layers, you will always have the most up to date data, as the KML file is merely a link to the GeoServer. There's a list on our webservice wiki at lyceum: http://lyceum.massgis.state.ma.us/wiki/doku.php?id=wms:simple_clients

Staff News and Meeting Announcements

Welcome to Four New Staff Members ...

Since Scott Costello left MassGIS, Dominique Pahlavan has been swimming against the tide of updates as she has worked to maintain the Protected Open Space and Recreation Lands datalayer. We are happy to report that she now has some help! Three positions have been filled to work through the backlog of edits and new acquisitions.

Leading the group overseen by Dominique is the **Open Space Database Administrator, Benjamin Smith**. Ben started his GIS career working as a GIS technician for three years at the University of New Hampshire, while at the same time studying for his degree. After graduating from UNH with a B.A. in Geography, he served sixteen years as a GIS Analyst for the Cape Cod Commission regional planning agency. Also joining the open space team are **GIS Technicians Peter Grace and Angelika Bahr**. **Peter** will be working to help MassGIS process the backlog DCR and DFA conservation restrictions and agricultural preservation restrictions. A life-long resident of Rhode Island, Peter has a bachelor's degree in geography from Rhode Island College and had previously been involved in the open space project for The Rhode Island Department of Environmental Management. **Angelika** is a graduate of the University of Massachusetts where she received her BS in Earth and Geographic Sciences, with Certificates in GIS and MIS. Prior to joining MassGIS, Angelika worked as GIS Specialist for the Boston Redevelopment Authority and as Asset Management Coordinator for TRA Transit Realty Associates.

The fourth new staff member is **GIS Applications Developer, Gabriela Laird**. Gabriela joined us from the private sector where she worked as an application developer and a GIS Analyst for over 7 years. She will be maintaining current internal applications written in Visual Basic 6 and writing new external .NET applications. Gabriela is originally from Israel. She graduated from the Technion - Israel Institute of Technology.

... And One Goodbye

For the past two and a half years, Sean Sweeney has led our project to prepare Navteq street and address data for use by the state's more than 270 Public Safety Answer Points (PSAPS or 911 call centers). Initially, this involved geocoding the Master Street Address Guide and finding missing streets and addresses in the Navteq data. He and the other members of the project team subsequently also successfully integrated the Navteq roads with those from the Executive Office of Transportation. Finally, Sean has also overseen the integration of a series of quarterly Navteq data updates into data updates shipped out to the PSAPs. Sean has prepared the remaining members of the team for the next phase of maintenance. The Director and the staff here wish him well in his future endeavors.

[23rd Annual Northeast Arc Users Group Conference \(NEARC\)](#)

The Resort and Conference Center at Hyannis, MA, September 21-24, 2008.

Due to the wide variety of presentations at NEARC and the probable overlap of dates and potential speakers with any [MGIC Seminar Series](#) session we might schedule, please look for us to resume the MGIC Seminar Series in October.

Any comments or suggestions about the GISette are welcome – send to paul.nutting@state.ma.us.

MassGIS-The Commonwealth's Office of Geographic and Environmental Information is located within the Executive Office of Energy and Environmental Affairs and is charged with the collection, enhancement, storage and dissemination of the Commonwealth's geographic data.

Massachusetts Geographic Information System (MassGIS)

251 Causeway St. Suite 500

Boston, MA 02114

Phone: (617) 626-1238

Fax: (617) 626-1249

