Mobile Mapping in the Town of Eastchester
ESRI Collector app used on Android smartphone

Building off the success of the street inventory project in the Village of Larchmont, County GIS staff has provided mobile mapping assistance to the Town of Eastchester. At the request of Planning Director, Margaret Uhle, the town saw mobile mapping as an effective way to map and Inventory Street signs as part of a comprehensive update to the town's Vehicle and Traffic Law. Time-stamped pictures of each sign, which are taken as part of mapping process, will be used to replace written descriptions of each sign that are currently included and used in the ordinance. As designed, the mobile application leverages the county's enterprise GIS infrastructure and does not require any local client software. The data collected from the field or updated using a browser application, is automatically stored in the County's enterprise GIS databases. "The collaboration between the town and the County was absolutely essential for both the development and success of the project," said Planning Director Uhle. "The street sign inventory would not have been possible without the support of, and assistance from County GIS. Once the mapping is complete, police department personnel will be in a position to readily access, view and update the data."

The Eastchester street sign project collected street sign locations, which were attributed by category (i.e., stop, speed limit, and parking, one way etc.) using easy-to-use pull-down menus speeding up data collection and minimizing data coding errors. With data collection recently completed, a total of 4,044 street signs were mapped across the town. The mobile app also enables users to associate one or more related documents (such as photos, videos, or MS-Word files) with the sign.

For more information, contact either Connor Lynch at (914) 995-6532 or Xiaobo Cui at (914) 995-3781.

The Town of Eastchester collected street sign data with a mobile app developed by Westchester County GIS. Each street sign was coded and photographed by sign type. The data collection and inventory effort will help facilitate traffic code enforcement.

GEOGRAPHIC INFORMATION SYSTEMS

The New Westchester County Base Map
Orthophotography and planimetric data now available online

Work and delivery of the new Westchester County digital base map including half-foot-resolution color orthophotography and updated countywide planimetric datasets, was completed this spring. Westchester County contracted with IIC Technologies, Inc. for Spring 2013 aerial photography which provided the basis for the first comprehensive countywide planimetric update since 2004. The new imagery was used to support the updating of planimetric datasets including building footprints, edge-of-pavement, sidewalks, parking lots, bridges, and other physical features. Base map products form the foundation of dozens of applications in emergency response, public safety, public health, infrastructure management, land use planning, transportation, natural resource management, and tax mapping – at both the county and local level.

Central to the success of the 2013 update, was the incorporation of Quality Assurance/Quality Control (QA/QC) procedures by an independent contractor. All datasets were rigorously reviewed for spatial accuracy, completeness and attribute coding by Bowne Management Systems, the county's selected QA/QC contractor. By definition, QA/QC was intended to guarantee that products meet contracted standards and criteria, confirming accuracy, completeness, connectivity, and conformance to design. Used throughout the geospatial industry, QA/QC procedures protect the significant investment an agency makes in large geospatial data development projects.
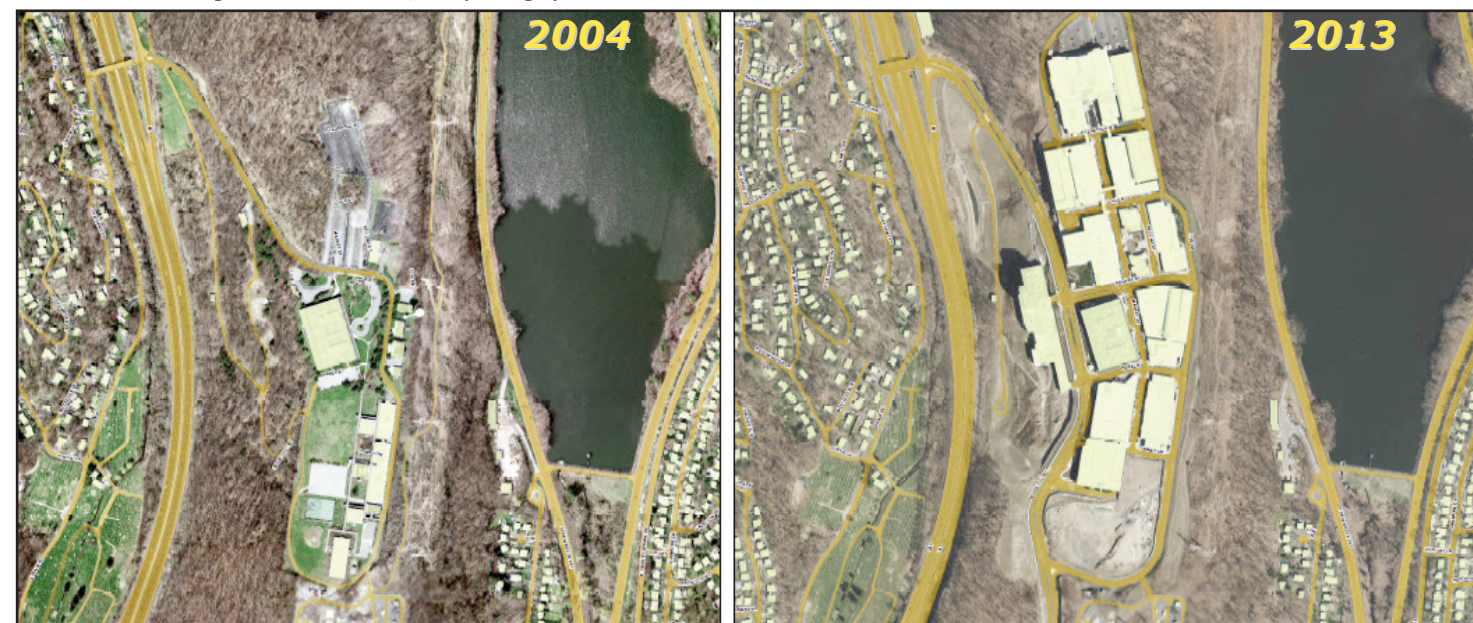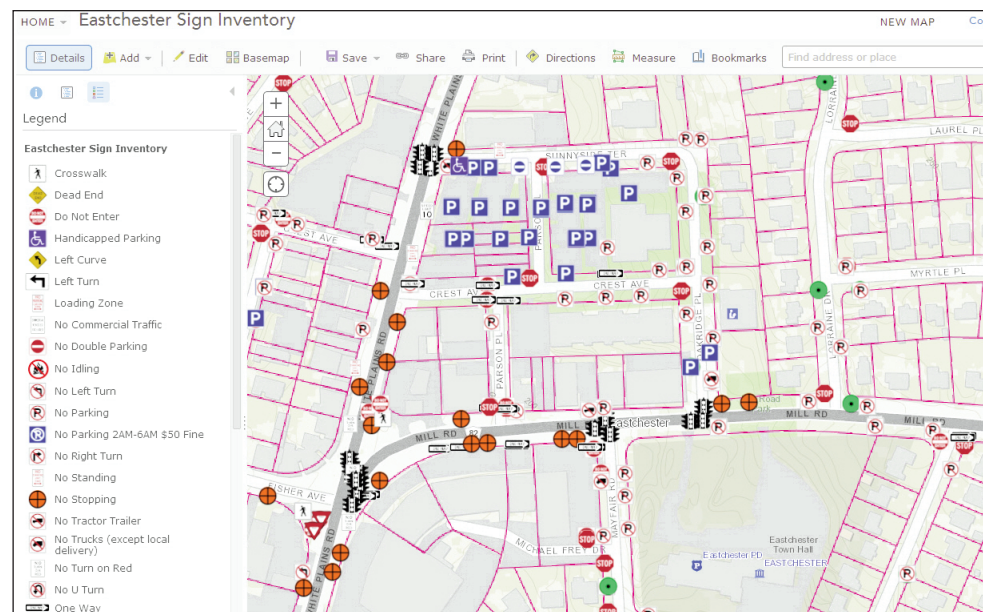
Final data was delivered to the county in ESRI Geodatabase and shapefile formats and is currently being uploaded to the county's enterprise GIS database. Planimetric datasets will also be available for download from the County GIS Data Warehouse and individual orthophotography files will be available for download from the New York State Clearinghouse. A countywide orthophoto mosaic will be integrated into the interactive Mapping Westchester County application.

Similar to earlier countywide photogrammetric projects, Westchester County GIS will be publishing features (images and planimetrics) from the 2013 base map project as Open Geospatial Consortium (OGC) compliant map services. While individual datasets will be available for download, map services enable users to consume and *mash-up* larger volumes of data in a wide range of viewers and desktop clients, including ArcGIS Explorer, ArcGIS, and AutoCAD. Visit our website for a list of available Westchester County map services.

For more information on all elements of the countywide base map update, contact Ilir Tota at (914) 995-5605.

The countywide base map included the updating of existing planimetric features. Independent QA/QC reviewed potential problems in the data which was resolved to the satisfaction of the county prior to final acceptance. Image above shows Ridge Hill, Yonkers orthophoto and planimetric data from 2004 (right) and 2013 (left).

DEF Asset Viewer

For several years, County Dept. of Environmental Facilities (DEF) has used a vendor supported GIS desktop application (Automated Sewer Manhole Inspection or "ASMI") to manage sanitary sewer system features, inspection history, and support for "Call- before-Dig" job routines. Originally developed at ArcGIS 9.2, the application was recently migrated by Bowne Management Systems to ArcGIS 10. GIS staff worked closely with Bowne to convert older desktop client tools to a browser-based application while maintaining original application functionality. The new program provides expanded access to DEF information stored as GIS files including geo-referenced images and videos. The new application allows DEF staff to edit the attributes and locations of DEF sanitary sewer manholes and lines through an interactive ArcGIS Server-based map interface. For more information, contact Dongming Tang at (914) 995-4437.

Digital Trail Maps

GIS staff is working with the Department of Parks, Recreation, and Conservation (PRC) to develop a series of digital trail datasets for selected parks, which will be available through the PRC website. Data will be published through a web application that will provide hikers and park visitors access to information regarding trails, points of interest, and available service locations throughout the parks. In those areas where wireless service is available, users will be able to access the application on smartphones to help navigate trail systems and other areas of the park. Ward Pound Ridge Reservation will be the first of several digital trail web mapping applications. The interactive map will be available to the public later this Spring. For additional information contact, Ana Hiraldo-Gomez at (914) 995-5162.

GIS App for Sewer Overflow

GIS and the Department of Health (DOH) staff are working on the development of ArcGIS Desktop project, which will serve to inventory and track sewage discharge locations. "Having all related documents in one location will help to streamline the detection and elimination of sewage discharges reducing potential public health hazards and environmental contamination," notes Matthew W. Smith, senior sanitarian at Westchester County Health Department Bureau of Environmental Quality. The project will serve as a one-stop location to a wide range of GIS data including pictures of the sites, complaint forms, field activity reports, sampling and dye test results, and administrative enforcement actions in PDF format. For more information, contact Ana Hiraldo-Gomez (914) 995-5162.

Local Government Geospatial Projects Flourish
Work includes conversion of 40-year-old City of Rye engineering manuscripts

Westchester County GIS staff continues to work with and support local governments on a wide range of geospatial projects. Over the past several months, meetings have been held with multiple municipalities including Rye Brook, Dobbs Ferry, Irvington, Ardsley, Village of Pelham, Tarrytown, Sleepy Hollow, City of Rye, Mount Kisco, Larchmont, New Rochelle and Bronxville.

Focusing on selected projects, GIS staff has been assisting the villages of Rye Brook, Dobbs Ferry, Irvington, Ardsley and Pelham on mapping infrastructure systems. Utilizing infrastructure map books produced by the county, municipal staff are updating existing sanitary, storm water and water systems data. County staff will incorporate the edits annotated on the hardcopy maps and return up-to-date digital data to each municipality with a finalized map book for use by local staff. In return, the County receives valuable updated local infrastructure datasets.

In recent meetings with City of Rye engineering staff, it became apparent there was a need to compare new digital infrastructure datasets collected in the field against similar data mapped nearly 40 years ago. County GIS agreed to assist and work closely with an intern hired by the City of Rye to perform the data analysis. To begin the process, over 90 citywide sanitary and storm water system digital files (1976 system wide hardcopy maps which were scanned) needed to be "geo-referenced". Using the geo-referenced scans as a basis, the more recently collected infrastructure datasets (catch basins and manholes) were then plotted on top of the older maps for comparison and updating (see image below). Rim elevations, catch basin numbers, manhole numbers, storm pipe information and sewer pipe information are being taken from the old manuscripts and being attributed to the more recent digital datasets.

At the conclusion of the project, the City of Rye will have updated citywide sanitary and storm water system maps both in digital and hardcopy format. A map series book will be made for the public works and engineering department, and the digital data will be made available through ArcGIS Explorer (desktop). The ArcGIS Explorer viewer will consolidate the city's entire infrastructure data into one location as well as give access to live Westchester County GIS map services.

County staff also continue to provide assistance to other municipalities with desktop clients such as ArcGIS and Google Earth. In fact, they are now using ArcGIS.com for several types of maps in support of local government programs. For more information, contact Connor Lynch (914) 995-6532.
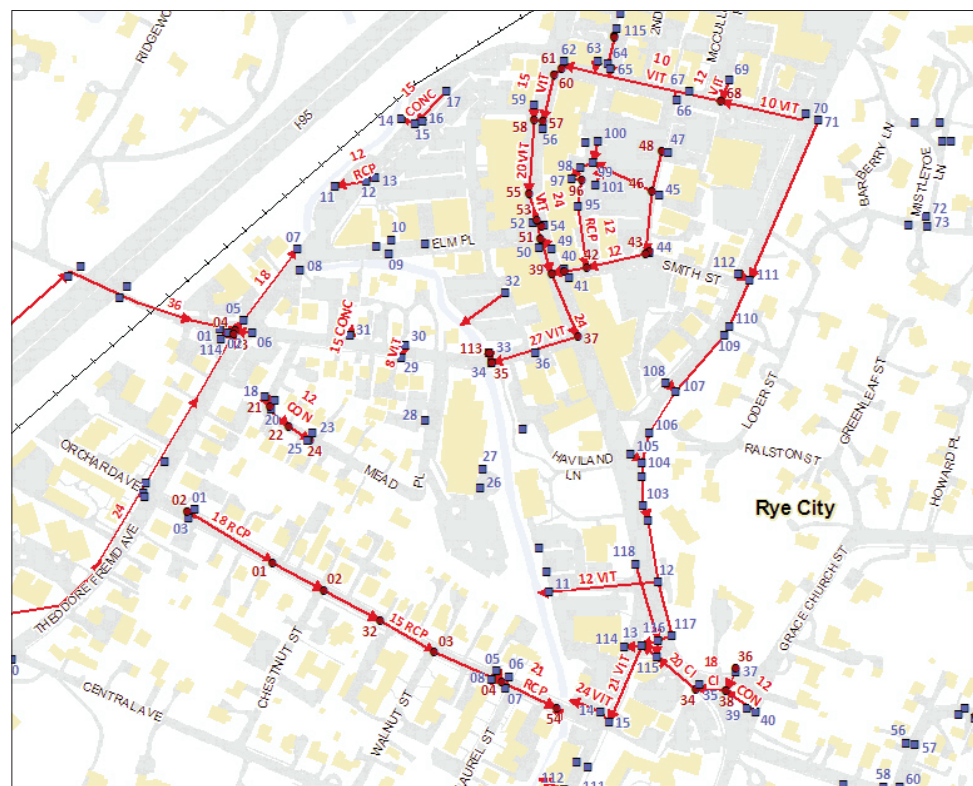
Infrastructure mapping is the focus of many municipalities across Westchester County. Westchester County GIS orthophotography and planimetric datasets are important products and provide geospatial registration to older and outdated infrastructure manuscripts. It is not uncommon for local governments to have critical infrastructure information only in hardcopy format – much of which is several decades old.

GIS for Para Taxi
New ParaTransit program for the Office for the Disabled

A new and exciting program has come to Westchester County's ParaTransit service. Westchester County is pleased to offer the "Para Taxi," a program that is expanding throughout the county providing ParaTransit riders with alternative service utilizing local taxi cabs for day-to-day transportation needs. ParaTransit a public transportation service for the disabled community servicing over 5,500 riders while providing over 220,000 trips annually.

The Para Taxi program first originated in the city of White Plains and has since established service in the cities of Peekskill and New Rochelle. The City of Yonkers will soon join the Para Taxi program in June 2014. A ParaTransit trip will cost riders $4.00 each way whether they use the traditional service or the Para Taxi program.

ParaTransit coordinated efforts with County GIS staff in determining the actual service areas (or "zones") for each municipality. Trips within the same service area are the most affordable though become more expensive when the drop-off location is in a different zone from the original pick-up location. Using mapping and geography to establish the zone boundaries and the associated fare structures has been extremely beneficial to the new program in terms of cost savings. The new Para Taxi trip costs approximately $10.00 compared to our traditional ParaTransit trip costing $46.00. The new program has also been a huge success in context of ridership. As of February 2014, Para Taxi has been averaging on a monthly basis 400 trips in the City of White Plains, 600 trips in the City of Peekskill and 200 trips in the City of New Rochelle.

In the near future, it is anticipated GIS staff will begin to also provide ArcGIS.com online mapping tools for ParaTransit staff. One function in particular, will enable call takers to geocode addresses to determine the exact service areas the trips both originate and end. The Para Taxi viewer will also provide call takers with access to common community facility locations, public transportation system components and routing functions.

"GIS staff mapping support to help implement the new program was essential," notes Evan Latainer, Director, Office for the Disabled. "Under the direction of the County Executive Robert P. Astorino, we expect the Para Taxi program and ridership to continue to expand."

For more information on the new Para Taxi program, contact Evan Latainer at (914) 995-2957.
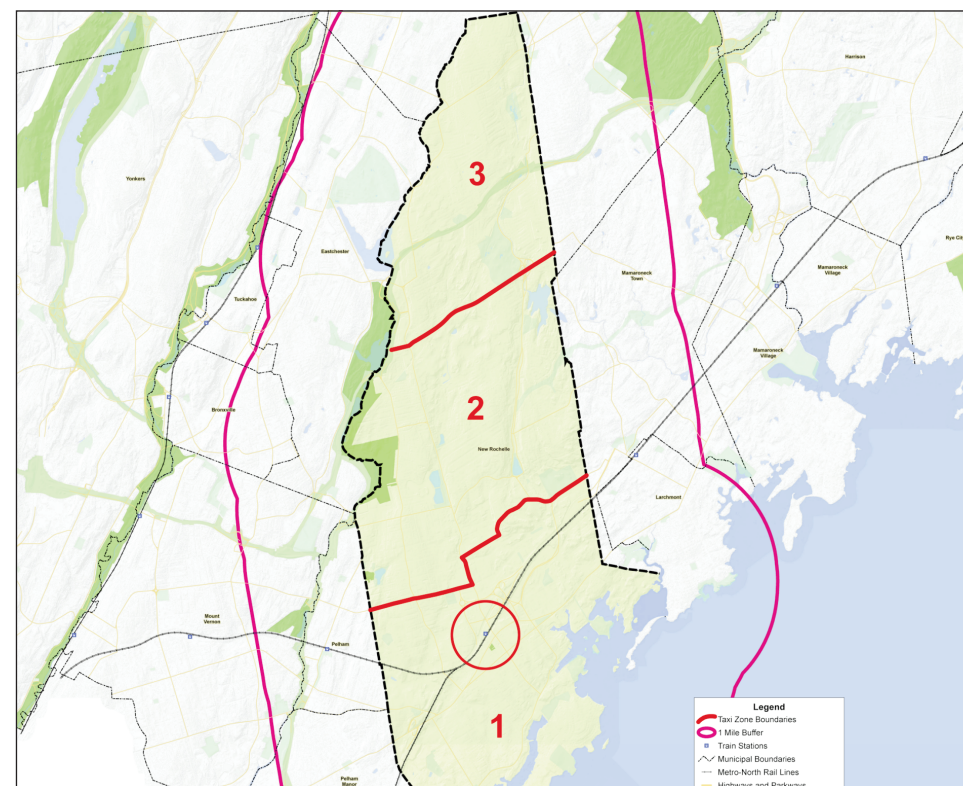
The Para Taxi program uses "zones" to determine trip fares paid to the vendor. Four zones are associated with the New Rochelle program including three within the city limits and a fourth, which is a 1-mile buffer around the city boundary. Intra and Inter-service area trips define the overall trip fare.

New Tax Parcel Data

In collaboration with local governments, Westchester County GIS has created a unified countywide digital tax parcel data available for download. Providing the data online and in digital format provides an efficient process for users to easily download the data and at the same time significantly reducing the number of tax parcel data requests at both the local and county level. Because the data is obtained from so many sources and in different formats, GIS staff "normalized" the data to a common format and making it available in "as is" condition. Assessor contact information is also available at the website for users who need additional assistance. For more information, contact Ilir Tota at (914) 995-5605.

Food Bank for Westchester

Westchester County GIS staff is currently assisting the Food Bank for Westchester on mapping poverty status in various municipalities. The Food Bank supports over 230 emergency and non-emergency feeding programs ranging from food pantries and soup kitchens to shelters and school-based programs. These programs are primarily open to the public and offer multiple services to county residents. These facilities were previously mapped and are shown on the Food Bank website. GIS county staff is also providing American Community Survey 5-Year estimates data (2008-2012), which will be useful for additional mapping, reports, and Food Bank outreach efforts. For more information, contact Ilir Tota at (914) 995-5605.

Geospatial Plan for HPN

County GIS staff is initiating support to the Department of Public Works & Transportation (DPW&T) as part of work with Environmental Systems Research Institute, Inc. (ESRI) on a significant geospatial project at the Westchester County Airport (HPN). Funded by the federal government, the Federal Aviation Administration (FAA) requires airports to collect, maintain, and electronically submit comprehensive geospatial data to FAA via a Web portal. Such compliances are required in order for airports to continue to receive Airport Improvement Program (AIP) funding from FAA. GIS staff will assist DPW&T to integrate both local and federal datasets into the ESRI ArcGIS for Aviation model, which will help facilitate long-term planning, operations and management of the airport. For more information, contact Zhenglu Zhang at (914) 995-5347.