April 2005

Welcome to the thirteenth edition of the **MassGIS GISette**, a bi-monthly newsletter e-mailed to our users and partner agencies to keep them informed of data updates, GIS events, and on-going technology developments. You may "opt-out" of receiving this newsletter by replying to this e-mail with "No Thanks" in the subject header. 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**.

Database News

Data Updates

- **State House and Senate District Layers Updated** - 4/25/2005
  The Massachusetts House Legislative Districts and Massachusetts Senate Legislative Districts layers have been updated with attribute edits to reflect the changes from three recent House special elections and a Senate vacancy.

- **DEP Wetlands (1:12,000) Data Updated** - 4/12/2005
  Data have been added and updated to the Deerfield, Housatonic and Westfield watersheds. For more information, please see the Datalayer Description and, for areas with completed data development, the Status Map.

- **Title 5 Layer Updated** - 4/12/05
  Tiles for the Deerfield, Housatonic and Westfield watersheds were modified to reflect updates to the DEP Wetlands (1:12,000) layer.

- **Orthophoto Index Updated** - 3/31/2005
  Three tiles were added to cover Nomans Land (island south of Martha's Vineyard) in February 2005. Three others were added in March to account for the extent of future ortho imagery.

- **Updates to DEP Public Water Supply Layers** - 3/15/05
  The DEP GIS Group has updated the following layers:

  - Public Water Supplies
  - Zone IIs, IWPA
  - Surface Water Protection Areas (Zone A, B, C)
    Included in this update are layer name changes, as follows:
    - ZONEIIS_REG_ZONE2 is now ZONE2_POLY
    - ZONEIIS_ARC has been removed and replaced for cartographic purposes with the new layer ZONE2_POLY_DISSOLVE
    - ZONEA_REG_PWS is now ZONEA_POLY

- ZONEB_REG_PWS is now ZONEB_POLY
- ZONEC_REG_PWS is now ZONEC_POLY

- **C21e Layer Updated** - 3/15/2005
  DEP GIS Group has updated the <u>Tier Classified Chapter 21E Sites</u> datalayer. 59 sites were added and 111 sites were removed.

- **New Digital Elevation Model and Shaded Relief Image Layers** - 2/28/2005
  The <u>Digital Elevation Model (1:5,000)</u> is a raster layer that represents surface elevation for Massachusetts. A companion layer, <u>Shaded Relief (1:5,000),</u> is useful for cartographic display and represents a shaded relief or "hillshade" for the surface terrain of the state. The source data for both layers were the digital terrain models that were produced as part of the 1:5,000 Black and White Digital Orthophoto imagery project.

What's New on the MassGIS Web Site

- **<u>Changes to Online Land Use Data</u>** - **3/31/2005**
  The Land Use shapefiles available online now contain all three years of statewide data - 1971, 1985 and 1999. No longer will users have to join to the history table to access 1971 and 1985 data. The land use history table now contains records for 1951, 1990, 1991 and 1997, where available. Users also may download a single statewide shapefile for land use data. Also, the <u>Land Use datalayer description page</u> has been updated to reflect these changes.

- **<u>Geonames Distributed in Personal Geodatabase</u>** - **3/3/2005**
  The three Geonames annotation layers are available in the ESRI Personal Geodatabase format for use in ArcGIS 9.0.

Status of Digitized Soil Surveys for Massachusetts

While exhibiting at the <u>Massachusetts Association of Conservation Commissions</u> annual conference, the most popular inquiry of MassGIS staff was, "what is the status of soils mapping in the Commonwealth?" So, Darlene Monds, of the USDA/NRCS, has provided GISette readers with an update:

Soils mapping is a joint project by the <u>Massachusetts Department of Agricultural Resources,</u> <u>MASSGIS,</u> and <u>USDA-Natural Resources Conservation Service</u>.
For Massachusetts state plane data, viewing or downloading from MASSGIS is recommended. For UTM data, NRCS is recommended.
The following digitized soil surveys are **available** from MASSGIS and USDA-NRCS:
- Berkshire County
- Hampden & Hampshire Counties, Western Part
- Hampden & Hampshire Counties, Eastern Part
- Worcester County, Northeast Part (should be available by 5/2/05)
- Essex County, Northern Part
- Essex County, Southern Part
- Norfolk & Suffolk Counties
- Bristol County, Northern Part
- Bristol County, Southern Part
- Barnstable County
- Dukes County
- Nantucket County

The following soil survey areas are **digitized and quality control is in progress**; projected dates for availability in parentheses.
- Worcester County, Southern Part (June 2005)
- Middlesex County (June 2005)
- Worcester County, Northwest Part (July 2005)

- Hampshire County, Central Part (August 2005)
- Hampden County, Central Part (August 2005)

Field soil scientists are currently updating Franklin County and Plymouth County soil surveys. The fieldwork is complete for approximately 85% of both counties. **Digitizing is in progress**. We hope to make a portion of these surveys available digitally in the next 1 to 2 years, depending upon staffing levels and priorities.

Online Mapping

Get Lat/Long in Color Orthos
While using the Color Orthophoto viewer, using the new XY tool, you can locate a lat/long coordinate.

Faster Draw Time for Raster Datasets
MassGIS is now using the SDE rasters in the online viewers for these layers:
USGS Topographic Maps
5k Elevation
5k Shaded Relief
This improvement will reduce draw time in both OLIVER and the topo map single purpose viewer.

Mapping Species in Massachusetts
MassGIS and the Executive Office of Environmental Affairs are pleased to support the Massachusetts Association of Conservation Commissions in undertaking the latest Biodiversity Days event from June 4th through the 12th.
Biodiversity Days is an outreach program that brings together citizen participants for nature field trips to conduct species identification and reporting in the Commonwealth. MassGIS has a long history of supporting this program by hosting a reporting website and maintaining the species inventory database. The Biodiversity Days website now features several web mapping services. Users can see maps highlighting towns where people have reported seeing a particular species.

OLIVER Enhancements
- Improved Geocoding:
The geocoding or address-matching feature in OLIVER can now accept 3 different formats:
    - street number, street name, and zip (251 Causeway St., 02114)
    - street number, street name, and town (251 Causeway St., Boston)
    - 2 intersecting street names (Causeway St., North Washington St)
More than these bare minimums can be used. For example, giving a town or a zip with 2 intersecting streets will speed up the query and increase accuracy.

- Zoom to Specific Scale:
By either double-clicking the scale bar or choosing the Tools menu, then "Zoom to Specific Scale" the user can choose various pre-set scales or type in their own custom scale, using the format of a number with or without a comma (for example, 100,000 or 100000). The pre-set scale options have a text description to help the user visualize how large a geographic area that scale represents.

- OLIVER Bug fixes:
No more unexpected zooming out. We fixed the bug that caused the map to sometimes zoom out when new data was added.

- OLIVER Now Has a Simplified Installation: http://maps.massgis.state.ma.us/massgis_viewer/index.htm
 Here click on the yellow down arrow to download the version 1.5 JRE and Java Web Start. Then click on the red MassGIS Viewer logo above to get OLIVER. The JRE, Java Web Start, and OLIVER files are 17MB in total, which are only downloaded during the initial installation. Users with slower connections, such as 56K, may want to request a CD, which contains the 17MB. 17MB at 56Kbps will take at least 42 minutes to download.

Open Space Corner

Greetings Open Space Users!

OpenSpace is being updated so fast right now I can barely keep up! Feast or famine, I guess. The result is that several hundred (yes, hundreds!) of new polygons of OpenSpace with state interests are being entered. They are now in the final stages of QA/QC and should be available for download in the next few weeks. There are also many other edits with no state interests pending as well. Keep checking in, as the data will be changing frequently.

The continual clean-up of the dataset is also ongoing. This will move all town boundaries in OpenSpace to the new Survey Town Bounds dataset and revisit all attribute fields for data scrubbing (typos, etc.). Due to the volume of editing, we are internally moving OpenSpace editing to a separate instance of SDE to prevent performance conflicts between editing and the rest of the entire data catalog. The edits can then be easily incorporated into the full data catalog without affecting the performance of the underlying RDBMS.

What happened to 15 years of Topology in OpenSpace?
The coverage data model for OpenSpace utilized the hard-coded topology enforced by ArcInfo prior to ArcGIS 8 for 15 years. This huge effort was not lost in the conversion to a GeoDatabase. OpenSpace topology is now governed by rules that mimic the behavior of the old spatial relationships between feature classes. The rules-based GeoDatabase topology appears as a feature class in the Open Space Feature Dataset. Unlike coverage topology, the GeoDatabase topology allows for errors to persist without affecting the rest of the database. The rules used for OpenSpace are defined as follows:

I.	OPENSPACE_ARC	Must not Overlap
II.	OPENSPACE_ARC	Must not Have Dangles
III.	OPENSPACE_ARC	Must be Single Part
IV.	OPENSPACE_ARC	Must not Self-Overlap
V.	OPENSPACE_POLY	Must not Overlap
VI.	OPENSPACE_POLY	Boundary Must be Covered by OPENSPACE_ARC
VII.	OPENSPACE_POLY	Must not Overlap CHAPTER61_POLY
VIII.	CHAPTER61_POLY	Must not Overlap
IX.	CHAPTER61_POLY	Boundary Must be Covered by OPENSPACE_ARC

This set of rules approximates coverage topology. The editing tools of ArcGIS allow for the editor to create polygons from arcs or create arcs from polygons; this allows the editor to use whichever method they prefer for creating new features. They then use the automated tools to create the associated features required by the topology.

All features in OpenSpace still fit together nicely into a related geometry that approximates land ownership in the Commonwealth (no easy feat).If you have seen something wrong or missing in OpenSpace, please notify me with the correct information (please include the unique OS_ID or TOWN_ID & POLY_ID).

Keep those updates coming and enjoy the Spring (but be beware of ticks!).

 - Scott Costello, MassGIS Open Space Coordinator, scott.costello@state.ma.us, 617-626-1076

Events, Awards, and Meetings

Events

NEARC Spring Conference - Wednesday, May 4, 2005 8:00-3:30 **Smith College,** Northampton, MA

NEGITA Spring Conference - Thursday, May 12, 2000-Sheraton Ferncroft Resort, Danvers MA
Mobile Computing: What's New
NEGITA is sponsoring a one-day conference on mobile computing. The day will include an overview of the technology, users case studies, and 10 mobile vendors will be in attendance to showcase their products and services. For registration information go to the New England Chapter site.

MassGIS Wins GITA Award

In recognition of the success of our web services initiatives, the Geospatial Information & Technology Association (GITA) awarded MassGIS its Innovator Award. The Award was presented at the annual conference in Denver on March 7th, and Saul Farber, our web services programmer, was on-hand to accept it. The conference was a showcase for the ways in which interoperability is beginning to take hold at the enterprise level. Representatives from ESRI, GE-Smallworld, IONIC, FGDC, and OGC were all on-hand to demonstrate their latest products, projects, and initiatives.

One conference seminar of particular interest to MassGIS was one in which Ordinance Survey (the USGS equivalent in the UK) discussed their transformation from a purely cartographical data-distributor to a fully geospatial data-cataloging organization. They now provide detailed datasets of the entire UK to their customers, delivered using a purely vendor-neutral, GML-based format.

Meetings

Massachusetts Geographic Information Council MGIC **-** A late May meeting is still in the planning stages. Please check our website soon for details.

Any comments or suggestions about the GISette are welcomed paul.nutting@state.ma.us.

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

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