

GEOGRAPHIC INFORMATION SYSTEMS

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GIS Supports Expansion of the Geospatial One-Stop (GOS)

Westchester County is first county in U.S. to participate

Westchester County recently became the first county in the United States to contribute and publish metadata through the federal Geospatial One-Stop (GOS) portal (www.geodata.gov). In addition to publishing metadata - which is "data about data," the GOS portal also provides a direct link to the county's main web mapping application *Mapping Westchester County* at <http://giswww.westchestergov.com>. The GOS portal is one of 24 e-government initiatives sponsored by the Federal Office of Management and Budget (OMB) to enhance government efficiency and improve citizen services. It serves as a public gateway for improving access to geospatial information and data.

GOS provides an innovative way to share geographic information. The portal "harvests" metadata from local sources such as Westchester County and makes the information available at the GOS website.

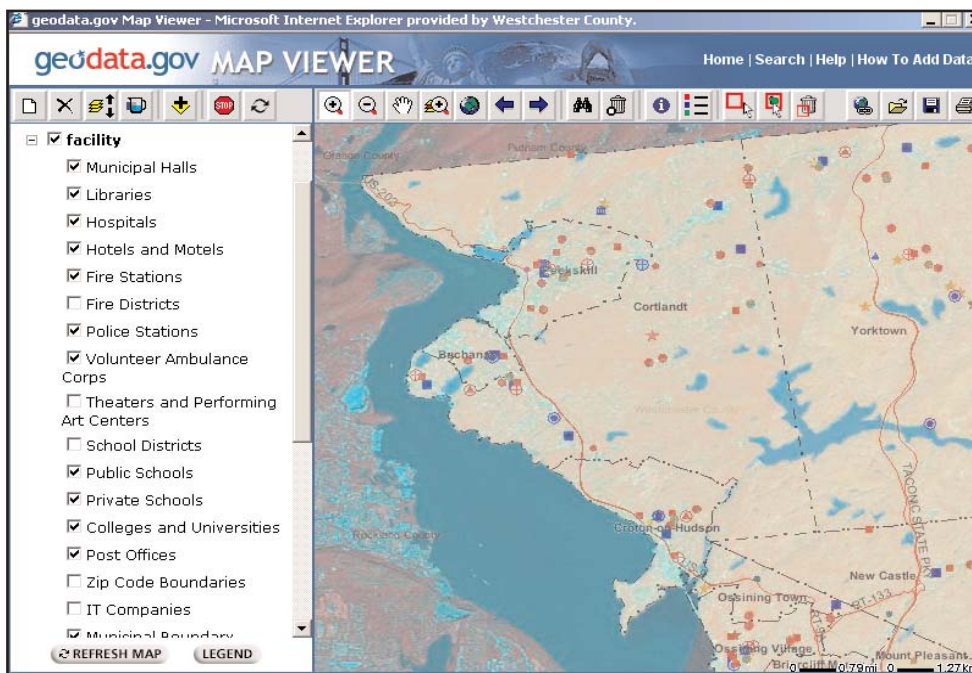
Utilizing search and query functions available at the GOS website, users can search and view Westchester County GIS metadata, download County GIS data, or view online mapping applications. The GOS application also enables users to interactively access and integrate data from other ArcIMS web map services. For example, as shown in the screen capture below, a LANDSAT 7 satellite image available from ESRI web map services can be added to the *Mapping Westchester County* application that has been launched from the GOS website. Such functionality gives users access to a wide range of spatial datasets across the Internet.

Making Westchester County metadata available at the GOS website required GIS staff to develop a customized application (called metadata Services) which allows GOS search engines to "harvest" the county's metadata records on a regular basis.

Software components required to develop the metadata Service application include ArcGIS Desktop, ArcIMS, ArcSDE and Oracle relational database. ArcCatalog in ArcGIS Desktop allows county GIS users to create and publish metadata to the metadata Services.

Having successfully developed this web-based program, Westchester County GIS has served as a model to other government agencies throughout the country starting similar GOS initiatives. "Westchester has led the way when it comes to collecting such extensive data," said Norman Jacknis, the county's chief information officer. "We were ready to go and up for the challenge."

For more information on the county's involvement with the GOS project contact Xiaobo Cui at (914) 995-3047 or email at xxc1@westchestergov.com.



The GOS portal enables users to access and integrate data from other ArcIMS web map services sites. As highlighted above, after launching the "Mapping Westchester County" from the GOS portal, a LANDSAT 7 satellite image available from another internet site can be draped over Westchester GIS data.

GIS Workshop for Engineering & Public Works

January 28, 2005

9:00 AM - 12:00 PM
143 Grand Street White Plains

Westchester County GIS invites you to a morning of *skill learning* presentations focusing on (1) computer-aided design (CAD) and geographic information systems (GIS) integration and (2) mobile mapping applications. Agenda items include:

"Using GIS data in AutoCAD MAP and Land Development Desktop," Bruce Hegstrom and Kevin Rose, (Microdesk).

"GIS & Mobile Mapping," Tim Dec, (Tadpole Cartesia).

To register or for more information contact Ana Hiraldo at (914) 995-4416 or visit our website at <http://giswww.westchestergov.com>.

Bronx River Watershed Study

County GIS staff has recently initiated work with the Department of Planning on the Bronx River watershed to assist in the development of a watershed action plan focusing on an impervious surface analysis of the watershed. This study will calculate the amount (acreage) of impervious surface (structural features and transportation features) in each municipality and subwatersheds. Structural and transportation feature datasets to be used in the study were mapped in the county's 2000 base map project.

The Bronx River watershed is approximately 48 square miles in size and includes 14 municipalities in the south central portion of the county. It is subdivided into three subwatershed basins: Bronx River, Grassy Sprain Brook and Kensico. For more information contact Lisa Vasilakos, Westchester County Department of Planning at (914) 995-4407.

Air Photo Conversion

Under the direction of the county archivist, Patricia Dohrenwend, Westchester County is currently reviewing the potential to scan historical aerial photographs obtained between 1925-1995 and integrate the scanned images into an ArcIMS application. GIS staff is assisting with the project design and identifying necessary software and hardware components. The project is based on recommendations in a study funded by the New York State Archives and conducted by Applied Geographics, Inc. of Boston, MA. Final implementation will be based on estimated conversion costs and available funding. Currently the photography exists only in hardcopy format typically as 9x9 inch black and white contact prints housed in the county's Department of Planning. For more information, contact Patricia Dohrenwend at (914) 231-1501 or Ariane Porter at (914) 995-3371.

CT GIS FOIL Case

The Connecticut Supreme Court is expected soon to review a landmark Freedom of Information Law (FOIL) case focusing on public access to the Town of Greenwich GIS database. Recognizing the importance of the issue, the Connecticut Supreme Court is expediting the case by hearing the town's appeal immediately rather than the case first being heard in the state Appellate Court. The case is being closely monitored by many national Freedom of Information advocacy groups and has been reviewed in several on-line GIS publications such as GISmonitor, GISDevelopment.net, and MapCruzin.com. A more detailed reading of the case can be viewed at <http://www.rcfp.org/news/documents/20041111-greenwich.pdf>. Former Westchester County GIS staff member Greg Sullivan currently serves as GIS coordinator for the town.

2005 County Base Map Update

The county's first digital base map, developed from 800-scale photography obtained in April 2000, consists of half-foot-resolution imagery, and hydrologic, topographic, transportation and structural planimetric features. The nearly 50 gigabytes of data is broadly utilized by both county and local governments, and provided to the public through many web-based applications.

For the last 12 months GIS staff has focused on planning the first major update to this data. Originally intended to take place in 2005 (to continue a long-standing tradition of countywide aerial image acquisition every five years), the update project moved forward a year as a result of the county's collaboration with New York State's Digital Orthoimagery Program (NYSDOP) Spring 2004 campaign.

The partnership with NYSDOP was finalized once it was determined that the county would be able to acquire higher quality photography (600-scale). The improved photoscale will allow the county to update planimetric datasets developed from the 2000 project as well as to capture street features such as catch basins, manholes, fire hydrants, etc.

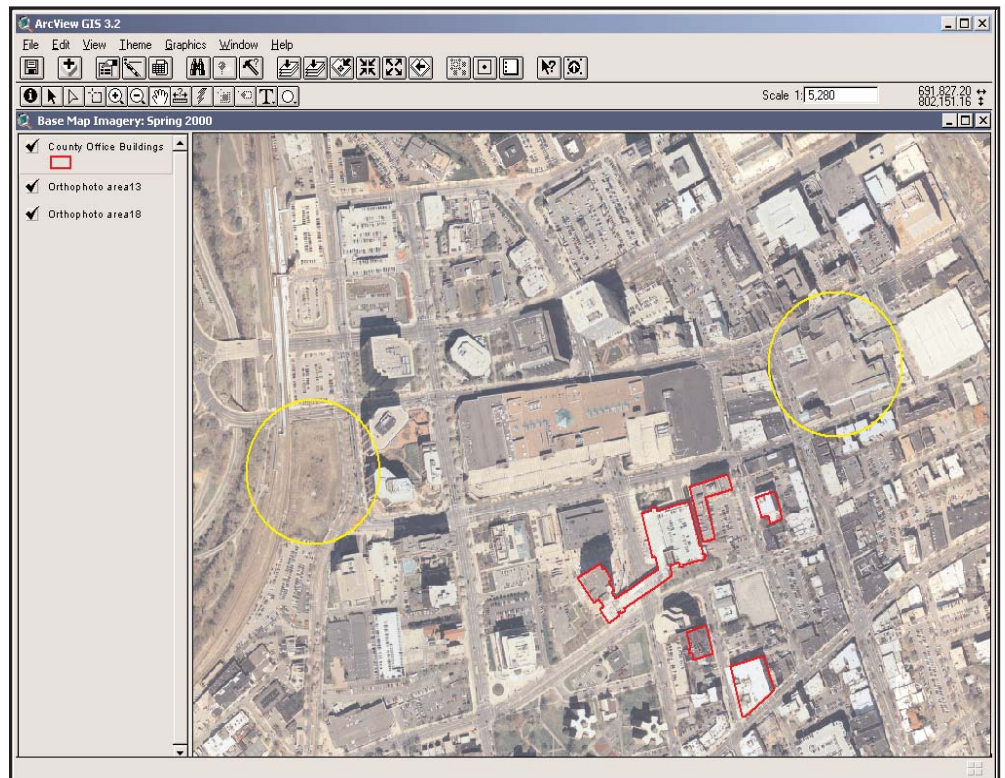
Because of the improved photoscale and enhanced aerial triangulation (AT) associated with the 2004 photography, GIS staff were also successful in negotiating a "hold-firm" price with the photogram-

metrist for the production of two-foot contour data. Under this arrangement, municipalities will be able to purchase - with significant cost savings - the 2004 contour data directly from the county's photogrammetrist on a "per square mile" basis.

The county will also benefit from the state's photography by increasing its photo coverage beyond the county's corporate boundaries. The 2000 aerial photography extended only 200 feet beyond the county boundary which has proved to be limited for projects and/or county facilities adjacent to the county boundary such as the Westchester County Airport. The 2004 photography extends as much as 7,500 feet beyond the county's corporate boundary.

The project timeline is subject to final approval and release by NYSDOP of the 2004 imagery which is anticipated January 2005. Data production and review is planned to take approximately 16 months. Another important highlight for GIS staff is that data review procedures for the update are expected to be performed entirely in a digital environment, eliminating the necessity of producing, transporting and handling hardcopy check plots.

For more information on the base map program update contact Deborah Parker at (914) 995-3888 or email at dape@westchestergov.com.



Readers familiar with the rapidly changing cityscape of downtown White Plains will appreciate the need for updated imagery. Circled sites (yellow) near the county offices (building footprints in red) have undergone significant development since April 2000.

Local Government

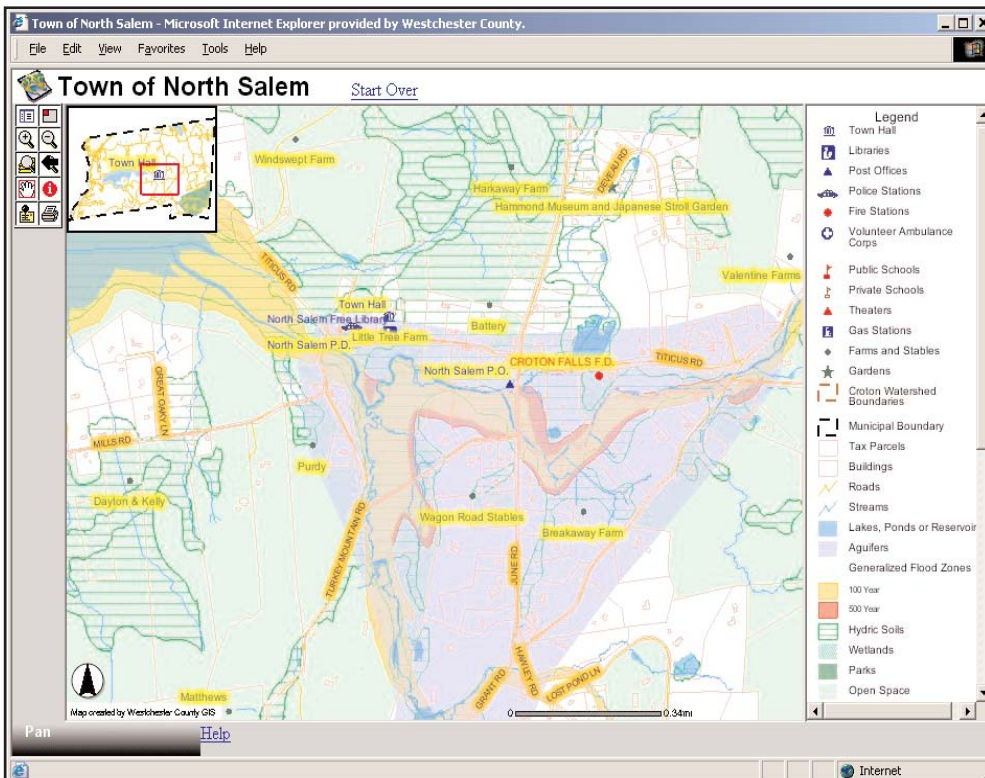
Westchester County GIS continues to maintain an active role in supporting local government GIS programs throughout the county. GIS staff is currently working with the **Town of North Salem** as part of the county's GIS *Jumpstart* program providing training and education as well as data bundles for desktop GIS applications. A web-based GIS Data Viewer which is integrated with the county's existing web mapping environment will also be established. This web-based application will allow users to view/browse, add/remove layers, geocode, and create maps with a wide range of environmental, cultural and demographic, facility, tax parcel, and planimetric datasets, including color orthophotography. An ArcReader application is scheduled to be installed for the planning, building and highway departments. Similar on-line mapping applications are being planned for both the towns of **Lewisboro** and **Pound Ridge** and the **Village of Mt. Kisco**. To view samples of the on-line mapping applications that the county has developed for other municipalities in Westchester County, visit our website at <http://giswww.westchestergov.com>.

County GIS staff is currently working on a GIS User Needs Assessment (UNA) and Implementation Plan for the **Village of Pleasantville**. The study, supported by the New York State Archives through the Local Government Records Management

Improvement Fund (LGRMI), is scheduled to be completed by the end of the year. The **Village of Dobbs Ferry**, a second term LGRMI funding recipient, will begin working with county GIS in the implementation of its UNA study completed in May 2003. Proposed work includes the development of the web-based GIS Data Viewer application, hardware and software upgrades to the existing GIS workstation, and purchase of a large document printer. The **Town of Mamaroneck** and villages of **Mamaroneck**, and **Larchmont** anticipate initiating development of their intermunicipal GIS program in early 2005. A top priority of this project will be the conversion of existing hardcopy tax maps for all three municipalities.

This year the villages of **Port Chester** and **Scarsdale**, and the towns of **Harrison** and **Rye** have joined with other municipalities to participate in the GIS Data Sharing Intermunicipal Agreement (IMA) with the county. A total of 22 municipalities have now signed IMAs with the county. The GIS Data Sharing IMA framework enables both municipalities and the county to realize significant cost savings in the area of data development.

For more information on local government GIS programs and development opportunities, contact Ana Hiraldo at (914) 995-4416 or email at aeh2@westchestergov.com.



This screen capture shows the Town of North Salem web-based GIS Data Viewer application currently under development. Layers include community facilities locations and environmental features. After completion of development the GIS Data Viewer application will be available through the town's website at <http://www.northsalemny.org>.

GIS Software Migration

County GIS is continuing its migration from the ArcView 3.2 to the ArcGIS 8.x (or higher) environment. While most users are now operating at a minimum of ArcGIS 8.x, full implementation of ArcGIS 9.x is contingent on a new GIS system architecture which is being established. ArcGIS 8.x is a significant upgrade to ArcView 3.2 and comes with three levels of installation components representing three levels of functional capabilities. The lowest level is equivalent to ArcView 3.2 and the highest level is equivalent to ArcInfo 7.x. ArcGIS 8.x shares the same set of user interfaces among the three levels of functional capabilities.

To date, GIS staff has installed ArcGIS 8.x or higher for over 30 county users consisting of a combination of single-seat (for day-to-day users) or floating (for occasional users) licenses. GIS staff has also deployed MapObjects Java and MapObjects Window to developers in the Department of Information Technology. For more information on the GIS software migration and related training courses, contact Tong Zhou at (914) 995-3012.

911 Call Boxes Mapped

In November, county GIS staff used Trimble ProXR GPS equipment to map and validate the locations of emergency call boxes along the North and South County Trailways, and the Bronx River Pathway. The pole-mounted, bright yellow boxes are located at approximately one-mile intervals along portions of the trails, and in adjacent parks. The emergency call boxes can be used by motorists as well as walkers or bicyclists on the trails. After the data has been reviewed by county personnel, it is anticipated the new emergency call box data will be integrated into public safety and emergency services mapping applications. For more information, contact Deborah Parker (914) 995-3888.

DPW Road Sign Inventory

The Department of Public Works (DPW) has contracted with Greenman-Pedersen Inc. (GPI) to inventory traffic (regulatory, warning and guide) signs along county-owned roads. The inventory is the basis of a comprehensive traffic sign replacement and construction project anticipated to start in early 2005. The county is responsible for approximately 8000 signs along 170 miles of county roadway. For the inventory, GPI will use DPW's ProXR GPS equipment from Trimble, and ESRI's ArcPad running on mobile pc's. Assisting in the project, GIS staff recently converted over 2200 orthophoto TIFF files (75-Mb each) to 815-Kb portable image files which can be loaded on handheld units used in the project. For more information contact Roger Griffith (DPW) (914) 995-2556 or Deborah Parker (914) 995-3888.

2004 Freshwater Wetlands Data Obtained

State-designated wetlands last mapped in 1970s

Westchester County GIS has recently obtained and integrated into its central GIS database the new 2004 state-designated freshwater wetlands coverage. With the last comprehensive mapping of the county's freshwater wetlands occurring in the 1970s, this most recent effort by NYS DEC identi-

fies significant wetland changes throughout northern sections of the county.

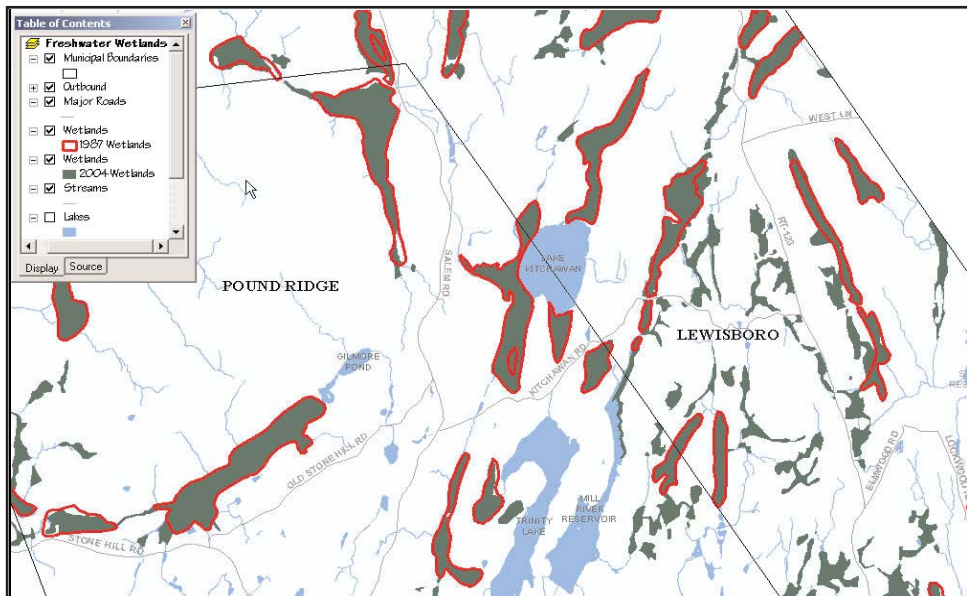
The Freshwater Wetlands Act (FWA), Article 24 of the New York State Environmental Conservation Law, provides DEC with the authority to regulate certain freshwater wetlands (wetlands 12.4 acres or

greater in size, certain smaller wetlands of unusual local importance (LUI), in addition to a 100-ft buffer around previously mapped wetlands). Prior to the release of the 2004 data, the only other version of the digital data was a 1987 coverage also released by DEC.


Using GIS software tools, county GIS staff compared the 1987 and 2004 versions of the coverage. A majority of the changes were primarily located in northern Westchester. Those municipalities affected by the addition of new wetlands include Bedford, Briarcliff Manor, Cortlandt, Harrison, Lewisboro, Mount Kisco, Mount Pleasant, New Castle, North Castle, North Salem, Ossining, Peekskill, Pleasantville, Pound Ridge, Rye Brook, Somers and Yorktown.

As a result of the remapping project, the county's total wetland acreage has increased from 7,556 acres to 12,195 acres, an increase of approximately 61%. The Town of Somers witnessed an acreage increase of 107% (641 acres to 13330 acres) while the Town of Ossining experienced a decrease of nearly 12%.

A PDF file of the new countywide map is available at <http://giswww.westchester.gov.com>. For more information, contact Cindy Louie at (914) 995-3014. (Note: Acreage figures are unofficial).



Based on a comparison of the 1987 and 2004 state designated freshwater wetland coverages provided by DEC, County GIS calculated that the towns of Lewisboro and Pound Ridge were among the top three municipalities with the greatest increase in state designated freshwater wetland acreage.



Andrew J. Spano, Westchester County Executive
County Board of Legislators

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