

# GEOGRAPHIC INFORMATION SYSTEMS

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Westchester County GEOGRAPHIC INFORMATION SYSTEMS

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## Maps Support County Deer Management Plan in County Parks

*Hunting and safety zones identified on kiosk maps*

An overabundance of white-tailed deer (*Odocoileus virginianus*) has been a long-standing issue in Westchester County with far-reaching ecological consequences. In 2009, the pilot Adaptive Deer Management Program (ADMP) was created in response to a recommendations from the Westchester County Citizen's Task Force based on the White-tailed Deer and Forest Regeneration

Final Report. The 2009 program was a success and the ADMP has continued to expand annually. Currently, the Westchester County Department of Parks, Recreation and Conservation (PRC) manages and conducts the program in six parks - Ward Pound Ridge Reservation, Muscoot Farm, Lasdon Park and Arboretum, Sal J. Prezioso Mountain Lakes Park, Hilltop Hannover Farm and John

E. Hand's Bald Mountain Park. The hunting season runs from October 1 to December 31 each year.

Bow hunting was recommended as the safest and most effective method of reducing deer populations without incurring extra costs to the county and allowing county parks to remain open to the public.

As part of the program, maps are being created to be used by hunters and Park staff. Hunters can use the maps for hunting, scouting and navigating through the park. They can also use the map to locate park kiosk, where they can insert their designated "hunter number" pin to mark the location where they will be hunting that day. The kiosk system allows other hunters to see areas that are being occupied by other hunters and allows Parks staff to easily find and locate hunters if needed. Planimetric features, streams, stone walls, trail systems and other land marks on the map help hunters navigate the park as well as estimate deer movement and location. Also featured on the map are "safety zones" and property lines. The "safety zones" are 500 foot buffers placed around houses adjacent to the property. These two critical features distinguished on the map allow hunters to see where they can and cannot hunt.

For more information on the County's Deer Management Program visit <http://parks.westchestergov.com/deer-management> or contact Dan Aitchison at (914) 864-7326.



John E. Hand's Bald Mountain Park Map mounted at park kiosk showing hunter numbers to mark their location. Map layers include stone walls, terrain, environmental features and "safety zones," to help hunters and staff navigate through the park.

## Westchester County GIS develops Story Maps for county and local governments

What is a Story Map? Environmental Systems Research Institute (ESRI) Story Maps are easy to use web map applications created with ArcGIS.com. This interactive online web mapping application provides the necessary tools for GIS staff to effectively communicate information to non-technical users through the use of images, geospatial data and videos.

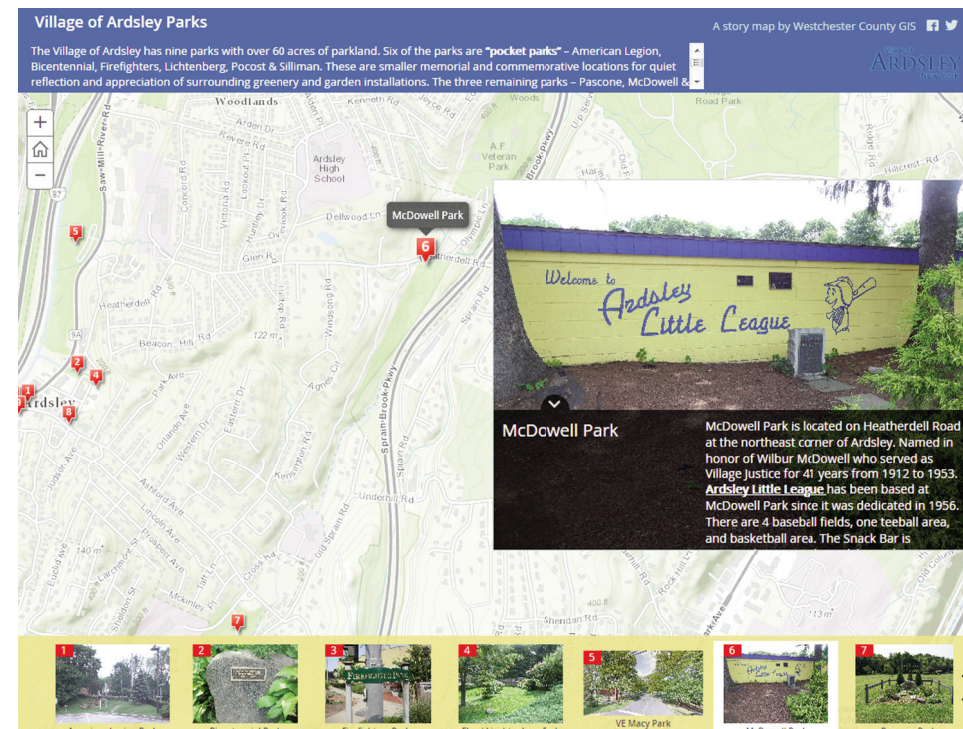
How does it work? To start creating Story Maps, users must first obtain a ArcGIS.com organizational user account, which is contingent on ESRI software maintenance being current and up-to-date. Once the organizational account is set-up, users can access ESRI's Cloud infrastructure to create maps with their own new data, images, and videos or using map services and content from other web sites. Many geospatial tools available in the ArcMap desktop software

can be utilized in building the Story Map. Users can also customize layer symbology and configure pop-ups to display attribute data. Once completed, the user can then share the map on the Web using one of the many Story Map templates available in ArcGIS.com. Each Story Map can be designed and customized to suit the needs of the individual user.

County GIS staff recently worked with the Village of Ardsley to develop a Story Map showcasing the village's parks. The Story Map was developed using the Map Tour template and is now a one-stop resource center for village park information. "A great thing about living in the suburbs is having "green spaces" to enjoy all around the Village. The Story Map will help folks locate those spaces and allow them to make a virtual visit to the sites. People will enjoy

the slide show, and be inspired to go out and visit the parks," said Lorraine Kuhn, member of the Village of Ardsley Recreation Commission.

In addition to the images, the Story Map provides information on each of the parks facilities and amenities, and links to relevant websites about the park's history. Several of the Village of Ardsley parks are "pocket-parks" dedicated to public servants. The Story Map can be accessed from the village parks website. GIS staff is also working on the development of Story Maps for county programs in the Departments of Parks, Recreation, and Conservation (PRC), Planning, Public Works, and Office of Economic Development. For more information, visit the ESRI Story Maps website or contact Ana Hiraldo-Gomez at (914) 995-5162.



Village of Ardsley Parks Story Map above shows the application's interface with images aligned at the bottom of the screen. The selected tag is displayed over the map area with descriptive information and related links. Story Map can also be shared on Facebook and Twitter social media accounts.

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## Find Your Water Supplier

Westchester County GIS, in collaboration with the Westchester County Department of Health (DOH), developed a new online application that enables residents to type in an address as a means of identifying the water district that provides service to that specific location. The application – titled “Find Your Water Supplier” has been integrated as part of Mapping Westchester County – the primary public facing mapping application published by Westchester County GIS. The easy-to-use application provides information which enables residents to directly contact the appropriate water supplier. Additional information on how to report issues such as water main breaks, low water pressure, or brown water is available once directed to the correct water supplier Website. The application can be found on the DOH website. For more information, contact Xiaobo Cui at (914) - 995-3781.

## 1990 Aerial Imagery

Westchester County GIS is now making 1990 black and white aerial photography available online. The 1990 imagery is the eleventh complete countywide flight series (ranging between 1947 – 2013) accessible from the county through Mapping Westchester County or as an individual map service.

Over 200 individual images were used to create the countywide mosaic. The county’s new 2013 high accuracy base map was used as a reference to “register” the 1990 imagery. The images were edited further using ESRI ArcGIS 10.1 desktop and LizardTech GeoExpress V9.0 software tools. For more information on accessing the 1990 aerial photography, contact Connor Lynch at (914) 995-6532.

## School District Boundary Update

With assistance from Westchester County Executive Robert P. Astorino’s office, county GIS staff has initiated a comprehensive project to update the countywide school district boundary layer. As a means of improving accuracy, district boundaries have been made to be consistent with tax parcel boundary files. Additionally, GIS software tools were used to identify any boundary overlaps in the digital data.

Similar to previous versions of the school district boundary layer, the data will be available for download from the County GIS Data Warehouse as well as incorporated into several online map services being published by the County. Selected attribute data for each district is also being updated. The new dataset is scheduled to be available first quarter 2015. For more information, contact Will Buckhout at (914) 995-4005.

## Disaster Planning Map for Red Cross

Map identifies resources and assets in case of emergency

County Executive Robert P. Astorino recently announced that Westchester County GIS staff has partnered with the American Red Cross to create a map that can help the organization’s staff quickly commence and operate shelter operations during an Indian Point radiological event.

In a disaster, population numbers are a driver in the scale and scope of the emergency response plan. Therefore, having easy access to population count numbers embedded in the map is of tremendous value. The new map provides users with access to population data by designated areas so the need for additional shelter capacity can be more accurately determined. For easy access to general numbers, the map has distance rings (2, 5, 10 mile, etc.) with estimates of the number of people who will need sheltering.

The GIS map also provides Red Cross with an improved capability to graphically communicate activities and identify challenges during a disaster. Better situational awareness and communication significantly cuts down on administrative and communications downtime that surrounds disaster events, especially in the earliest hours. This is especially important to the Red Cross who supplements its regional workforce with specialists from around the country, many who may be unfamiliar with Westchester County.

To be clear, large scale sheltering on a moment’s notice is not easy, especially when it is needed for thousands of people. Trailers of cots, blankets, food and other provisions need to be quickly moved to dozens of buildings that will be converted into shelters. Multitudes of Red Cross workers will converge to run those shelters and be tasked with keeping them well supplied.

The map features the locations of prepositioned supplies, key roads, evacuation routes, bridge clearances (needed for truck routes), primary vendors, reception centers, shelter sites, and medical services, which will allow Red Cross staff to strategize and plan effectively during an emergency.

The benefits of this project are far more reaching than solely improving cost and time savings from running a more logistically efficient operation. It will also ensure that the county’s shelters are properly provisioned and comfortable for all the people who need it during a difficult time. Westchester GIS staffs a mobile office at the county’s Emergency Operations Center during disasters; therefore, the map can easily be modified to show current operations pertinent to an event and can be built upon as needed. For more information, contact Mary Davis, Red Cross representative at [maryhovedavis@aol.com](mailto:maryhovedavis@aol.com) or Ilir Tota at (914) 995-5605.

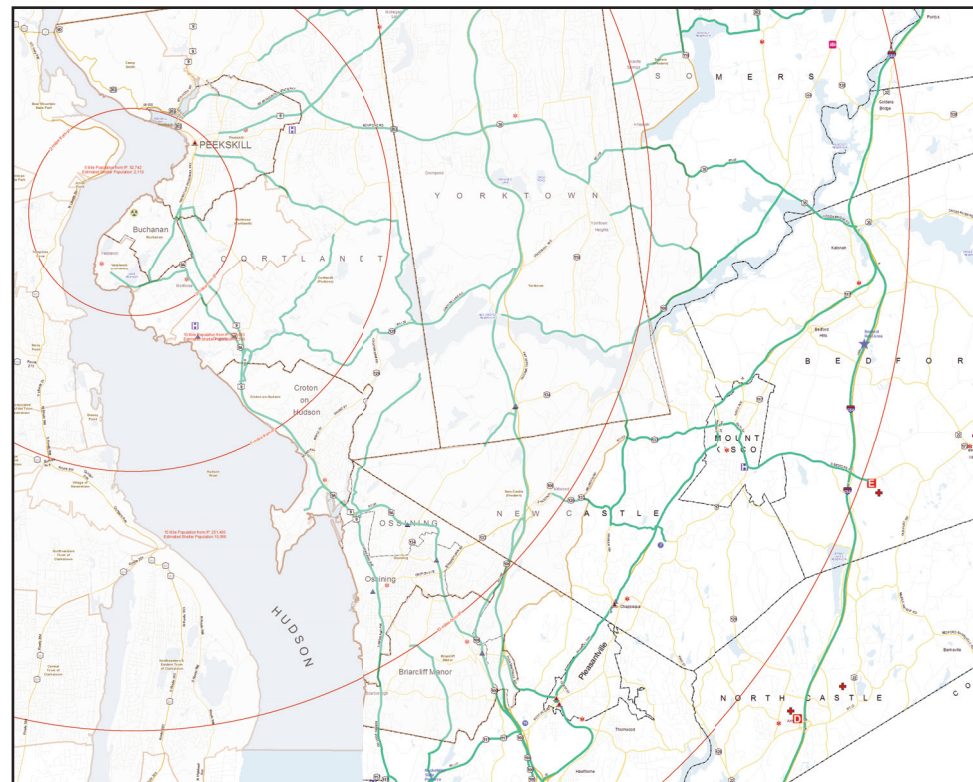


Image shows Indian Point emergency planning zones with 2, 5, 10 and 15 mile radius. Map also includes emergency facility locations, population data, shelters, hospitals and other emergency related datasets crucial for analysis planning by Red Cross staff.

## DPW Bridge Inventory Viewer

Application will maintain data on valuable county asset

To assist in the long-term data maintenance of critical county-owned assets, County GIS staff has been working with the Dept. of Public Works (DPW) staff to develop an application that focuses on county bridges.

Over the years, both location and descriptive information on county-owned bridges has been generated and maintained by many different agencies including: County DPW and Traffic Engineering, NYS Dept. of Transportation (NYSDOT), NYS Thruway Authority, engineering companies, and local governments. The application currently under development will use GIS as a framework to manage the various types of information specific to each bridge including: location, surveys, inspection reports, photographs, as-built drawings, maintenance issues and other related documents. Information for each bridge (both spatial and attribute) will be indexed using the assigned NYSDOT Bridge Identifier Number (BIN).

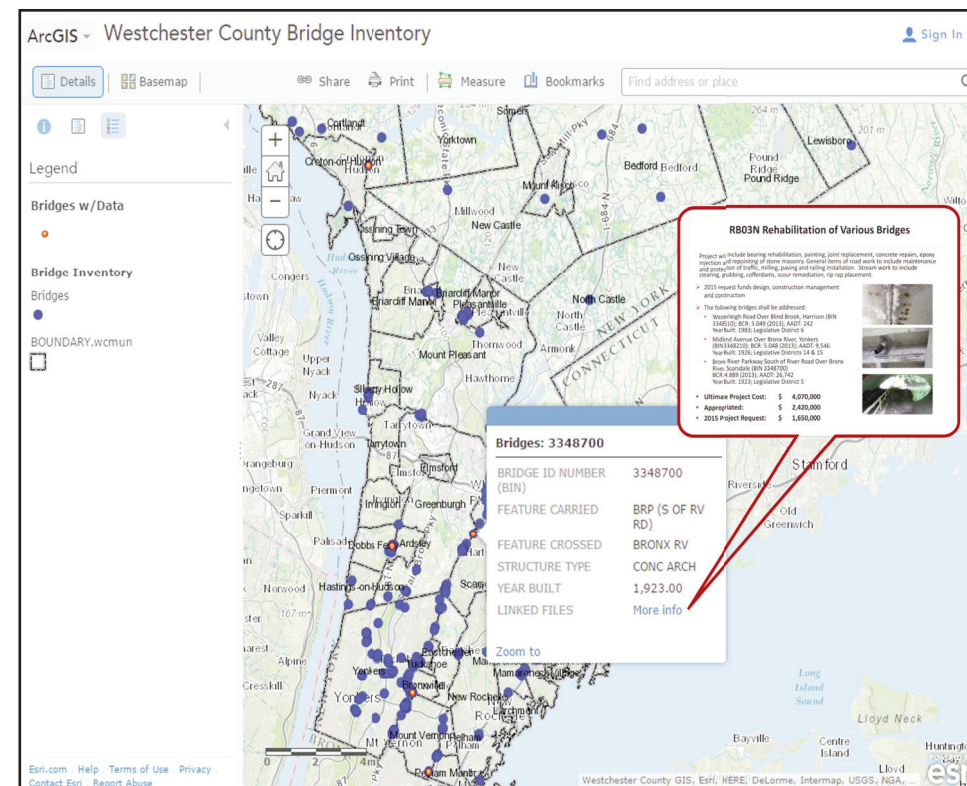
To assist in the initial confirmation of each bridge location, DPW staff used an ArcGIS 10.1 desktop project that was created by GIS staff. The project included new countywide planimetric datasets, 2013 aerial photography and copies of bridge inventories as supplied by the different agencies. DPW staff visually reviewed all datasets and associated documents to create a definitive and authoritative data layer consisting of 298 features

(bridges). The bridge (data layer) will be stored in the central GIS database, and will be available for other enterprise geospatial mapping and analysis applications.

Work is currently underway to design an expanded database that will contain and provide access to the many different types of files associated with each bridge. In addition to the desktop version of the application, GIS staff is building a lightweight “bridge viewer” with ArcGIS.com that will provide basic data access and viewing capabilities to a larger number of users in DPW. Users of the viewer will have “Read Only” access to the application, but will still have the capability to retrieve important bridge information to support day-to-day DPW business functions.

“The bridge inventory viewer will help us consolidate and retrieve in a timely manner all of our accumulated information from original construction plans to more recent rehabilitation projects, bridge inspection reports, safety flag information and photographs for each of the County-owned structures,” said Craig Ryen, Senior Engineer, DPW.

Future application design considerations also include maintaining and updating bridge data via mobile technology. For more information, contact Craig Ryen at (914) 995- 2581 or Dongming Tang at (914)



The management of Westchester County bridges involves coordination among several government agencies resulting in the generation of many types of datasets pertinent to each bridge. The location of 298 county-owned bridges have recently been verified by County DPW staff and are now being integrated into new GIS desktop and server applications.

## Landsat 8

County GIS staff recently obtained new Landsat 8 imagery covering Westchester County from the USGS Earth Resources Observation and Science Center (EROS). The EROS archive holds data collected by the Landsat suite of satellites that began with Landsat 1 in 1972. The Landsat archive provides a rich collection of information about the Earth’s land surface and is typically used at smaller scales covering larger (regional) geographic areas. Major characteristic changes to the surface of the planet can be detected, measured, and analyzed using Landsat data. Landsat represents the world’s longest continuously acquired collection of remote sensing data and is available for download at no charge. A PDF version of recent Westchester County captured imagery is available for download at the Map Gallery. For more information, contact Ilir Tota at 914-995-5605.

## Veterans Service Agency GIS

Westchester County Executive Robert P. Astorino and county GIS staff worked with the Westchester County Office of Veterans Affairs (VA) this past summer to inventory and map all the services and facilities relevant to Westchester County veterans. This work resulted in the development of an interactive map, which provides users with a convenient one-stop tool to search veterans services and activities including: VA hospitals, and medical clinics, nursing homes, job and education centers, counseling services, American Legion Posts, monuments and current events. The system also integrated the Find and Assist Veterans of Record (FAVOR) listings on the map – a list compiled by the Veterans office that identifies local businesses that offer discounts on their goods or services to men and women who have served in the U.S. Armed Forces. For more information, contact Zhenglu Zhang at (914) 995-5347.

## Tarrytown Walking Audit

The Tarrytown Environmental Advisory Council (TEAC) is working with County GIS to map results of the first “walking audit” for its Complete Streets/Healthy Places initiative. The initiative seeks to mobilize citizens to identify opportunities to improve pedestrian and bike access in the village as well as improve public spaces. On September 14, volunteers fanned out in groups for a quarter-mile radius around village hall and Tarrytown train station to observe vehicular and pedestrian traffic. Selected findings were highlighted on a poster-sized map provided by Westchester GIS, and will be used to build support for the initiative in upcoming events. TEAC plans to use GIS maps in focus groups to further target challenges and opportunities. For more information, contact Lakis Polycarpou, Sustainable Development Consultant at TEAC.