Local Government Geospatial Projects Continue to Expand

Westchester County GIS staff continues to work with local governments on a wide range of cost-effective geospatial projects. Over the past several months, meetings have been held with Buchanan, Peekskill, Yorktown, Mount Kisco, North Castle, New Castle, Larchmont, Lewisboro, Ossining Town, and the City of Yonkers.

Focusing on selected projects, GIS staff has been assisting the villages of Buchanan and Mount Kisco on mapping infrastructure systems, helping City of Peekskill staff on GIS data development priorities, and the town of New Castle GIS committee on enterprise geospatial issues and tax map maintenance options. Both the towns of Lewisboro and Ossining assessor offices have requested County GIS staff input on alternative tax map maintenance options as well.

Many municipalities continue to use the county-developed and supported Tax Parcel Viewer as a means to make available local tax maps, show basic property information, and generate mailing labels as part of the abutters function. Recent GIS staff work also includes the design and publication of a hardcopy map book series for major infrastructure systems (sanitary sewer, storm water, and drinking water) for municipalities. The first series was completed for the Village of Croton and printed, at a cost to the village, at the county's Dept. of Information Technology print shop.

County staff also continue to provide assistance with desktop clients such as ArcGIS and Google Earth and are now using ArcGIS.com for several types of maps in support of local government programs. For more information contact Sam Wear (914) 995-3047 or Connor Lynch (914) 995-6532.
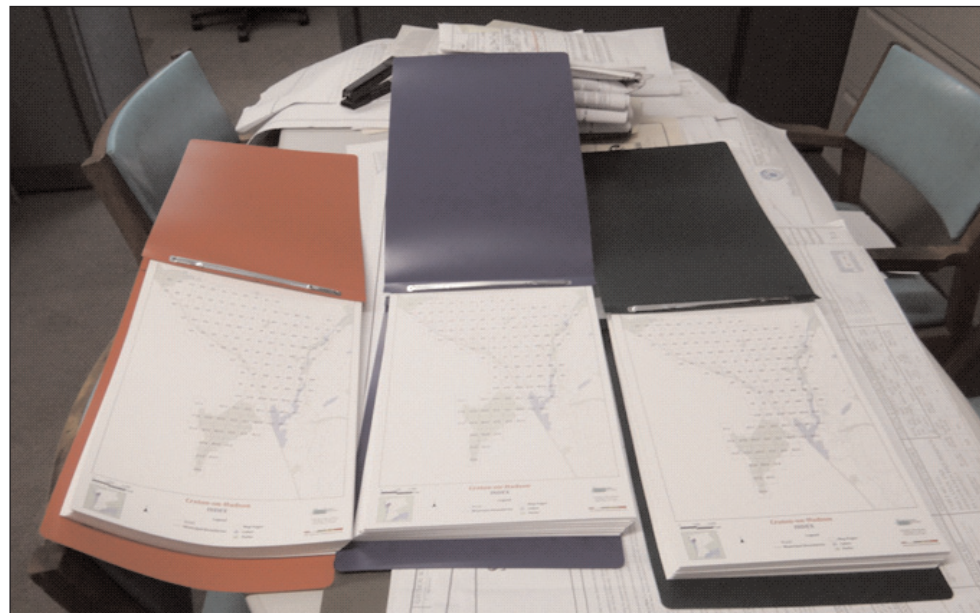
Westchester County GIS produced GIS map books for Village of Croton-on-Hudson DPW and Highway departments. The book series will be used in the field to identify infrastructure features for DPW and Highway field work staff.

GEOGRAPHIC INFORMATION SYSTEMS

Hiding in Plain Sight

Westchester County GIS Helps Identify Potential Farmland 30 Minutes Outside NYC

When you think of Westchester County, you probably don't think of it as a place with farms. It might surprise you then to know that according to the Department of Planning the county has 7,547 acres of land certified as farmland by the county's Agriculture & Farmland Protection Board (AFPB).

These farmlands are mainly for commercial horse boarding and other equine related activities, although the horticulture industry also has a strong presence. We have farms which grow fruit, vegetable and other crops follow and Christmas trees.

But the farm lands, of course, just represent a small percentage (2.6%) of all county land, and there is little chance of this getting larger due to the lack of a viable network or support system to encourage sustainable and successful farming.

Enter GIS. In collaboration with the county-owned Hilltop Hanover Farm in Yorktown Heights, GIS staff are working to identify potential "farmland" opportunities across the county The criteria developed by Hilltop Hanover staff includes variables such as designated agricultural soils, slopes, solar orientation, access to water, and those parcels two acres or larger. So as to identify potential partners in the program, only properties associated with educational, academic, medical, religious institutions, and selected corporate and business parks were included in the initial mapping effort.

County GIS staff used ArcGIS10.1 Desktop as the tool for the multi-step process which included several spatial queries such as attribute and spatial analysis, a relate and intersect between different data layers, and geometry calculations. Once the candidate list of eligible properties was generated, staff generated a Web map in ArcGIS.com to share with Hilltop Hanover staff. The Web map includes all relevant study layers, the Westchester County base map, digital surface models, and aerial photos.

Now with a map that identifies nearly 5,000 acres of potential farmland, Hilltop Hanover can start to pursue potential land/lease agreements to get newly trained farmers working on farmland in the communities they live. The potential exists to have schools provide food to school cafeterias, hospitals with their own "farmers" helping to augment food for their patients and employees, and corporate parks having their own farm stands on-site.

"With so many site requirements and constraints which are incorporated into our analysis – and potentially so much land to cover, especially on such a broad county-wide scale – GIS software is a perfect fit in helping us identify potential small-scale farming locations," says Hilltop Hanover Farm director Lucille Munz. "We look forward to continued work with GIS staff as we continue to refine and add additional data layers as part of the study and help identify "inactive" farmlands to be put back into production."

For more information on the study, contact Lucille Munz (914) 962-2368 or Zhenglu Zhang (914) 995-5347.
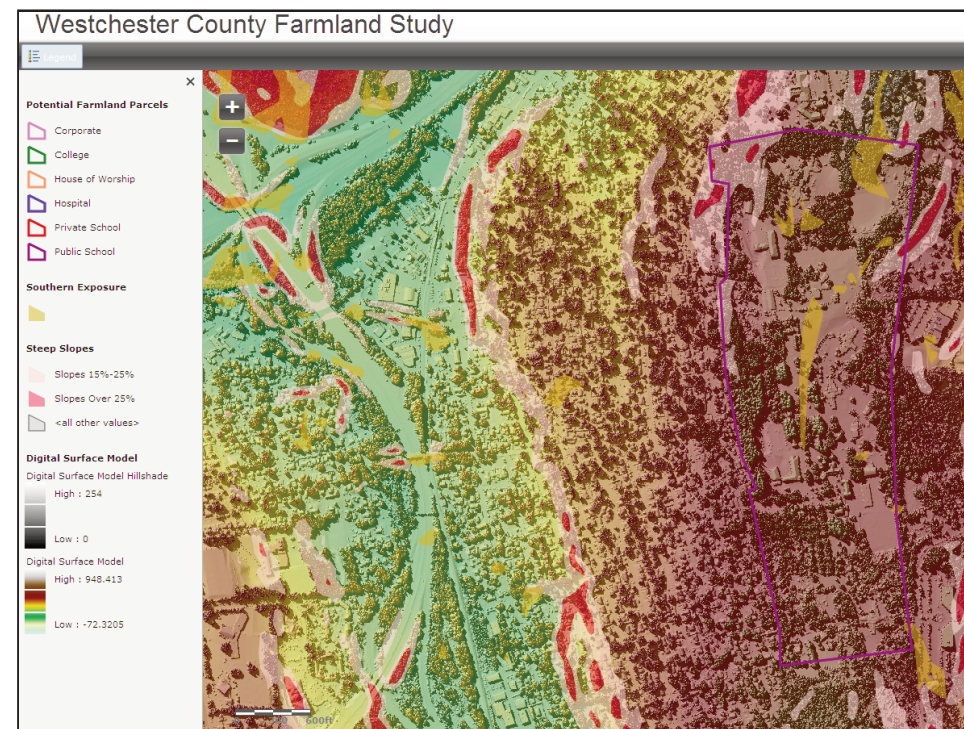
Nearly 150 properties in the county were identified as meeting the initial minimum criteria including property size, limited slope, suitable agricultural soils, water accessibility (water districts), and solar orientation. The ArcGIS.com application also integrated other relevant data layers including aerial photos, digital surface model (as seen in image), and building footprints.

Evacuation Bus Stops

The Westchester County Office of Emergency Management, in cooperation with DPW Transportation and County GIS, recently updated all general population evacuation bus routes and bus stops in the County's Radiological Emergency Response Plan for the Indian Point Nuclear Power Plant. The work was based on a study conducted by KLD & Associates to provide more accurate routes and stop locations, improve the efficiency of evacuation bus routes for the general public, and more accurately determine resource needs to evacuate transportation dependent populations within the Indian Point Emergency Planning Zone (EPZ). All new data is now incorporated into the EPZ module which residents can use as part of Mapping Westchester County. For more information contact Ilir Tota at (914) 995-5605.

DPW Bridge Inventory

To improve long-term data maintenance and asset management programs, County GIS staff is working with DPW staff on consolidating data and related documents pertaining to the County's bridge inventory database. Over the years, information on county-owned bridges has been collected and generated by different groups and agencies such as DPW, NYS DOT, NYS Thruway Authority, engineering companies, and local governments. One common identifier among the different inventories is the NYS DOT bridge index number (BIN) which will be used to consolidate and update pertinent bridge attribute data including photographs and bridge inspection reports. In the future it is anticipated the bridge data will be updated via a mobile application as well as integrated into other map services and desktop applications. For more information contact Dongming Tang at (914) 995-4437.

New ACS Maps

Based on Census Bureau data released in June 2013, a new series of maps highlighting an interesting array of housing, economic and transportation themes have been produced by the Planning Department and posted online. The maps are based on 2007-2011 American Community Survey (ACS) data at the census block group level. Topics include median household income, poverty status, means of transportation to work, housing tenure, year structure built, median housing value and number of bedrooms. Because the ACS data is based on a sampling of households, it is subject to a margin of error, and five years of data are aggregated to produce more reliable results. To see the new maps, go to either the Census and Statistics or Maps and Aerial Photographs section on the Planning Department homepage.

County Goes Mobile With Mapping App
Village of Larchmont using smart phone app for mapping street signs

With the support of both county departments and local governments, GIS staff has developed a smart phone mobile application which can be used to inventory and map above-ground street features. The mobile app is currently being tested as part of a street sign inventory project in the Village of Larchmont (Public Works Department).

As designed, the application leverages the county's enterprise GIS infrastructure and does not require any local client software. Smartphone users first need to download either the ESRI ArcGIS or Collector app both which are free to download from the Apple Store or the Google Play Store. The mobile application also requires users to have an ArcGIS.com organizational account. Once properly configured, the smart phone app will automatically connect to ArcGIS.com services, so the user can begin mapping and data collection.

The Larchmont street sign project lets users collect street sign locations and attribute by category (i.e., stop, speed limit, and parking, one way etc.) using easy-to-use pull-down menus which speeds up data collection and minimizes data coding errors. The mobile app also enables users to associate one or more related documents (photos, videos, MS-Word files, etc.) with the sign. After users have collected data in the field, they are able to use the same ArcGIS.com web service on a desktop browser to spatially edit or update attribute data. The data col-

lected from the field or updated from desktop is automatically stored in the County's enterprise GIS databases. The database also records when the sign features were created.

The collaborative workflow (county and village) to develop the street feature data collection mobile app includes:
• Design and implement street sign data model in ArcSDE
• Author the street feature data collection map (MXD) using ArcGIS for Desktop 10.1
• Publish a feature service for editing using ArcGIS for Server 10.1
• Create a web map in ArcGIS.com
• Download appropriate ESRI smart phone apps
• Registered ArcGIS.com users utilize smart phone app for mapping or data collection
• Data is stored as part of county's enterprise GIS database
• Repackage data as shapefiles or KML and return to involved agencies/municipalities for local use or republish as part of other countywide map services or as part of desktop applications.

The Larchmont street sign inventory is crucial in context of identifying any hardware and software limitations, user interfaces, and scalability to other similar mobile geospatial applications. For more information, contact either Connor Lynch (914) 995-6532 or Xiaobo Cui (914) 995-3781.
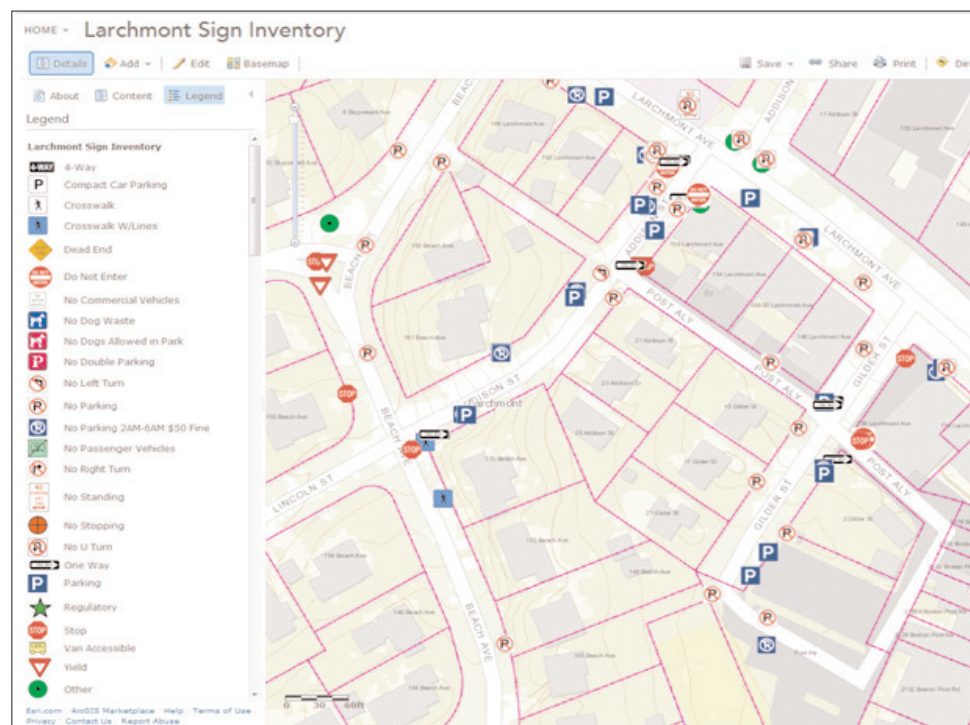
The Village of Larchmont is mapping street signs with a mobile app developed by Westchester County GIS. Each street sign is being identified as one of 25 different sign types as well as whether or not the signs meet minimum "retroreflectivity" levels. Data is being collected with a Motorola Droid Razr MaxxHD.

2013 GIS User Group Meeting
More than 150 attend meeting on Purchase College Campus

With attendance up nearly 15% over the 2012 event, the 2013 Westchester GIS User Group meeting was held on May 17 at Purchase College. Dr. Paul Ryan, Assistant Professor of Environmental Studies, opened the meeting in the Natural Sciences building by welcoming attendees to the Purchase campus.

The day's agenda included presentations on a wide range of geospatial subjects Local presentations included Denise Knauer, assessor for the City of Peekskill, illustrating how the city's assessment office offers online tax maps and related data using the County's Tax Parcel Viewer. Limarie Cabrera, Westchester Children's Association, provided an overview of agency mapping projects, and Jason Klein, Westchester County Parks and Recreation, detailed mapping efforts on Hurricane Sandy damage at Ward Pound Ridge Reservation. Christopher Mytych, Chief of the Village of Purchase Fire Department, highlighted how County GIS maps have been instrumental in inventorying the department's fire hydrants and related assets, and Greg Cutler from the Village of Mamaroneck also presented.

Representatives from both Dolph Rotfeld Engineering and Bowne Management Systems highlighted local MS4 infrastructure mapping and Al Leidner, president, provided an overview of current activities within the New York State GIS

Association. ESRI staff presented on mobile MS4 data collection, Jonathan Cobb, Waypoint Technologies, provided an update on recent advancements in GPS technology and Eric Brady, Bergmann Associates, on state-of-the art efforts in building spatial 3D models.

Sponsor presentations covered recent advancements in oblique imagery (Pictometry), sea level rise mapping (HDR), developing web mapping applications (Latitude Geographics), and an overview of OCad Orienteering mapping software (Orienteering Unlimited).

A "Lunch-and-Learn" session was led by County GIS staff focusing on how to access and use the County's public facing map services. Two afternoon vendor-led Special Interest Group (SIG) workshops were held covering GIS for AutoCAD (Bowne Management Systems) and Municity GIS Software for Local Governments (Software Consulting Associates). A special workshop for high school teachers and educators titled "GIS in the Classroom" was well-attended and led by nationally renowned GIS K-12 instructor, Lyn Malone.

Copies of the presentations are available for download from the GIS Website. For more information on the 2013 User Group Meeting, or plans for the 2014 event, email or call Sam Wear (914) 995-3047.

Held annually at Purchase College, the Westchester GIS User Conference continues to be one of the largest gatherings of geospatial users in the lower Hudson River Valley. The day long event includes speakers, workshops, vendor displays, and a map gallery. Plans are already underway for the 2014 event.

Find a Licensed Contractor

County GIS has successfully collaborated with colleagues in the Departments of Information Technology and Consumer Protection to design and implement a web-based application enabling county residents to search for and identify licensed contractors based on geography (i.e., zip code or municipality.) Currently, a list of 7704 licensed contractors are in the searchable database.

Once a contractor search has been completed and a candidate list generated, users can click on icons to get additional information on licensed contractors in their area including contractor's name, phone number, or license expiration date. The application can be found on the Consumer Protection website. For more information, contact John Gaccione, Dept. of Consumer Protection (914) 995-2164, or Zhenglu Zhang (914) 995-5347.

2013 Base Map Update

Update of the countywide digital base map is in full production based on leaf-off aerial photography captured in April of this year. The 2013 effort is the first comprehensive countywide planimetric update since 2004, with IIC Technologies, Inc. currently serving as the prime contractor providing both aerial photography and base map/planimetric mapping services. As of October 1, photogrammetric images and planimetric datasets were compiled for the southern portion of the County. All aerial photography and planimetric products anticipated to be delivery by first quarter 2014. Examples of the products being generated from the 2013 project are available for viewing on the County GIS homepage. For more information contact Ilir Tota (914) 995-5605.

Health Navigator Locations

Westchester County residents who are uninsured or self-insured can enroll in a new health insurance plan through the NY State Health Marketplace. To help residents and small business owners understand and access this new system, the Westchester County Health Department (DOH) has seven "navigators" available at 26 locations throughout the county. GIS staff assisted in this effort by developing an application which enables county residents to find a health navigator by geographic location, name, or type (walk-ins or by appointment), which are distinguished by red or blue icons on map. Residents can select a site from the list and get detailed information, including facility name, address, phone number, office hours and languages (Spanish and English). Options for driving directions are also available. The mapping application can be found on the Department of Health Website.