The State of the State in GIS

A New York State Showcase

October 29, 2015

William F. Johnson

NYS GIS association

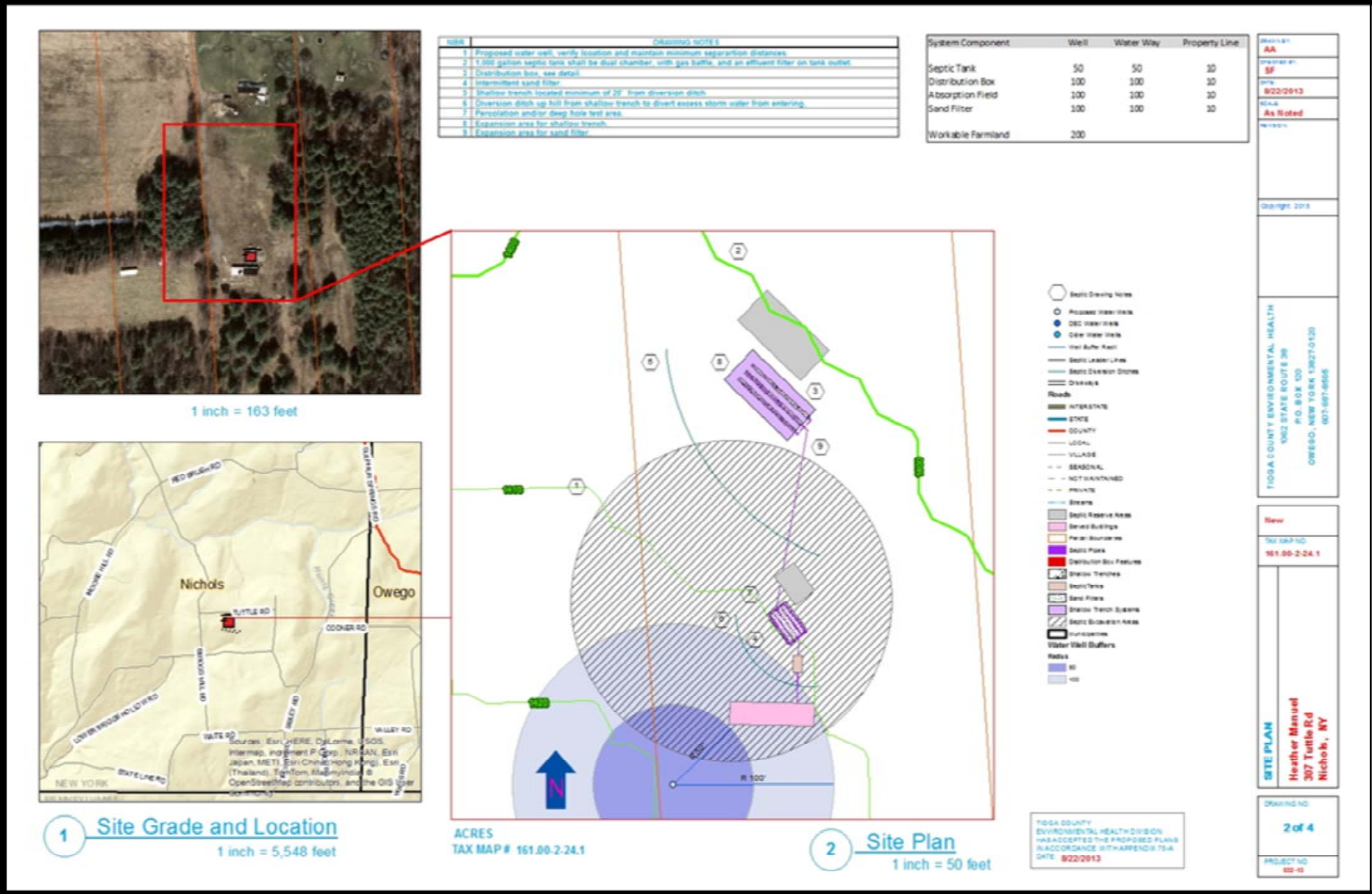
Presented at NYGeoCon, Albany, NY

NY GeoCon

How this works:

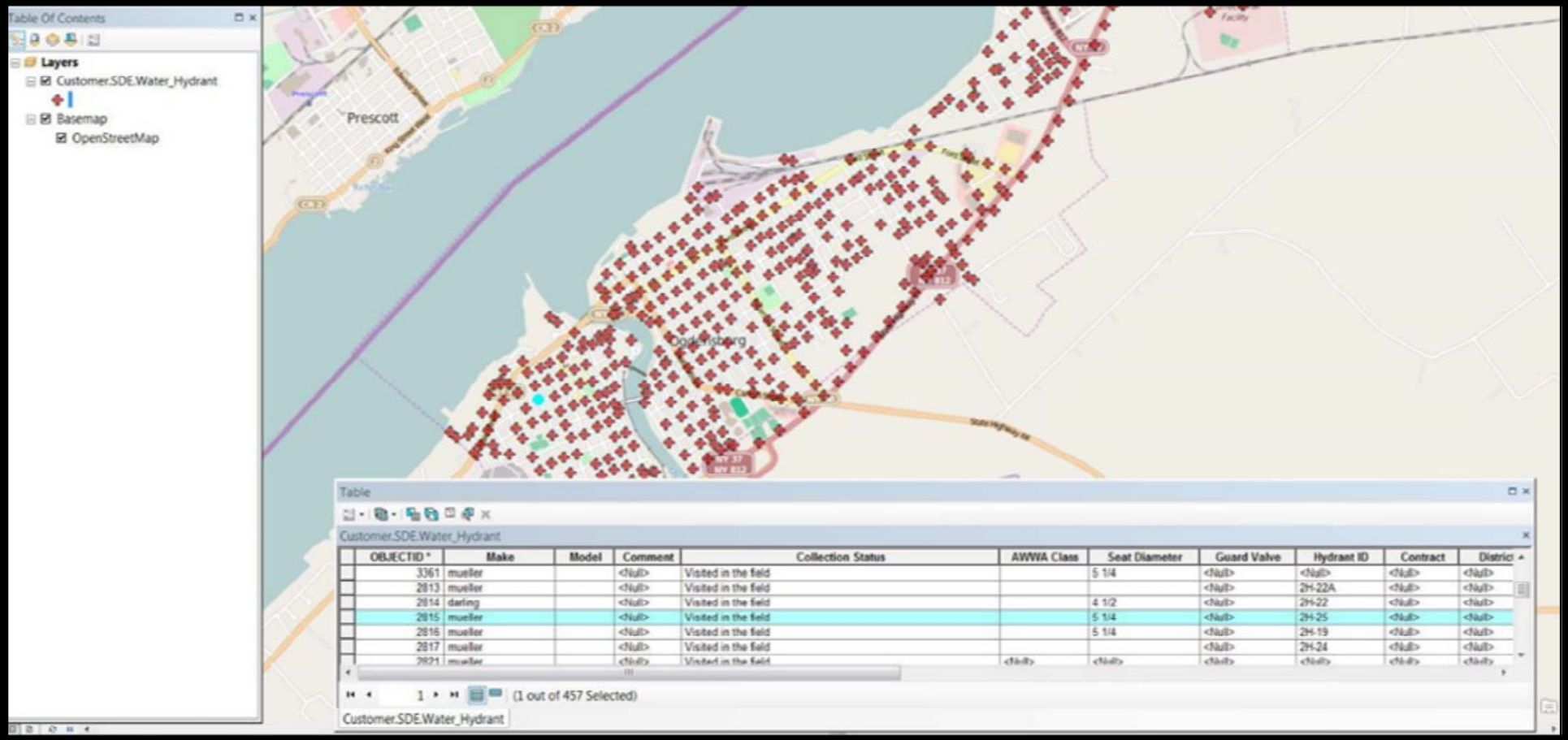
- You submitted examples – a total of 115!
- I formatted them & shortened the descriptions, as needed
- They will appear in the order I received them
- On some slides, you'll see:

- At the end, we'll do an "applause meter" poll from among my faves; the winner gets nothing



Bill Ostrander, Tioga County GIS (ostranderw@co.tioga.ny.us)
Attached is a picture of a data driven septic system map that I've been working on for our Health Department. The Data Driven Septic System Map allows the user to enter a project number to automatically zoom the septic system map and its overview maps to the chosen system and update data in the margins. I still have to write some code to get the drawing note table to update.

4



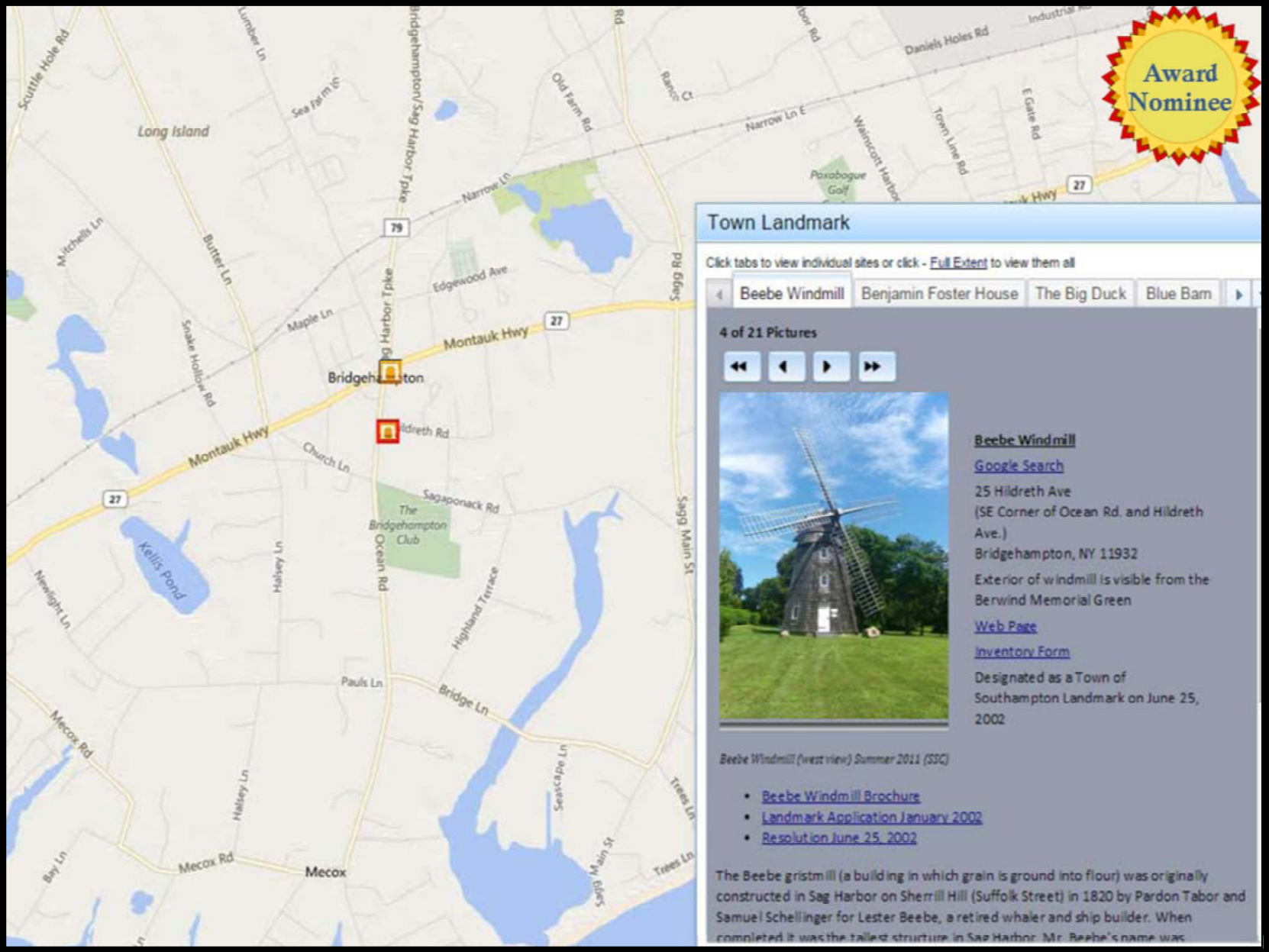
David Smith, Development Authority of the North Country (dsmith@danc.org)
Project to update the GIS data for City of Ogdensburg's 340+ water hydrants with information from the Fire Chief. The City's water and sewer infrastructure was mapped using GIS in 2015. I attached a screenshot of his map and data.

5

Star Carter, Development Authority of the North Country (scarter@danc.org)

I conducted a utility pole survey for a fiber optic cable build outside of Lowville, NY that included a section of poles in a heifer pasture. The cows were so intrigued that the entire herd gathered around and followed me to each pole. You never know what you'll run into during GIS field work!

6



Ross Baldwin, Town of Southampton (rbaldwin@southamptontownny.gov)
Historic Resources application
The Town of Southampton on Long Island has a rich history dating back to 1640. The historic resources application is a one-stop shop for history buffs and researchers alike. With over 130 different features accompanied by reports, write-ups, and descriptions as well as over 1,800 photos, users are able to transport themselves to Southampton's storied past.

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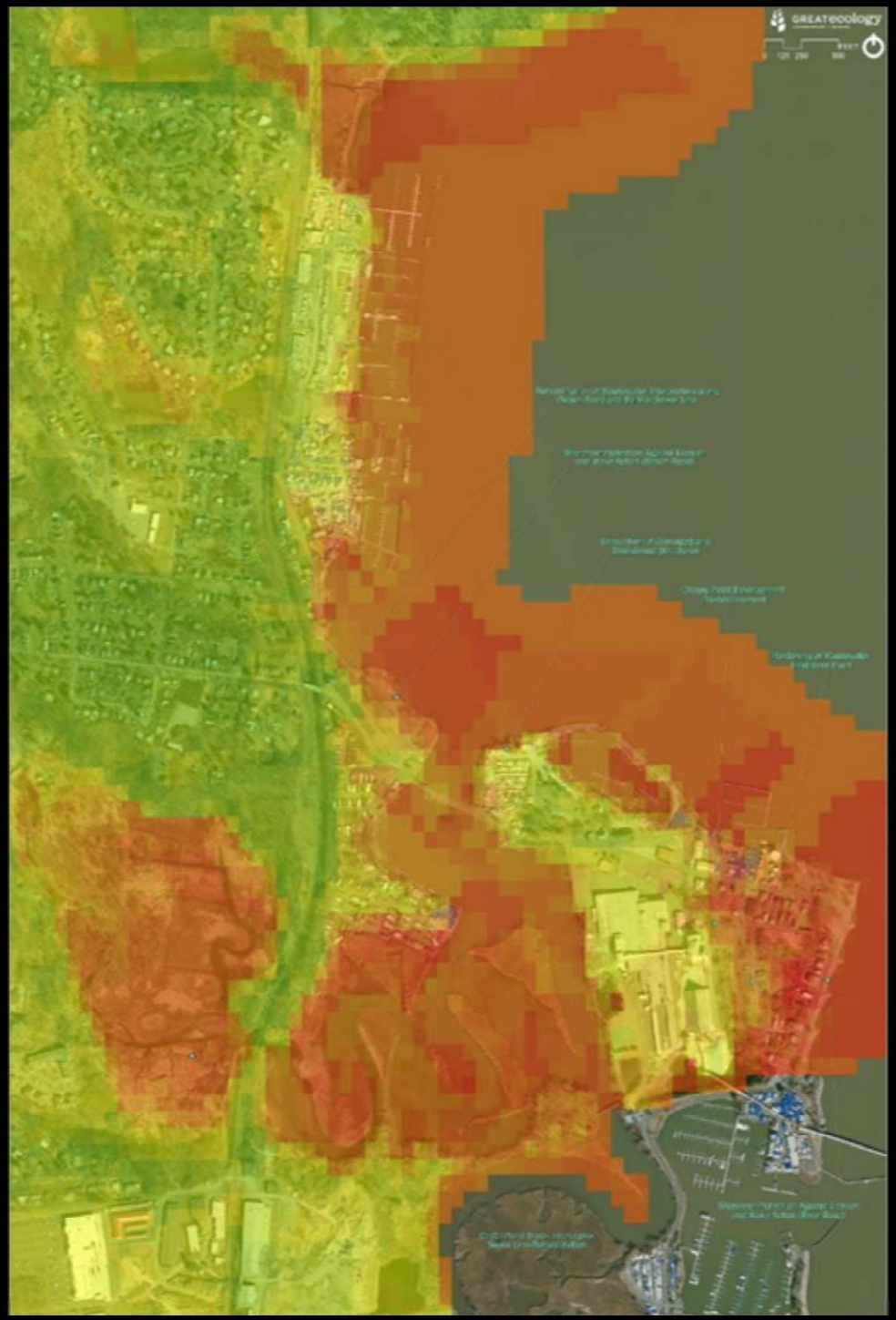
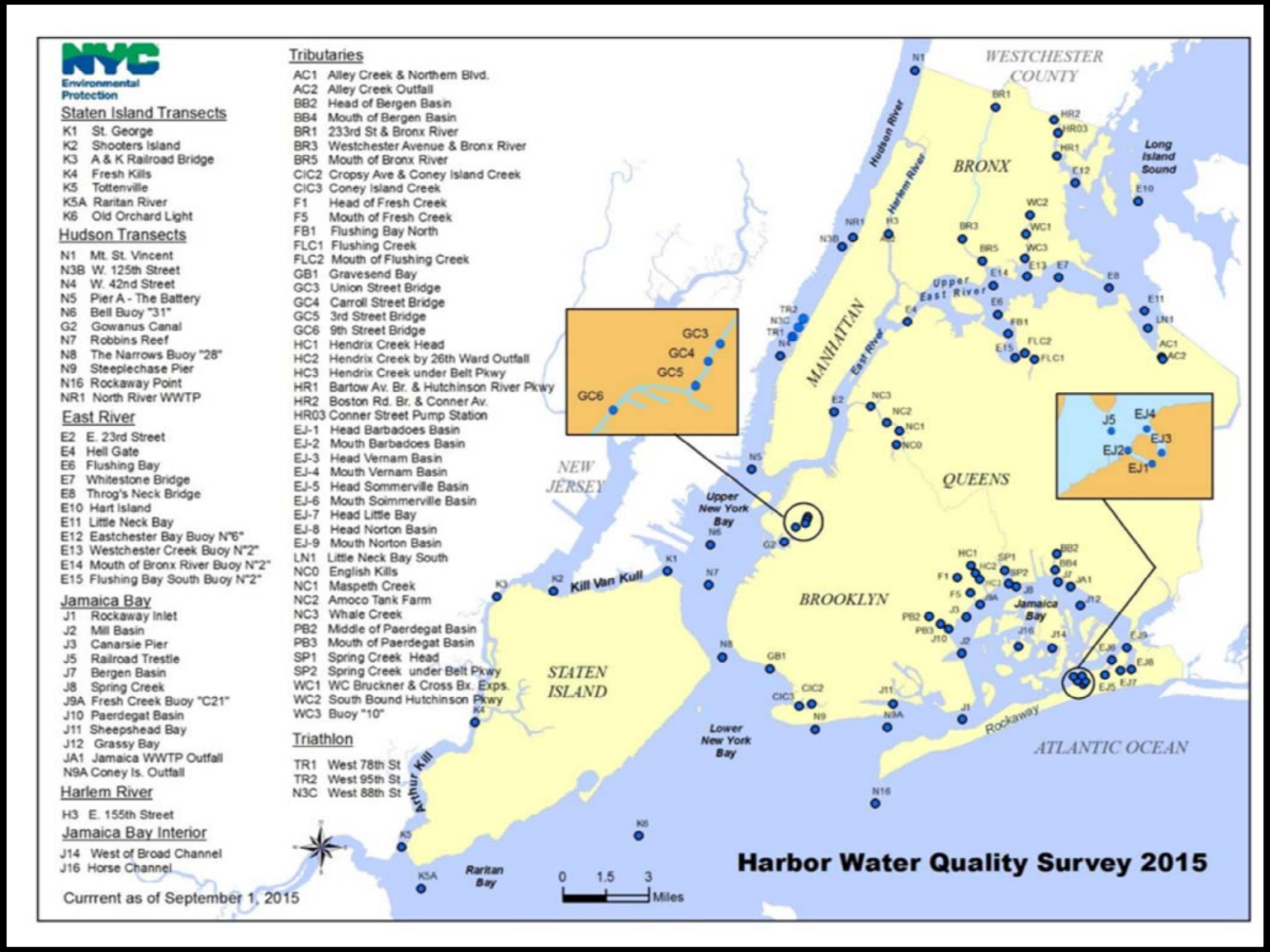
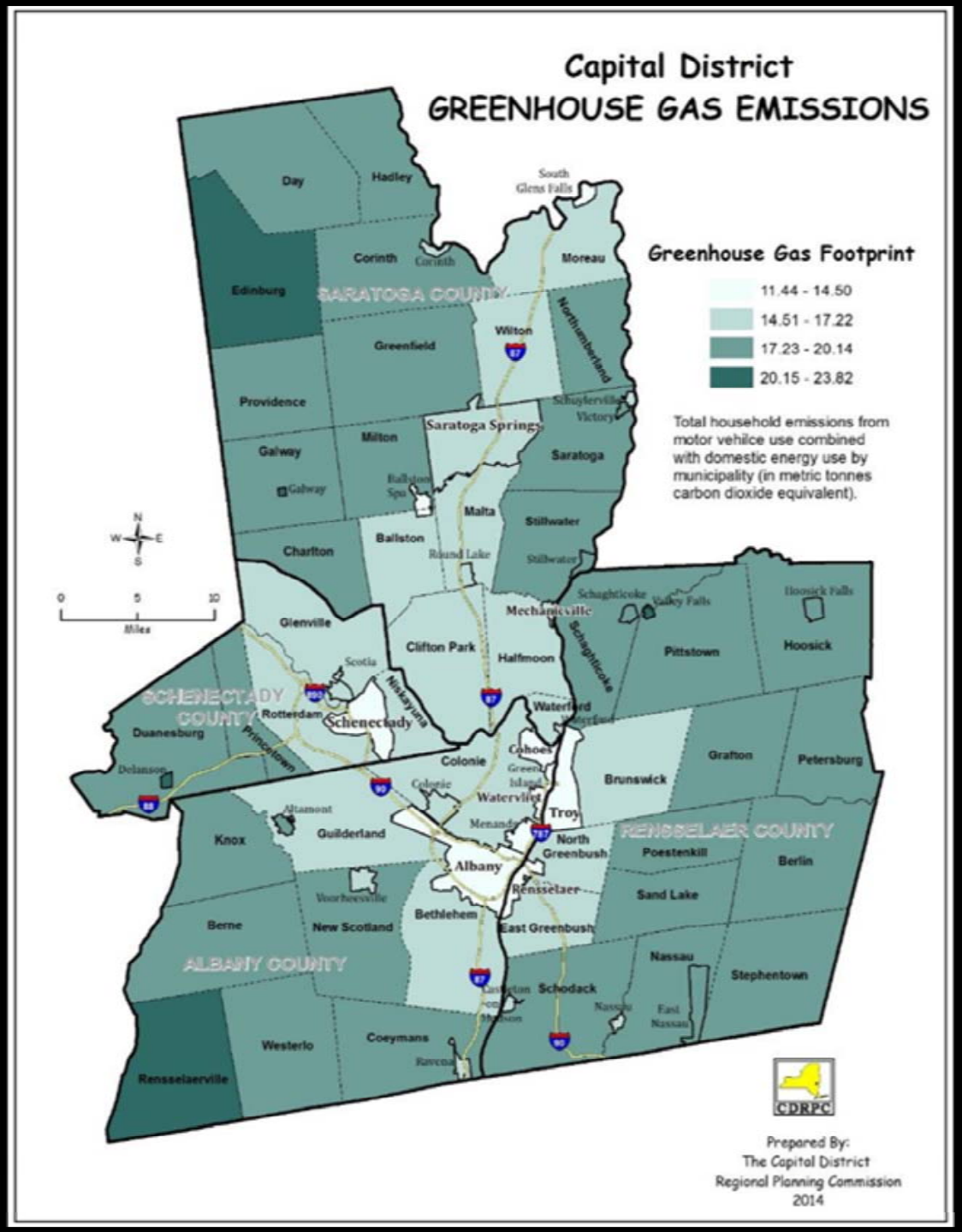


Zachary Lehmann, Great Ecology (zlehmann@gmail.com)
This is an image from a sea level resiliency project I worked on a few years ago. You can find the whole report here: http://www.harborestuary.org/pdf/ClimateChange/CaseStudiesInSLRPlanning.pdf.
I developed a coastal vulnerability index model based on 11 variables to identify public and private infrastructure along the Hudson River in Stony Point NY that is at risk of increasing storm severity and sea levels.



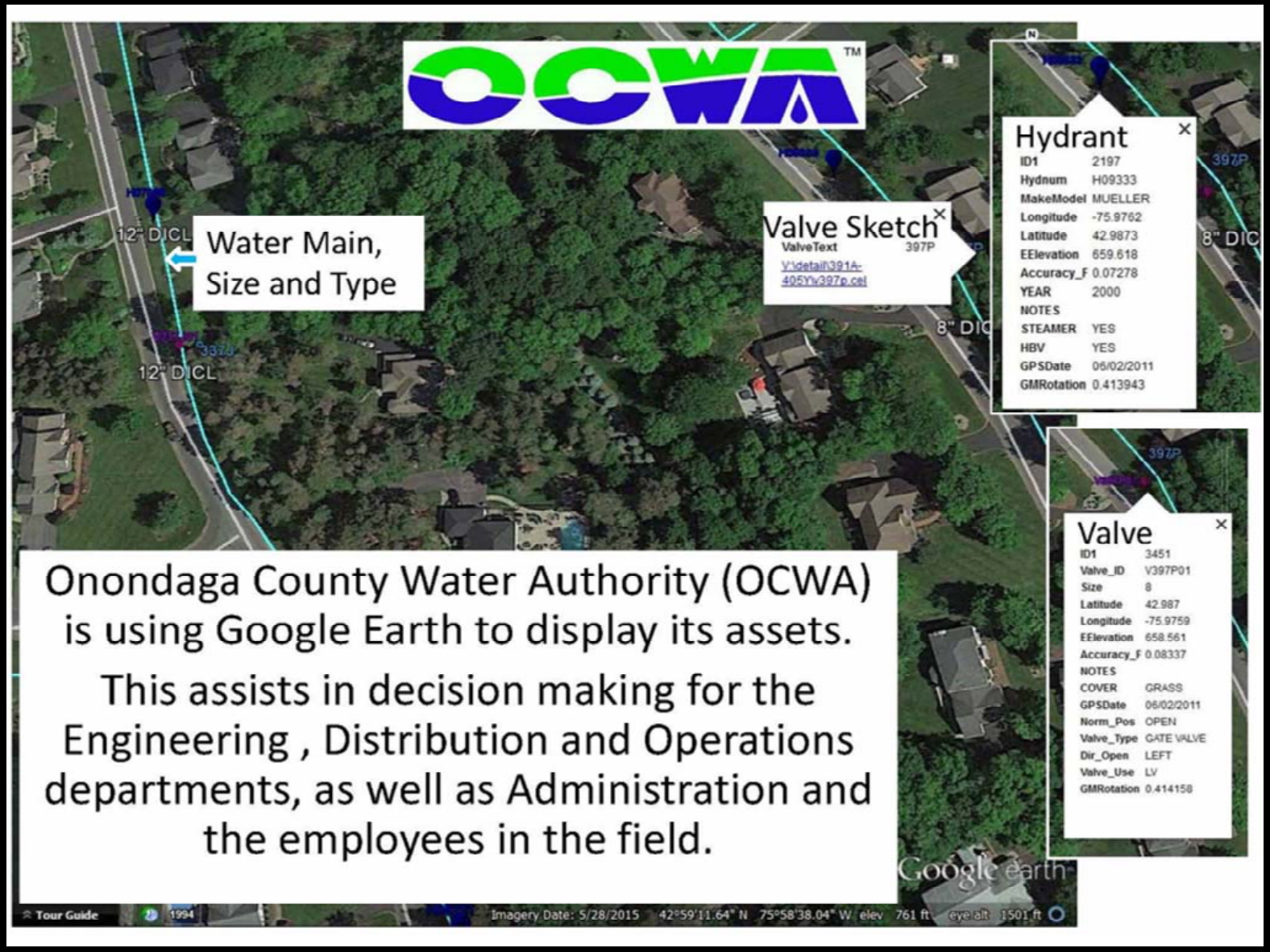
Kaled Alamarie, NYC DEP (kaleda@dep.nyc.gov)

The Harbor Survey monitors water quality in the NYC harbor. The Survey currently monitors 89 stations on a weekly basis from June to October and monthly thereafter. The goal of the program is to assess the long term trends in New York Harbor. The current program analyzes the water for 21 Parameters and also records weather data. A complete description of the program and the most recent data summary can be found at: http://www.nyc.gov/html/dep/html/harborwater/harbor_water_sampling_results.shtml. We currently have data in both excel and shape file and are working on a story map from when the program started up to date (1909- 2015).



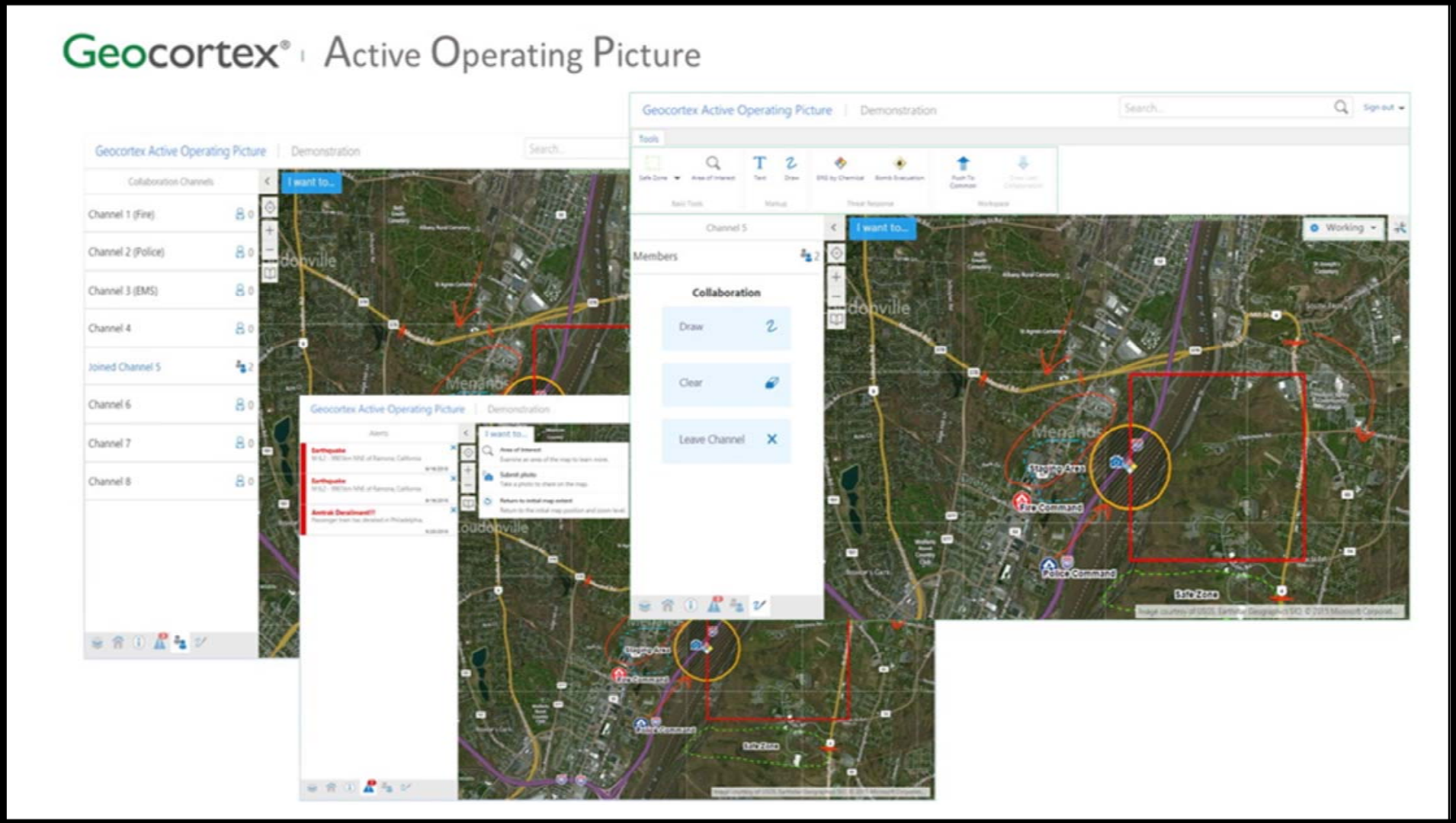
Todd Fabozzi, Capitol District Regional Planning Commission (todd.cdrpc@gmail.com)

The Capital District Regional Planning Commission has completed a regional greenhouse gas inventory, which includes a series of GIS maps depicting the greenhouse gas emissions of each community (maps: Domestic Emissions from buildings, Transportation Footprint from vehicles, and Combined Community GHG Footprint). Note that the urban communities, with higher densities, shorter commutes, and more options for walking and taking the bus, have comparatively lower emissions than suburban and rural communities.



Debbie Owens, Onondaga County Water Authority (dowens@ocwa.org)

The attached shows what has been done between our IT Manager, Barry Blanchard, and our engineer/designer who manages the summer aides with the GPSing of our valves and hydrants. Summer aides GPS valves and hydrants and those are represented in purple and dark blue. The light blue numbers are links to valve sketches. Turquoise lines are water mains as represented in the CAD drawings, with the water main size and type in white.

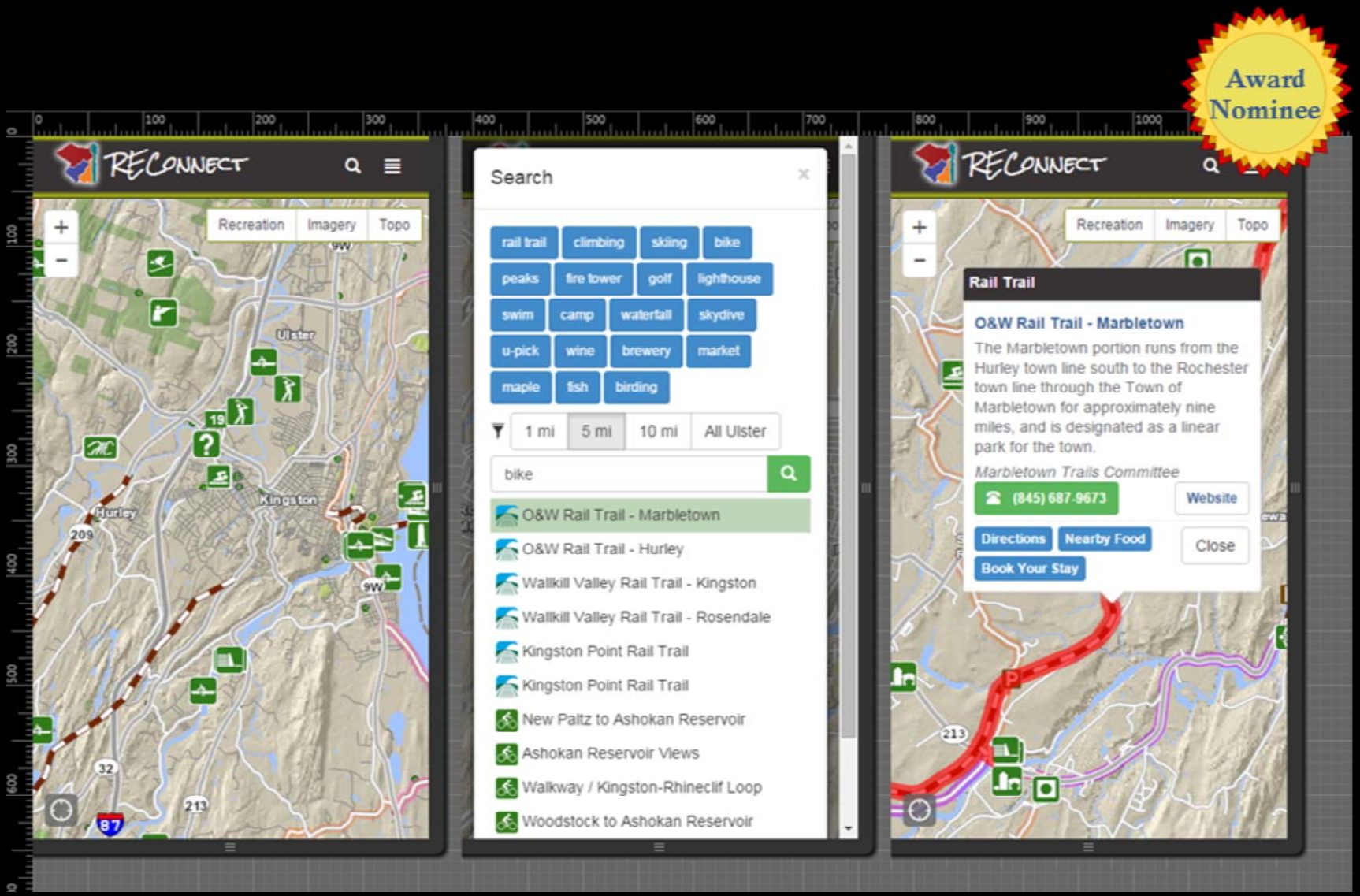


Michael Funaro, Latitude Geographics (mfunaro@latitudegeo.com)

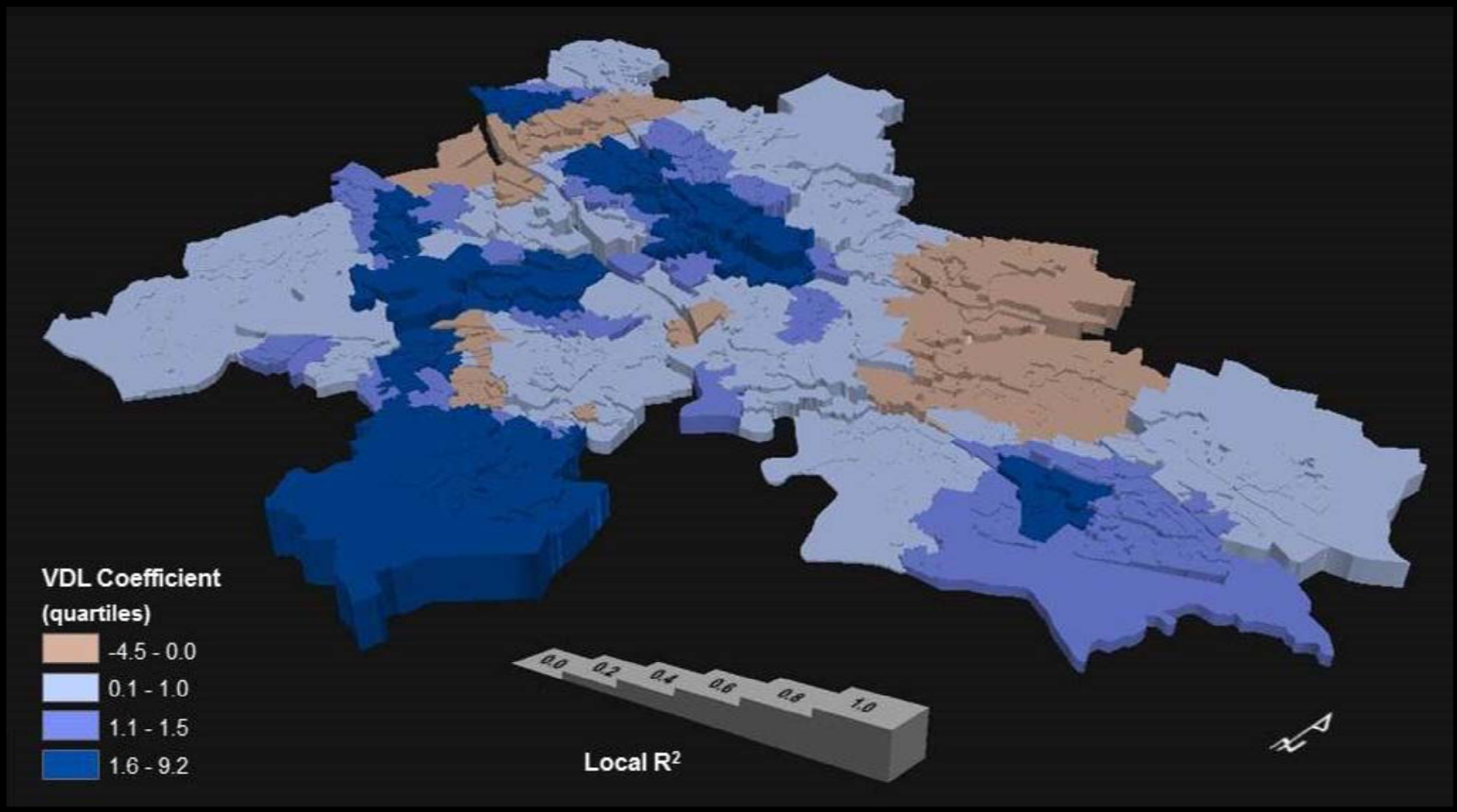
Active Operating Picture is really unique in that it streamlines the most important GIS tools required in an emergency for quick communications, and it adds Real Time ALERTING, Real Time COLLABORATION using map markup via what we call “Collaboration Channels”, SOCIAL MEDIA, Demographics, and tools to quickly add features from a secure “working” view to a “common” view where important information such as Command Centers, Operation Zones, ERG analysis and more can be viewed. We use WEB SOCKET Technology to make the real time collaboration happen, and ArcGIS GeoEvent Processor for real time event alerts and rules. Active Operating Picture brings GIS to the forefront of an emergency response by allowing EASY collaboration and communication without the complexities of a typical Web GIS Application.

Sheri Norton, Ontario County (sheri.norton@co.ontario.ny.us)

Advances in technology and mapping options have made it feasible for communities to collaborate with County staff for many projects. In the past year Ontario County has provided the framework for volunteers to generate detailed inventories of historic barns, WWI Veteran grave sites, as well as water infrastructure that would not have been possible before with limited staff time.

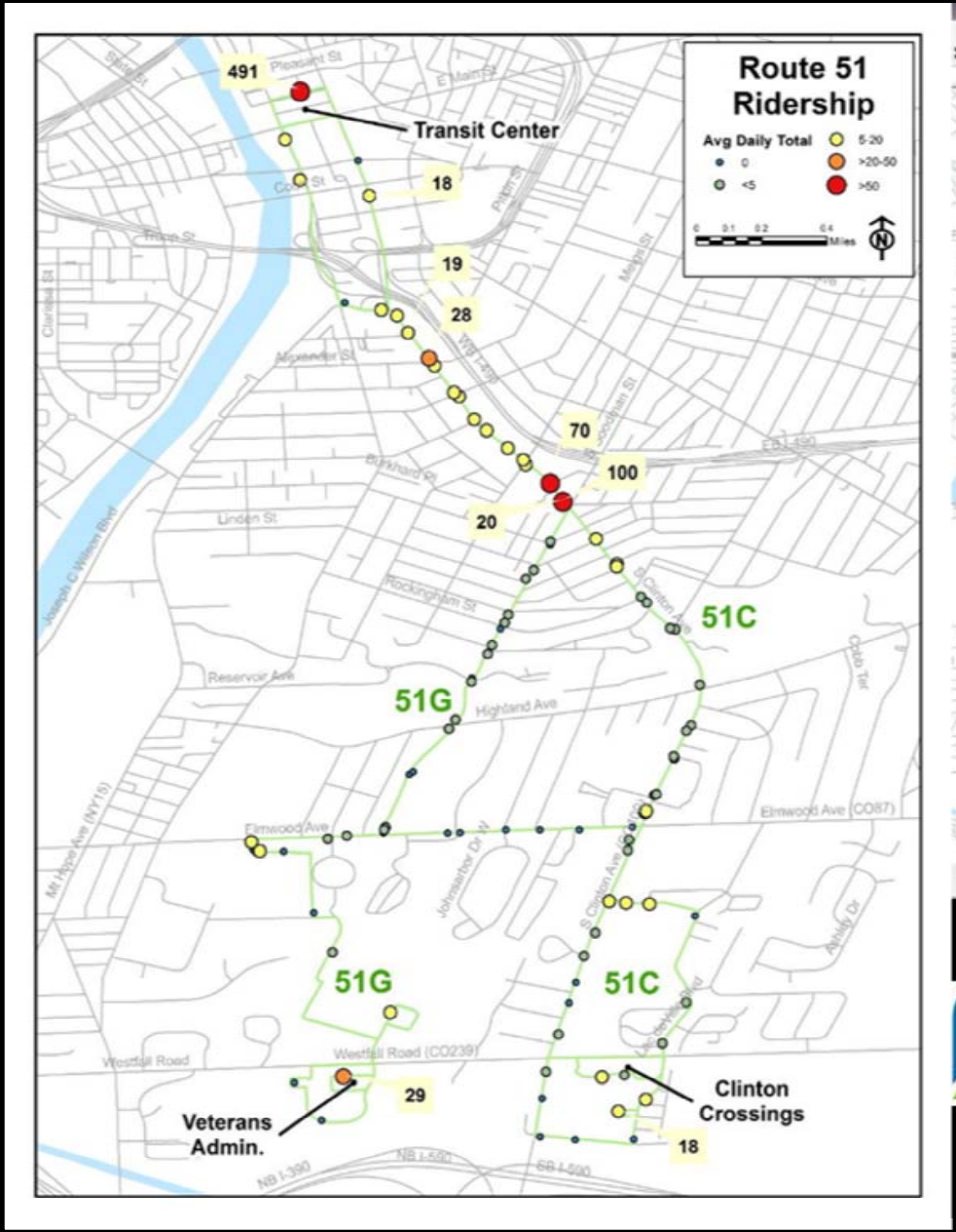


Thomas Hynes, Ulster County Information Services (thyn@co.ulster.ny.us)
Ulster County's New REConnect Map (http://ulstercountyny.gov/maps/recreation/test/).
Developed by the Ulster County GIS, this version is a fully responsive design, providing geo-location based searching and results filtering. Users can navigate around or search county data for outdoor recreation activities. Users also have access to directions, nearby food and lodging.



Juliana Maantay, Professor at CUNY – Lehman College (juliana.maantay@lehman.cuny.edu)

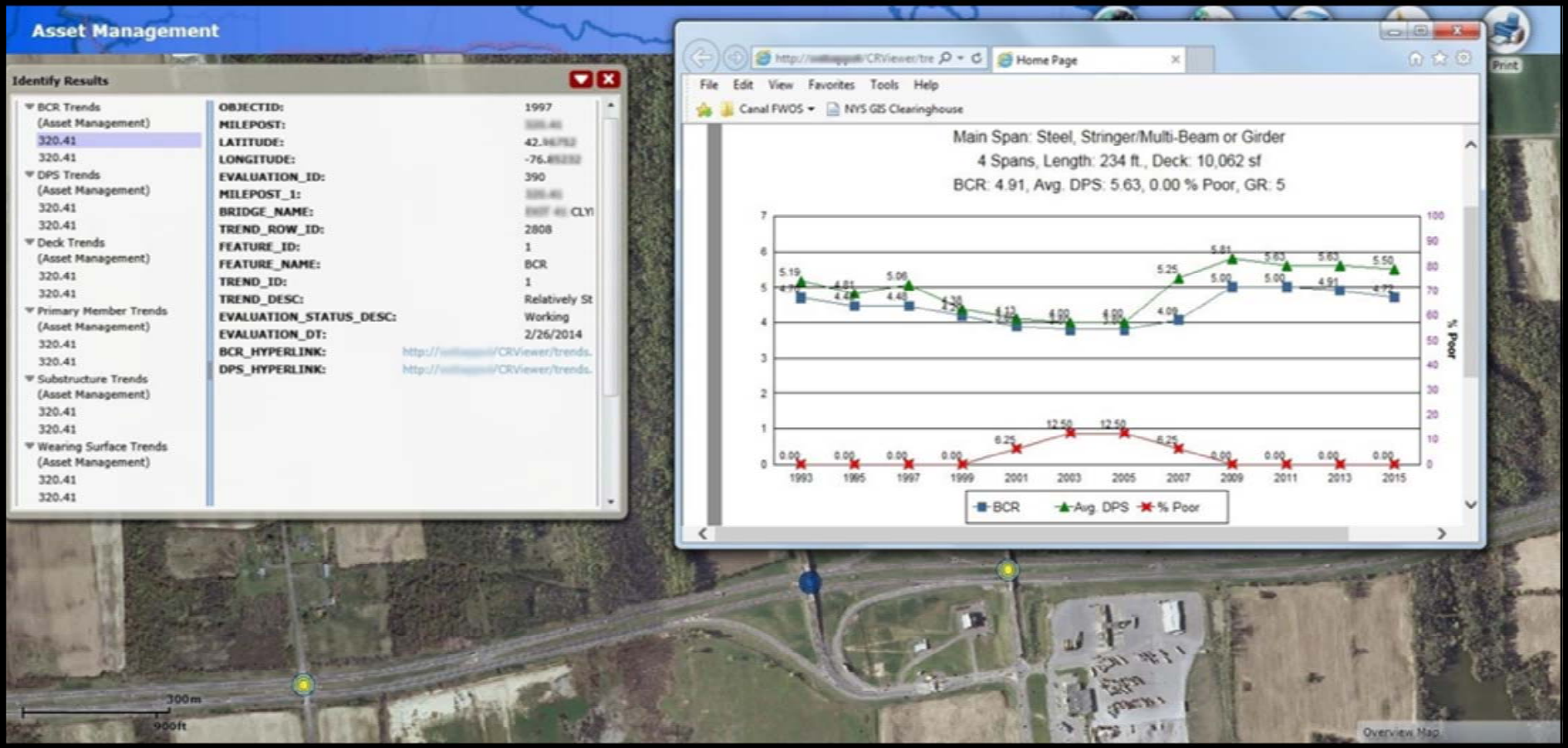
This bivariate stepped choropleth map depicts the outputs of a Geographically Weighted Regression (GWR), showing the relationship between the density of vacant and derelict land (VDL), a potential environmental stressor, and prescription rates for mental health medications, in Glasgow, Scotland. The local R^2 shows how well the local model performs, whereas the VDL coefficient represents the direction and magnitude of the association between VDL density and mental health prescription rates, while adjusting for selected socio-demographic characteristics. Data sources: Scotland Census, SIMD Health Domain 2010; Scottish Government (2012); Glasgow Development and Regeneration Service (2012). Map created by Andrew Maroko, Juliana Maantay, and Ragnar Þrastarson, Lehman College, CUNY, from the study: "At-risk" places: Inequities in the distribution of environmental stressors and prescription rates of mental health medications in Glasgow, Scotland (2015).



RTS REGIONAL TRANSIT SERVICE

Julie Tolar, Rochester Regional Transit Service (jtolar@myrts.com)

Ridership analysis performed before a route restructure and/or bus stop removal. Data pulled from on-bus APCs (automatic passenger counters).



Eric Herman, Thruway Authority (eric.herman@thruway.ny.gov)

This year, the New York State Thruway Authority released an internal application for Asset Management, used to prioritize a variety of projects, based on numerous criteria. Here, concentric circles show conditions of bridge decking, primary structure, and substructure all at a quick glance, with easy links to graphs showing how conditions degrade with age, and improve after maintenance work.

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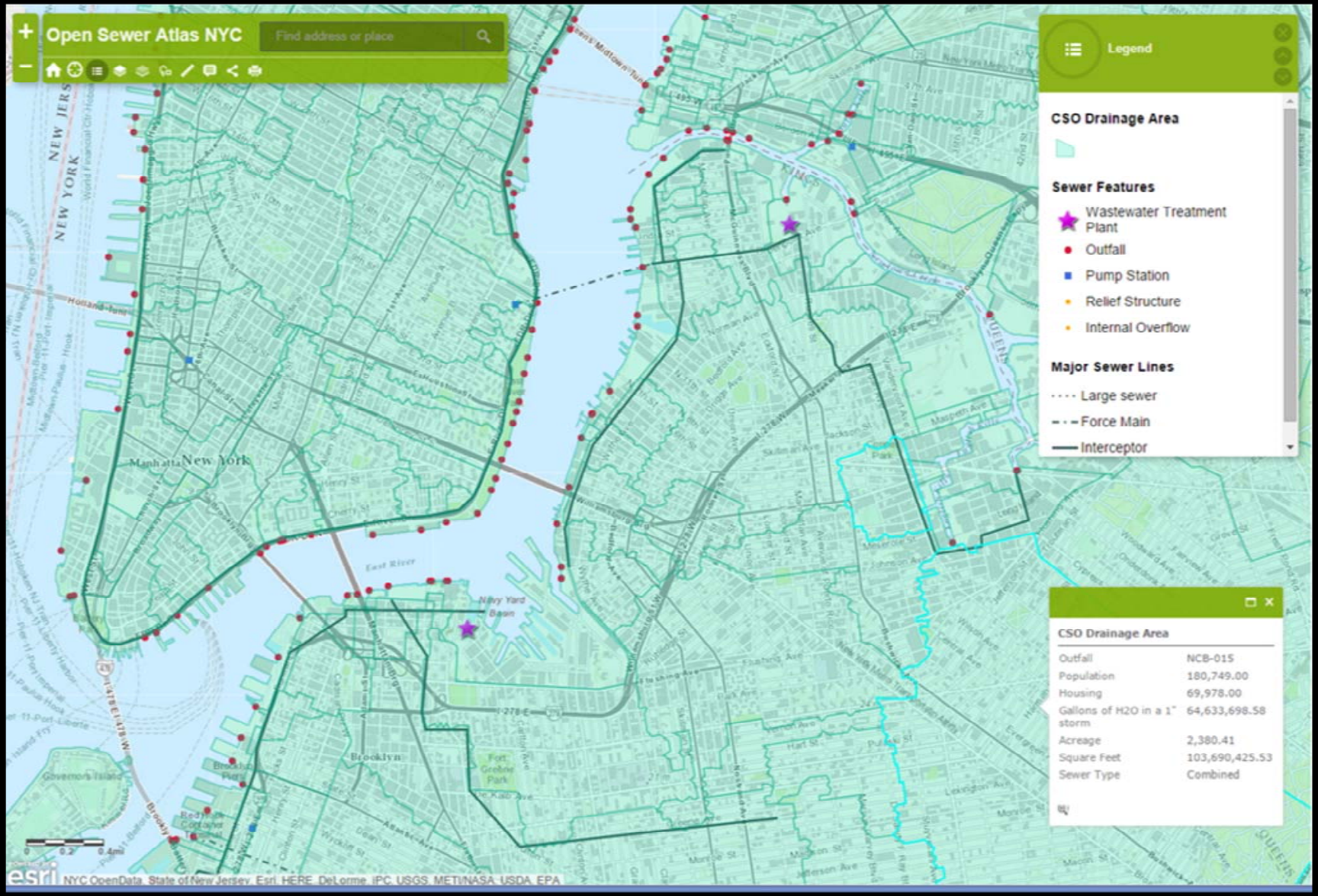
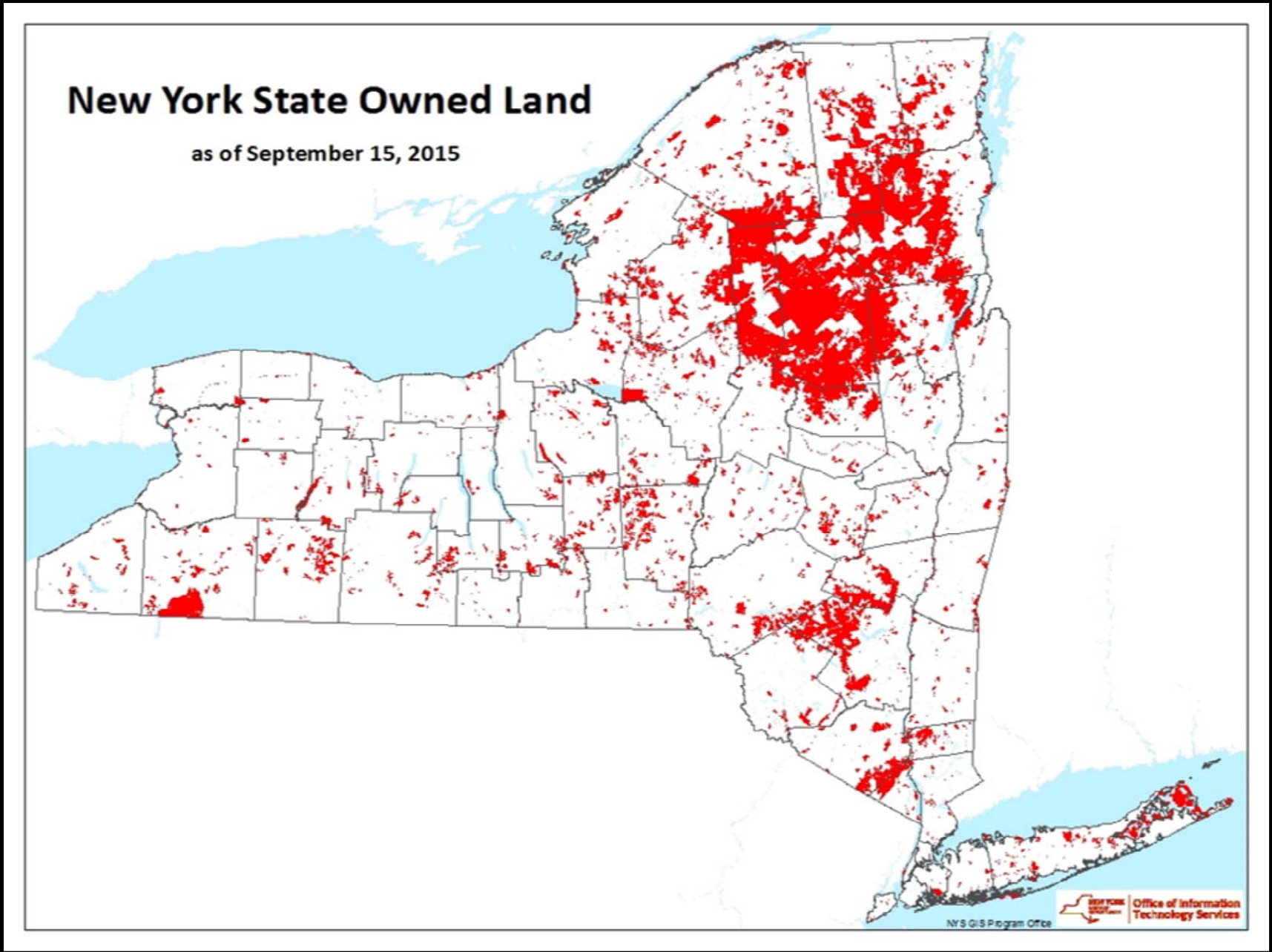


Korin Tangtrakul, Pratt Institute (korin.tangtrakul@gmail.com)

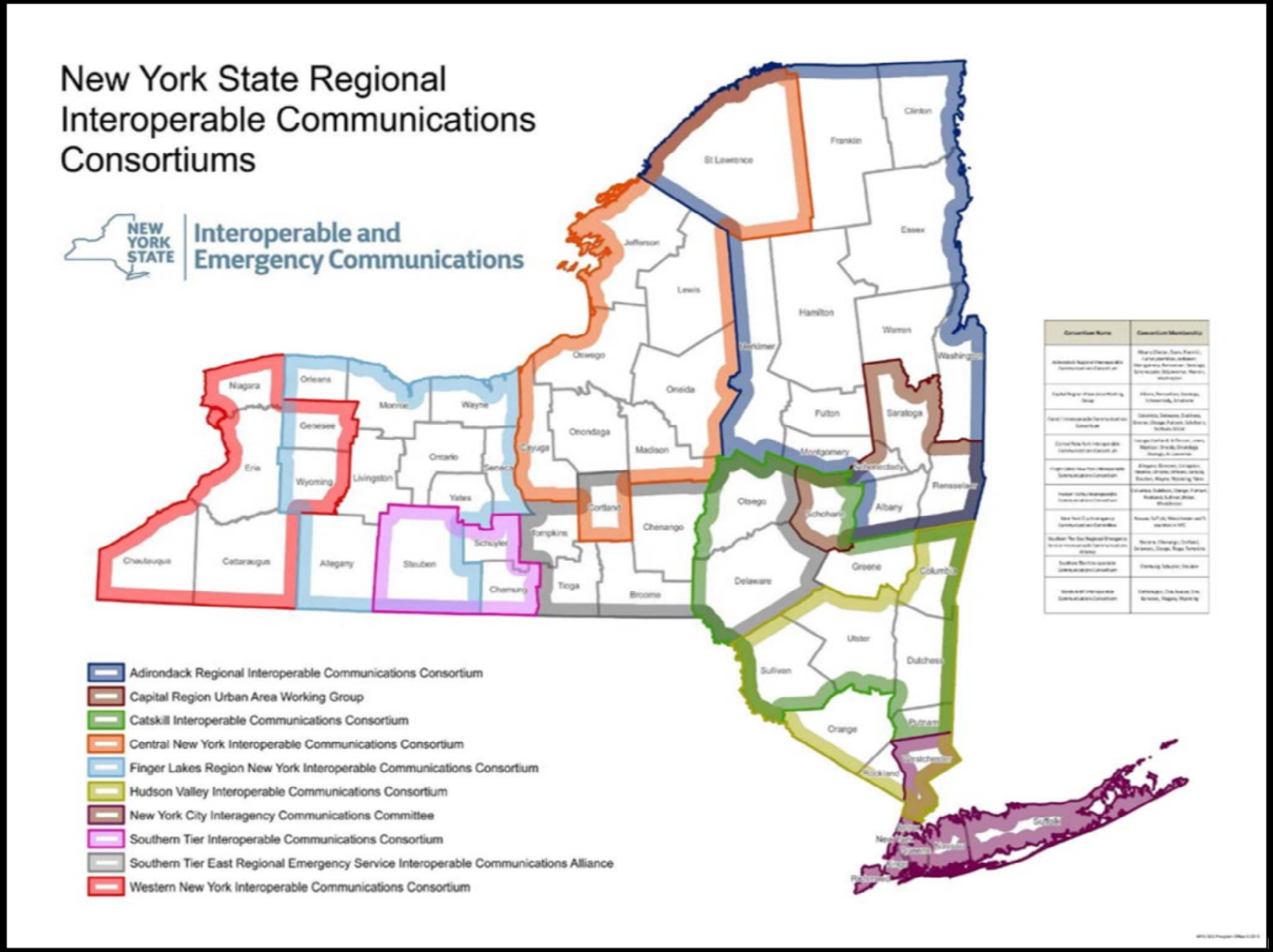
I have attached a screen shot from an interactive map I made of NYC's sewer system. The map can be found at openseweratlas.tumblr.com/map.

Open Sewer Atlas NYC is a hybrid community planning and watershed planning project with the goal of creating transparency into the confusing world of New York City's sewer system. Look for the red dots on this map to see where sewage overflows into the water body during heavy rainstorms.

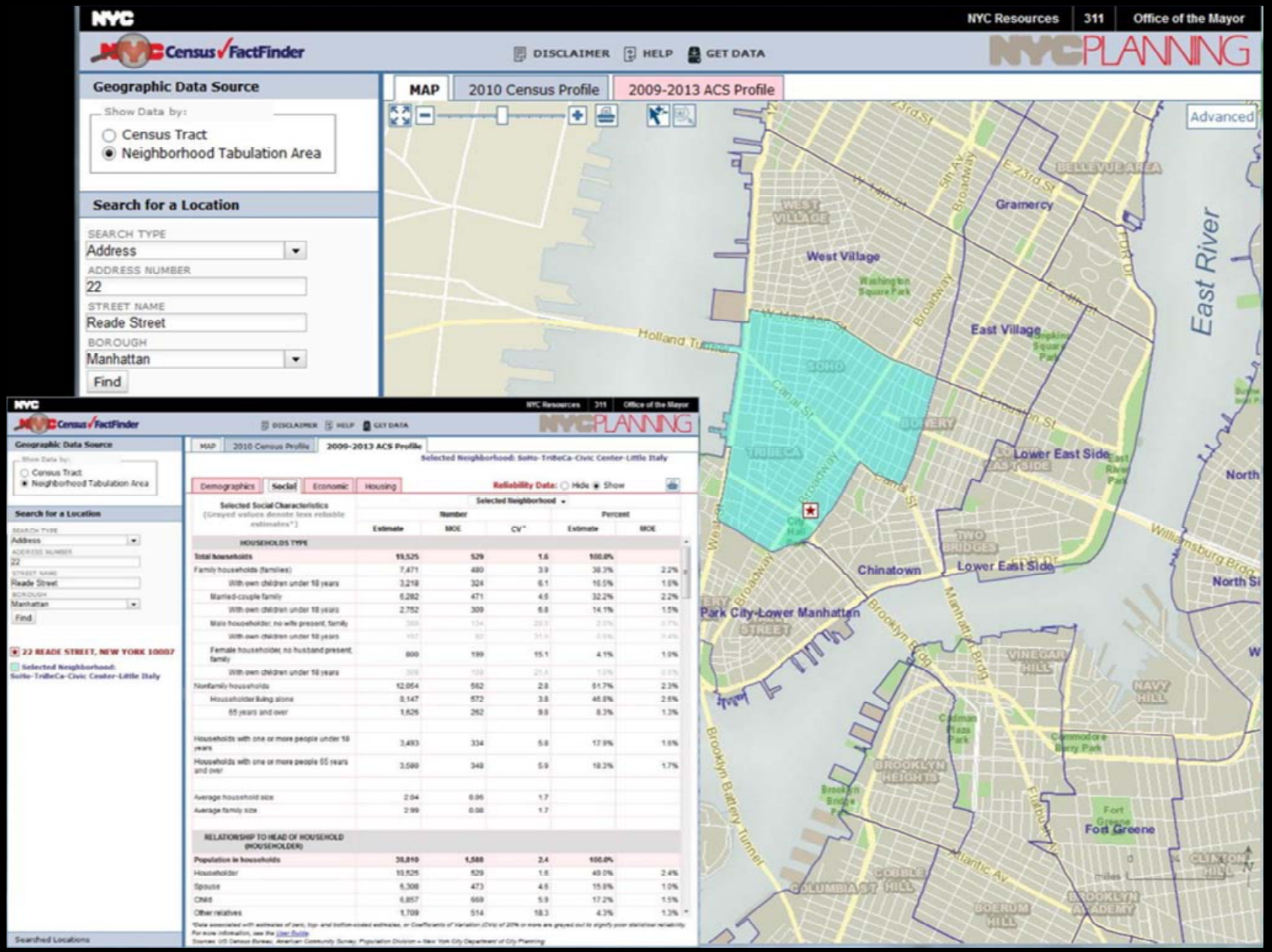


Bob Gehrer, ITS – NYS Information Technology Services, GIS Program Office (robert.gehrer@its.ny.gov)

The GIS Program Office is currently working to identify all state-owned land. This effort utilizes the recently assembled statewide tax parcel polygon geodatabase, as well as real property and boundary information from individual state agencies.

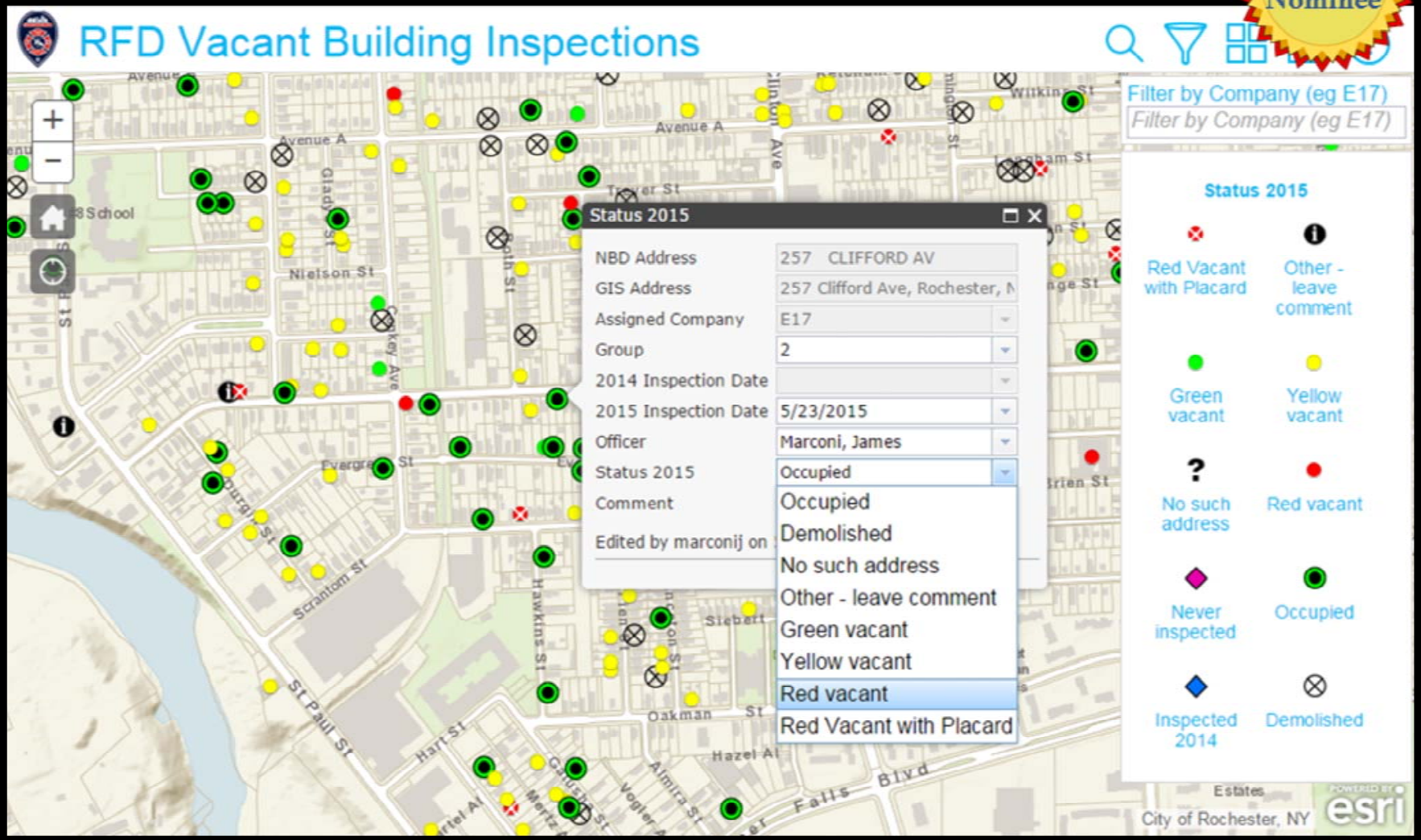


Jason Baum, ITS – NYS Information Technology Services, GIS Program Office (jason.baum@its.ny.gov)
Map of "Interoperable Communications consortiums". The map shows how counties have come together to improve emergency communication. GIS is helping the state plan for first responder communication statewide.



Wai Ming Chan, NYC Dept of City Planning (wchan@planning.nyc.gov)

With the updated NYC Census FactFinder, you can now interactively create demographic, social, economic, and housing profiles from the American Community Survey (ACS) for neighborhoods and user-defined tract groupings. For the first time, data on statistical reliability will also be provided for all profile estimates.



Mike Herr and Mike Ross, City of Rochester (mike.ross@cityofrochester.gov)

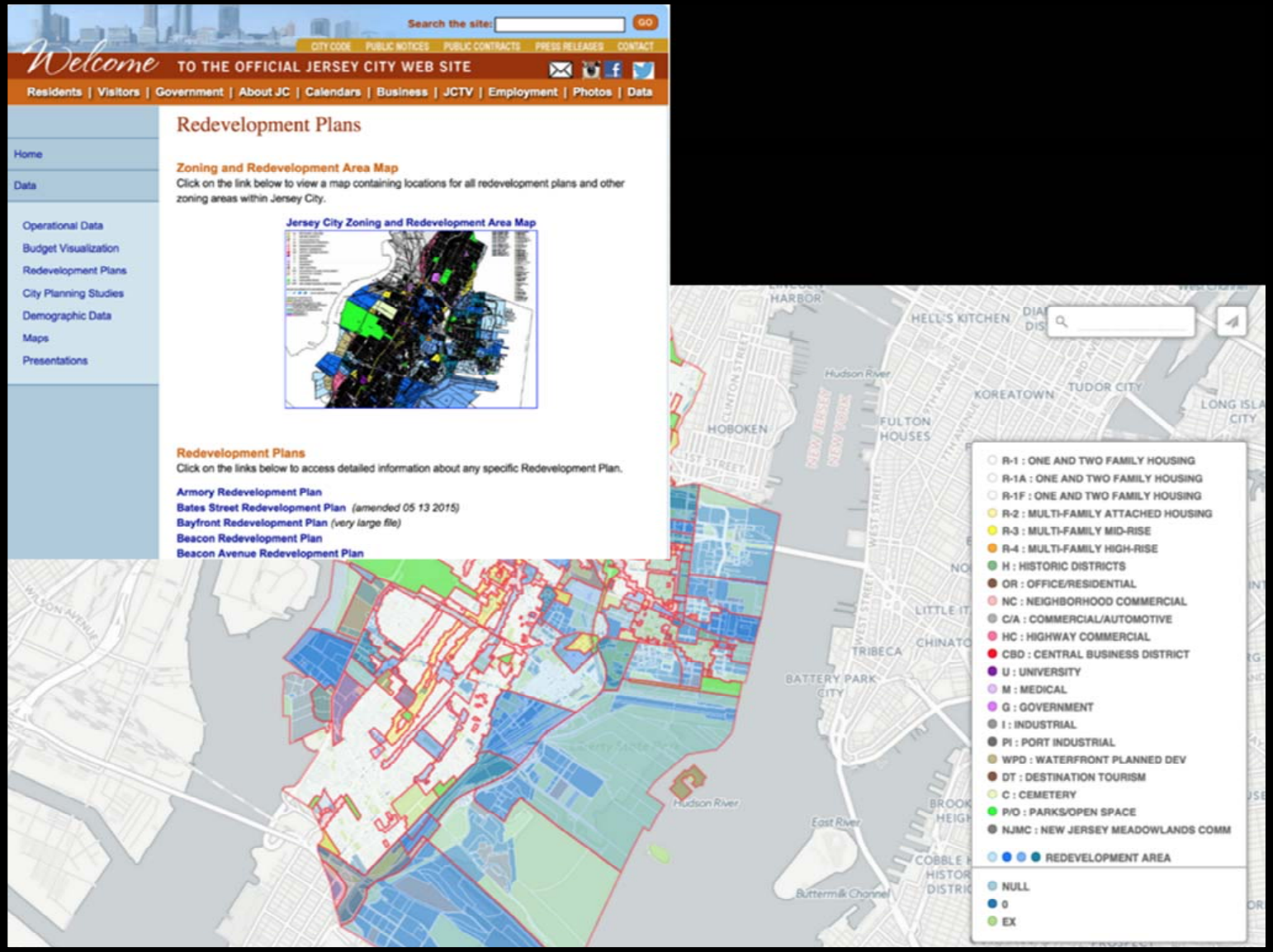
The City of Rochester built a mobile vacant-building inspection tool for the Rochester Fire Department. They made use of Esri secured feature services and an ArcGIS Online template to rapidly deploy the tool. It replaced a delay-plagued paper-based process, increased the speed of the inspection cycle, and improved communication with other departments and 911. The Fire Department inspected over 3,000 vacant structures using this tool.

Dan Allan, MRB Group (dallen@mrbgroup.com)

30 foot Buffalo in my backyard, created with ArcGIS Collector, DJI Phantom UAV and $100 in spray paint. This was done by me personally as a recreational hobby and was not associated with MRB Group or any commercial activity. I don't want the FAA to come calling!

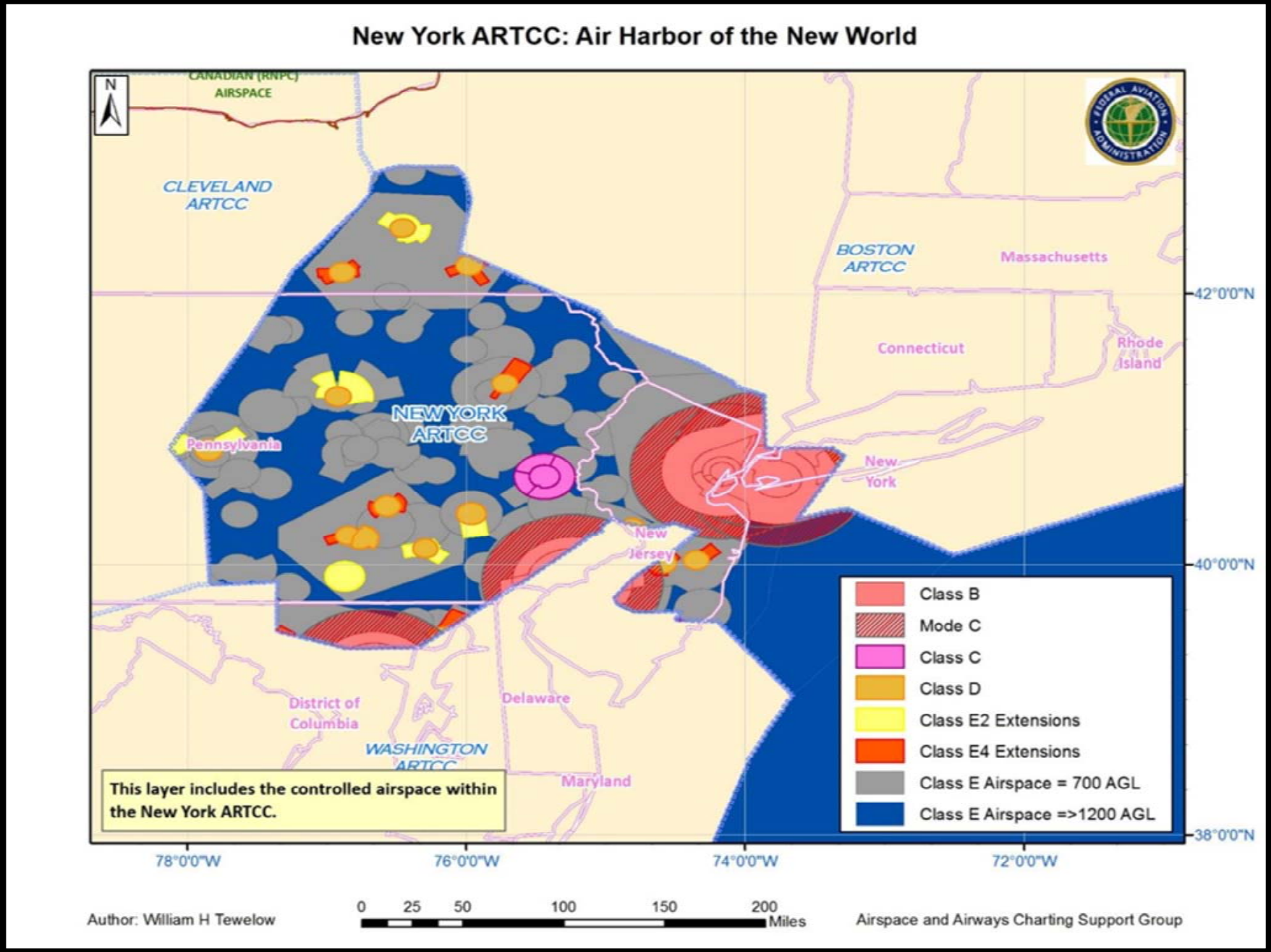
Kevin Heard, Binghamton University (giscore@binghamton.edu)

Using ArcGIS Online, we have developed a web mapping application that is superior to the current campus web map offering. The web map has a wealth of information at your fingertips including links to department websites, on demand Google Streetview, floor plans of buildings, and a variety of clickable layers including bus stops and routes, food places, athletic locations, parking lots, and more. The application also offers the ability to print as well as a geolocation function for smartphones. We are still working with the administration to replace the current web map with this new one.

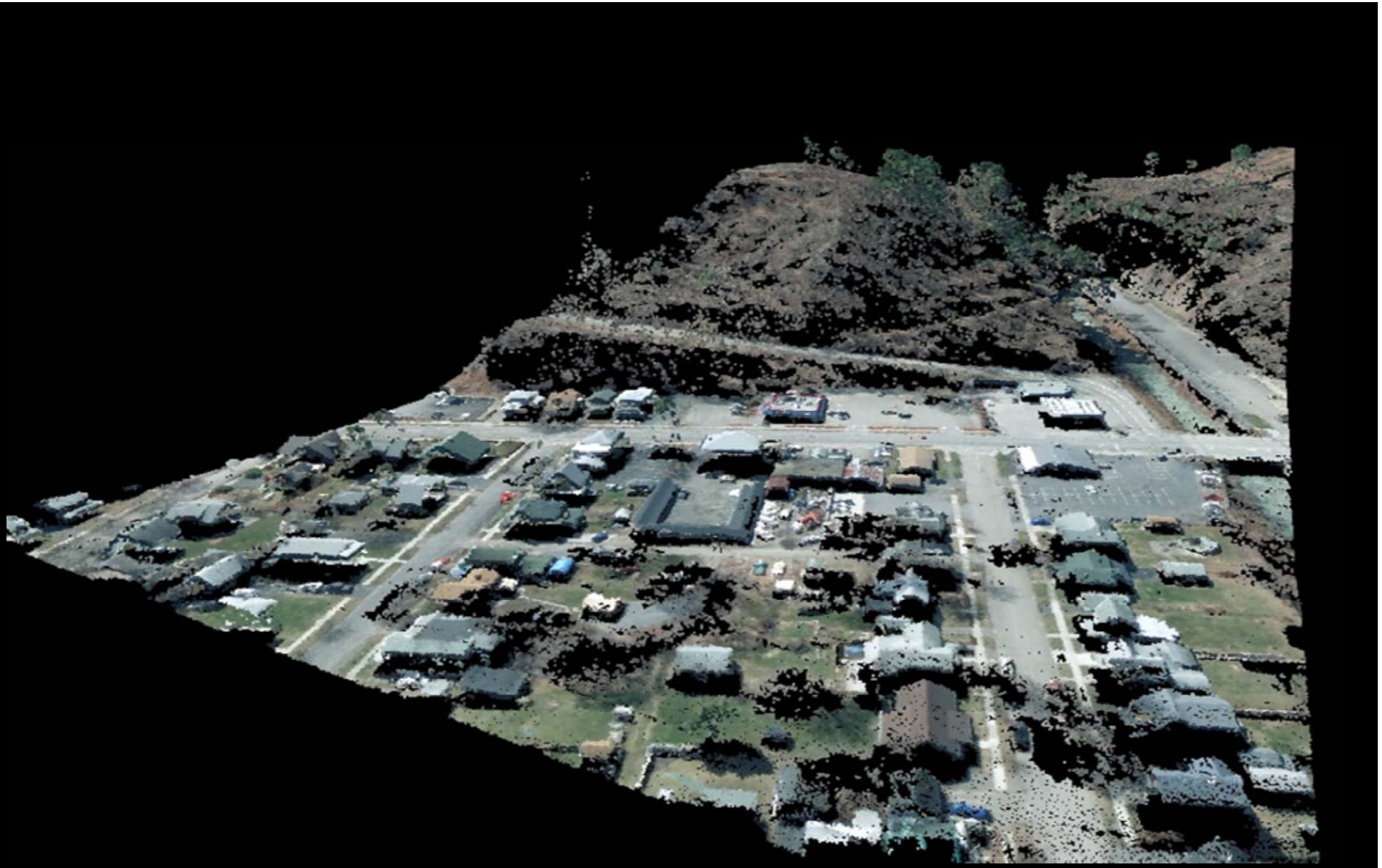


Anna Lukasiak, Open Data Science (adlukasiak@gmail.com)

The Interactive Jersey City Zoning Map will soon be completed. It's inspired by the Newark's Zoning Map that shows Newark Zoning & Land Use Regulations that were updated for the first time in 50 years. The project is using both parcel and zoning shape files from the city and is to replace the current Jersey City Zoning Map (PDF). I am in the process of adding google street view for each parcel, links to the zoning codes, historic and art district overlays, and redevelopment plans. Both the Newark and Jersey City Zoning maps use CartoDB, however, the Newark project is a one off map, while the Jersey City map is regularly updated on quarterly basis by the city. The bulk of the project is a python library that takes the city shape parcel and zoning files and creates json file required by CartoDB.



William Tewelow, Federal Aviation Administration (wtewelow@gmail.com)
Controlled airspace sectors within the New York Air Route Traffic Control Center (ARTCC)

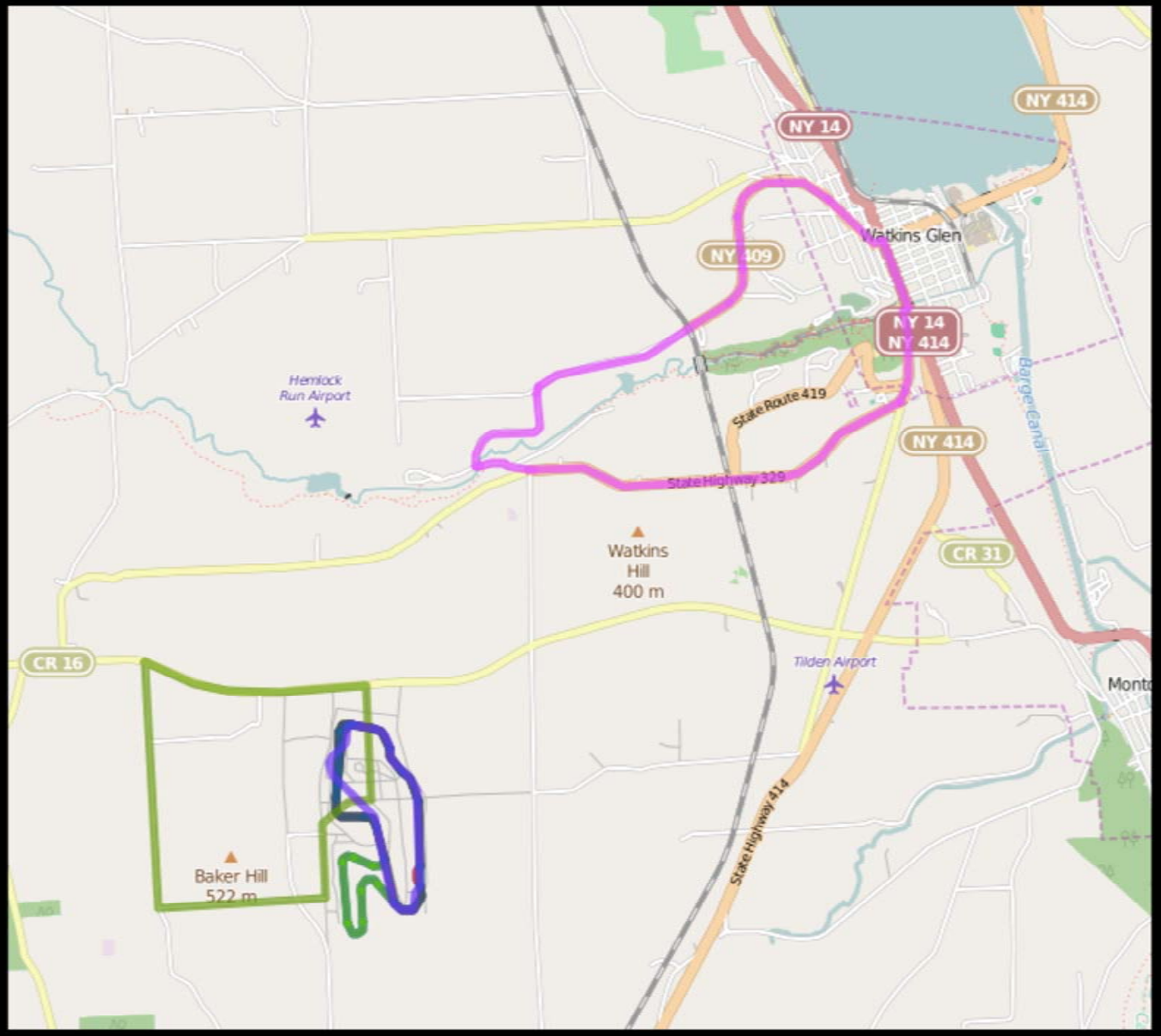


Ray Faught, ITS – NYS Information Techology Services, GIS Program Office (ray.faught@its.ny.gov)

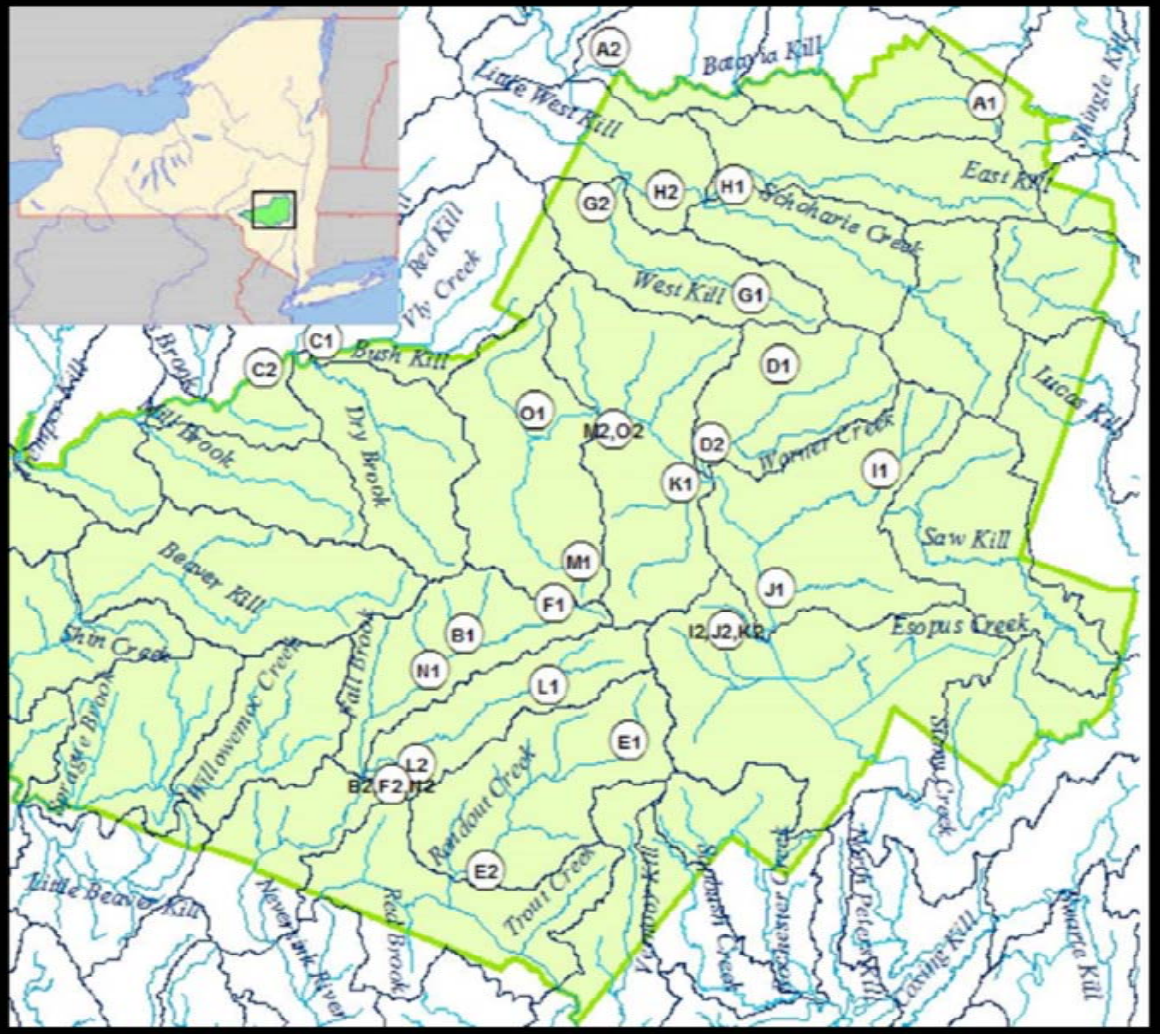
Screenshot from Global Mapper of the newest form of terrain modeling from the statewide orthoimagery program. Our contractor, Axis Geospatial, is using Microsoft's UltraMap software with the UltraCam Eagle and Falcon cameras to generate orthoimagery. Part of the output is a colorized pixel mapped .las file (LiDAR point cloud) with elevation values used as the terrain model. This image is made up of pixels with a 6in spacing, just like the orthos, so you see black between the LiDAR points.

Mauricio Giraldo, NY Public Library Labs (mauriciogiraldo@nypl.org)

I am working on a project that aims to expose and visualize a dataset of 100k+ photographers (collected by museums, libraries, and similar cultural institutions) and their birth, death, activity, and office locations. It is the most comprehensive dataset of its kind. What you see in the screenshot below is Project Mercury astronaut “Gordo” Cooper's birth (green), activity (red, he took photographs from space) and death (blue) locations.

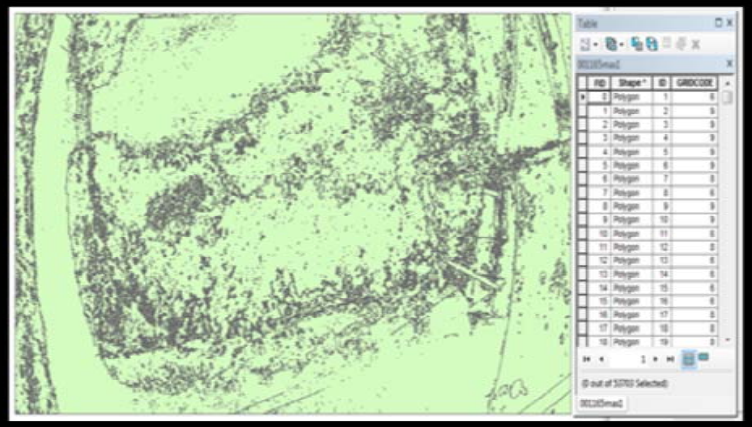


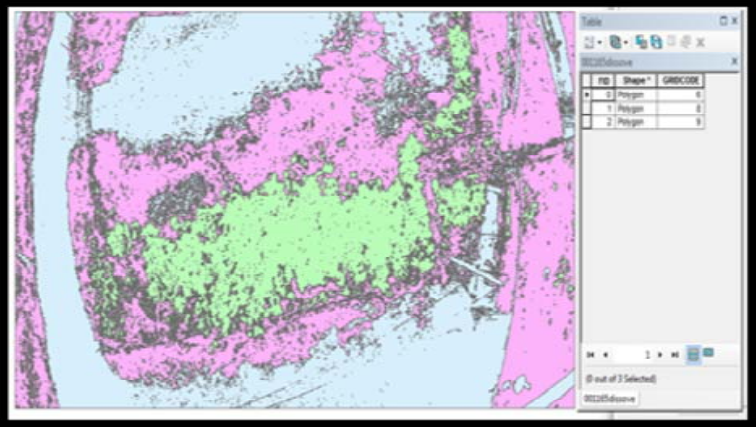
Richard Welty, April Park Networking (rwelty@averillpark.net)
Ghost Tracks - Mapping historic auto racing venues. Screen capture is Watkins Glen, current racing circuits from OpenStreetMap and historical racing circuits from OpenHistoricalMap



Janet Marsden, Syracuse University (jamarsde@syr.edu)
This figure for a research paper: "Watershed area ratio accurately predicts daily streamflow in nested catchments in the Catskills, New York" by Chris C. Gianfagna, Chris E. Johnson, David G. Chandler, Charlie Hofmann. Here's the caption: "Map of the Catskill Park showing the locations of the model development sites. Letters indicate the watershed, upstream gages are numbered '1', and downstream reference gages are numbered '2'. Note that some of the pairs share the same downstream reference gage."

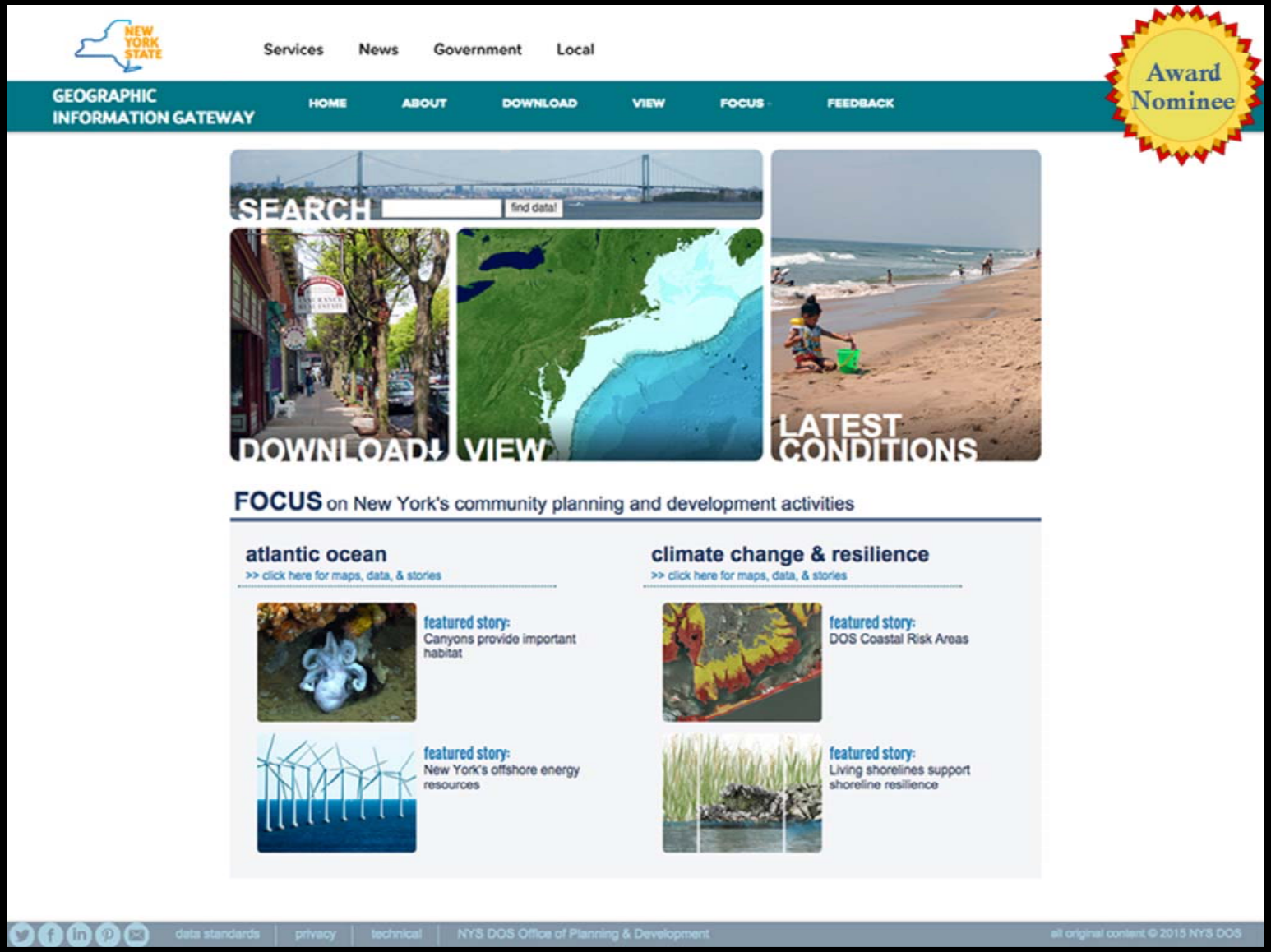
The full paper is downloadable at http://www.sciencedirect.com/science/article/pii/S2214581815001007.





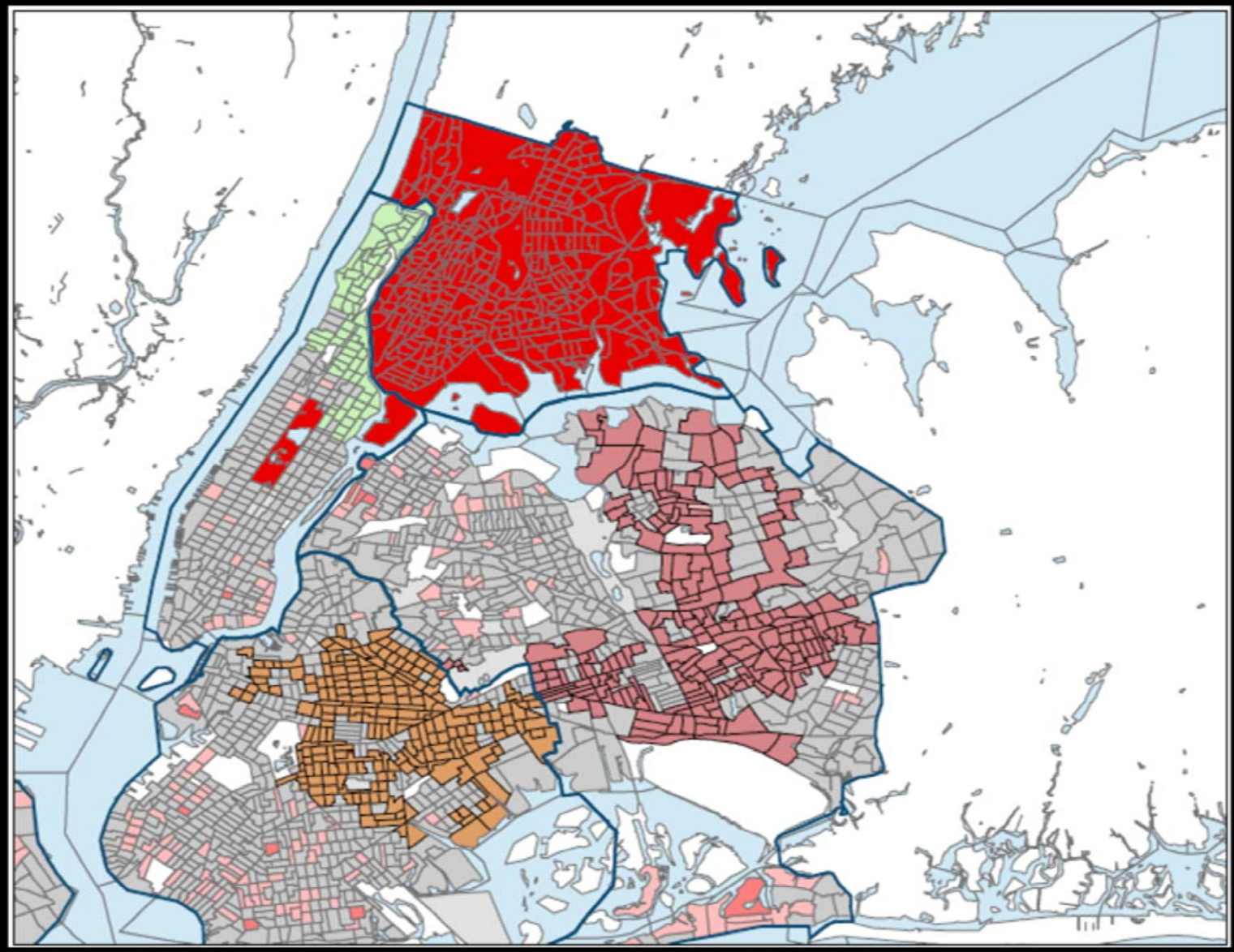
Tao Tang, SUNY - Buffalo State College (tangt@buffalostate.edu)

This basically is some of the graduate students using a drone to detect invasive species. Color images taken by the drone were geo-rectified and vectorized to identify the distributions.



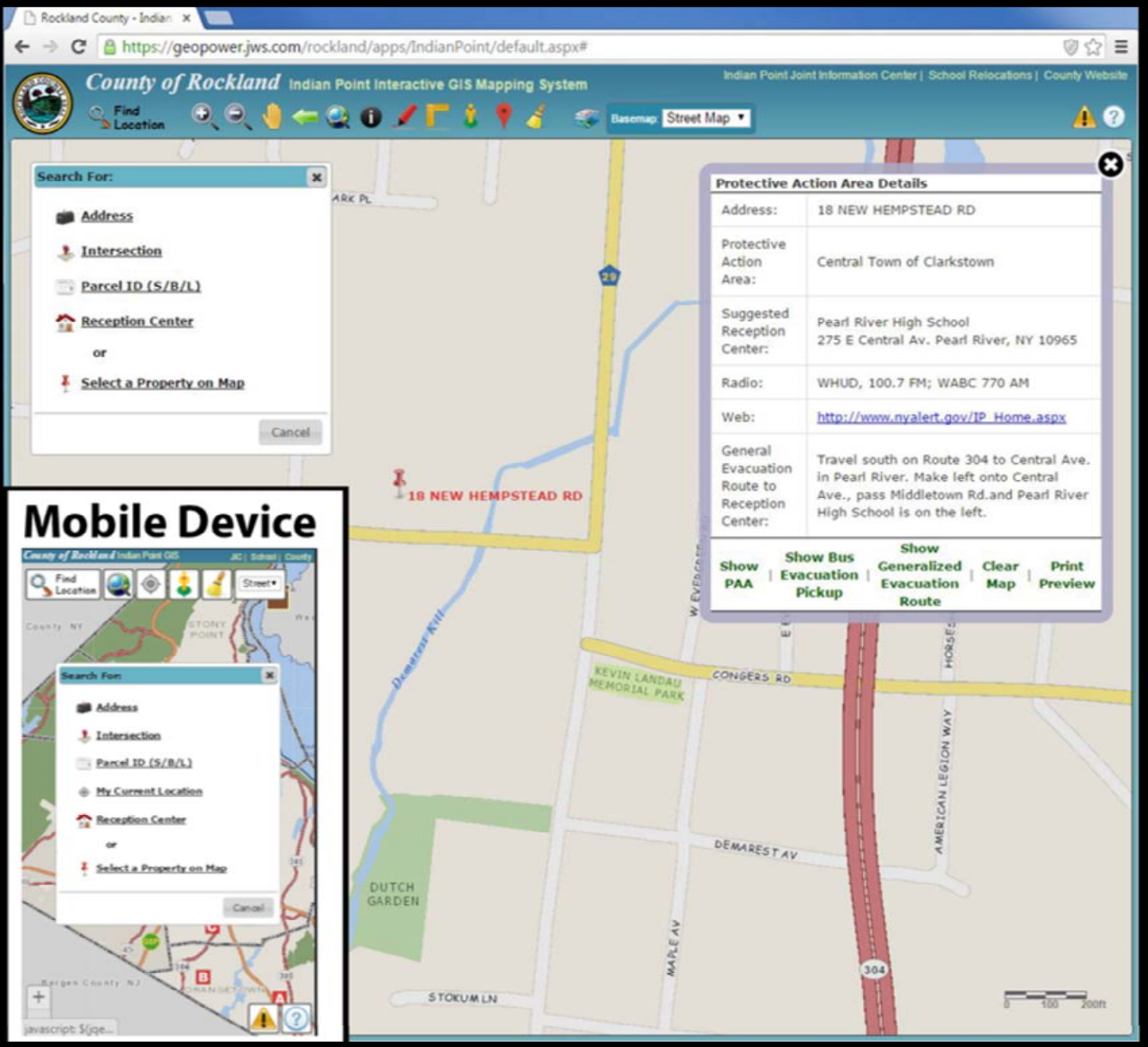
Jeff Herter, NYS Dept of State (jeff.herter@dos.ny.gov)

Stone Environmental developed the Geographic Information Gateway for and with the New York State Office of Planning and Development. This is an educational and user-friendly web application that identifies New York's diverse land and offshore assets so residents, local governments, educators, businesses and others can use this information when making planning and development decisions. The website provides the public access to free and reliable geographic data, real-time information, interactive tools, and expert knowledge on New York's resources, including climate change and community resilience activities.

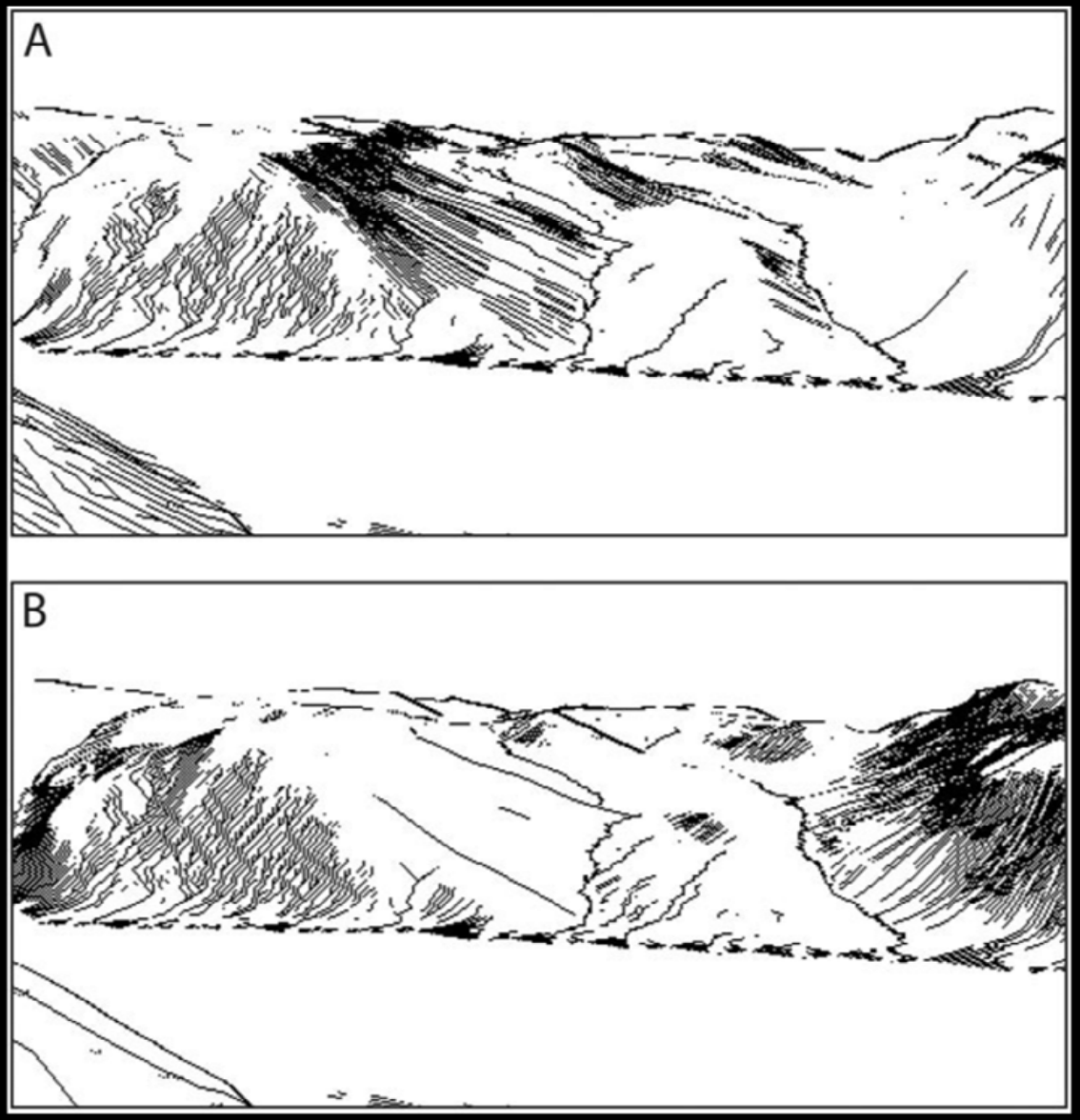


Bob Scardamalia, RLS Demographics (bob@rlsdemographics.com)

The USCIS (US Citizenship and Immigration Services) of the DHS allows definition of “Targeted Employment Areas” to promote immigrant investors. TEA’s must meet a national threshold of unemployment and GIS is used to identify contiguous high unemployment census tracts in the development of an area-wide TEA that exceeds the national threshold. The attached shows an upper Manhattan, Queens and Brooklyn TEA.



Doug Schuetz, Rockland County Departments of Planning and Public Transportation (schuetzd@co.rockland.ny.us)
The Rockland County Department of Planning GIS team released a mobile-friendly interactive mapping application for residents to find their location in relation to the Indian Point Energy Center. In an emergency, this provides a user with access to the corresponding emergency response information specific to their site.



Jim Mower, University at Albany (jmower@albany.edu)

Here's an illustration and caption from my most recent paper, Mower, J.E. 2015. "Concurrent Network Rendering for Automated Pen and Ink Style Landscape Illustration," *Transactions in GIS*, doi: 10.1111/tgis.12141. To appear in vol 20, no. 1, 2017. Two images of the same scene, looking at an angle of 225° across the Hudson River from a position above West Point, NY with varying light source azimuths. In A, light is coming from 135° (the left). In B, the light is coming from 315° (the right). The light source altitude angle in both cases is 45°. The minimum rendering score was set to .10 to intentionally oversample lines in shaded regions.

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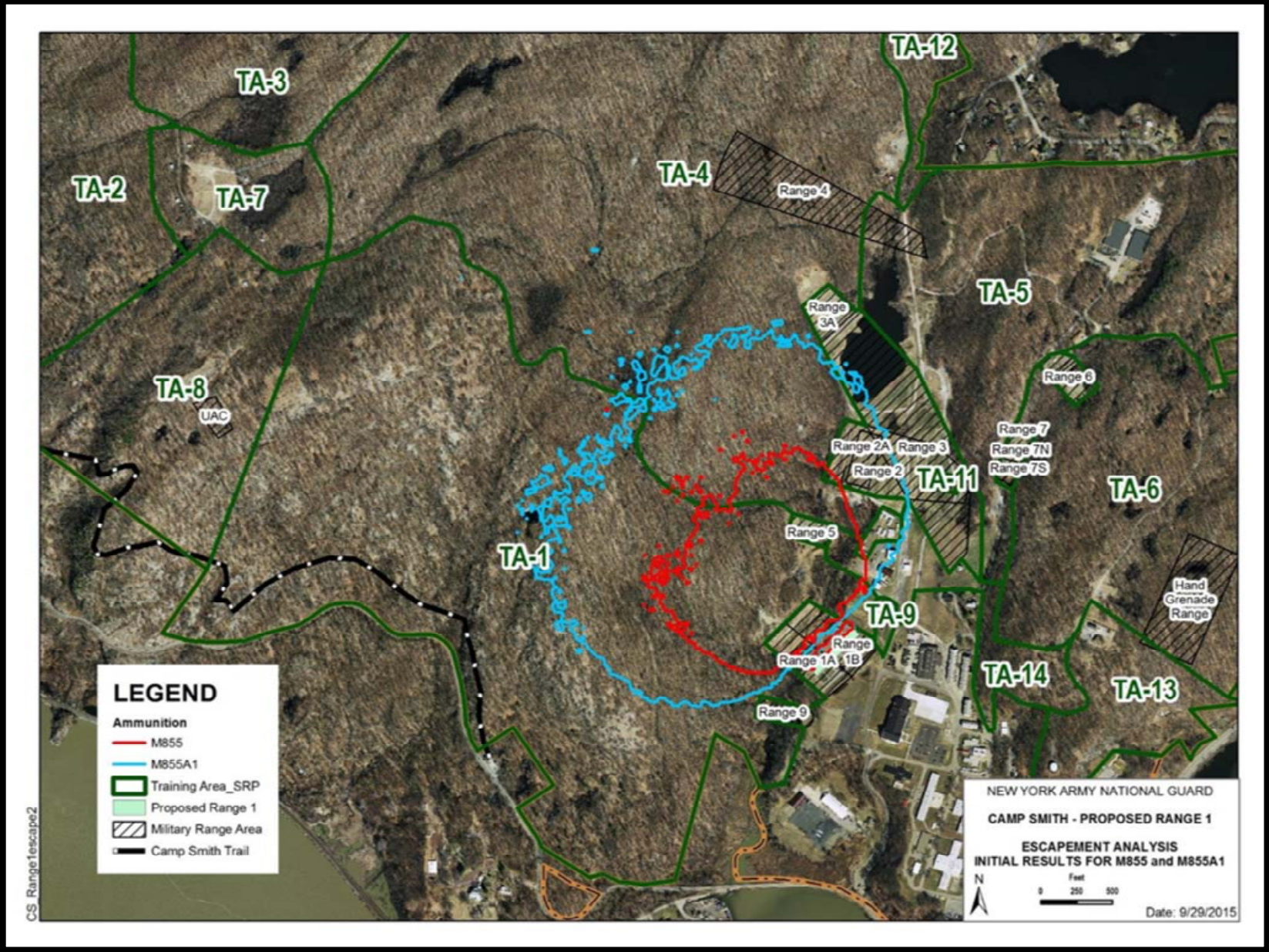
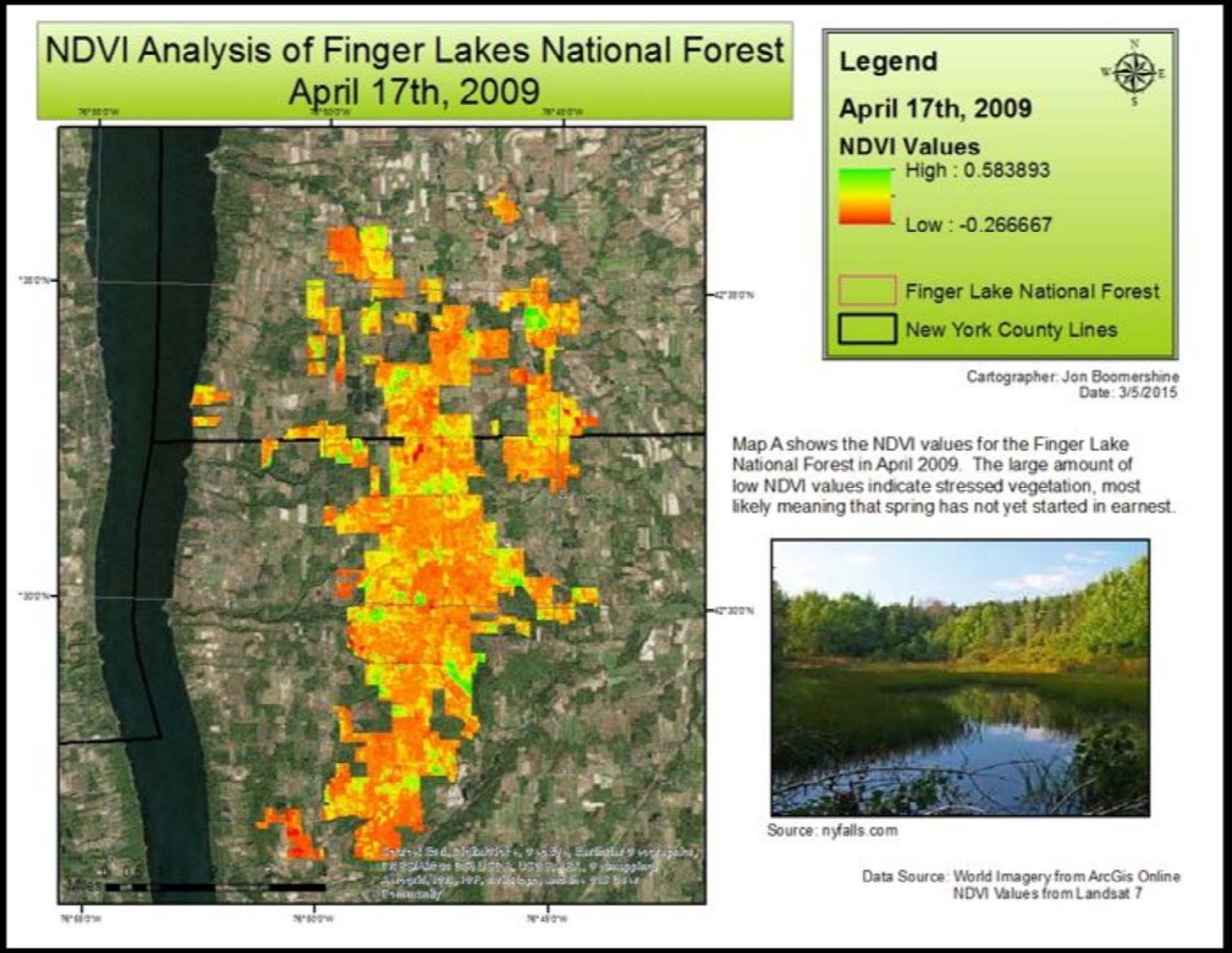


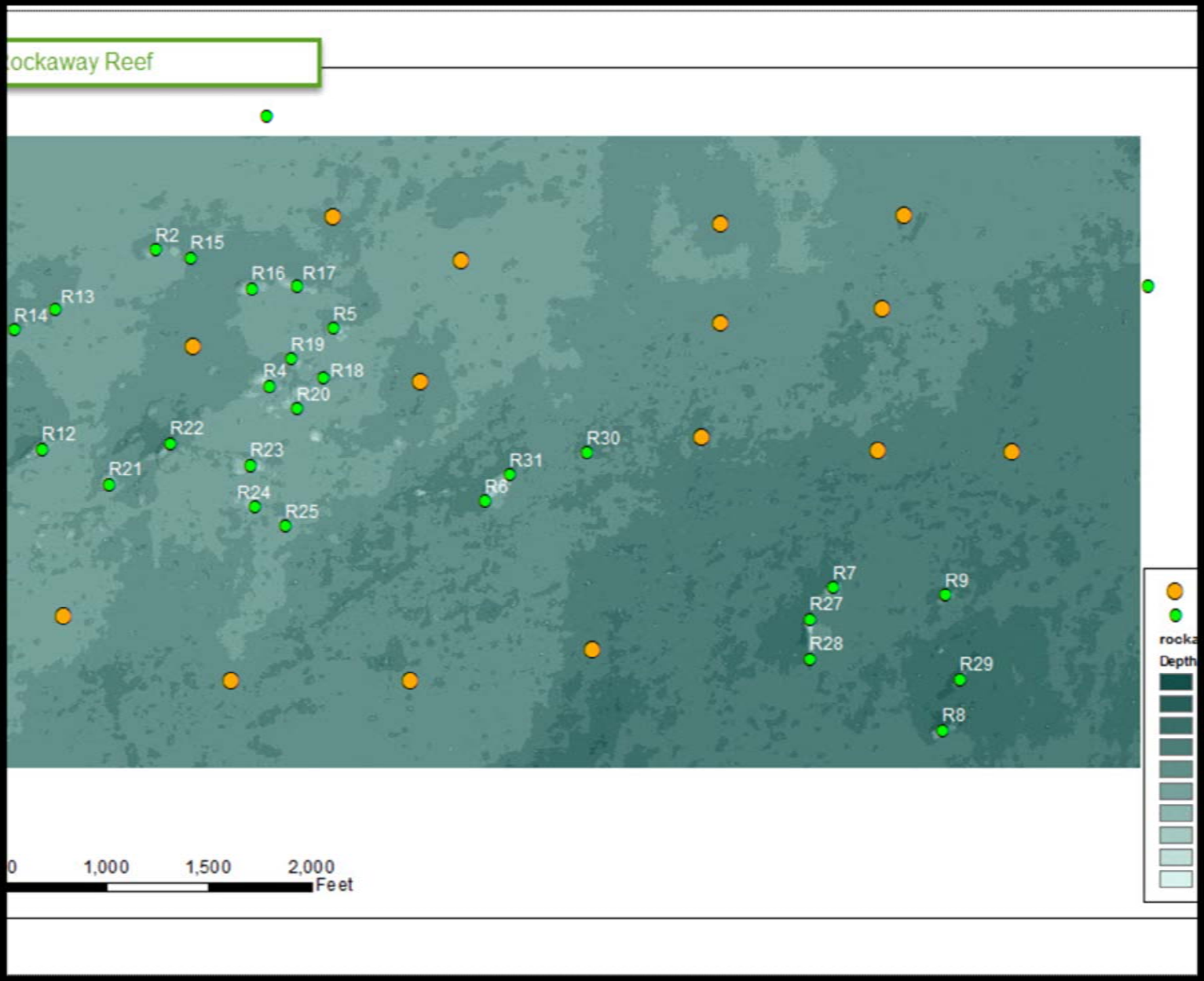
Stewart Galloway, NYS Division of Military and Naval Affairs (stewart.c.galloway.nfg@mail.mil)

Proposed Range 1: map displays an escapement analysis for a proposed rifle range. The range is on the main training site for the New York Army National Guard. The analysis is the result of a computer model (completed by the U.S. Army) that determines where a bullet might end up if there is a ricochet. The resultant contour overlay displays the potential impact on other training areas and ranges. This helps planners decide if the range should be built and if so, what areas will need to be shut down during a live fire exercise.

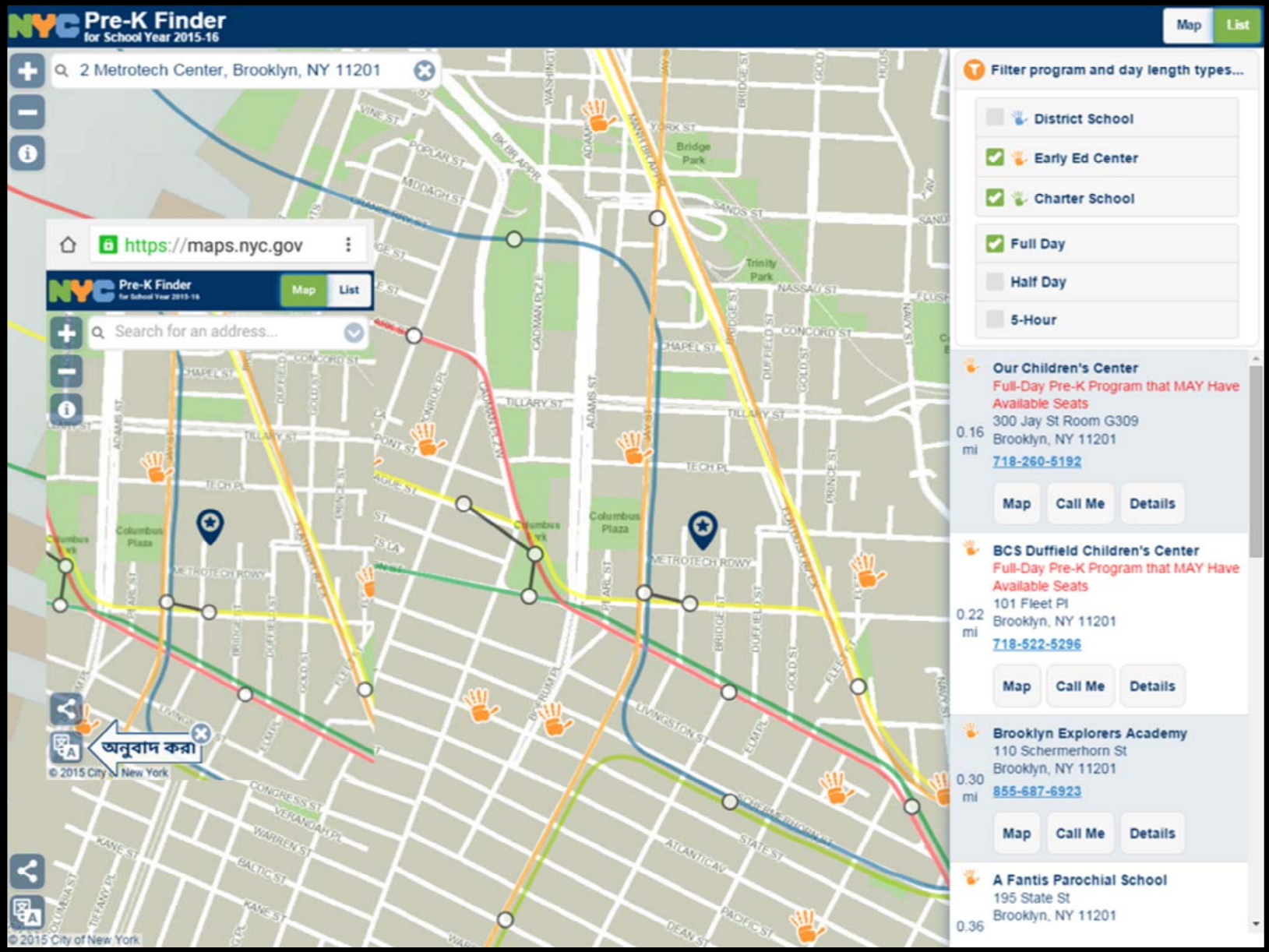


Jonathan Little, Monroe County Community College (jlittle@monroecc.edu)

Students in Introduction to Remote Sensing (GEG 133) assessed start of spring using NDVI in the Finger Lakes National Forest.



Melissa Albino Hegeman, NYSDEC's Bureau of Marine Resources (melissa.hegeman@gmail.com)
Using bathymetry data in ArcGIS to choose locations for new artificial reefs.

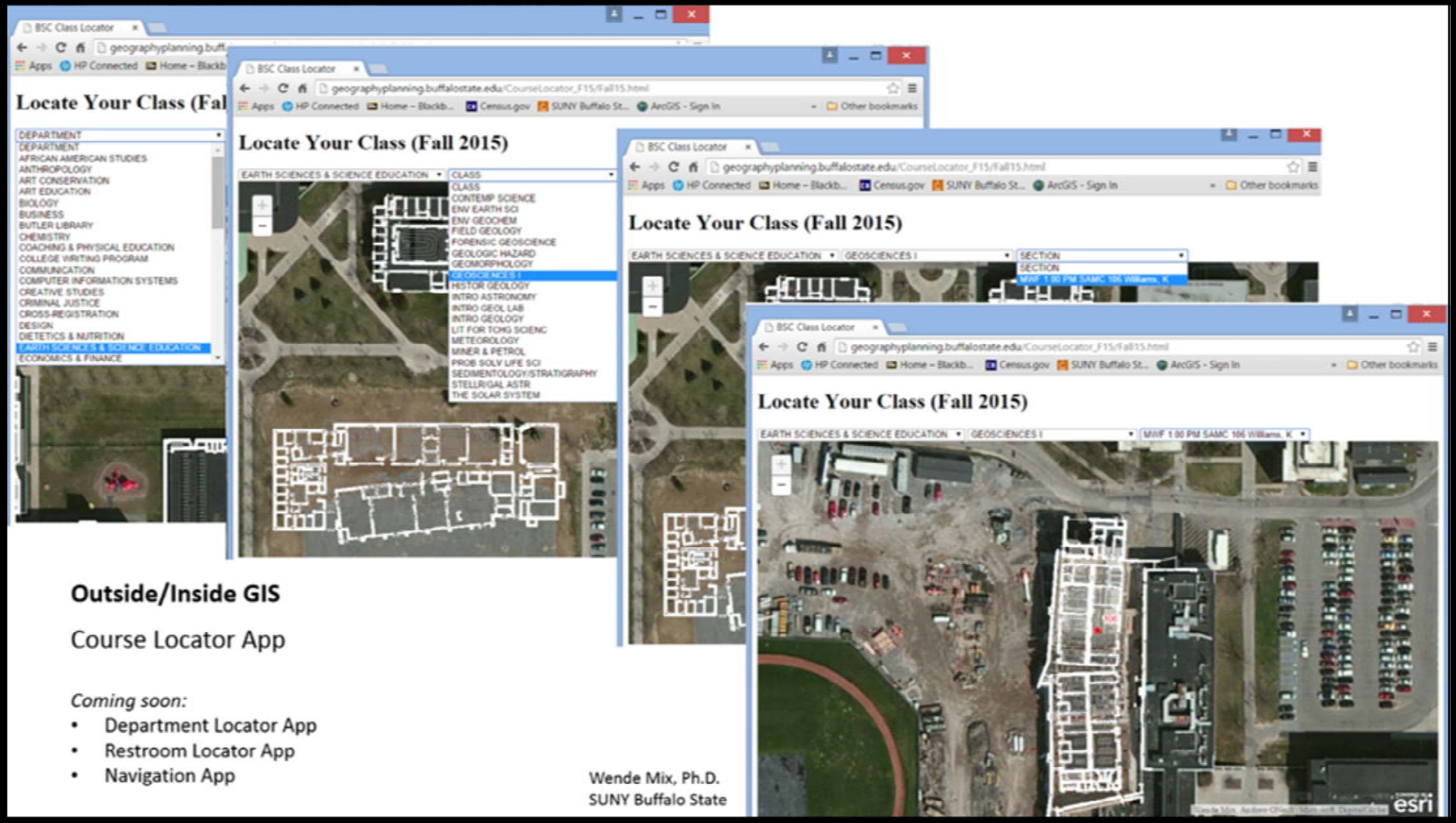


Colin Reilly, NYC DOITT (creilly@doitt.nyc.gov)

The Pre-K for All Finder was developed with a mobile-first approach using Open Layers. The application has a singular purpose that provides filtering capabilities and map interface for care givers and parents to find a Pre K program near their office, home or any location.

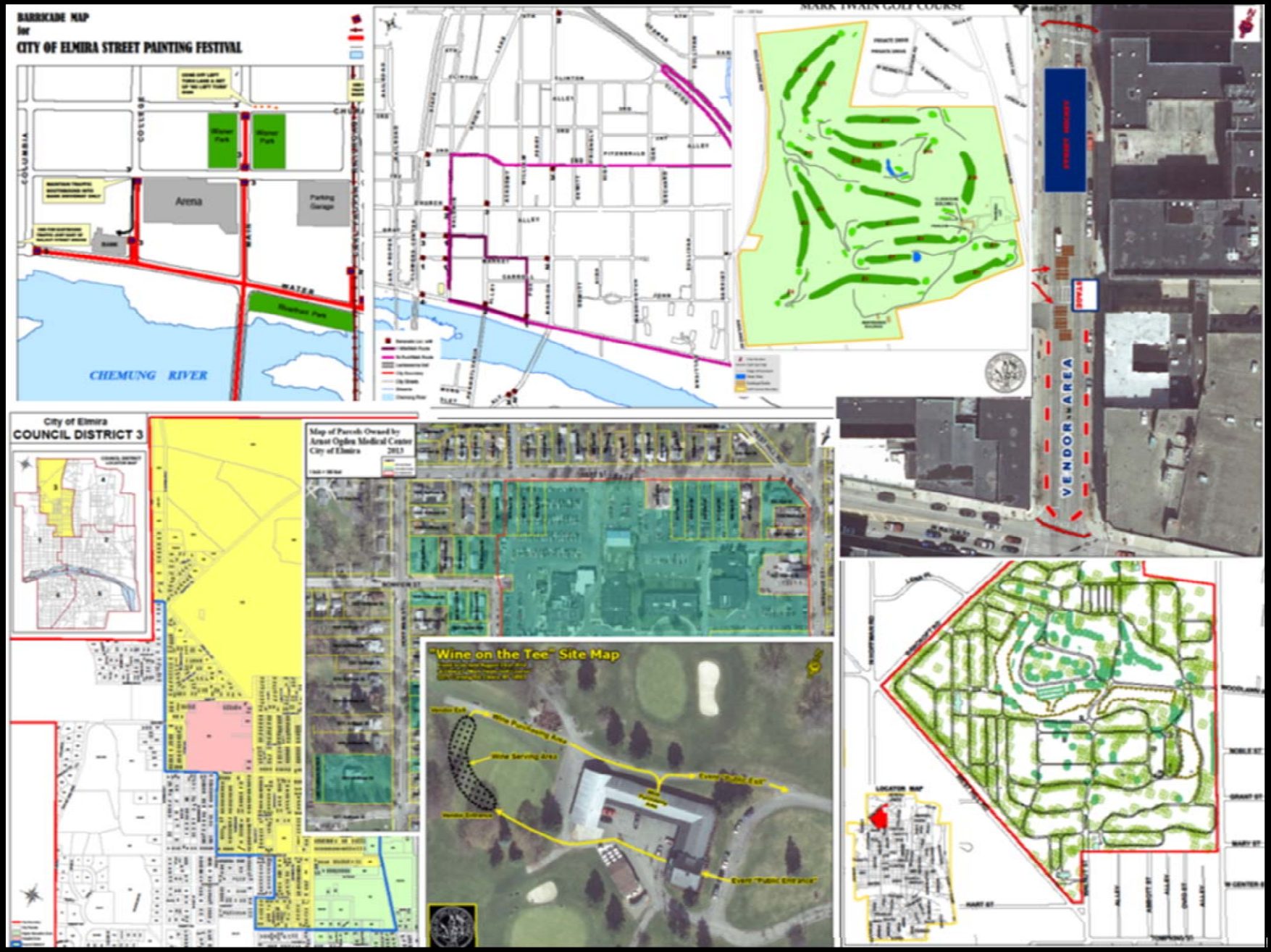
Kim Fisher, Wildlife Conservation Society (kim@squarewater.com)

Visionmaker NYC is a web application designed to enable the public to develop and share their own climate-resilient designs for New York City based on rapid and realistic model assessments of carbon, water, biodiversity, population, economics. Building on the ecological baseline reconstructed by the Wildlife Conservation Society's Mannahatta Project, we aim to give New Yorkers a beautiful, data-driven forum for democratic exploration and discovery of a sustainable and resilient New York.



Wende Mix, SUNY - Buffalo State College (mixwa@buffalostate.edu)

This is an example of one of the apps developed while building a campus wide database. All interior spaces are from georeferenced CAD drawings. Spring 2015 and Fall 2015 course offerings from registrar linked to building interior spaces. I am working toward a navigation app that will route users through interior and exterior spaces.

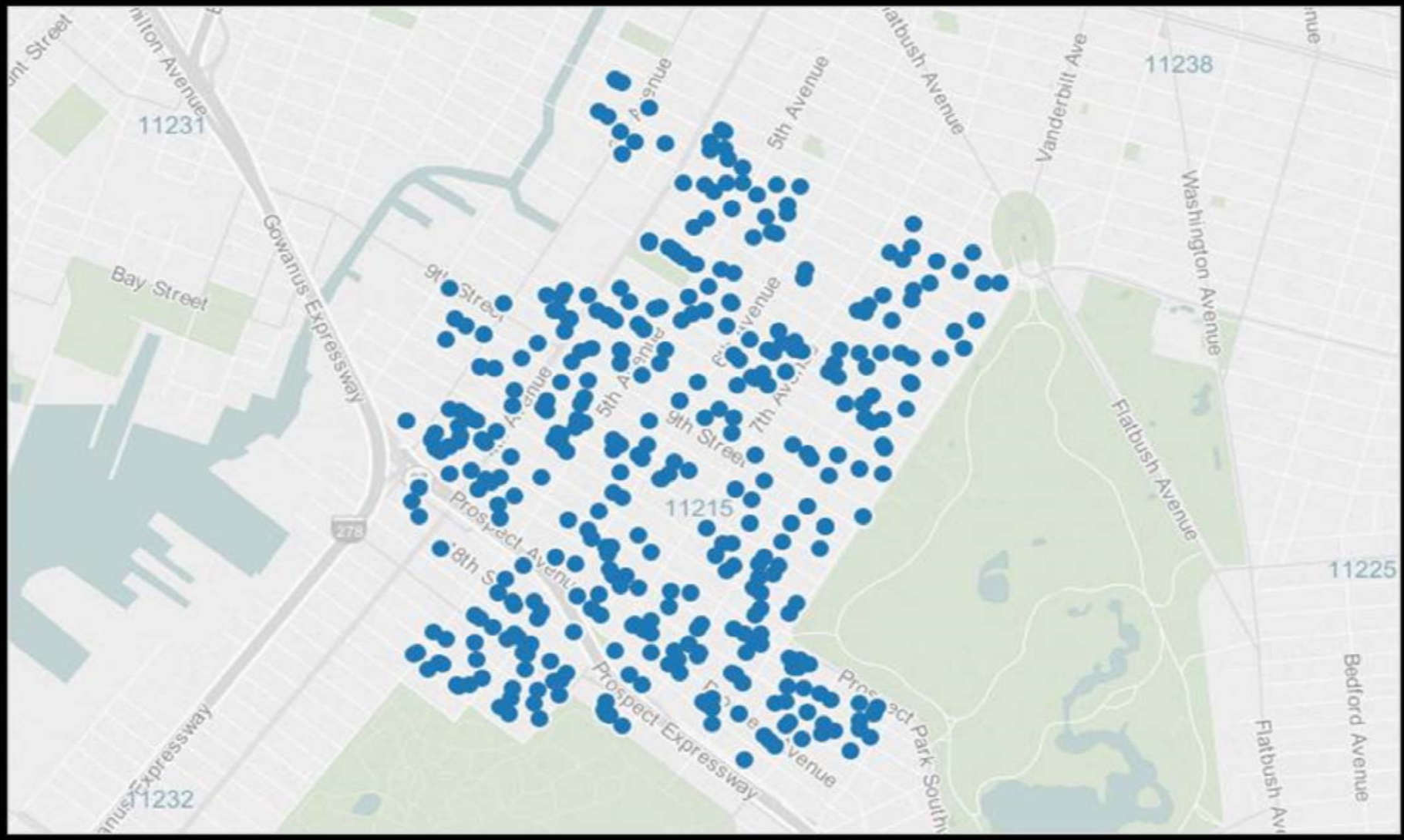


Richard Vary, City of Elmira DPW (rvary@cityofelmira.net)

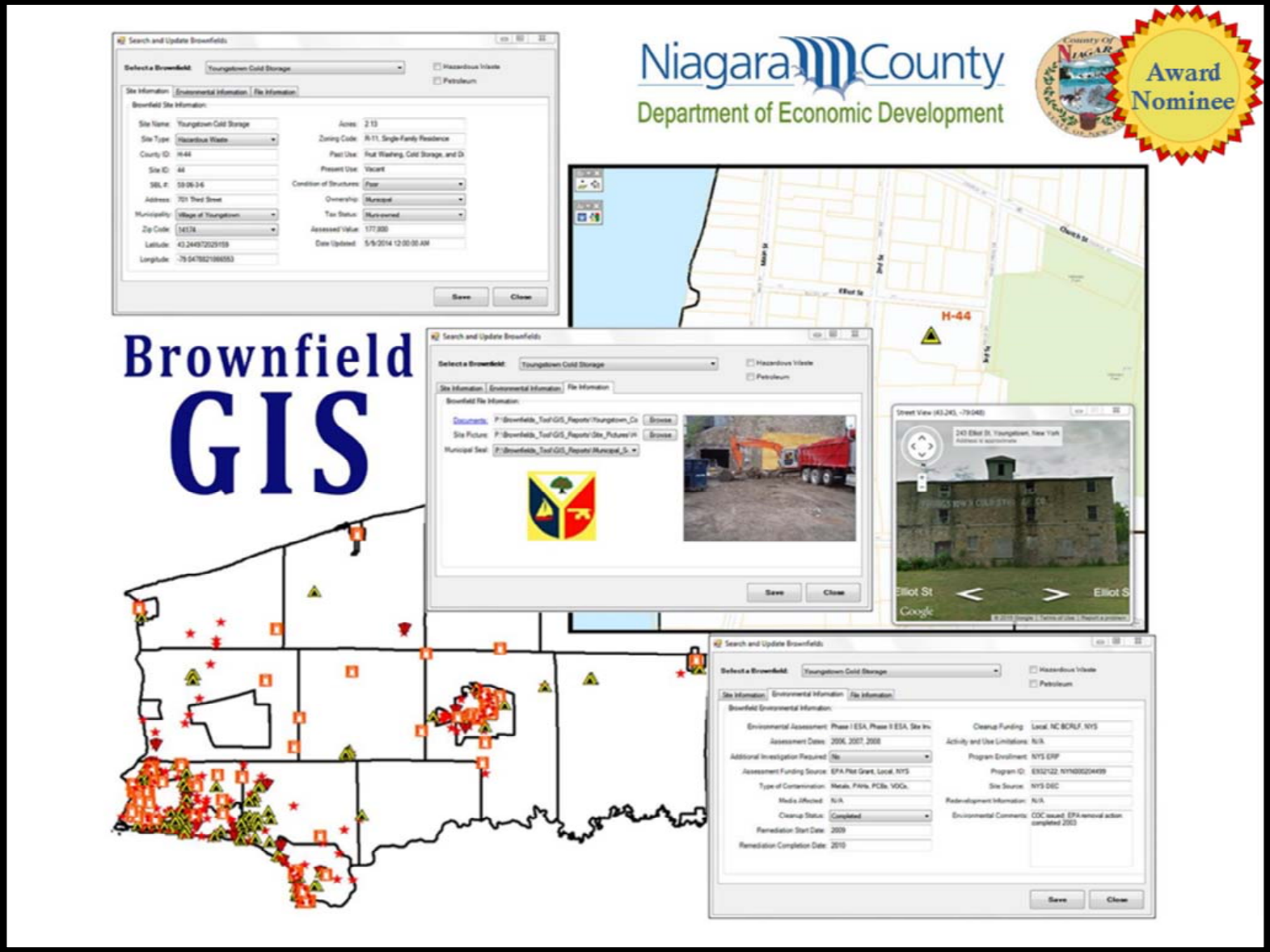
In my position here at the city, I have to say that I do not create any ground-breaking mxd's, but more like the samples you find here.

Sue Nixson, City of Ithaca (snixson@cityofithaca.org)

The City of Ithaca GIS Program solicited the Google Trekker backpack and collaborated with Cornell Plantations, NYS Parks, Ithaca College, and the Cayuga Nature Center to capture public trails and Ithaca's gorges for Google Street View.



Bill Loges, InfoGroup (bill.loges@infogroup.com)
Households in Brooklyn NY, zip code 11215, with grandparents present. (total 439 of those)
This data is fresh, as of 9/30/15, 2pm



Ben Bidell, Niagara County Department of Economic Development (benjamin.bidell@niagaracounty.com)

Niagara County Brownfields Tracking Tool, a GIS application with a custom, form-based interface for tracking sites in the Niagara County Brownfields Program. The Niagara County Department of Economic Development is using GIS to track federal, state, and county brownfields including ongoing environmental assessment, cleanup, and redevelopment activity. Integrated with comprehensive countywide basemap data, the application is also used to assess the impacts of brownfields on physical, social, and economic conditions in the county.

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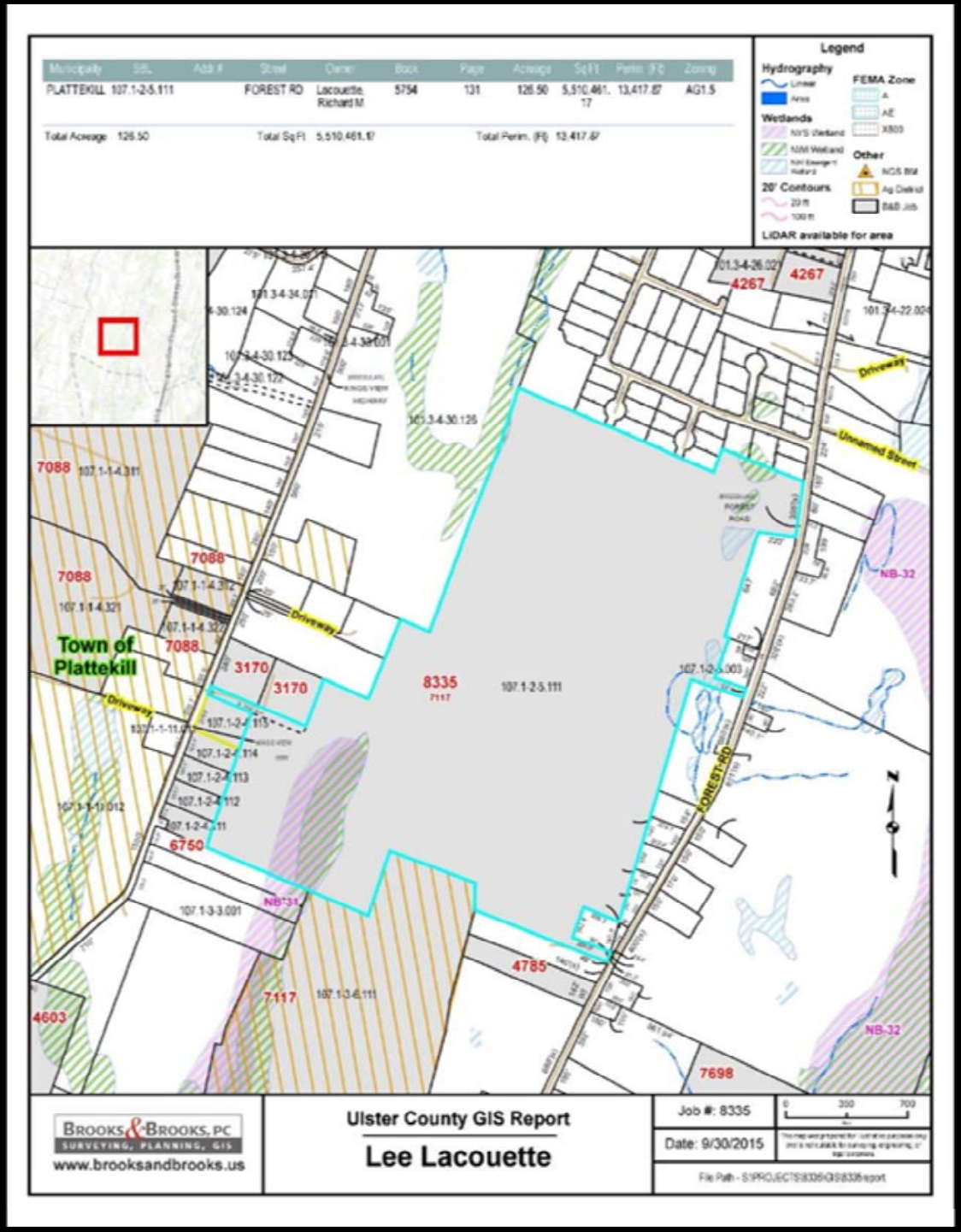
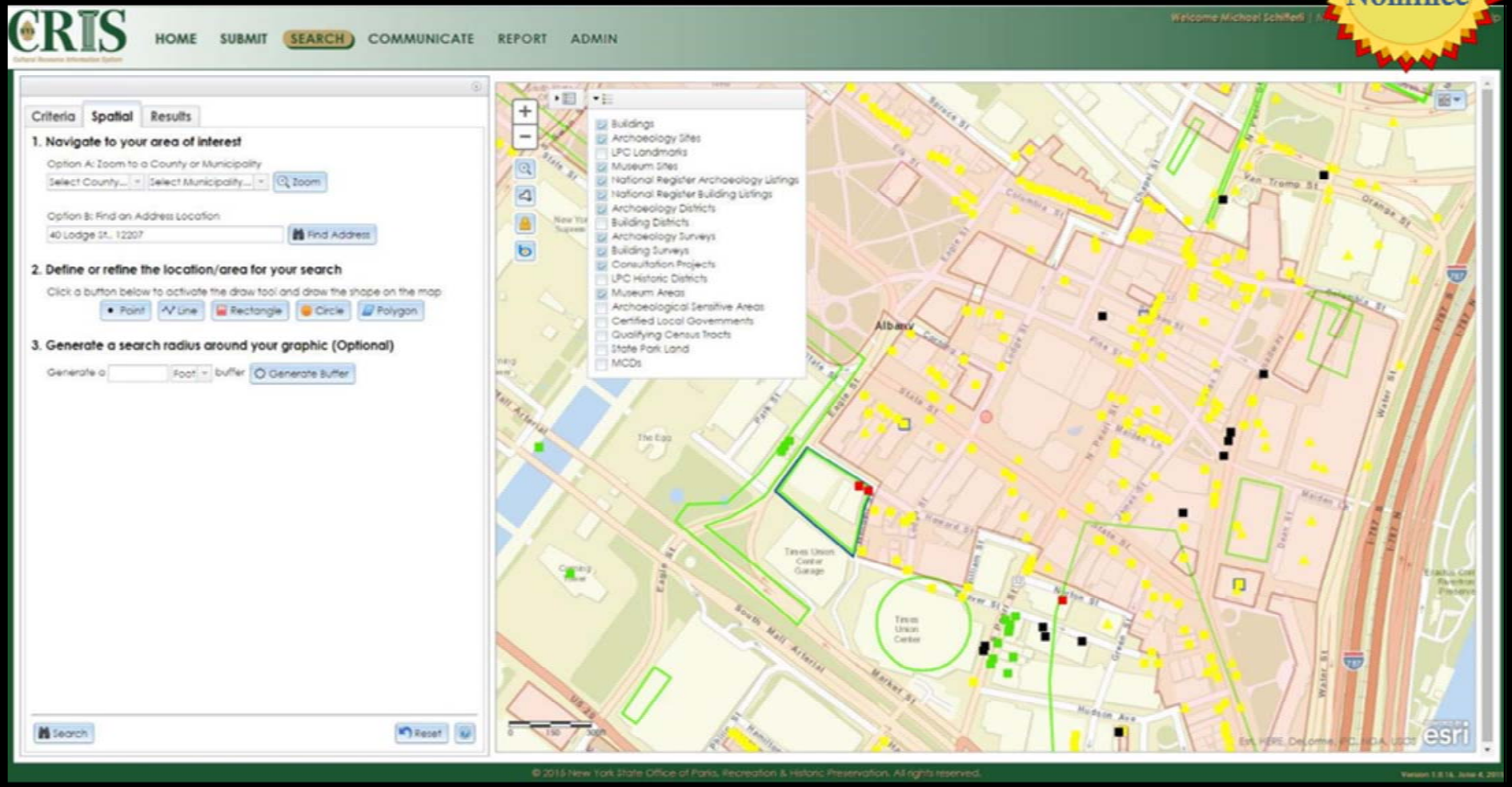
Santhosh Balakrishnapillai, Suffolk County Department of Information Technology (santhosh.balakrishnapillai@suffolkcountyny.gov)
This is the map I created for recent Suffolk County Marathon (Sep 13,2015). It includes USNG grid, Mile markers for Half Marathon and Full Marathon, Traffic Posts , Crossing Point, Medical Stations, Water Stops and various other critical facilities participated in the event. Map is color coded by Fire Districts. Also you can see Division boundaries.

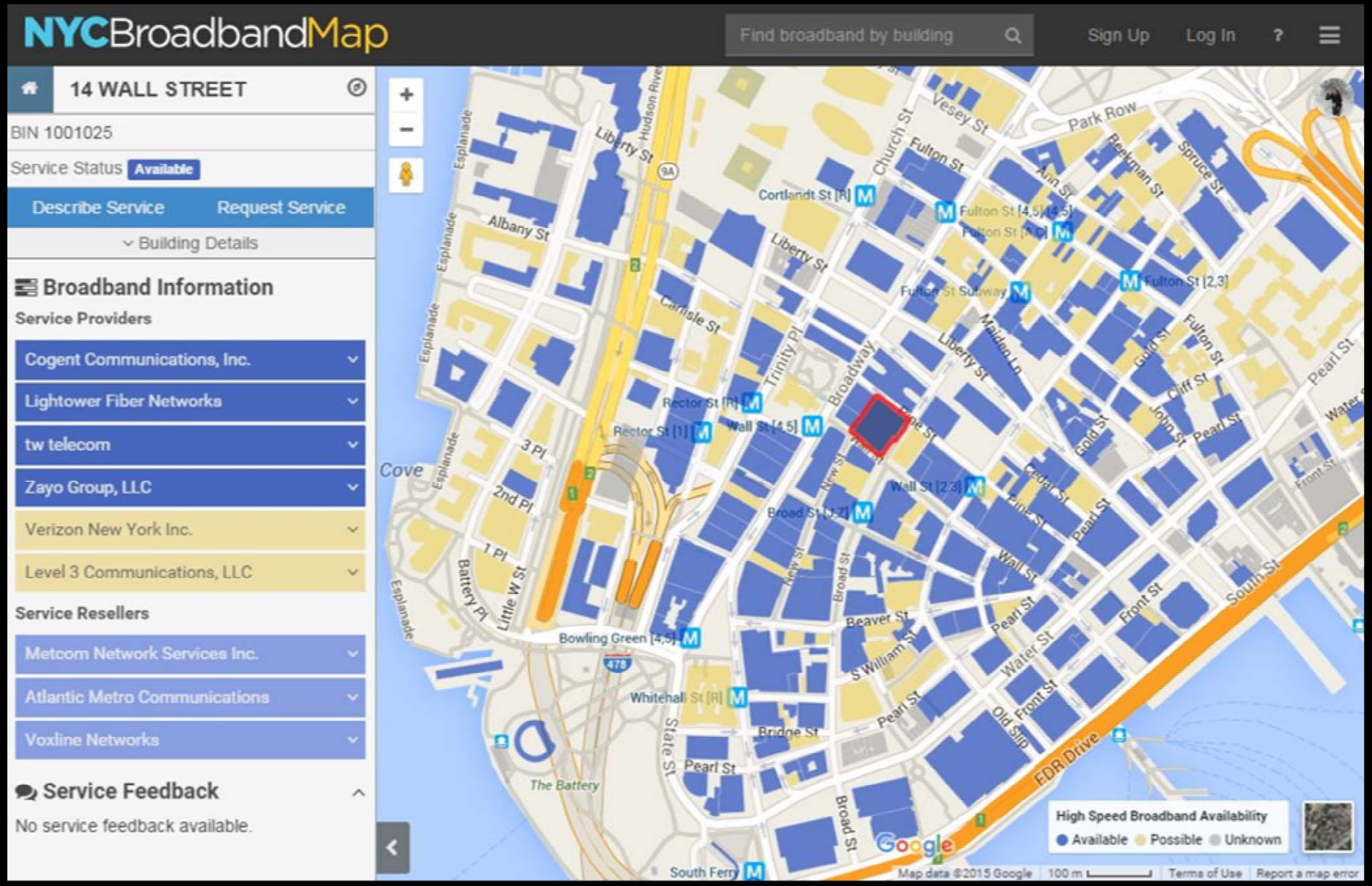


Giovanni Gagliardi, Brooks & Brooks Land Surveyors (ggagliardi@bnbpc.biz)
Attached is an image of a typical Brooks & Brooks GIS Report. I created the first in house GIS system for the firm and over the past 8 years it has grown into a very useful tool for us. Credit to be given to 2 GIS technicians who brought my primitive system and report to what it is today (Mike Pianka and Emmanuelle Amaroso). We now use this tool to research incoming jobs and prepare various products used by both the clients and our staff. It is ultimately keeping track of all the work we have done in our history and further references outside resources to make this an impressive company tool.



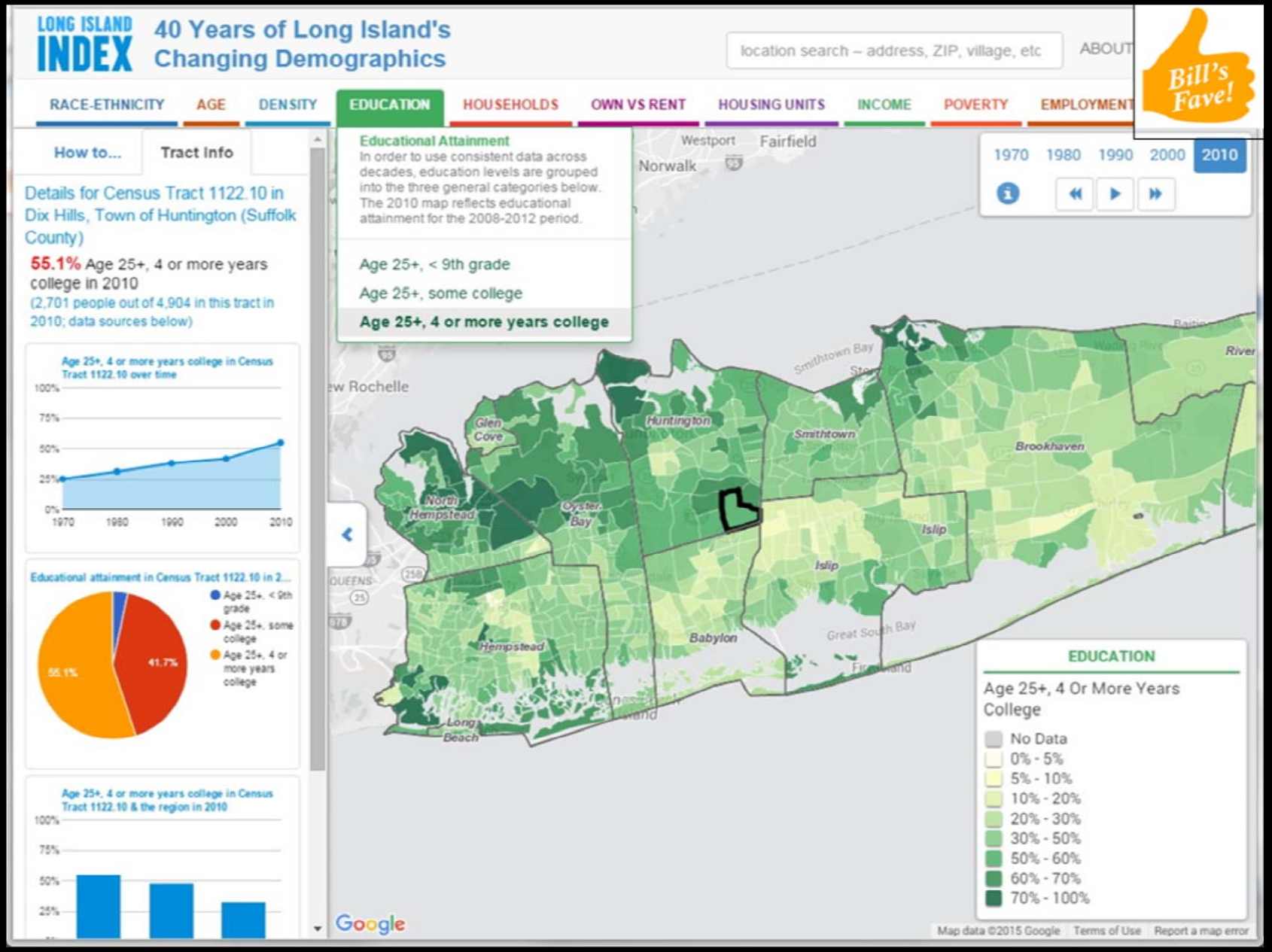
Michael Schifferli, New York State Office of Parks, Recreation & Historic Preservation (michael.schifferli@parks.ny.gov)

Fountains Spatial developed the Cultural Resource Information System (NYCRIS) for the New York State Historic Preservation Office (NY SHPO). NYCRIS is a publically available application which allows users to search the statewide database for cultural resources such as historic buildings and national register listings, as well as to digitally submit projects and resources for SHPO review. It also provides SHPO with a robust, backend workflow to digitally review all projects and correspond with end users throughout the review process. NYCRIS has allowed SHPO to increase the number of projects reviewed by over 50% in the past year.



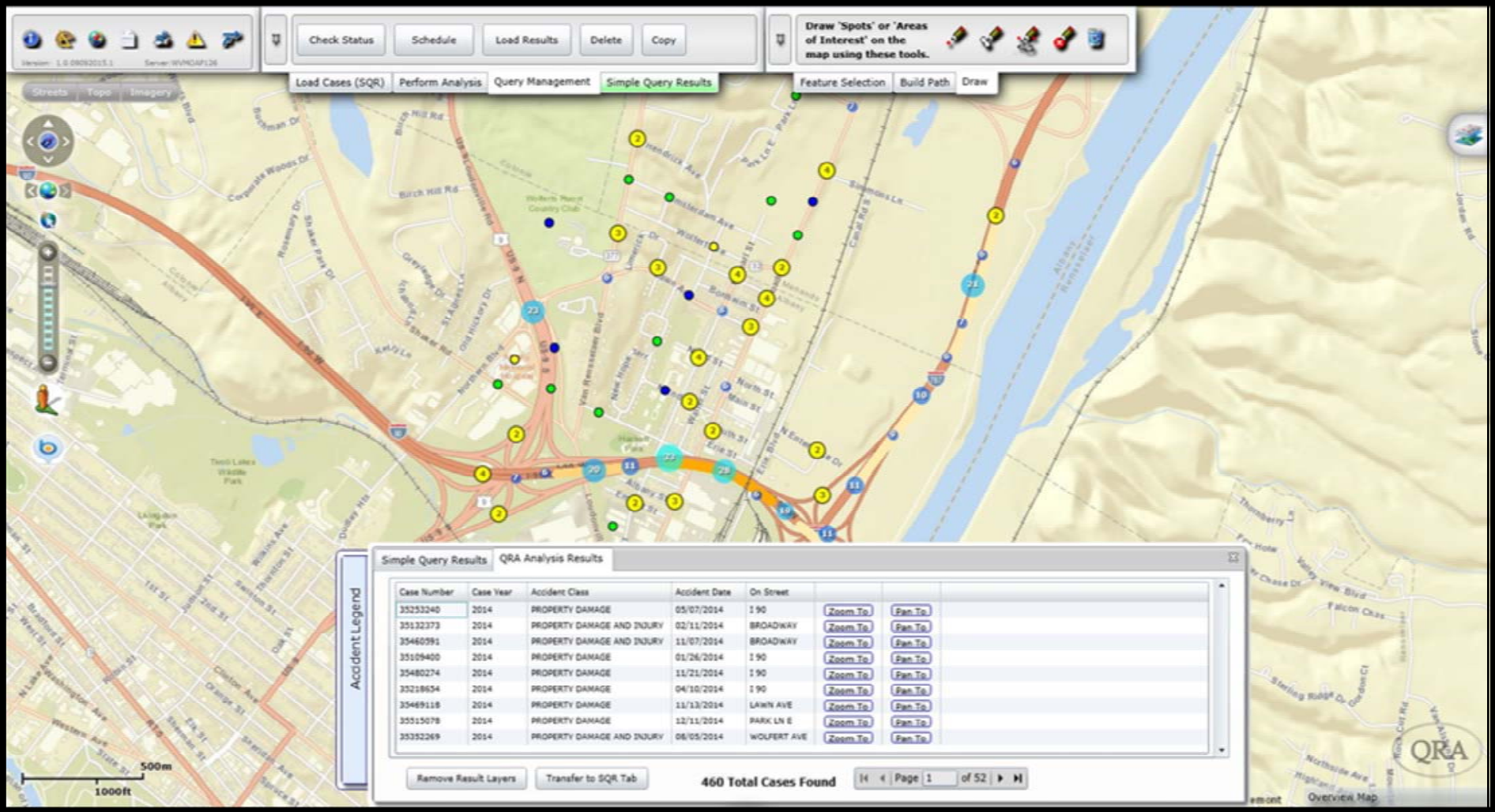
David Breeding, AppGeo (dbreeding@appgeo.com)

Applied Geographics (AppGeo) created The NYC Broadband Map for the New York City Economic Development Corporation to provide an up-to-date view of the availability of broadband (speed, technology) and demand in the City's commercial buildings. ISP partners and City programs like WiredNYC and ConnectNYC provide the availability data. Businesses around the City can share details on current service, and express demand for additional services for their location. The resulting broadband information exchange benefits all parties and the City.

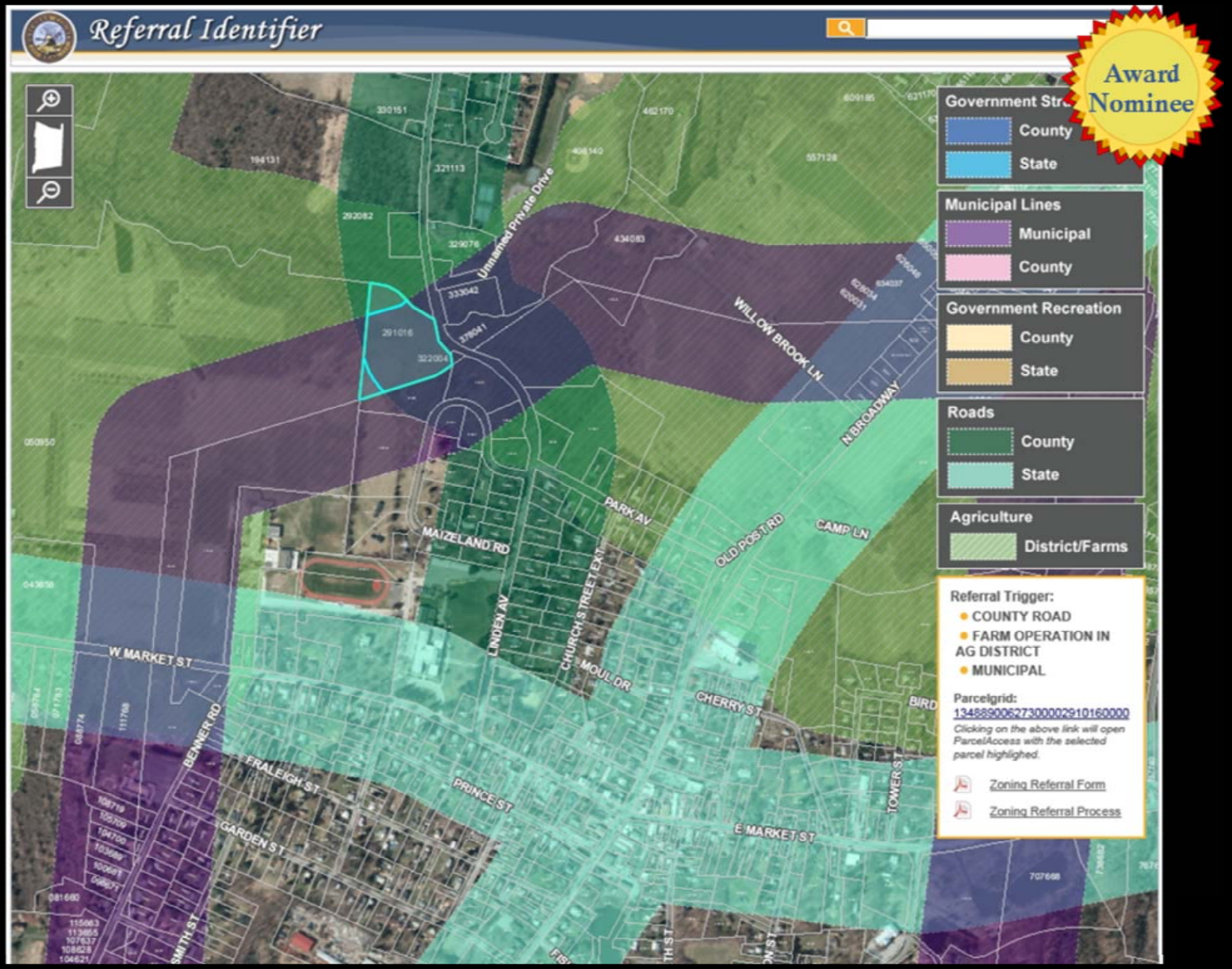


Steve Romelewski, CUNY Graduate Center (sromalewski@gc.cuny.edu)

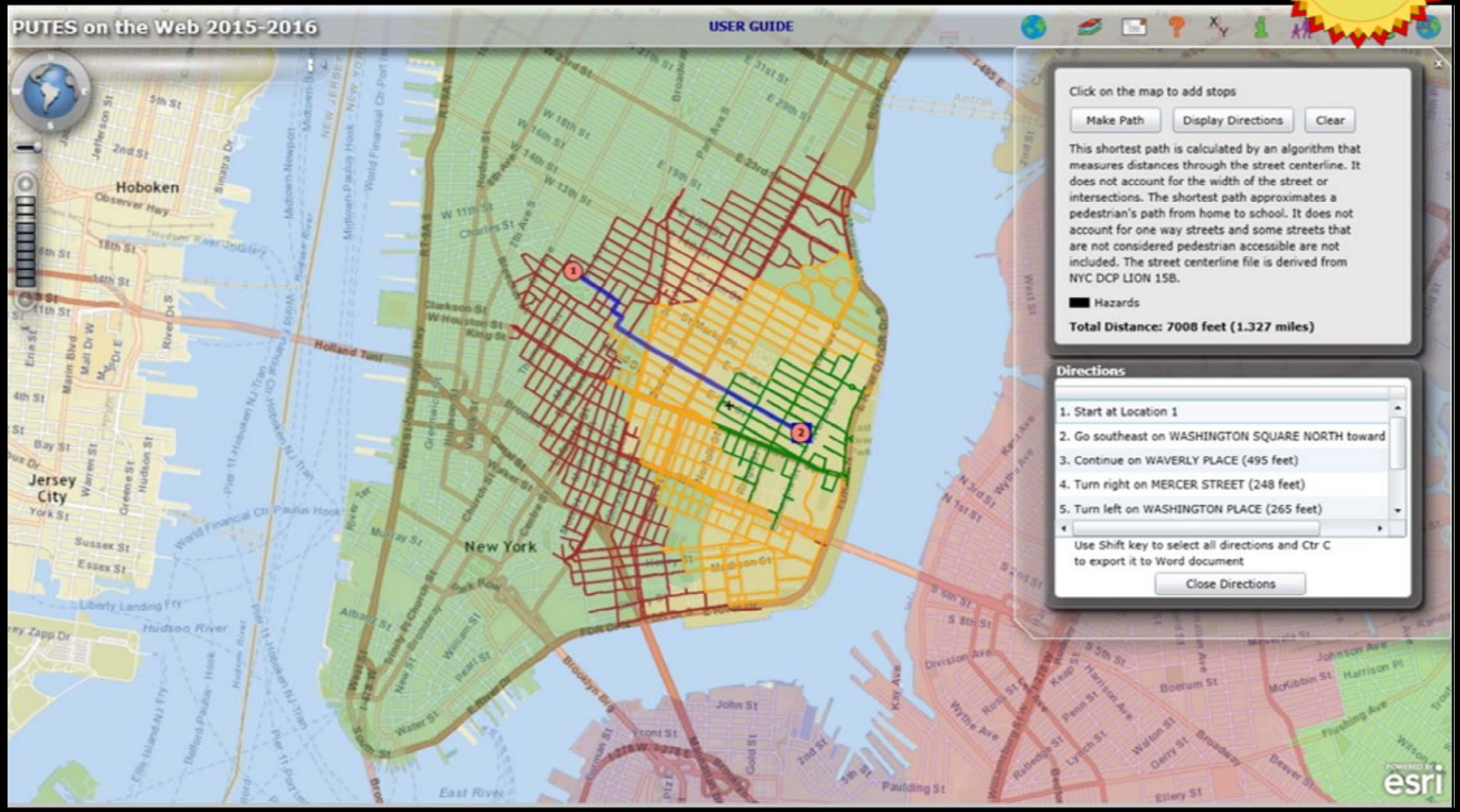
The Historical Census Atlas for Long Island presents tract-level information on 4 dozen demographic characteristics from 1970 through 2010. As you hover your mouse across Nassau and Suffolk counties, you'll see a 'dance of data' in the left-hand panel as statistics and charts change dynamically for each tract, and as the map seamlessly cycles through changing spatial patterns over that 40 year period.



Robert Zitowsky, NYS Dept of Transportation (robert.zitowsky@dot.ny.gov)
NYSDOT Accident Location Information System (ALIS). It shows the traffic accidents and Priority Incident Locations (PIL) in this part of Albany.

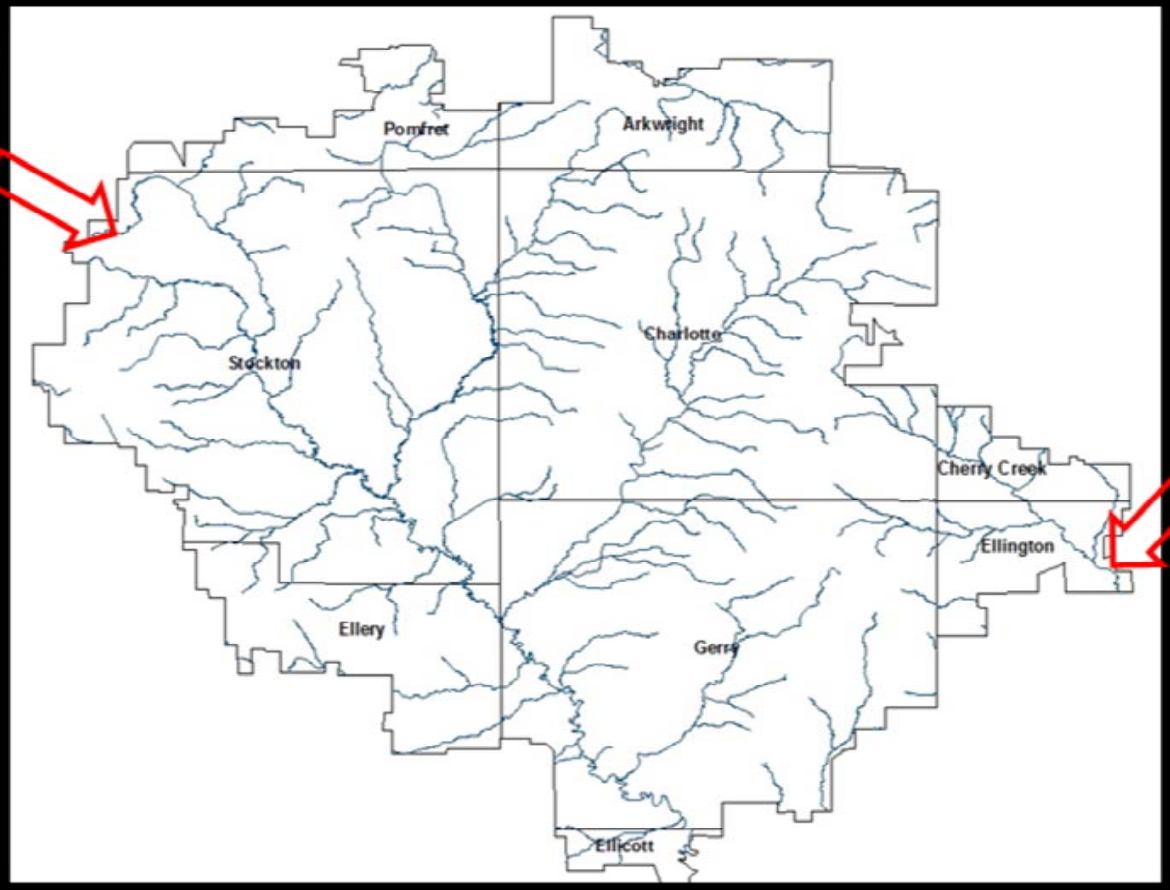


Bob Wills, Dutchess County Dept of Planning & Development (rwills@dutchessny.gov)
"Referral Identifer" application is an easy and accurate web-based tool for municipal officials to determine if a local action, i.e., development proposal, change in zoning, etc., needs to be referred to Dutchess County Planning for review and comment. County Planning Agencies are charged by New York State General Municipal Law Article 12, Sections 239-l and 239-m with reviewing certain "actions" that may be of interest to folks outside of the municipality in which they are happening.

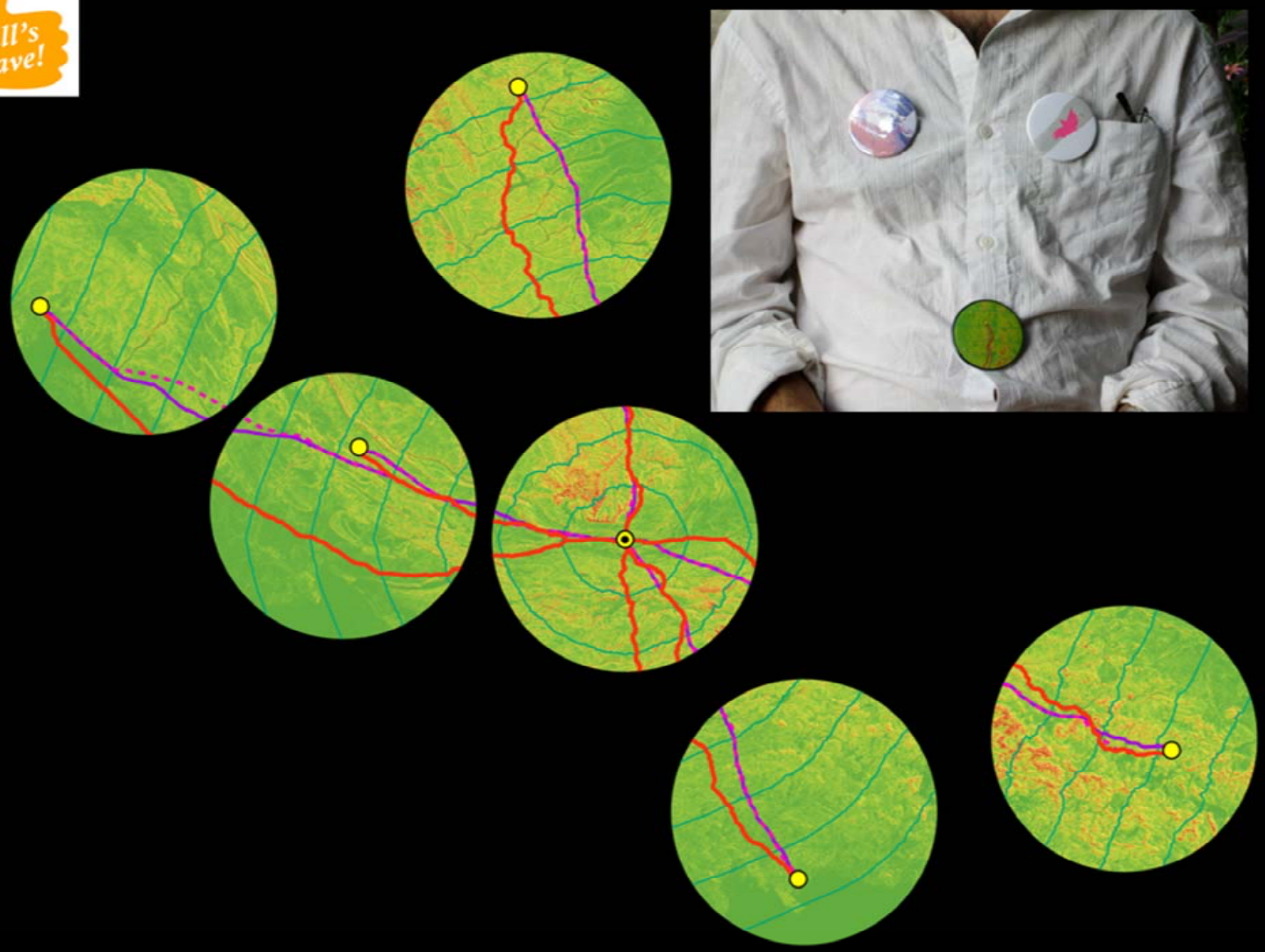


Joanna Laroussi, NYC Dept of Education (jlaroussi@schools.nyc.gov)

"PUTES on the Web" application used by an NYC DOE Office of Pupil Transportation to display transportation eligibility for general education students.

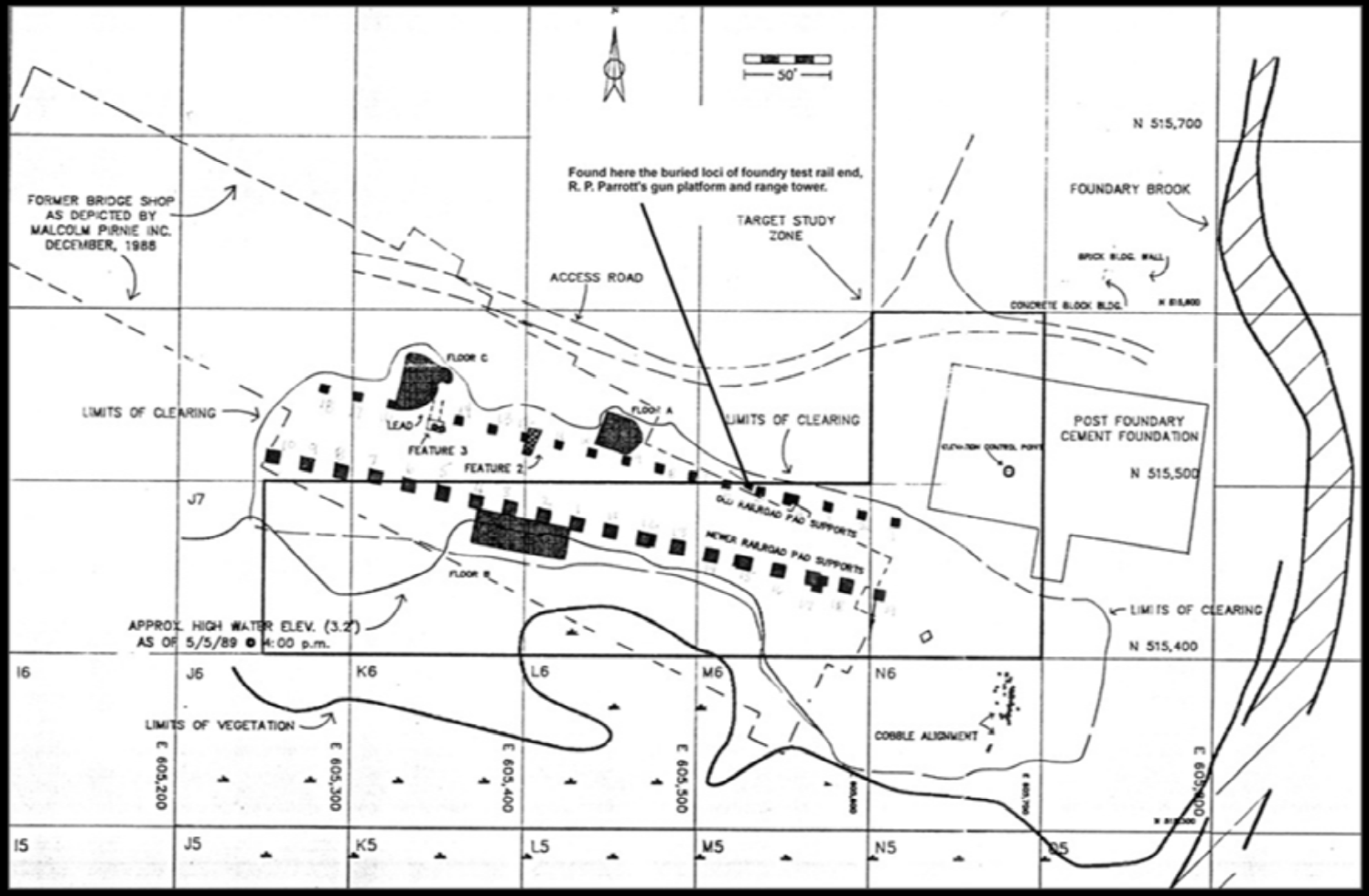


Michael Jabot, Professor, Science Education, SUNY-Fredonia (michael.jabot@fredonia.edu)
The map included is part of a "hyper" place-based curriculum that I have developed for partner schools across our region. GIS is used to help students develop a deeper understanding of their place and science. In the case of the example shared, the watershed concept fro this school district. The data used allows for changes in extent so that students see the streams they interact with on a daily basis.



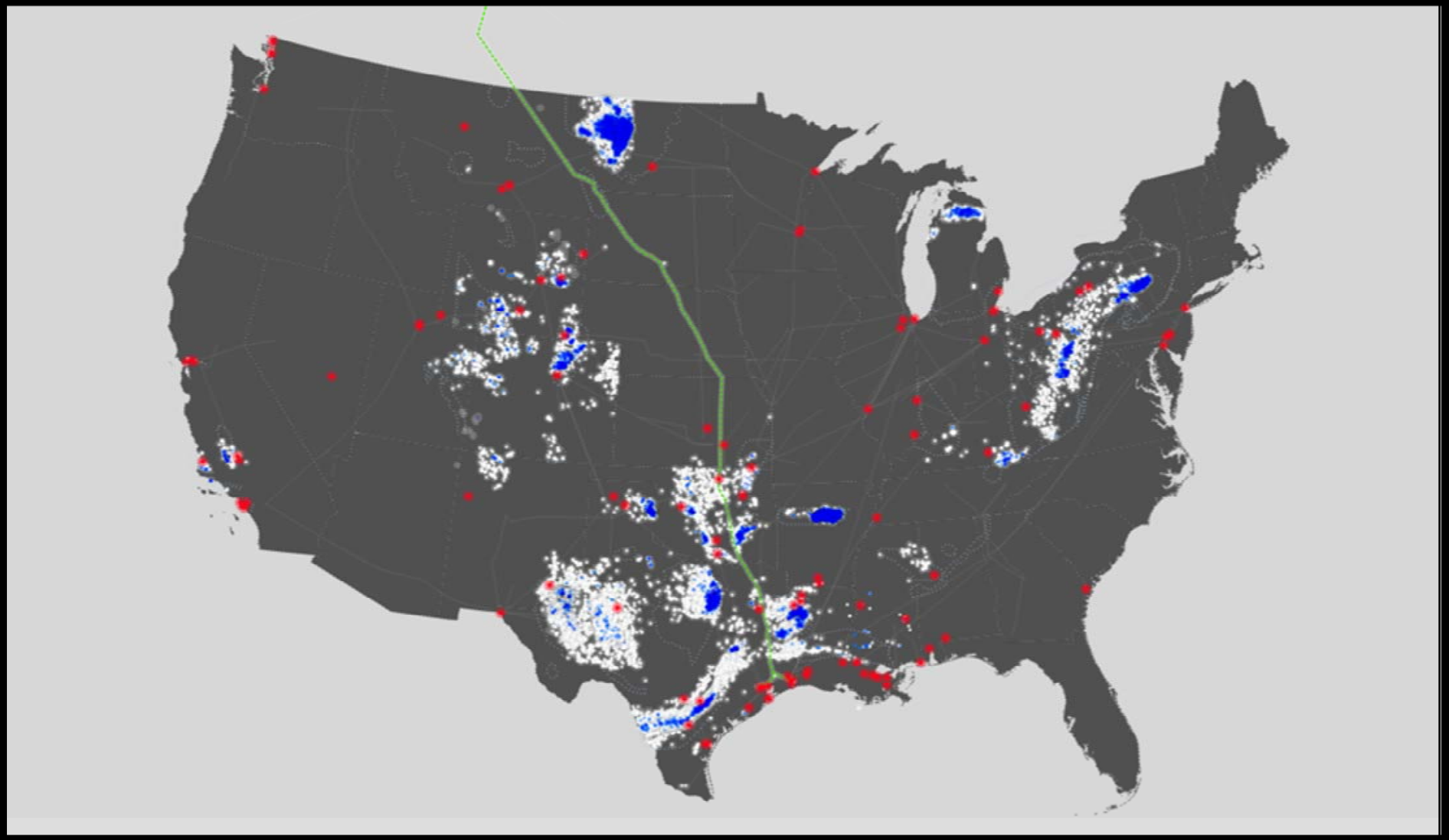
Susan Winchell-Sweeney, NYS Museum (susan.winchell-sweeney@nysed.gov)

This GIS project began in support of an interdisciplinary research modeling pathways from Paleoindian archaeological sites in the Northeast US – from Maine to Maryland – to a single ancient rock quarry in the Hudson Valley out of which stone tools were made and discovered at each of these sites. Though developed in scientific rigor, the maps were transformed into wearable art – art buttons, specifically – and presented in a gallery exhibition this past June. Publication of the research results along with the complete GIS maps is anticipated in early 2016



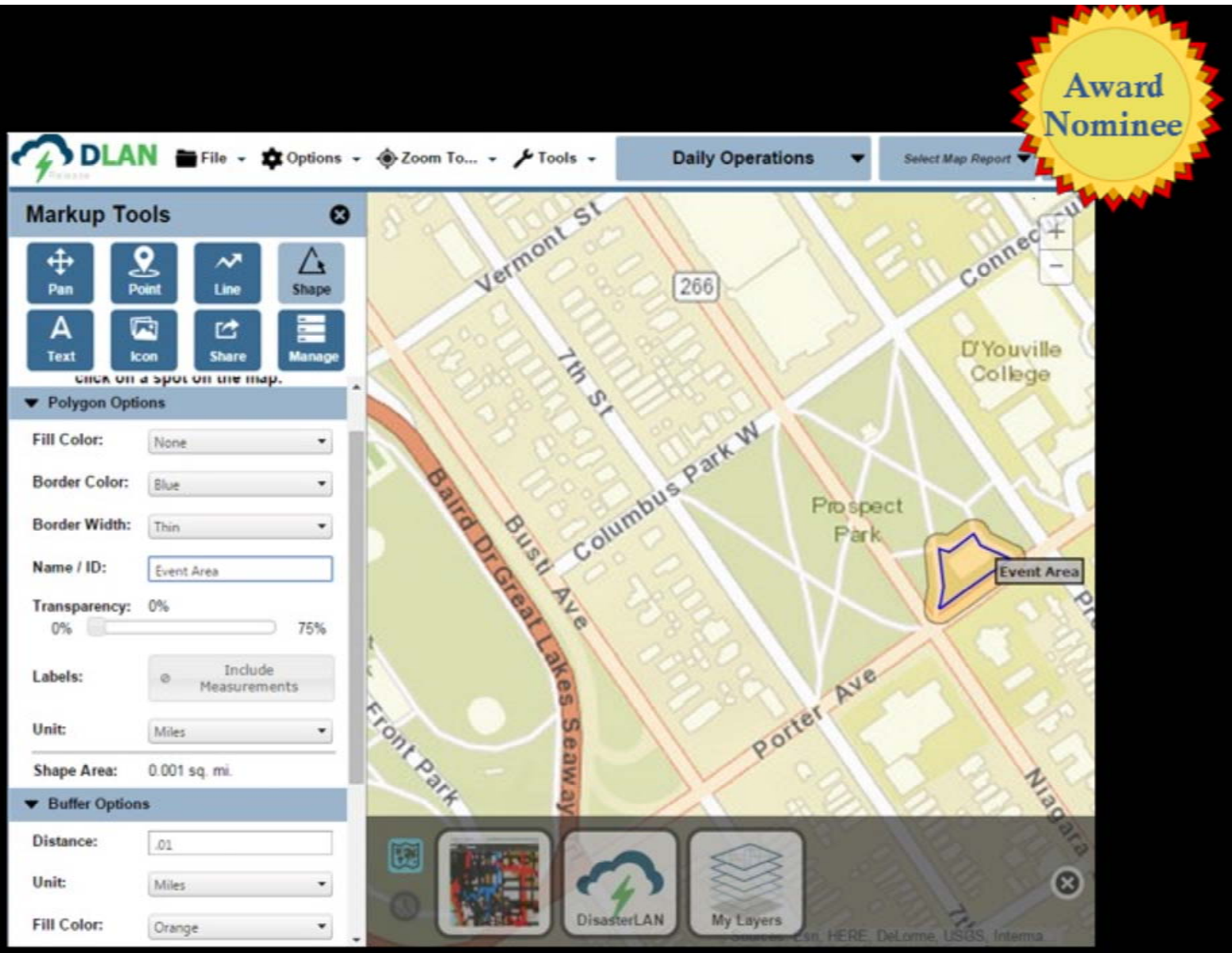
George Myers, AECOM – Archeology (georgejmyersjr@gmail.com)

Marathon Battery Superfund Site, Cold Spring, NY. Early use of GIS, "total station" and client supplied maps to comply with Federal 106 preservation law and aid in the subsequent remediation of the historic West Point Foundry Cove, 1989 to 1992. Archaeology survey was assisted from boat and ATV by Tidewater Research in NC and Grossman and Associates, Inc. Also terrestrial close-range photogrammetry, the Rolleimetric system in development, was provided by Prometric Technologies of Canada. Rolleimetric now owned by Trimble, was used on site providing a permanent record along with other in-field archaeological methods involving remote-sensing such as magnetometer surveys.



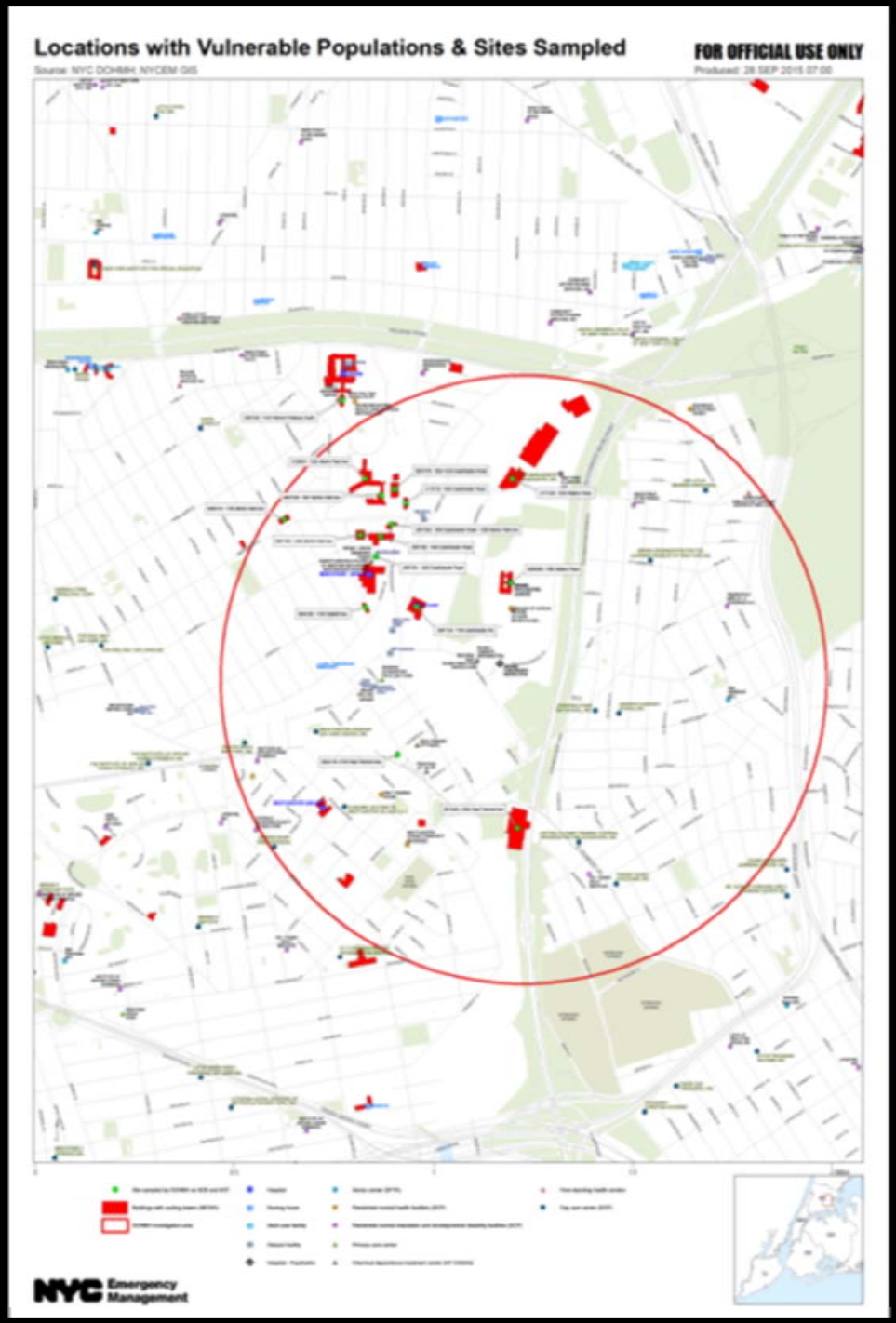
John Van Hoesen, Green Mountain College (vanhoesenj@greenmtn.edu)

A cumulative density map based on oil & gas well productivity within each of the major U.S. petroleum plays. The major refineries and pipelines - including the proposed Keystone-XL extension are also included.



Kristen Lovejoy, Buffalo Computer Graphics (klovejoy@bcgeng.com)

Buffalo Computer Graphics' (BCG) JavaScript GIS Common Operational Picture (COP) Viewer was created to be a lightweight, mobile friendly version of the original application, designed using Microsoft Silverlight. The application includes all of the core functions of the original and can be used across all devices using minimal bandwidth. The new application will improve the performance of the viewer and avoid future issues as Silverlight is phased out.



Jim McConnell, NYC Office of Emergency Management (jmcconnell@oem.nyc.gov)
Legionnaire's Disease outbreak – tracking vulnerable populations and sites sampled.

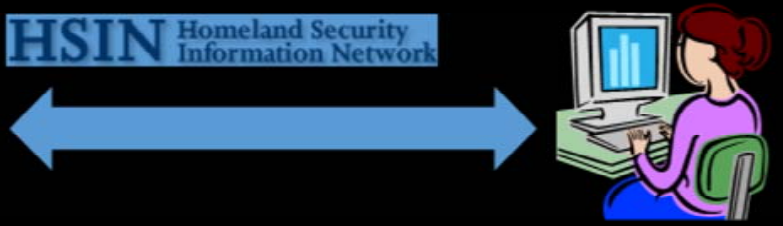
(Bakken) Rail Focus

A recent initiative in NJ has begun to systematically bring in EM and GIS users at the county level linking to GIS data provided by the state

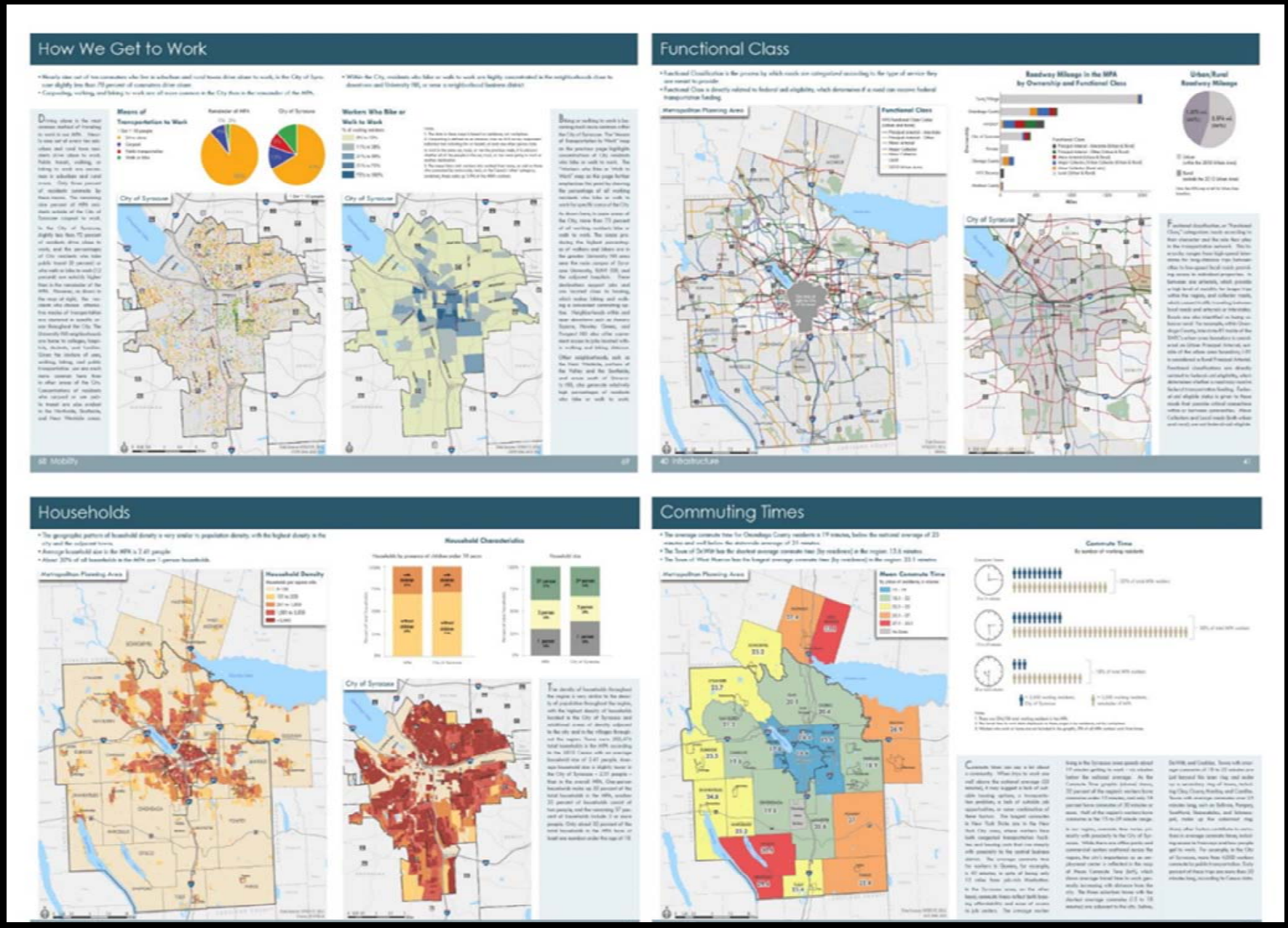
We are moving to a similar model in NY, except that we would like the counties on the rail lines to connect their servers to the state and to HSIN so we can overlay data as necessary.

County GIS Servers

State GIS Servers

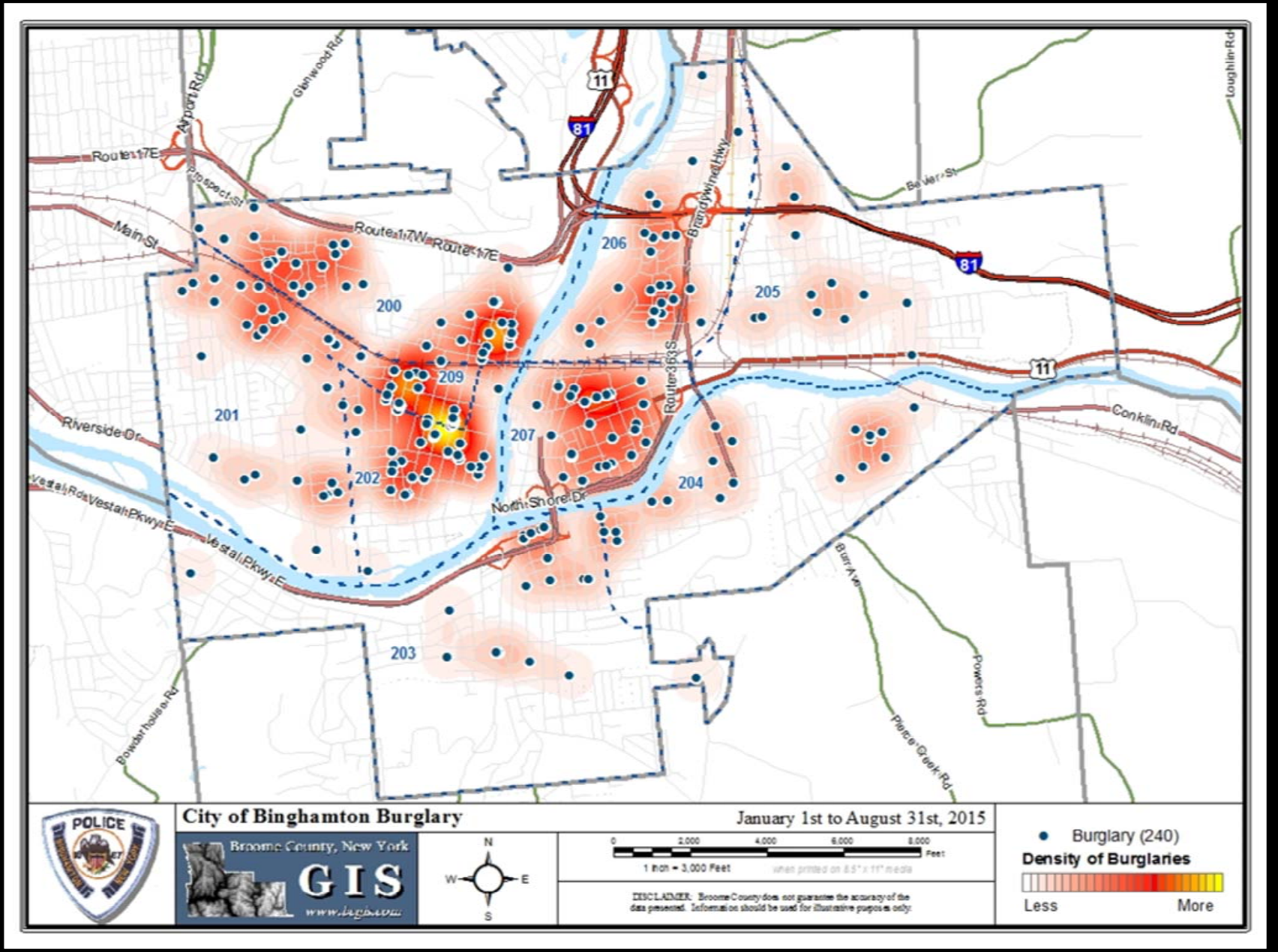


Alan Leidner, Booz Allen Hamilton (leidner_alan@bah.com)
Bakken Rail Focus. It represents the collective efforts of Tom Eldering (HSIN Regional Coordinator), Julia O'Brien (FEMA Region 2 GIS Coordinator) and myself (HIFLD Program). We have been working with the New York and New Jersey FEMA Region 2 GIS RISC Subcommittee.



Jason Deshaies, Syracuse Metropolitan Transportation Council (jasondeshaies@smtcmpo.org)

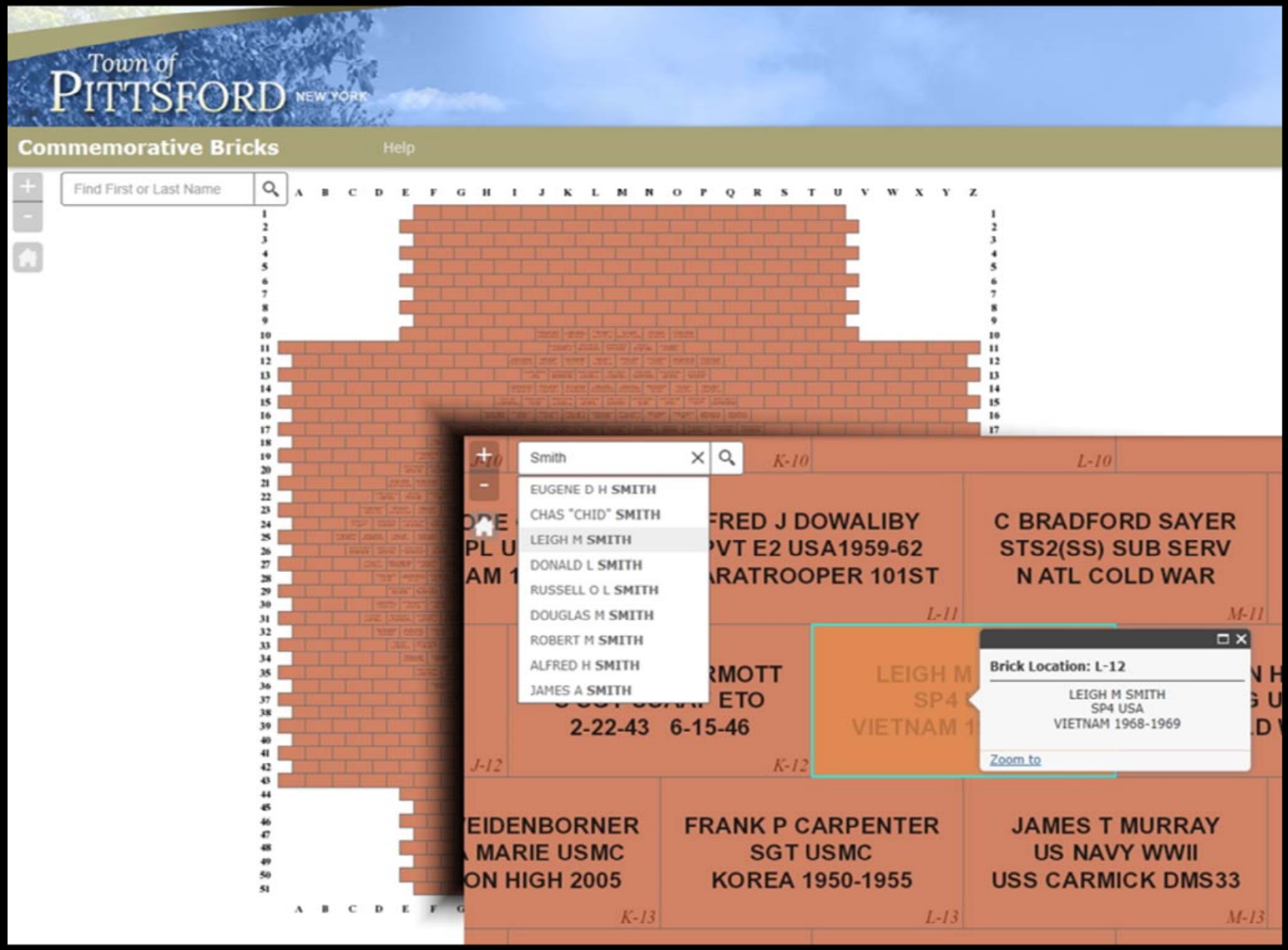
The SMTC has produced a Transportation Atlas. The Atlas covers a variety of topics related to transportation planning in our region, such as demographics, land use and environment, infrastructure, mobility, and safety. The Atlas is a useful reference document on its own as well as a companion to the new 2050 Long Range Transportation Plan.



Joe Gaynor, Broome County Department of Planning, GIS & Mapping Services (jgaynor10@gmail.com)
Crime map created for the City of Binghamton Police, for the period from January 1st to August 31st, 2015. Map graphics are also posted to their website and updated on a monthly basis.

Christina Croll, NYS Parks, Recreation & Historic Preservation (christina.croll@its.ny.gov)

We significantly changed our trail map template due to the Governor's office rebranding. While it was sad to replace the state park logo that we are used to and love, the rebrand gave us the opportunity to look at our map template with fresh eyes and I think that the new maps are outstanding. They are fresh and informative. I have gone through and replaced them on our website and am working my way through replacing them in the PDF maps app.



Michelle Debyah, Town of Pittsford (mdebyah@townofpittsford.org)
Web application where family and friends can search by name to find the location of Commemorative Bricks at the Town of Pittsford Veterans Monument.

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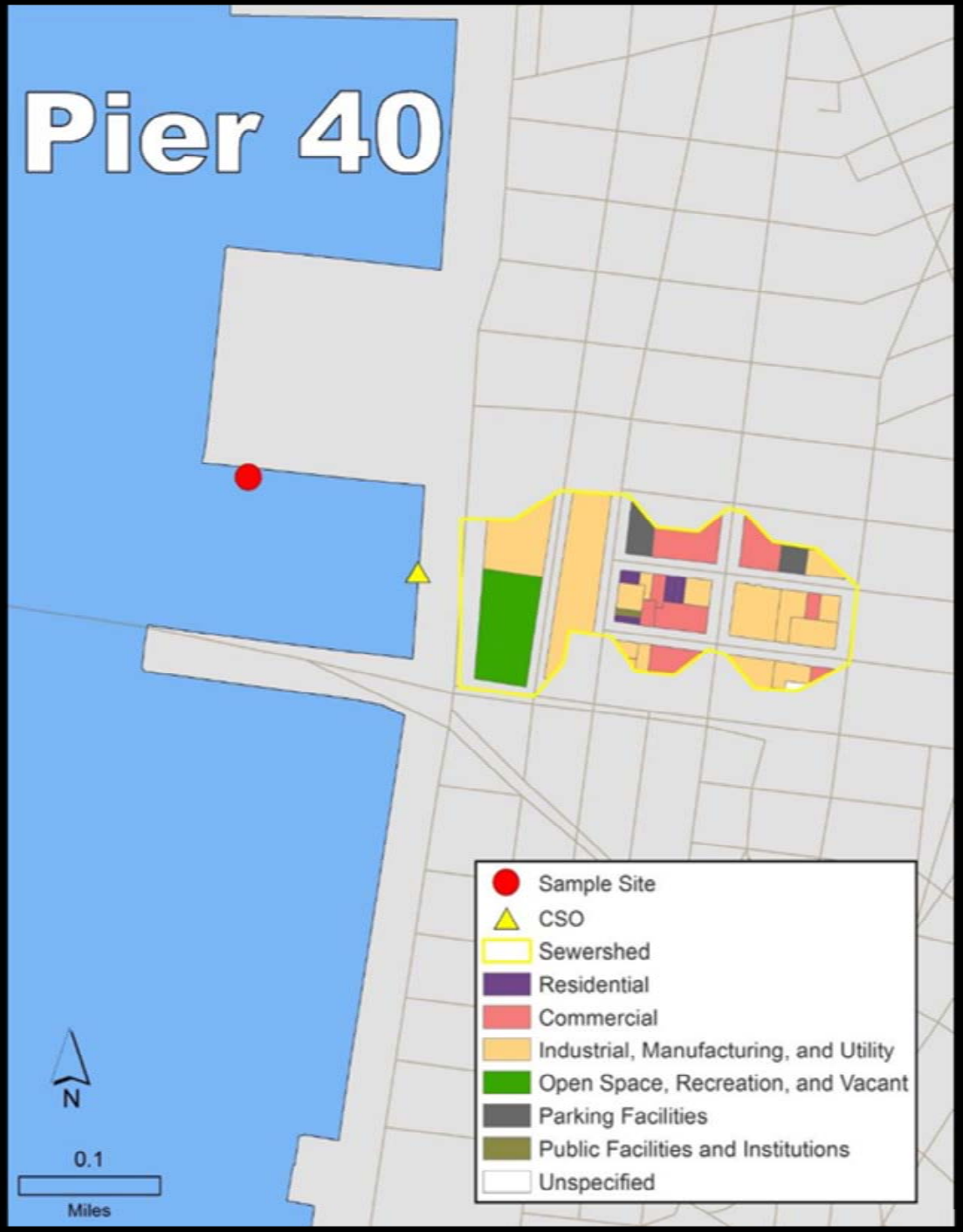
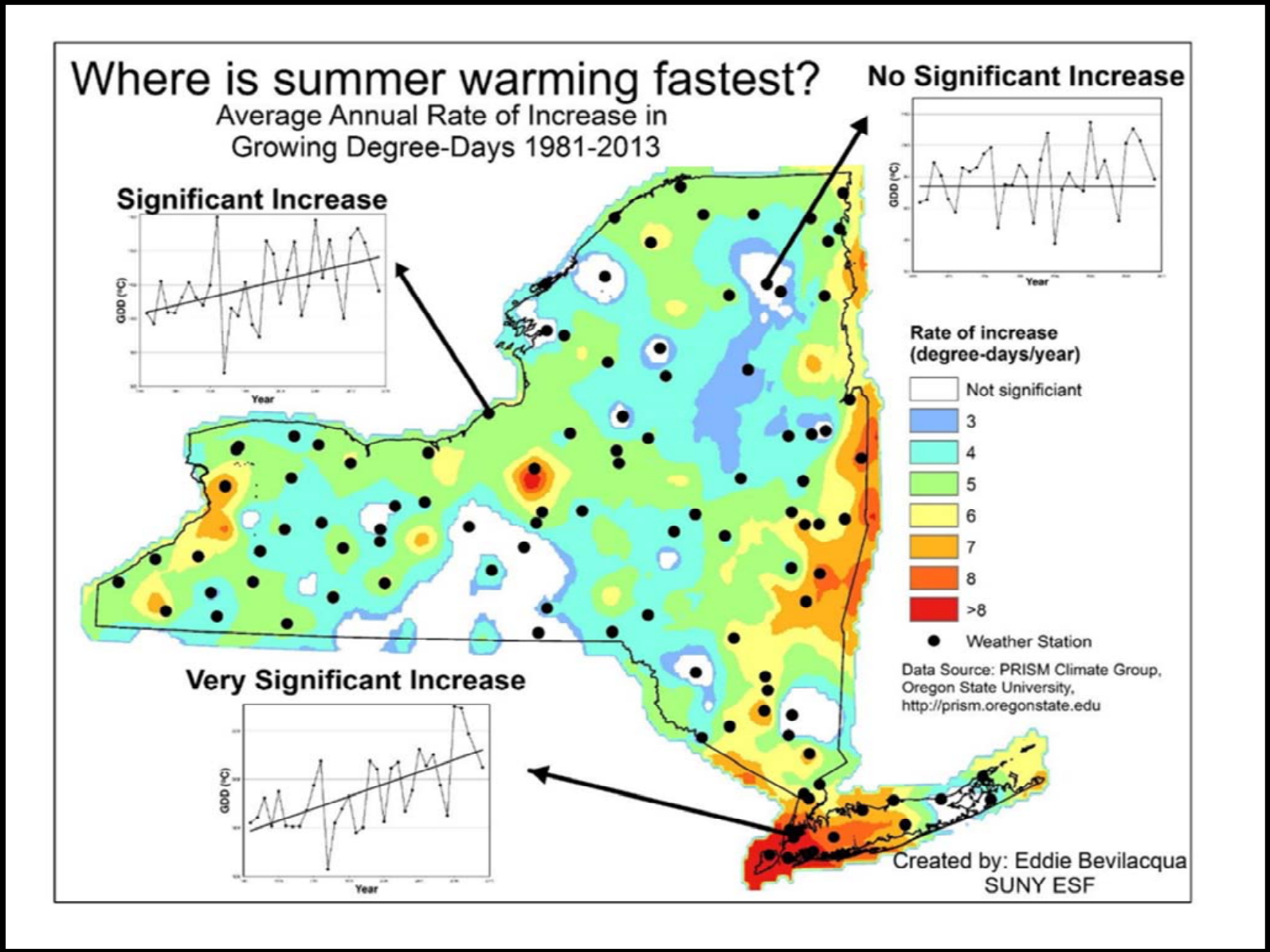


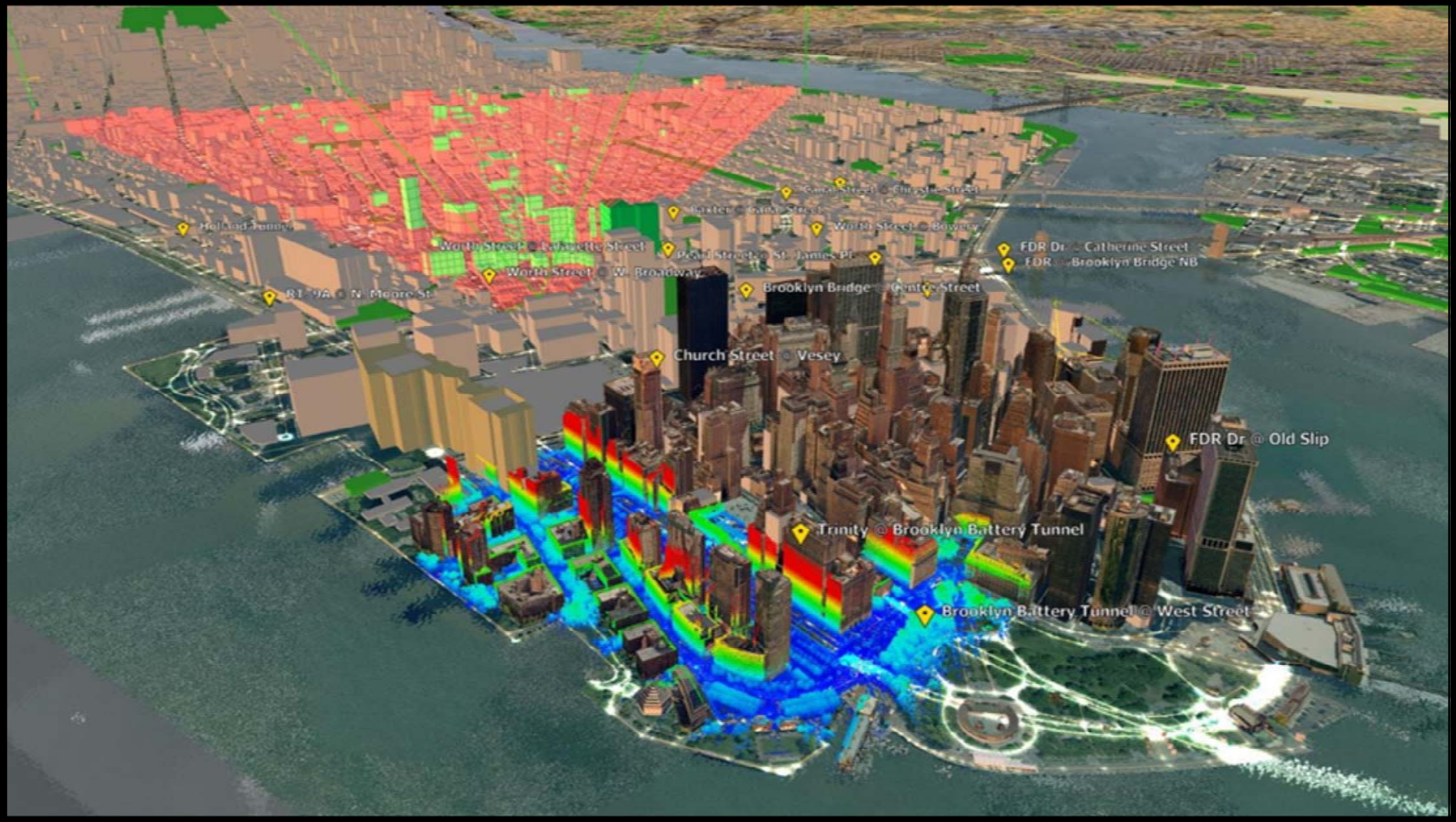
Jesse Miller, CUNY – LaGuardia Community College (jesse.miller@live.lagcc.cuny.edu)

I am currently involved in research looking at the effect of land use on combined sewage overflows and water contaminants in New York City waterways. This map shows data for one sample site, Pier 40 on the west side of Manhattan, along the Hudson River.

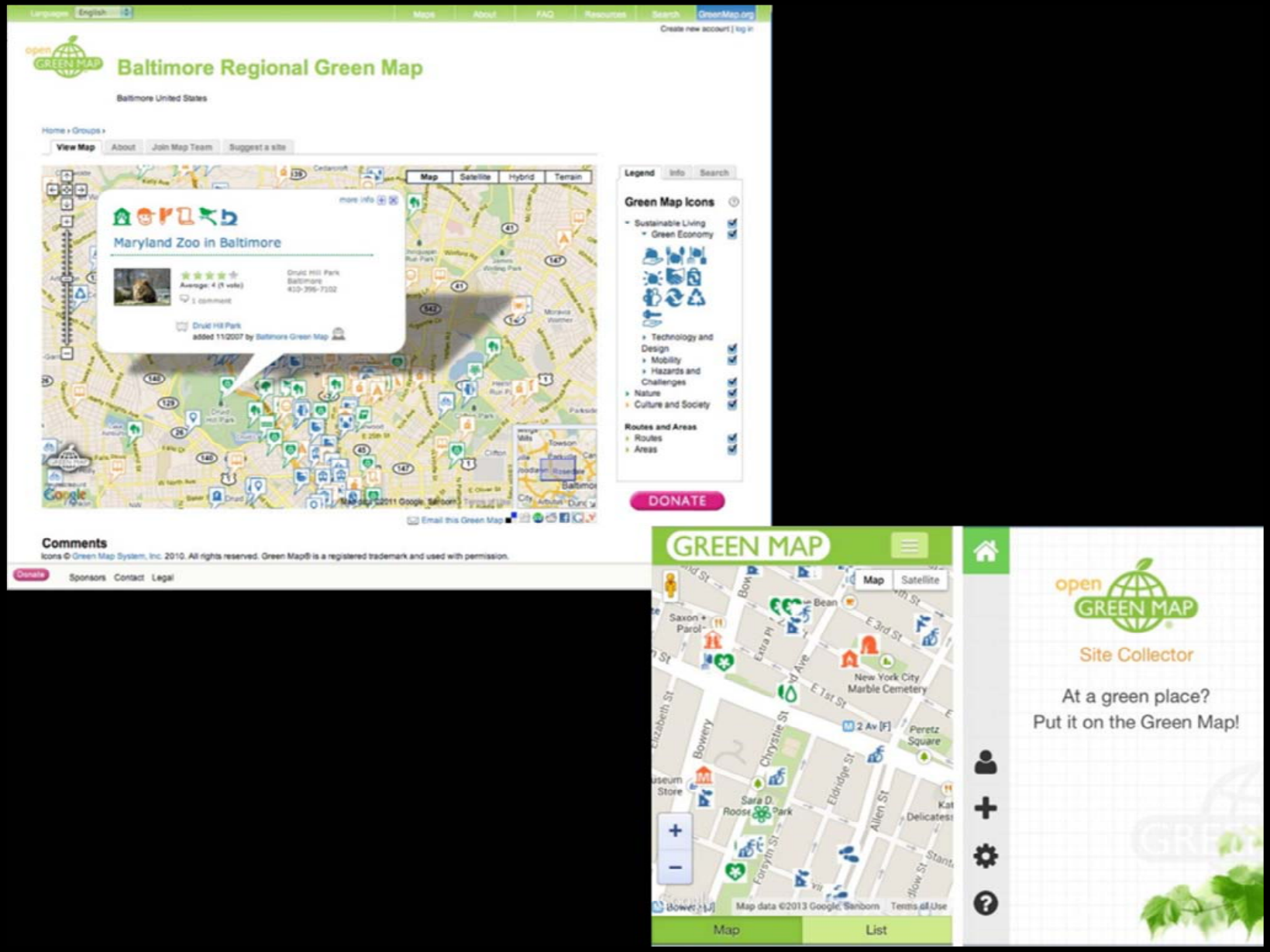


Eddie Bevilacqua, SUNY-ESF (ebevilacqua@esf.edu)

Part of research study on the potential impact of climate change (summer growing season temperatures) on tree growth across NY State. Step one in the process is to identify regions that show increases in growing degree-days (GDD) over the past 33 years using interpolated raster surfaces developed using Parameter-elevation Regressions on Independent Slopes Model (PRISM) and then developing regressions trends over time on individual pixel basis.

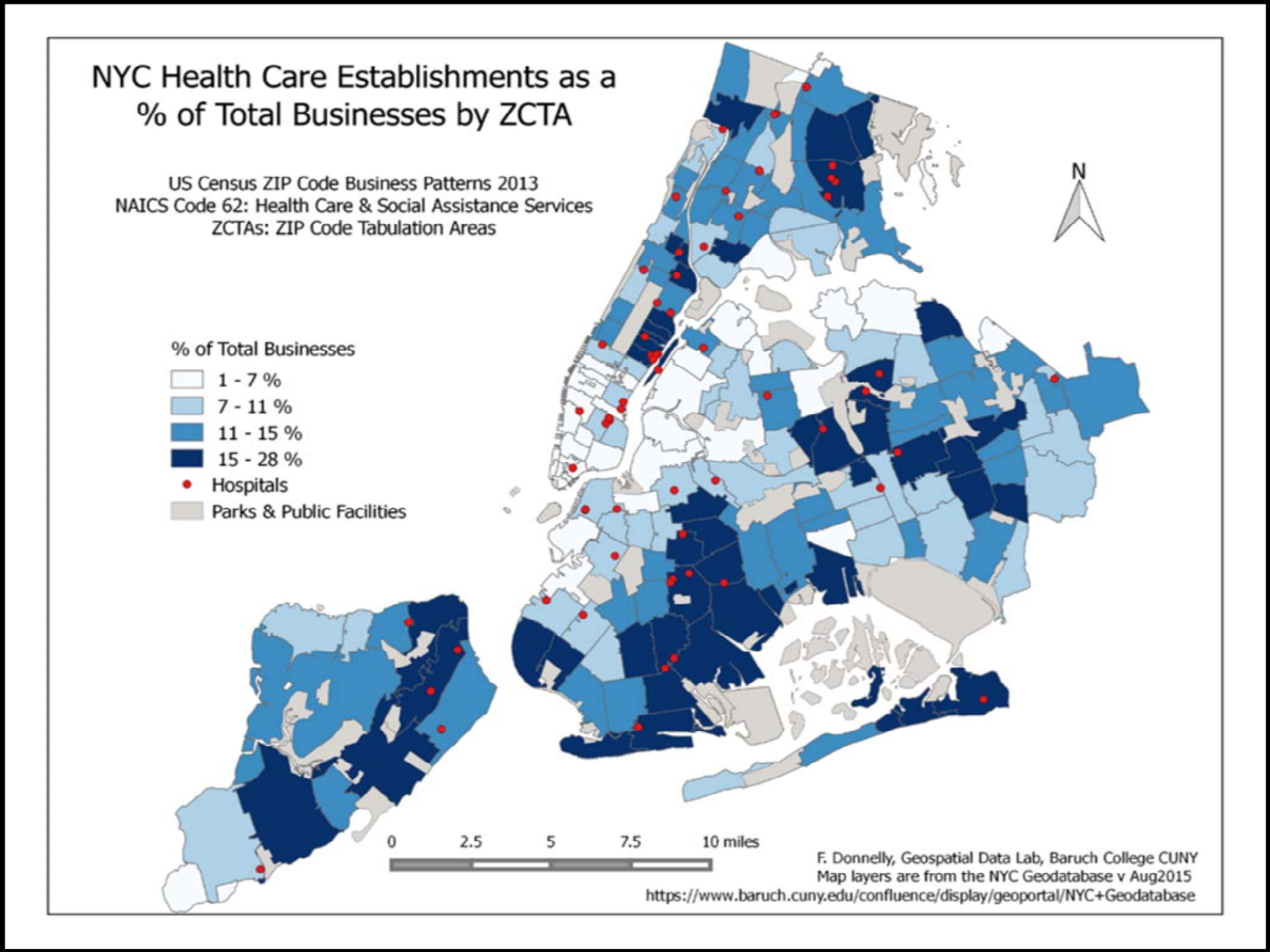


George Davis, Geoweb3d (gdavis@geoweb3d.com)
Here is an example of NYC Data Fusion Visualization using Geoweb3d.



Wendy Brawer, Open Green Map (web@greenmap.org)

Green Map System's social mapping platform has been utilized by local mapmakers in 40 countries to date. Drupal, the Google Map API and 170 Green Map Icons make it easy to chart local ecological, social, cultural and green living resources and take action toward sustainability - GreenMap.org



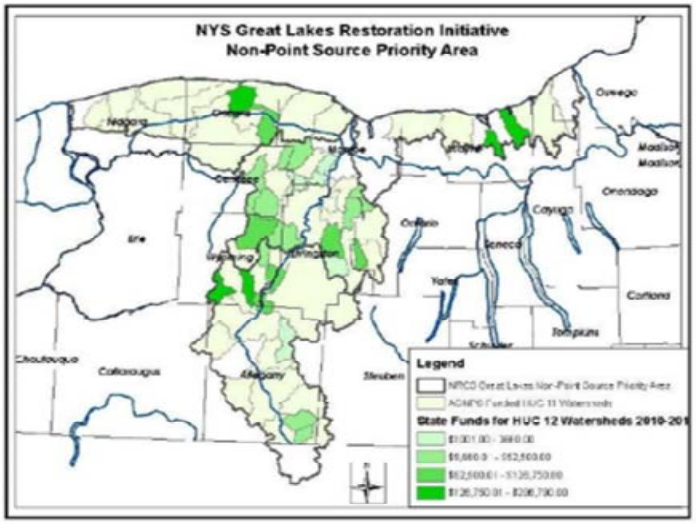
Frank Donnelly, CUNY – Baruch College (francis.donnelly@baruch.cuny.edu)

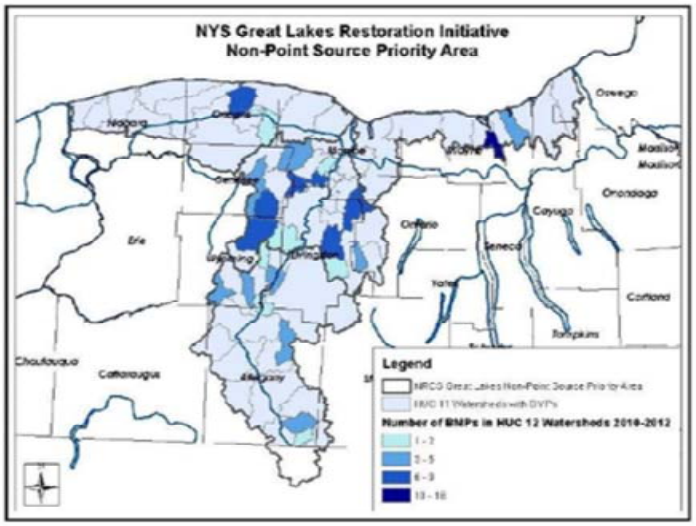
Visualize NYC neighborhood data with ease using the NYC Geodatabase, and create thematic maps like this one! The database is produced by the Newman Library's GIS Lab at Baruch College CUNY and comes in two flavors: a personal geodatabase for ArcGIS and Spatialite database for QGIS.

Michael Phillips, Columbia University (map2254@columbia.edu)

I wrote a python script to comb through NYC Pluto Data to produce 4 maps showing which residential buildings in New York City are built below Floor Area Ratio (FAR) for that specific year. In 1930, the max FAR was 4.9, 1959 the FAR was 7.5, 1960 FAR was 11.25 and 1961, the FAR was 12.

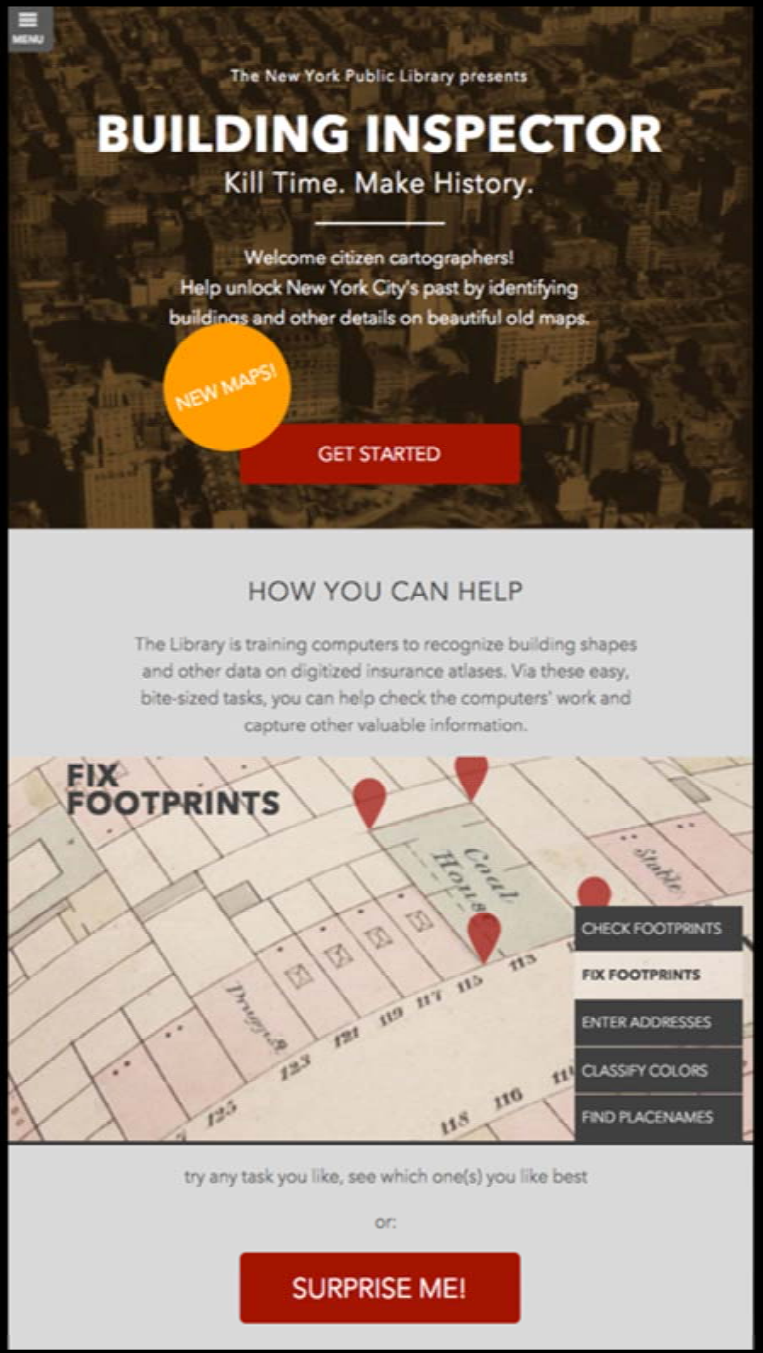
GREAT LAKES RESTORATION INITIATIVE – NON POINT SOURCE POLLUTION



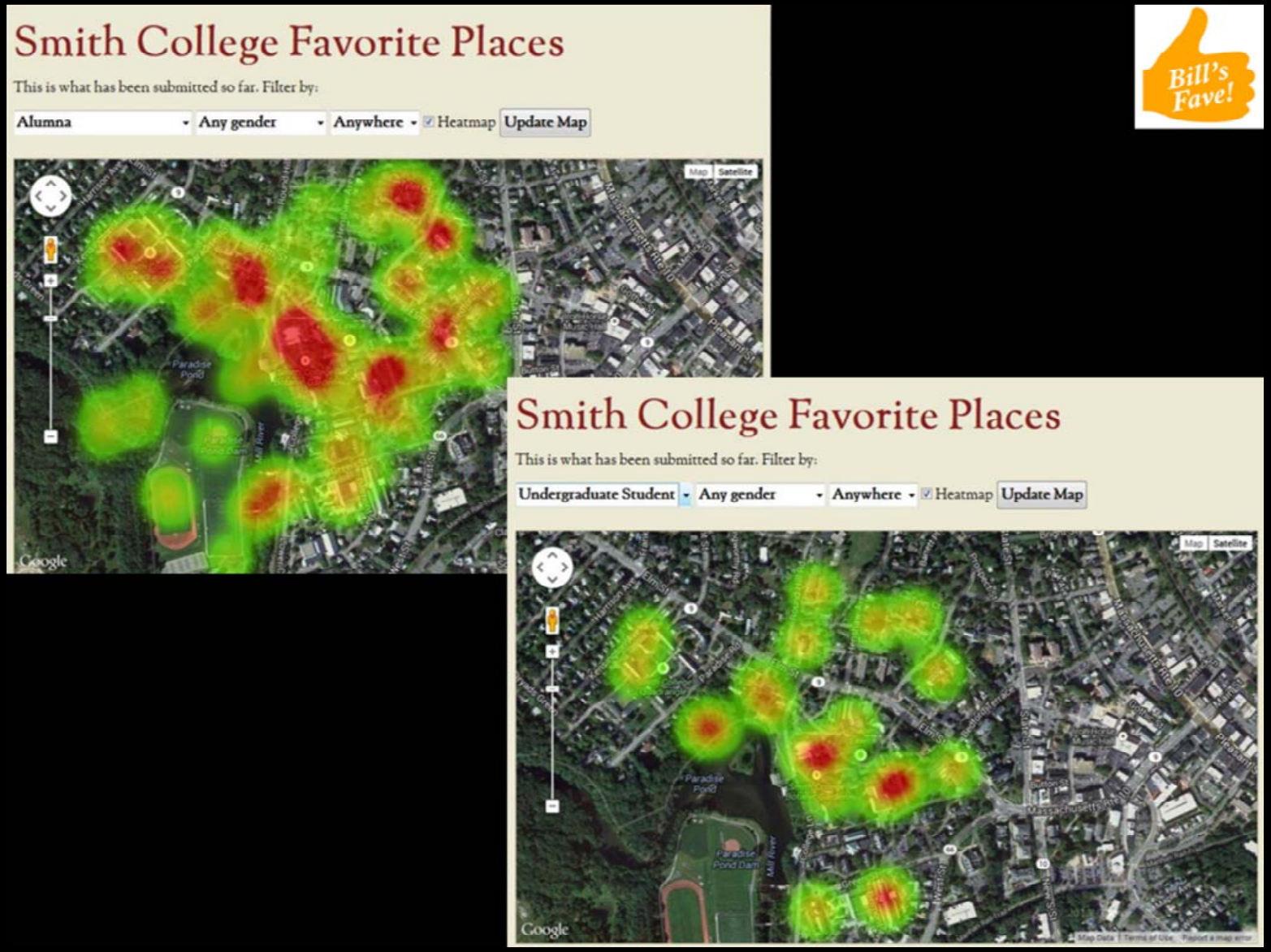


BMP – Great Lakes NPS
Access Road Improvement
Alternative Water Supply
Barnyard Water Management
Composting - Animal
Composting
Conservation Tillage
Contour Farming
Cover and Green Manure Crop
Covered Structures
Critical Area Protection
Diversions
Erosion Control - Structural
Fencing
Filter Strips
Grass Waterway
Heavy Use Area Protection
Livestock Exclusion
Manure Storage System
Manure Transfer
Nutrient Management – Cultural
Pasture Management
Pesticide Management
Pesticide Mixing/Loading/Storage
Prescribed Rotational Grazing
Process Waste Water Management
Riparian Buffer
Riparian Forest Buffer
Silage Leachate Control
Silage Leachate Control and Treatment
Streambank and Shoreline Protection
Stripcropping
Terraces
Waste Storage and Transfer

Lauren Lyons-Swift, NYS Department of Agriculture and Markets (lauren.lyons-swift@agriculture.ny.gov)
Maps for the USDA NRCS of the HUC 11 and 12s in the Lake Ontario Drainage where NYS Dept. of Ag and Markets Soil and Water Conservation Committee has funded Best management Practices (BMPs) for Agricultural non-point source pollution projects. The two maps show number of BMPs and funding amounts.

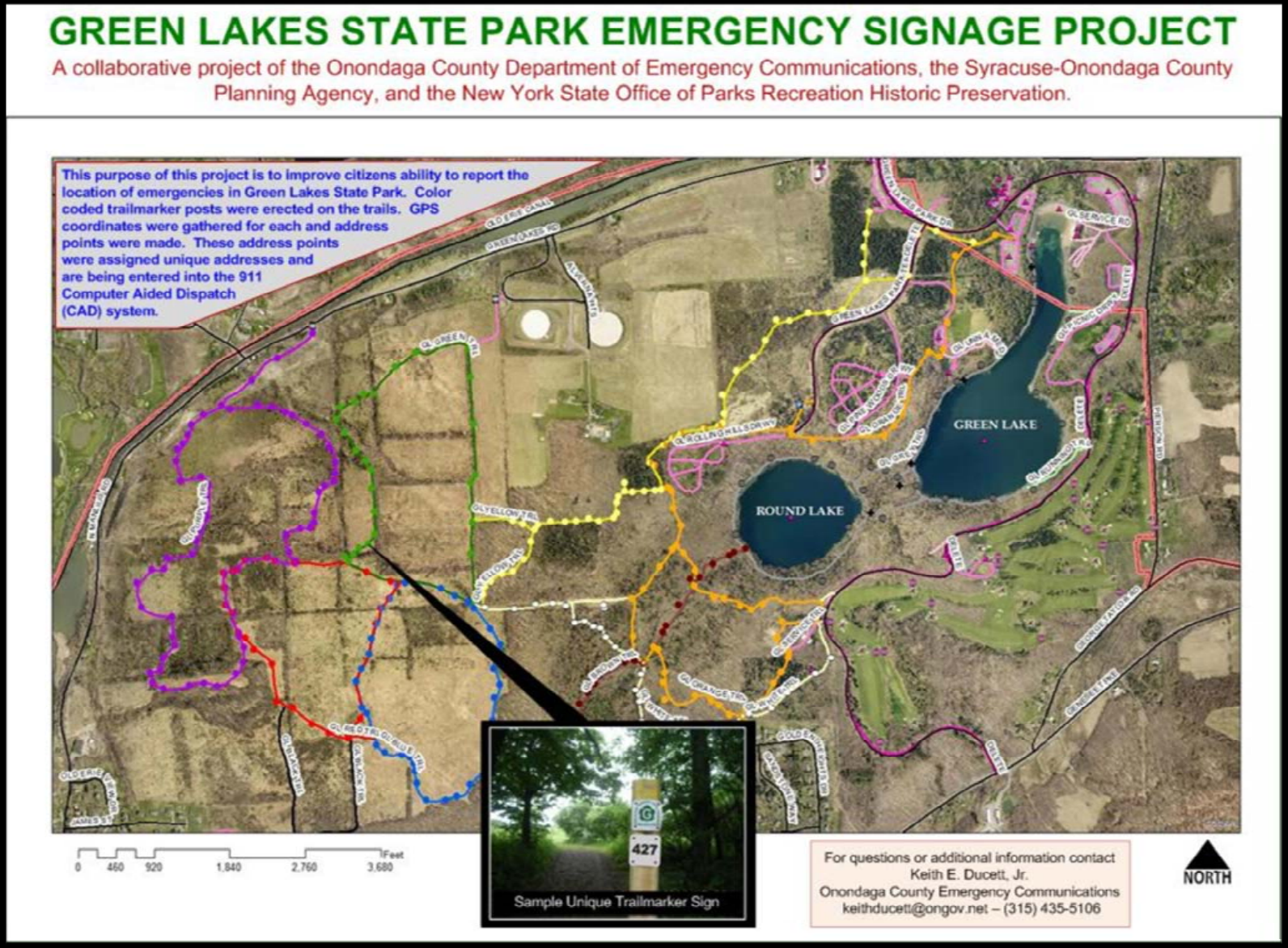


Matt Knutzen, NY Public Library (mattknutzen@nypl.org)
With a new Toponym naming feature, the Building Inspector app is the latest in a series of public-facing tools designed by The New York Public Library Labs to extract, correct and analyze data from historical maps. We're training computers to do the heavy lifting (via computer vision algorithms), and then distributing the remaining quality control tasks to smart, conscientious citizens like you.



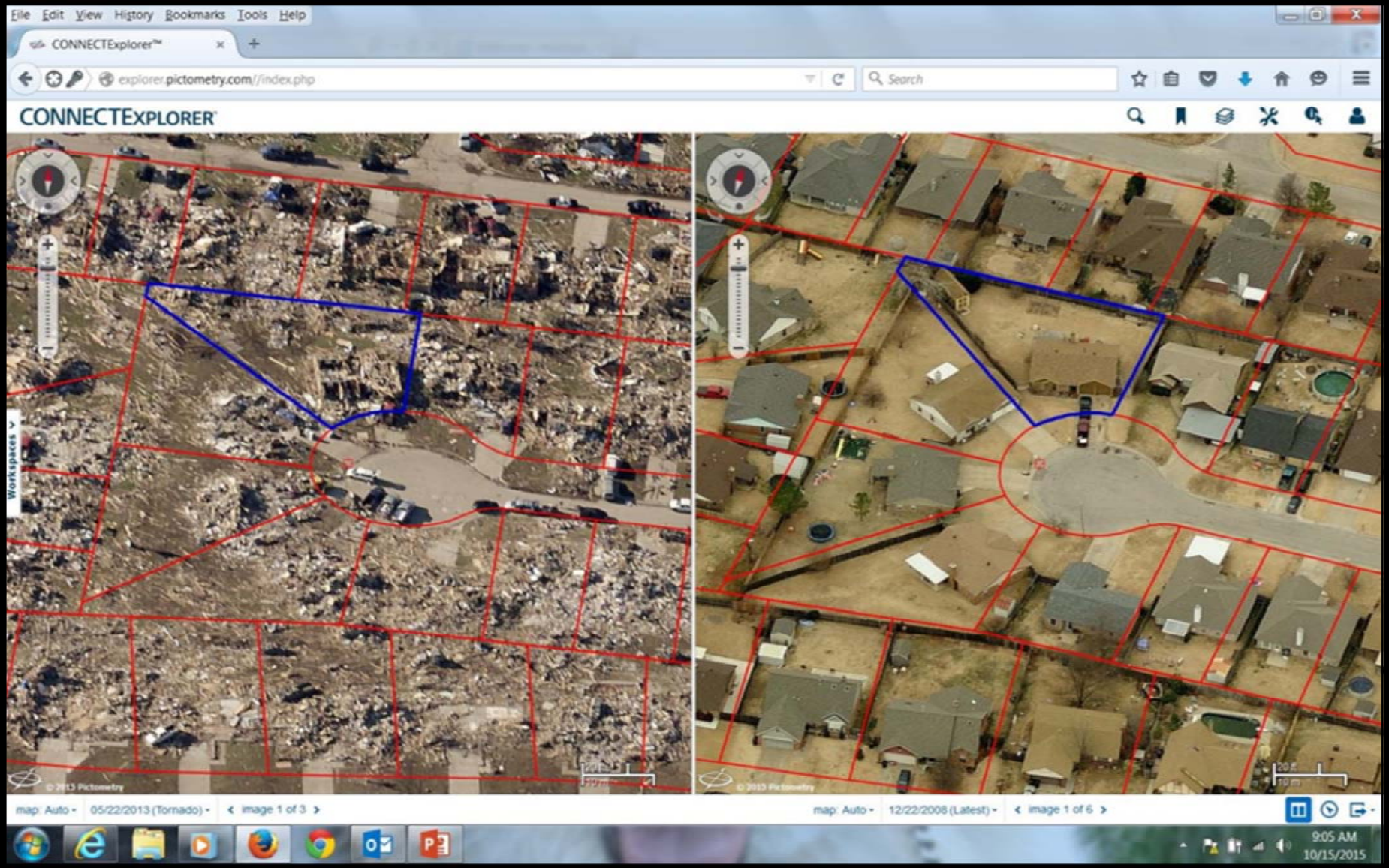
Jon Caris, Smith College (jcaris@smith.edu)

Images from our Favorite Places web application. Favorite Alumna places in the upper left. Favorite Undergraduate Student places in lower right. Our intention is to explore how Smith Campus Space transforms to Place. As these spaces become invested with memory and saturated with our experience, they become special and transform to what we think of as Place.



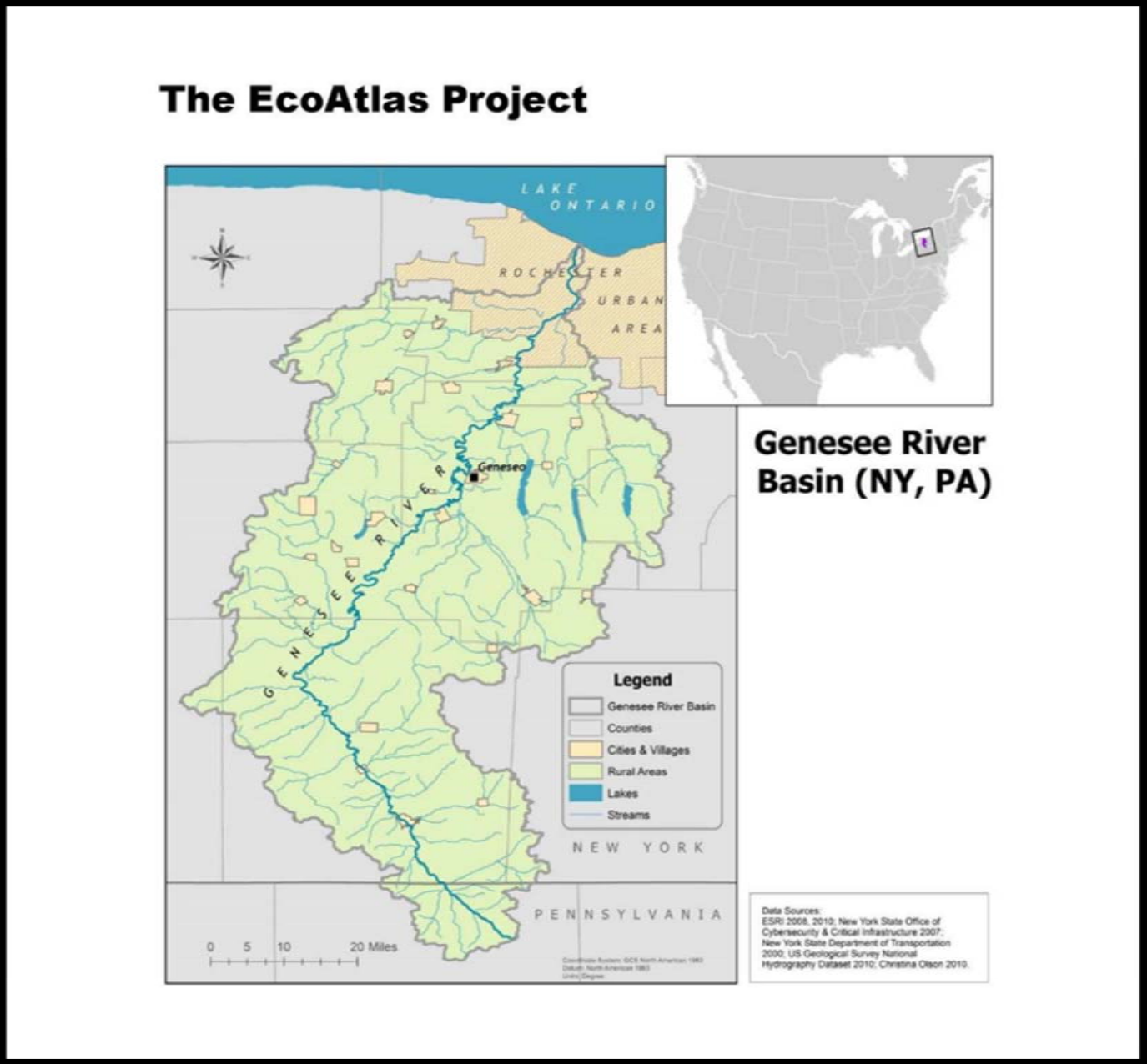
Keith E. Ducett, Jr., Onondaga County Department of Emergency Communications (keithducett@ongov.net)

The purpose of this project is to improve a citizens ability to report the location of emergencies in Green Lakes State Park. For it, color coded trailmarker posts were erected on the trails and GPS coordinates were gathered for each post. From these coordinates, address points were made and assigned unique addresses. They will be utilized in the 911 Computer Aided Dispatch (CAD) system to make entry of incidents in the park easier, as well as making it easier for first responders to find these emergencies.



Andrew Mendola, Pictometry (andrew.mendola@pictometry.com)

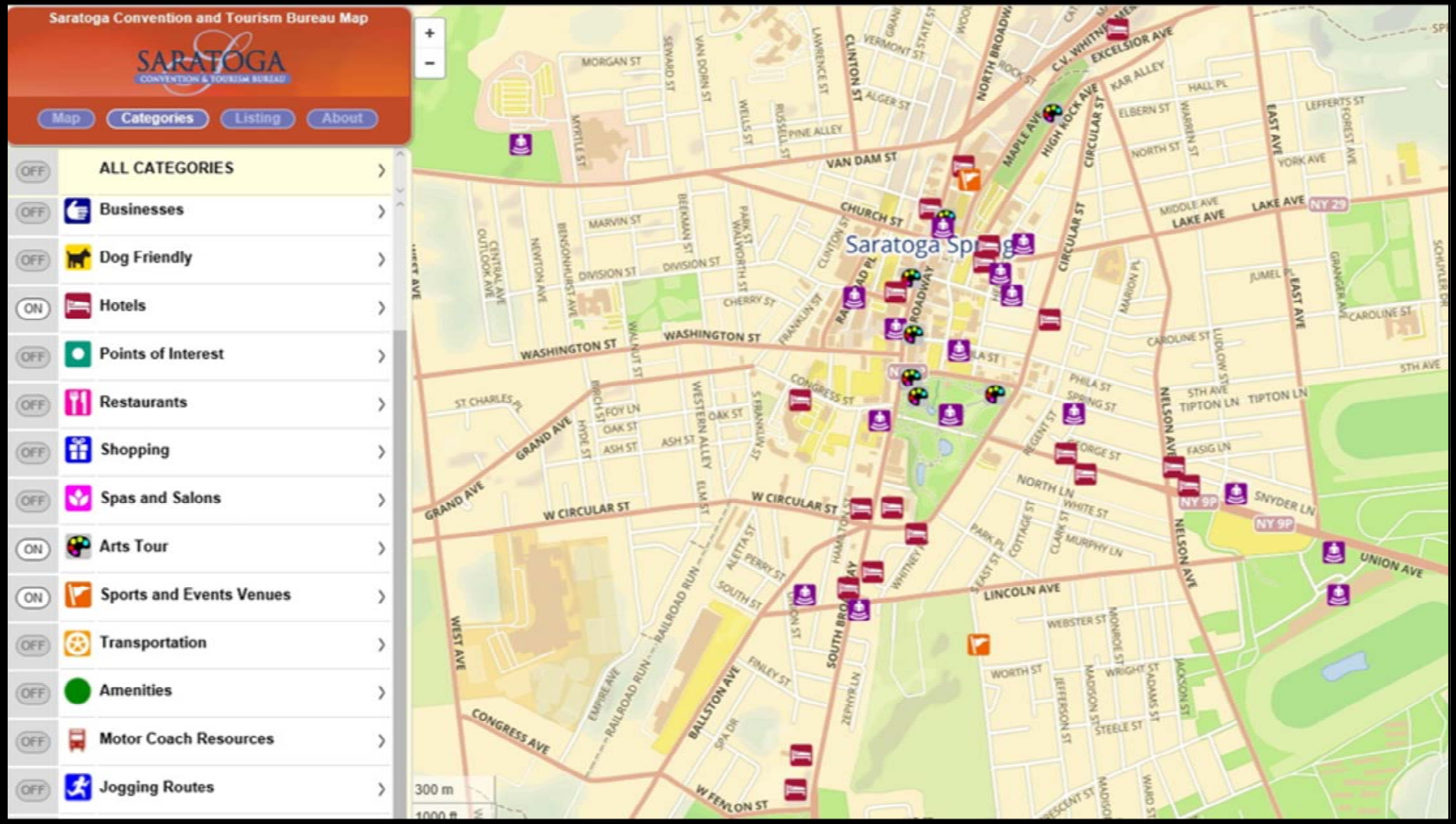
Pictometry's new Connect Explorer will allow users to easily view multiple image dates while incorporating their GIS data. This new application has many enhanced featured that GIS users have been asking for.



Colleen Garrity, SUNY-Geneseo (garrity@geneseo.edu)

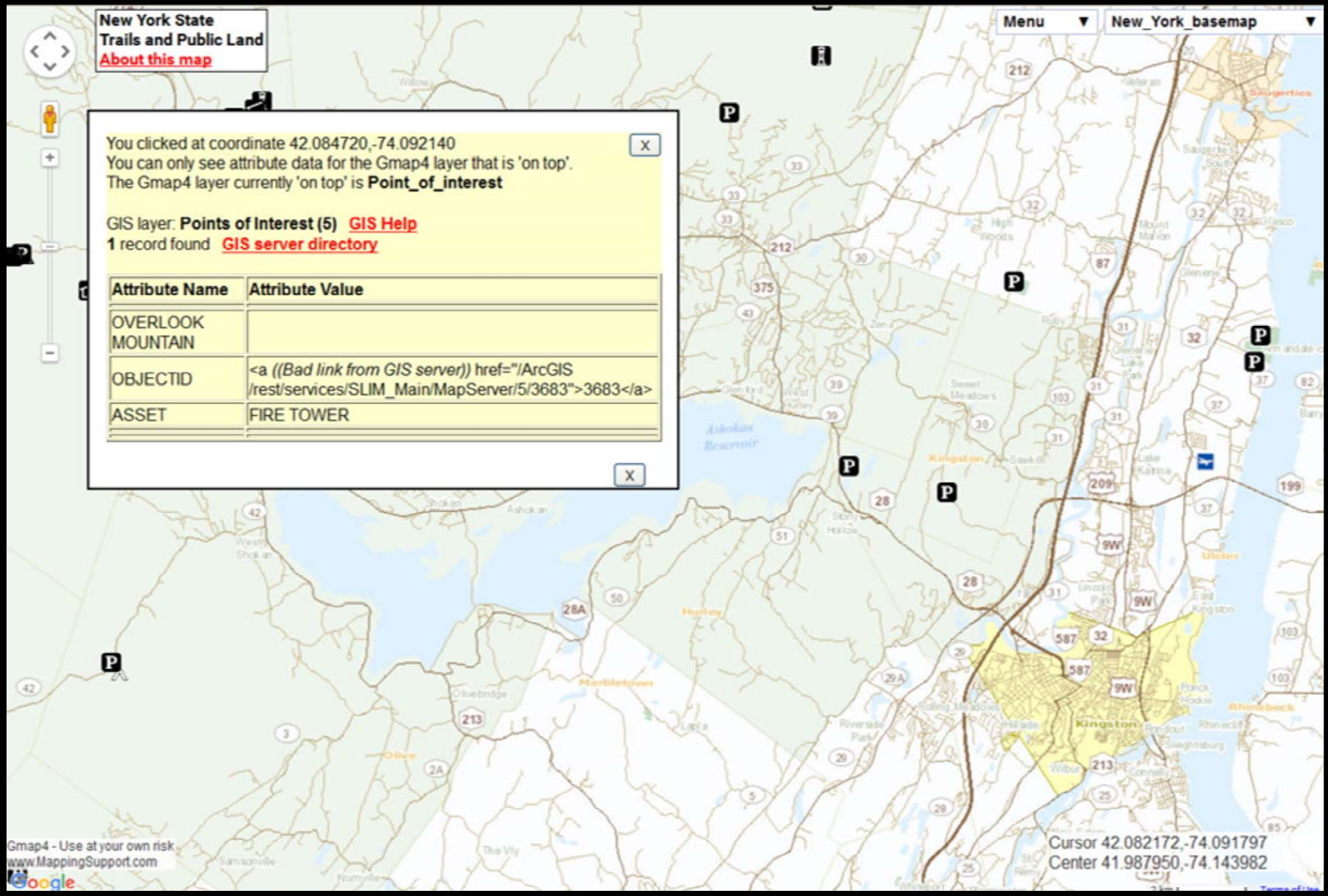
sample of an ongoing project at SUNY Geneseo called the EcoAtlas Project, which I work on with a colleague, Kristi Hannam, from the Biology Department here.

The Genesee River EcoAtlas Project provide a unique online map-based source of scientific information centered on a watershed, rather than more traditional political boundaries, providing an educational resource for the Geneseo community about critical local issues of sustainability. This research and educational site will address two important and overlapping goals: education for sustainability and high-impact educational practices.

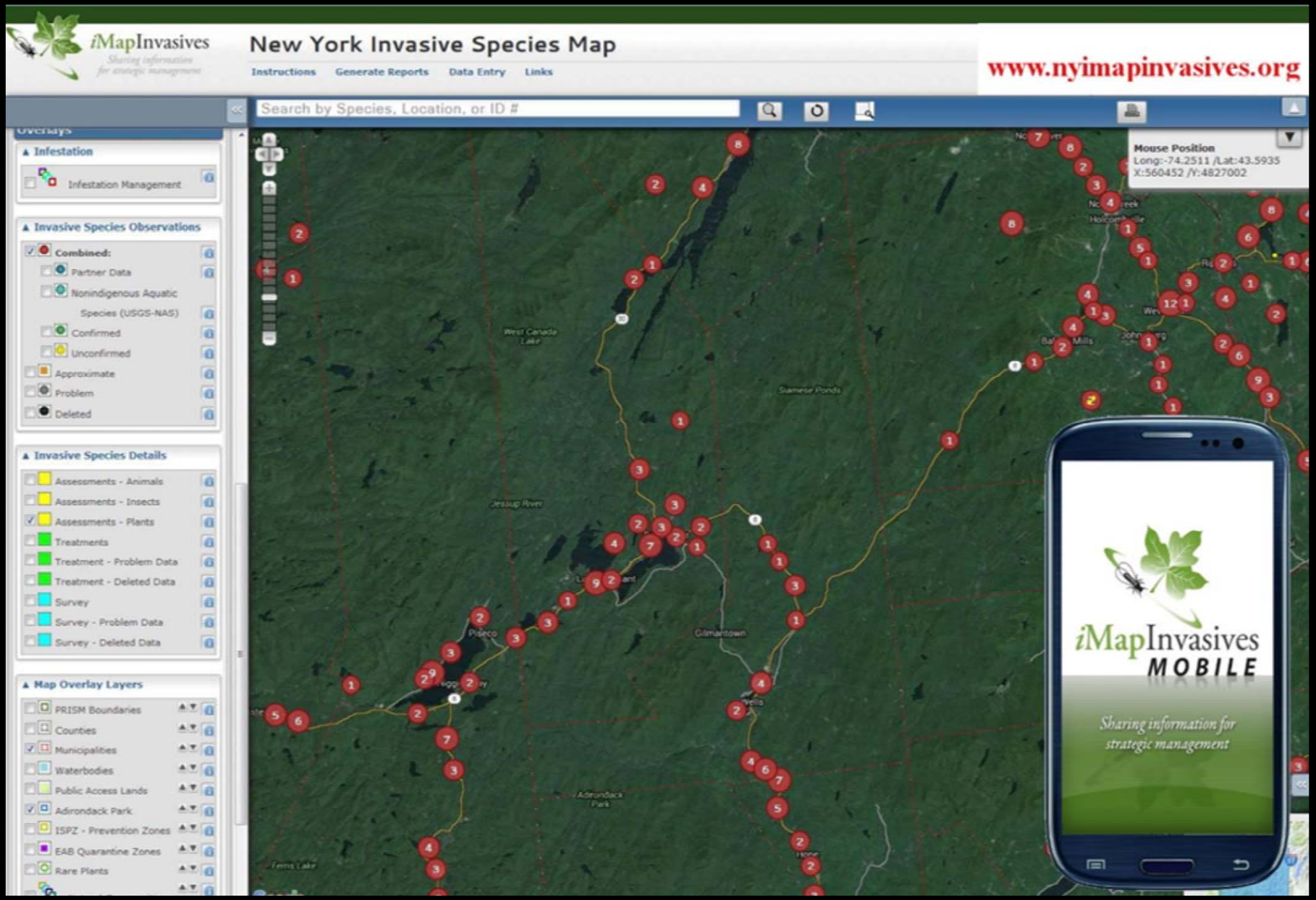


Paul Hein, Jimapco (phein@jimapco.com)

JIMAPCO's Saratoga Convention and Tourism Bureau Map enables visitors to the region gain a perspective on local resources, activities, and opportunities. This responsive web app works on all devices and can be updated in real-time by authorized users. The ability to link locations to descriptions, photos, and videos makes it the perfect resource for exploring the region.



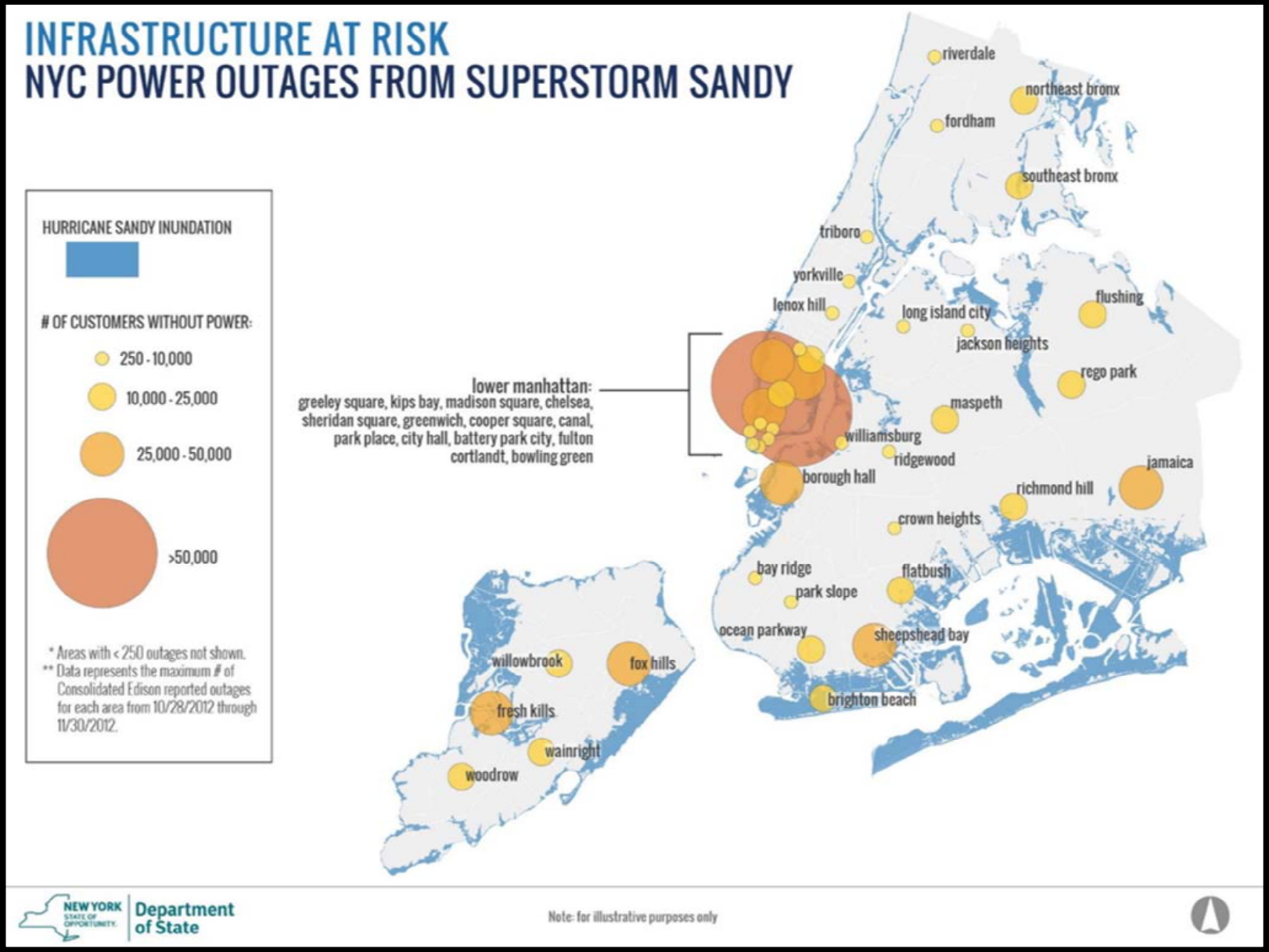
Joseph Elfelt, Mappingsupport.com (jelfelt@mappingsupport.com)
Gmap4 is an enhanced Google map viewer that can display any user-specified ArcGIS MapServer layers plus all attribute data.
For New York examples and more info see http://www.propertylinemaps.com/p/public_land_map/state/NY/_new_york_layers_off.html



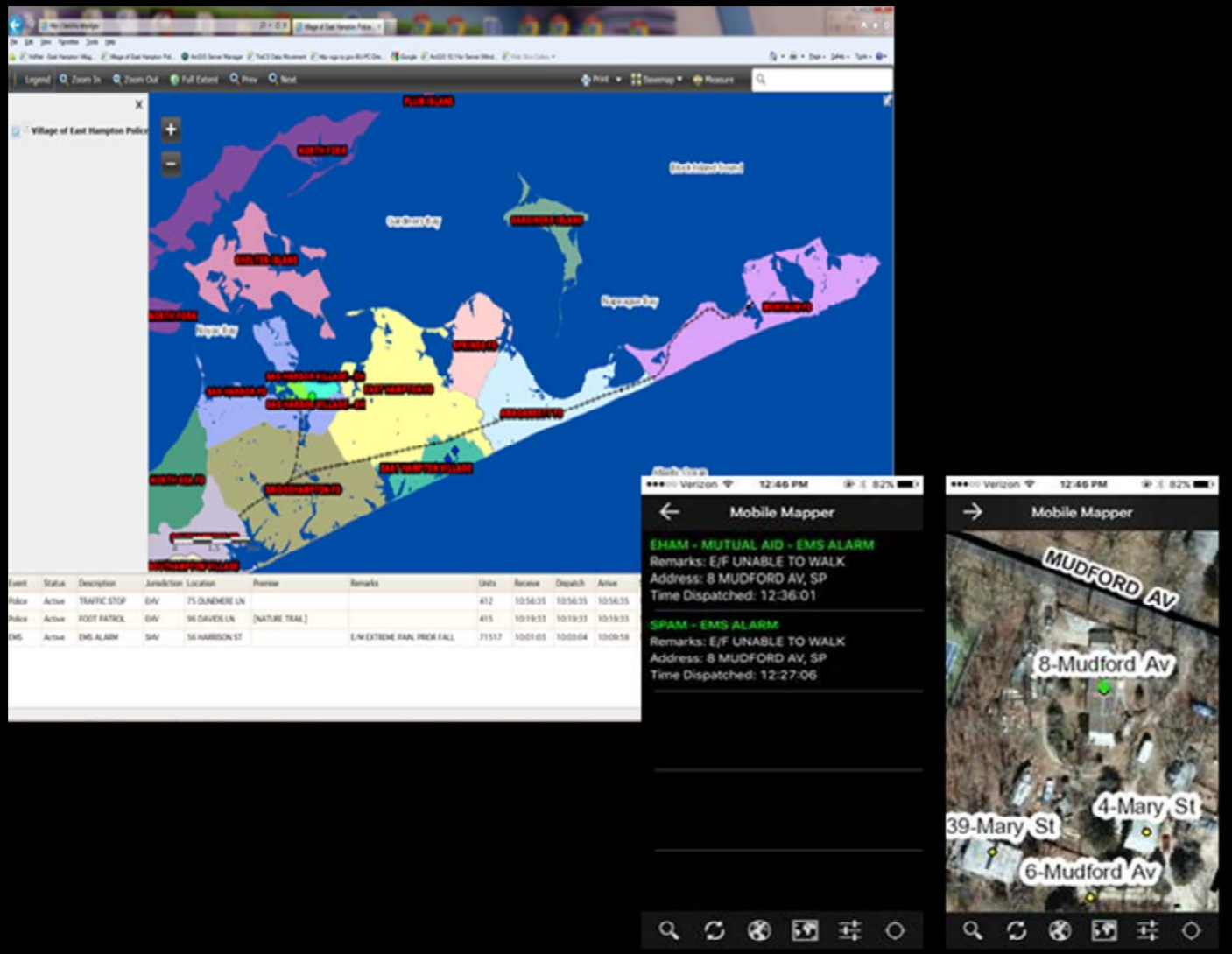
Brent Kinal, NYS DEC Natural Heritage Program (brent.kinal@dec.ny.gov)

In 2015 iMapInvasives celebrated 5 years of serving New York State's invasive species database needs. To complement the online database and website, iMapInvasives now has a citizen scientist mobile app, and an Android field data collection tool for natural resource managers.

Sharon Heller, Tompkins County Planning Department (sheller@tompkins-co.org)
Update of Land Use and Land Cover Inventory using Pictometry imagery from the Spring of 2015. This is based on LUNR 1969 (Land Use and Natural Resource Inventory). Previous versions are 1995, 2007 and 2012.

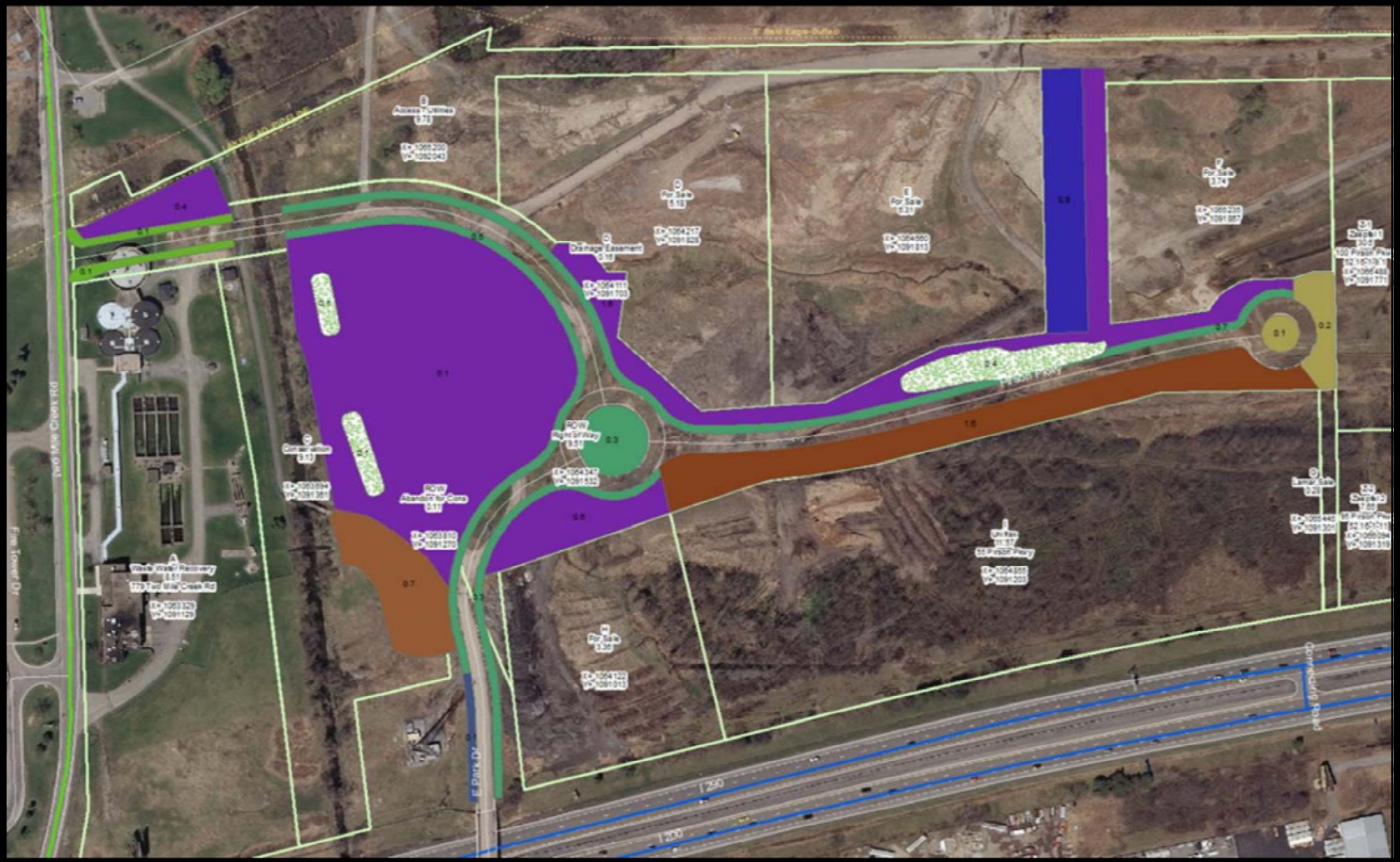


Newell, Rebecca, NYS Dept of State (rebecca.newell@dos.ny.gov)
The Department of State is working with State and local partners on climate change and resilience planning. GIS is a critical component of identifying risk and informing comprehensive plans (e.g. location of infrastructure systems with regard to flooding, as shown in the attached image, is one example of how GIS can be used to inform the planning process).

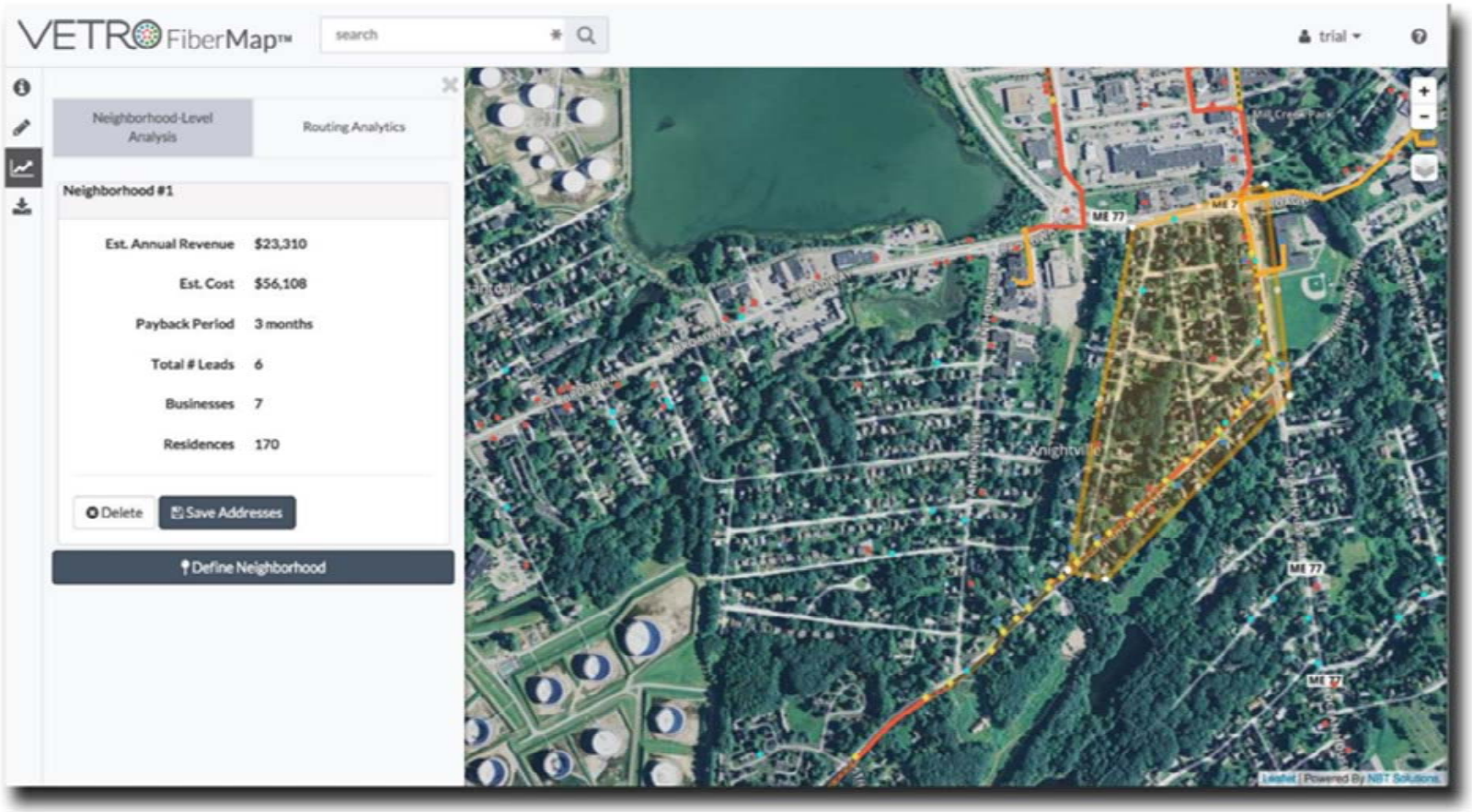


Rich Annitto, Bowne Management Systems (rannitto@bownegroup.com)

For the East Hampton Village Police Department's dispatch operations center, Bowne Management Systems developed a custom, emergency incident mapping application, integrating 911 call data from the department's existing dispatch program, Larimore. Based on the success of the CAD viewer, the Police requested that Bowne design and build a mobile mapping component for field use by First Responders. The system was developed for both Android and iOS and consumes the same service that is used by the CAD viewer. The Mobile Mapper has components for secure registration of users, notifications of incidents (using both Apple Notification and Google Notification), routing via Google Maps for mutual aid, and both a text display and a map display. The Mobile Mapper is also integrated with ArcGIS Online for additional base maps that are not hosted by the premise based ArcGIS for Server.

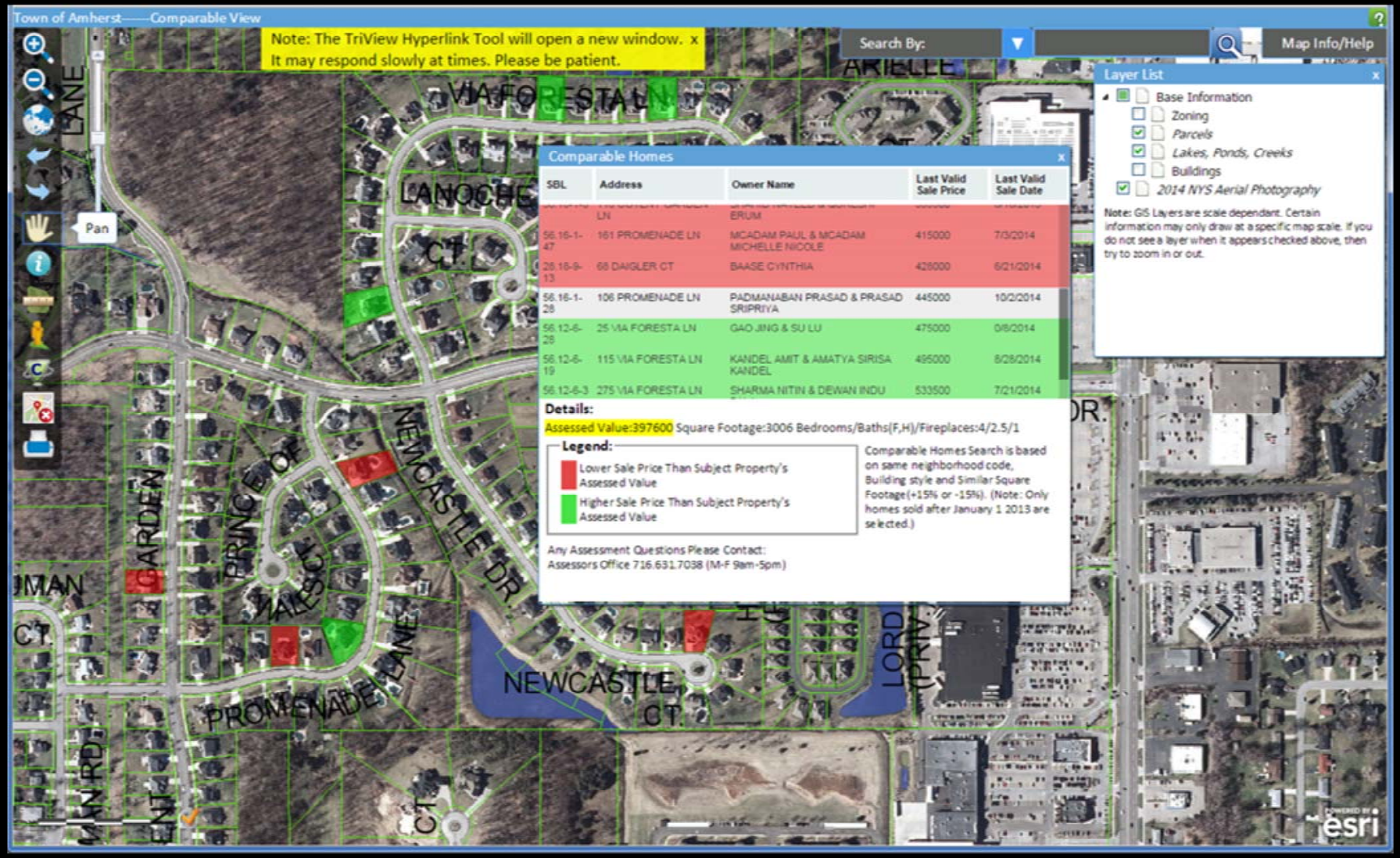


James B. Jones, Town Engineer, Town of Tonawanda (jjones@tonawanda.ny.us)
Here is a screen shot of a mowing plan I am working on for a new light industrial subdivision we are developing. We have three parcels sold so far but need to assign lawn/meadow mowing duties to varies entities based on abutting property ownership.



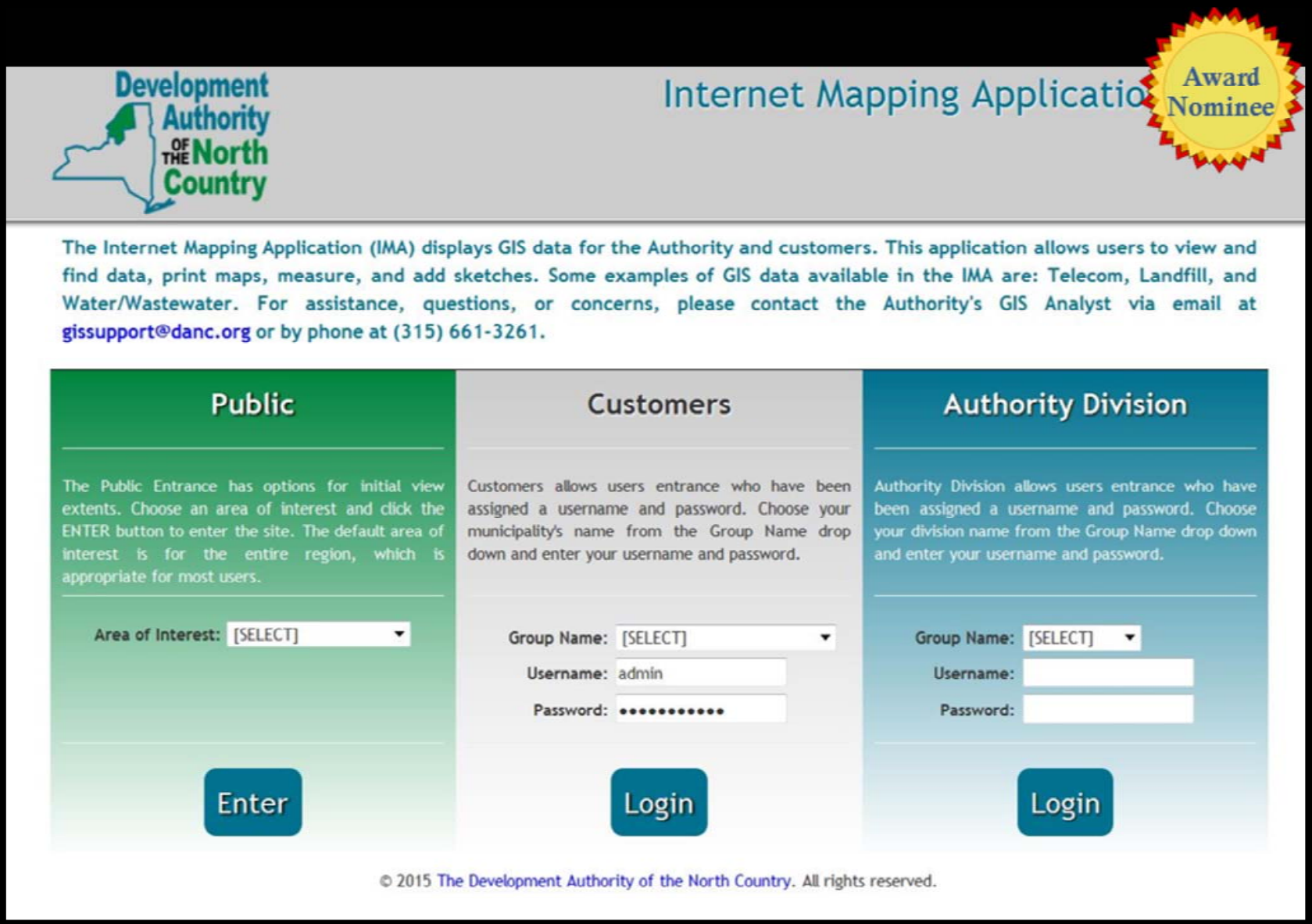
Sean Myers, NBT Solutions (sean.myers@nbtsolutions.com)

NBT Solutions in Buffalo, NY is building a fiber planning and management tool to help broadband providers expand services into areas where no high speed broadband is available or where only one service provider is available. The application is build on an open source platform and is sold on a monthly subscription basis.



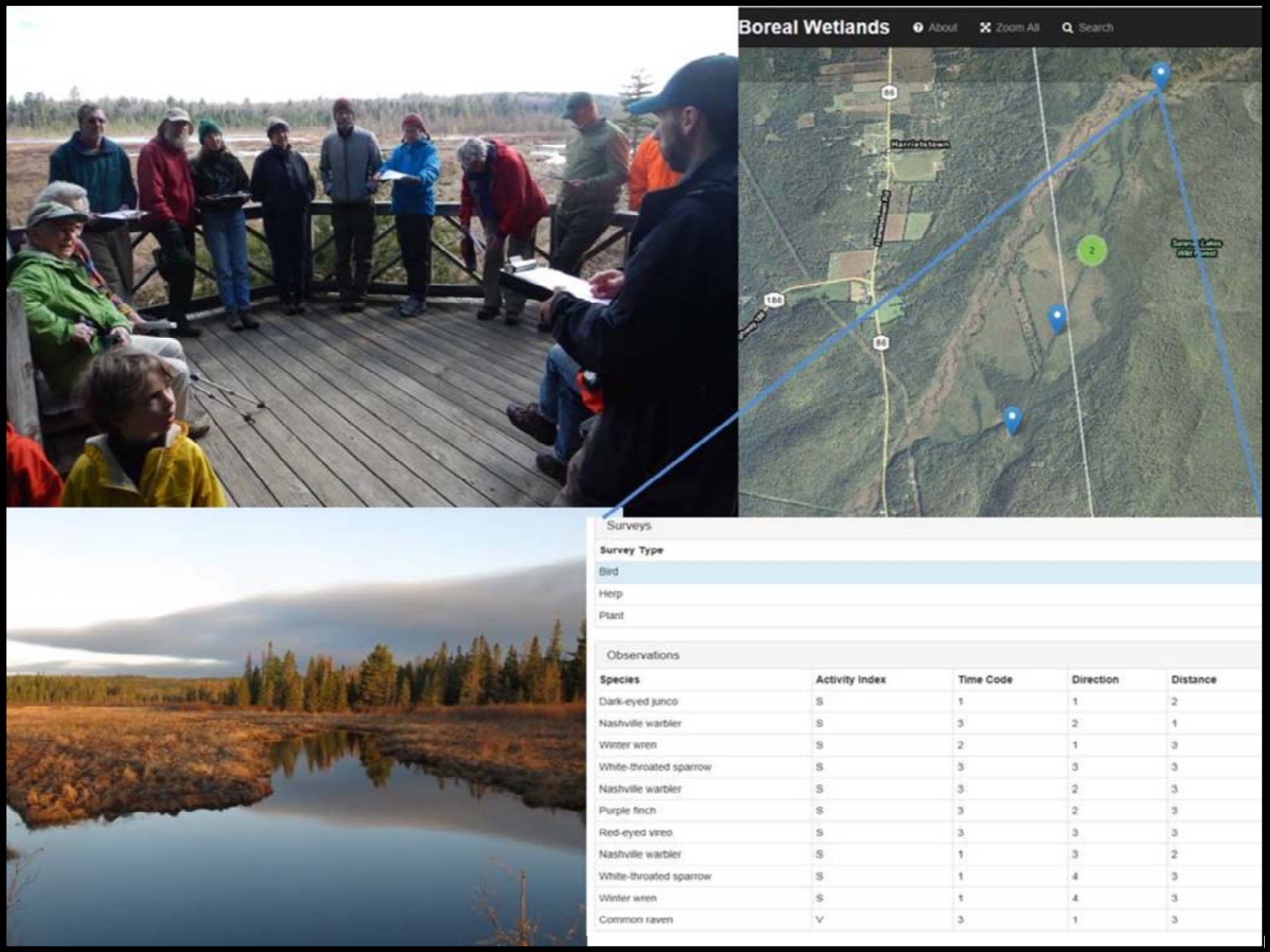
Brian Barnes, Town of Amherst (bbarnes@amherst.ny.us)

We developed a custom ArcGIS Server Web application for citizens to challenge their assessed property values. This GIS tool provides a visual perspective and location awareness for “Comparable Homes” based on the same neighborhood code, building style and similar square footage.



Star Carter, Development Authority of the North Country (scarter@danc.org)

The Internet Mapping Application (IMA) is a web-based GIS application that was developed by the Authority and Fountains Spatial to allow the Authority to host GIS data for local municipalities and other customers as a shared services model. GIS Hosting customers do not have to purchase GIS software or hire additional staff to manage their GIS data – they can simply log on to the IMA to view and use their data. A recent upgrade to the IMA makes it compatible with mobile devices!

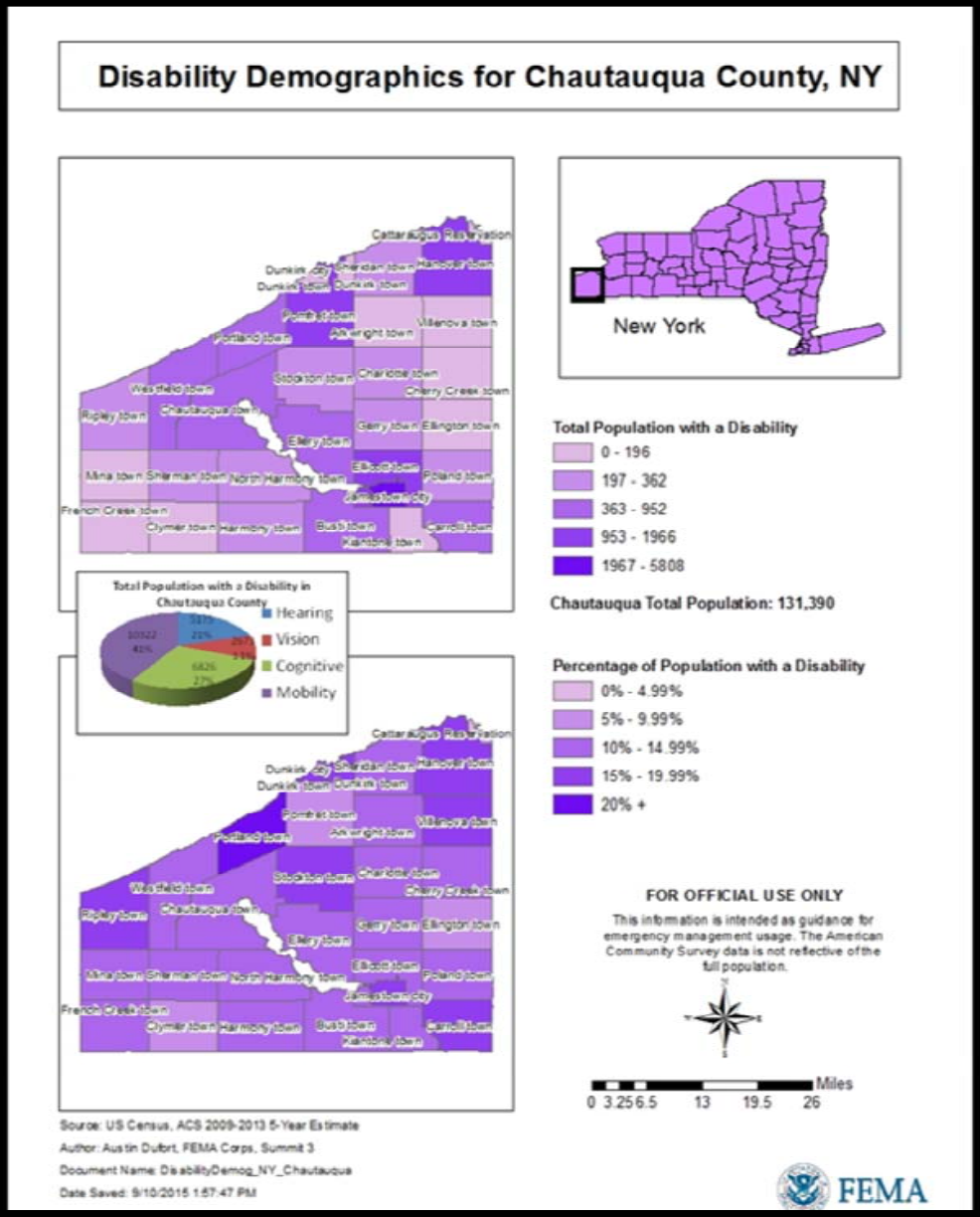


Steve Langdon, Adirondack Park Agency (stephen.langdon@apa.ny.gov)

"Detecting Climate Change in Wetlands in the Adirondack Park", a collaborative effort by the Adirondack Park Agency, SUNY College of Environmental Science and Forestry, New York Natural Heritage Program, and Paul Smiths College. The central goal of this program is to implement a citizen science monitoring program to gather phenology data for wetlands in the Adirondack Park - data on timing of plant flowering, frog breeding and bird nesting. After volunteers were trained, they entered data on this website: http://frontierspatial.com/adkatlas/boreal_wetlands/. These data allow us to monitor change in phenology as it relates to local environmental conditions.

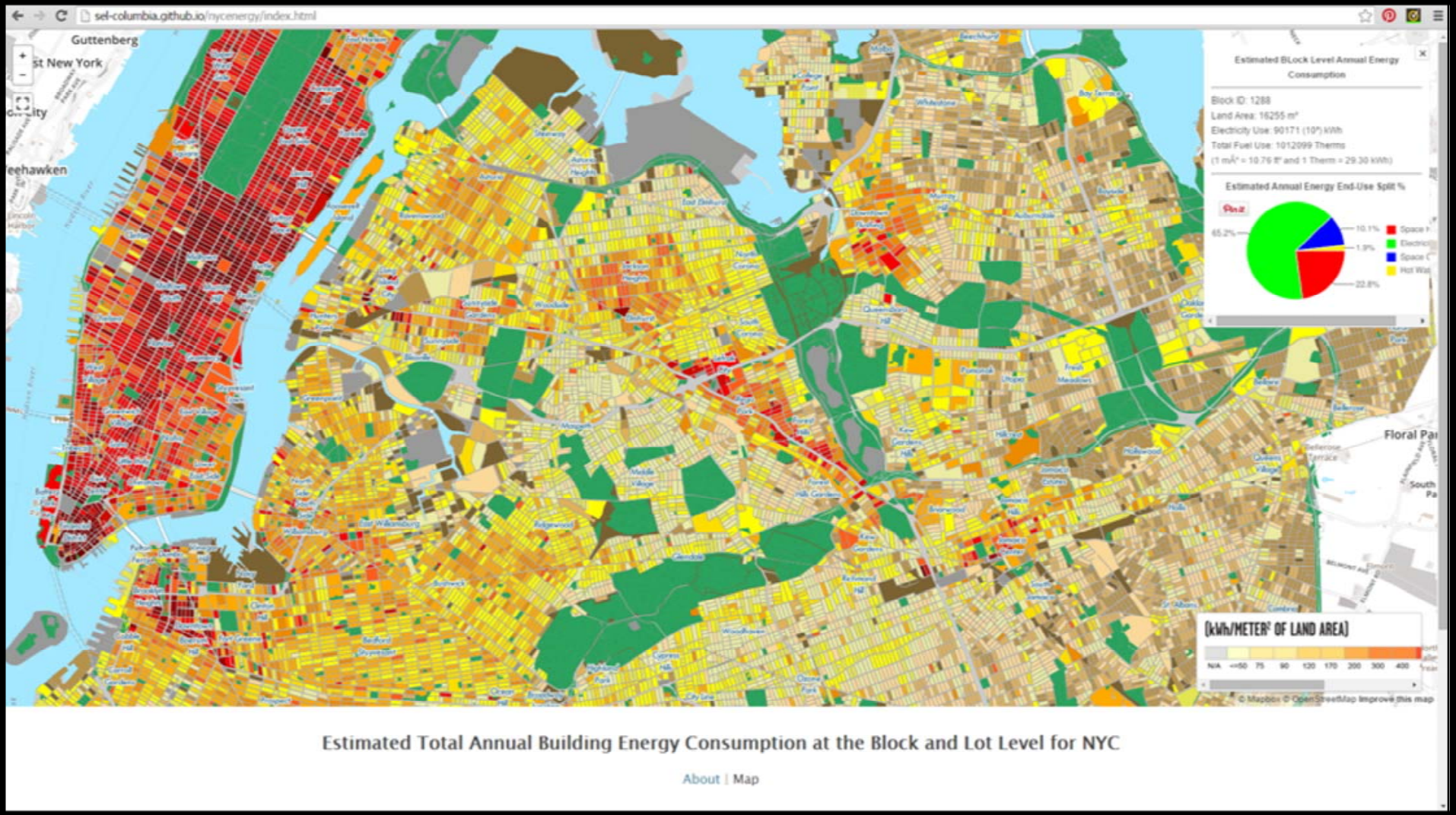
Paula Lazrus, St. John's University (pklazrus@verizon.net)

Images are of Storymaps created by students in Global History, A First Year Seminar and a Scientific Inquiry (science for non science students class). The first group mapped people important to the enlightenment, the FYS students mapped places in NYC visited by writers we read (the example is from Phillp Hone's Diary), and the Scientific Inquiry students were selecting topics of interest related to environmental science. There was no more than a few hours of training with AGOL in any of the classes, and all were made with public accounts.



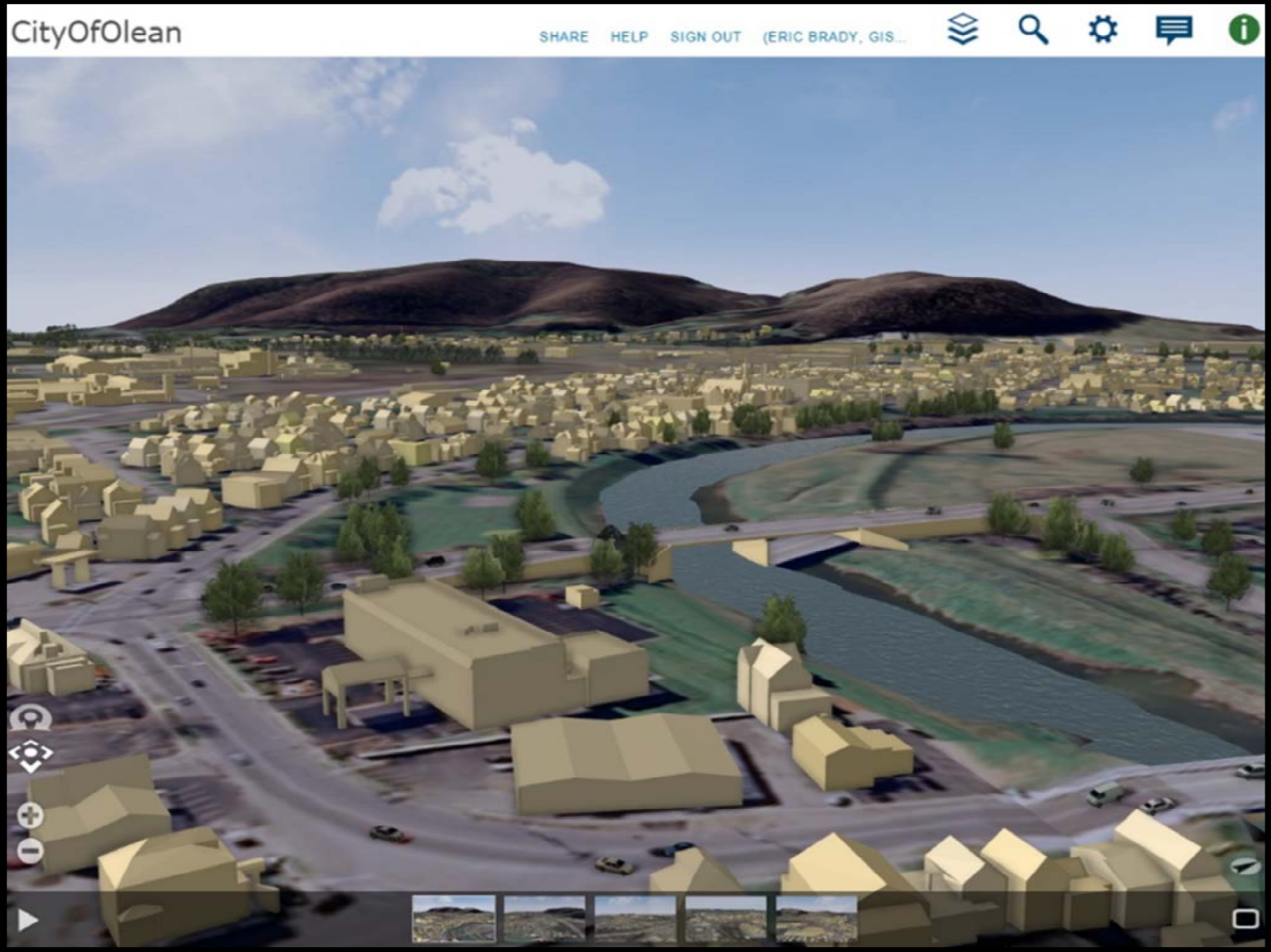
Julia O'Brien, Federal Emergency Management Agency (julia.obrien@fema.dhs.gov)

FEMA Region II created a series of disability demographic maps using ACS data for each county in New York. These maps will be used to help inform setups for Disaster Recovery Centers and to prepare Disaster Survivor Assistance Teams prepare to better serve person with disabilities.



Shaky Sherpa, Columbia University (ss3491@columbia.edu)

The map provides an estimate of the building energy consumption ("delivered" energy as opposed to "primary" energy) throughout New York City. The annual building energy consumption was estimated using ZIP code-level energy usage, on electricity, natural gas, fuel oil and steam consumption for the year 2009 as well as building information obtained from MapPLUTO (a NYC Department of City Planning geographic database).

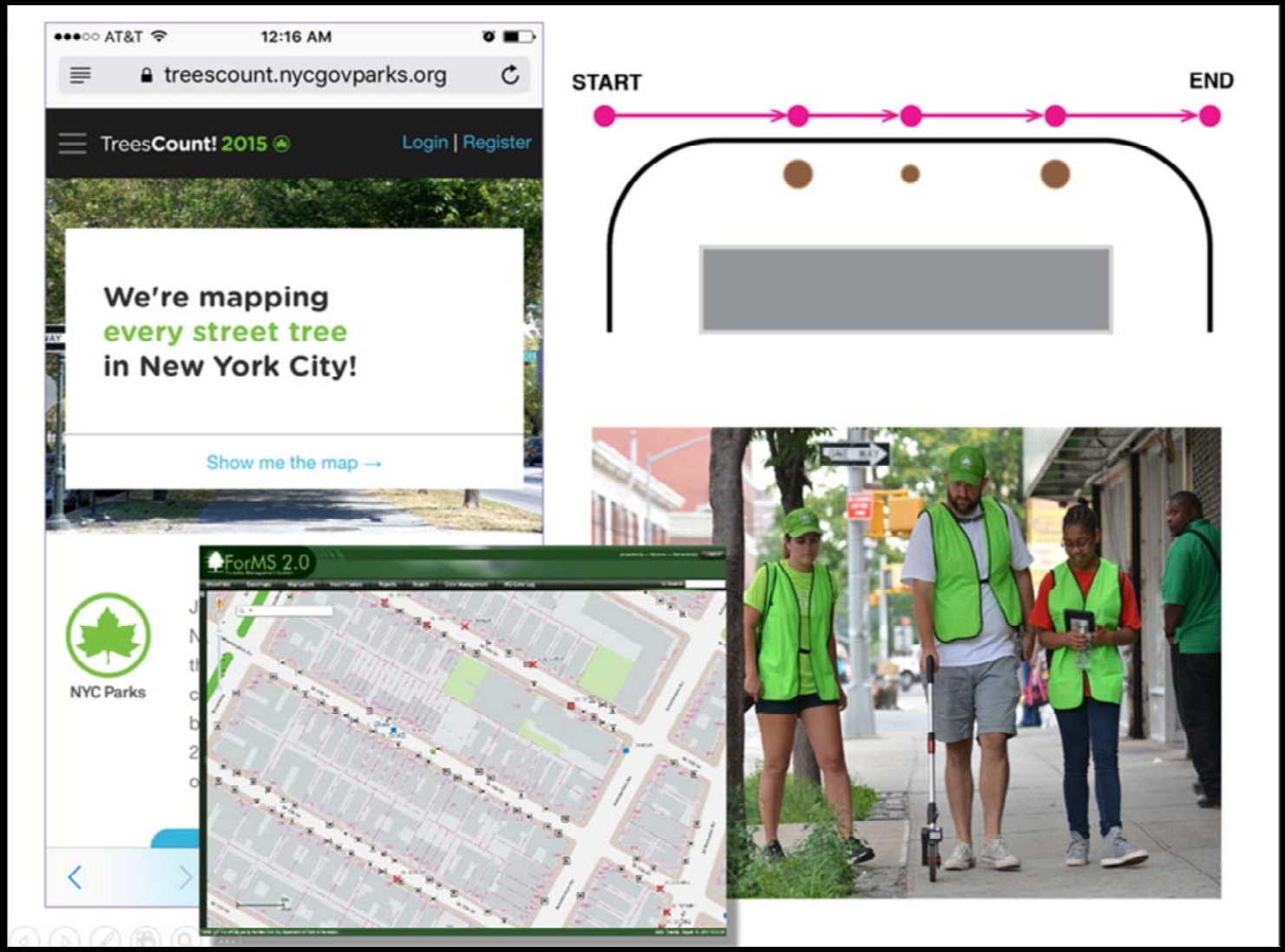


Kate Buss, Bergmann Associates (kate.buss@bergmannpc.com)

Bergmann Associates used Esri's City Engine to help the City of Olean, NY its steering committee and the public, visualize the future potential of their Brownfield Opportunity Area.

Peter Spellane, CUNY – CityTech (pspellane@citytech.cuny.edu)

This 1924 photo from New York City's Department of Information Technology and Telecommunications (DOITT), taken at the time of intense chemicals production, depicts a region of the Newtown Creek that is of importance in the EPA's present day investigation of the site's environmental contamination.



Jacqueline Lu, NYC Parks (jacqueline.lu@parks.nyc.gov)

New York City Parks has embarked on their third decadal volunteer-powered citywide Street Tree Census. Their mapping technology uses linear referencing to leverage the City's planimetric basemap, to create a highly accurate way to map street trees that is easy to use, train and scalable for use by thousands of volunteers. Volunteers use a surveying wheel to measure the distance from the corner of the curb, to the first tree, to the next tree, and so on all the way down the block. The geometry constructor uses the measurements to place the tree points exactly where they are located along the curb – with more precision than heads-up digitizing. The data is so spatially accurate they are bringing the data into their asset management GIS for forestry management. The entire volunteer mapping platform is open-source, and available for reuse on Github.

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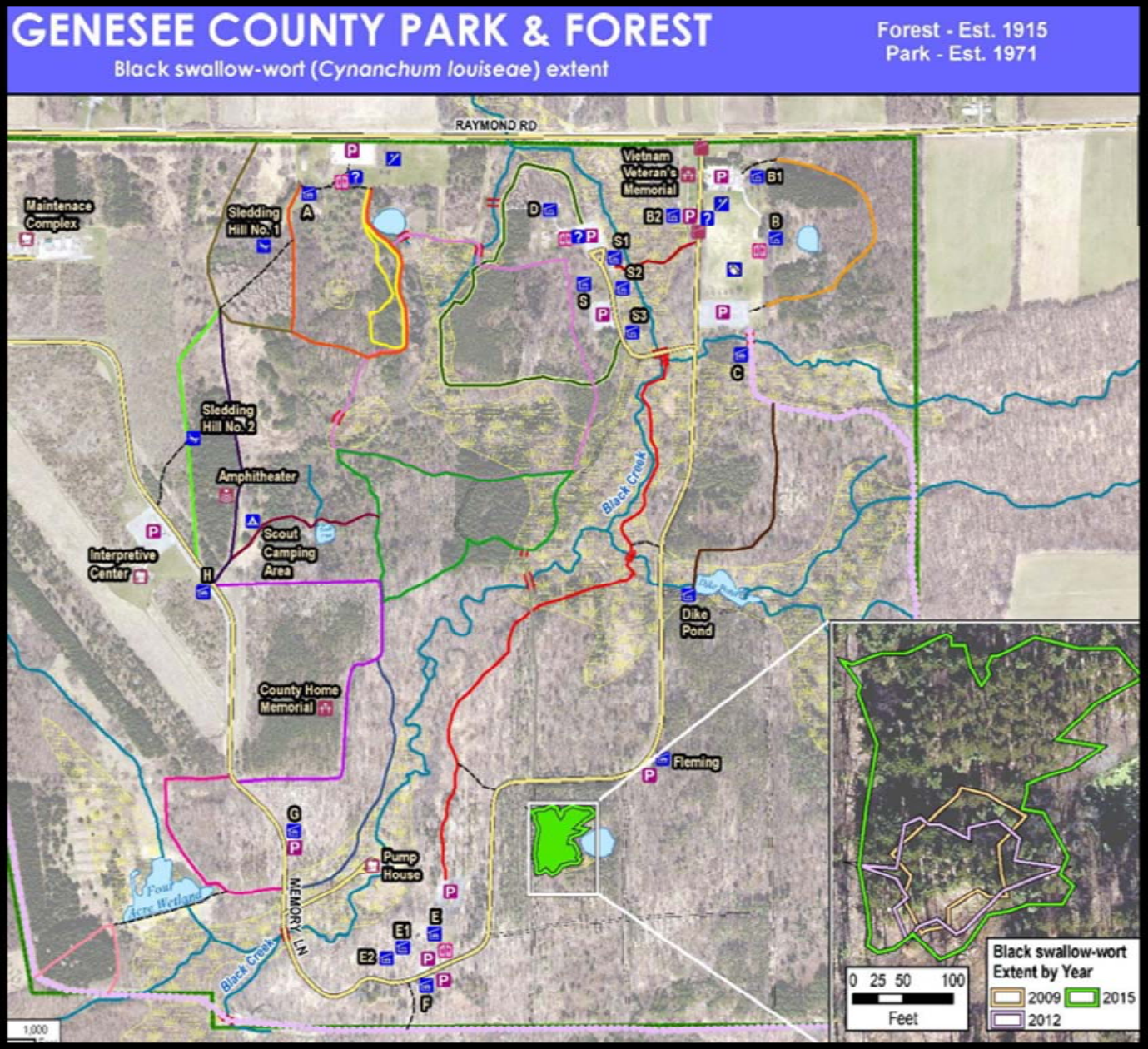
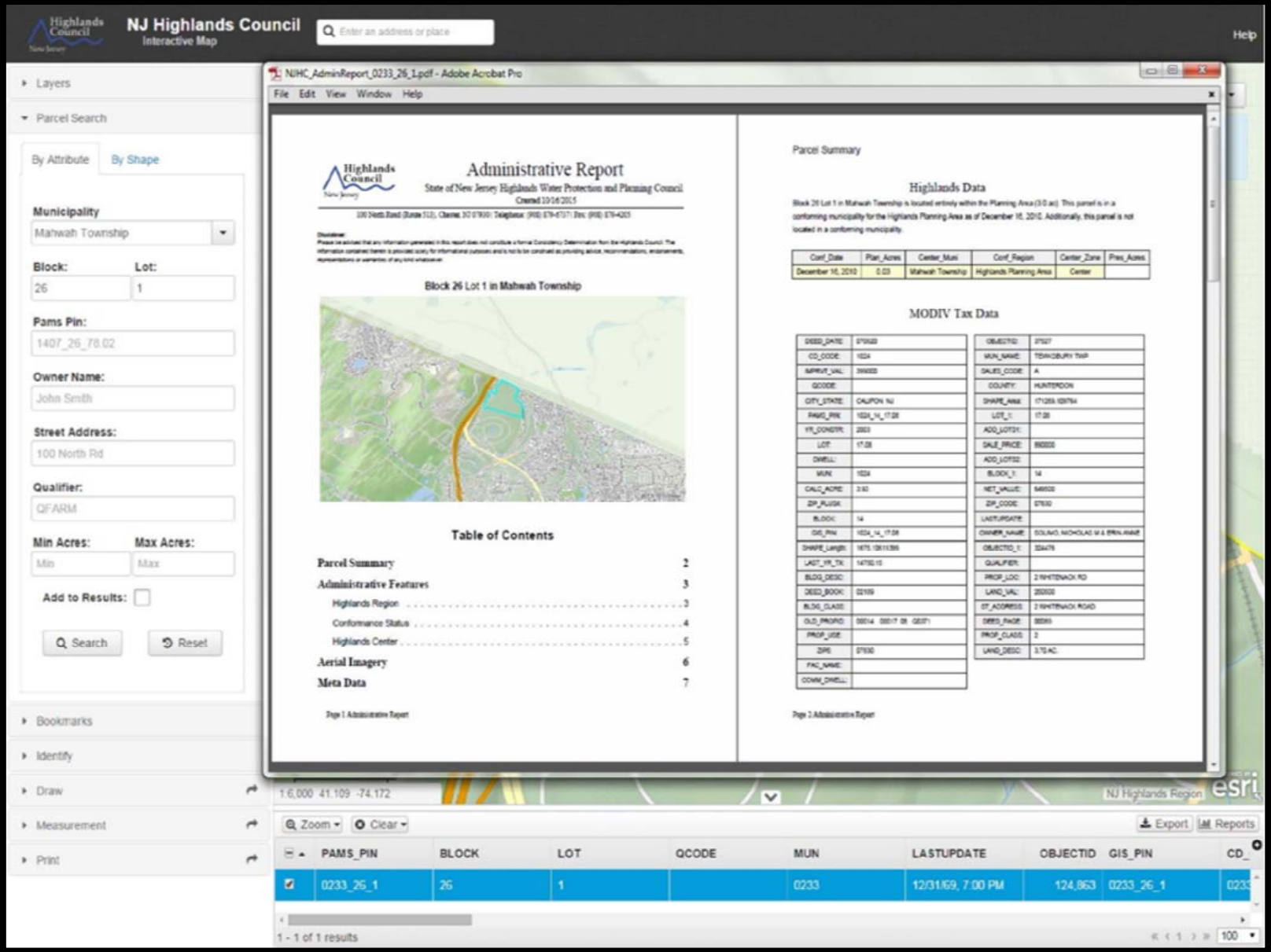
Emily Cheadle, New York Natural Heritage Program (emilycheadle@yahoo.com)
The image shows the newly updated New York Protected Areas (NYPAD) database. All of the over 31,000 parcels now have names and information. They were just submitted to be part of the USGS Protected Areas Database of the United States (PADUS).



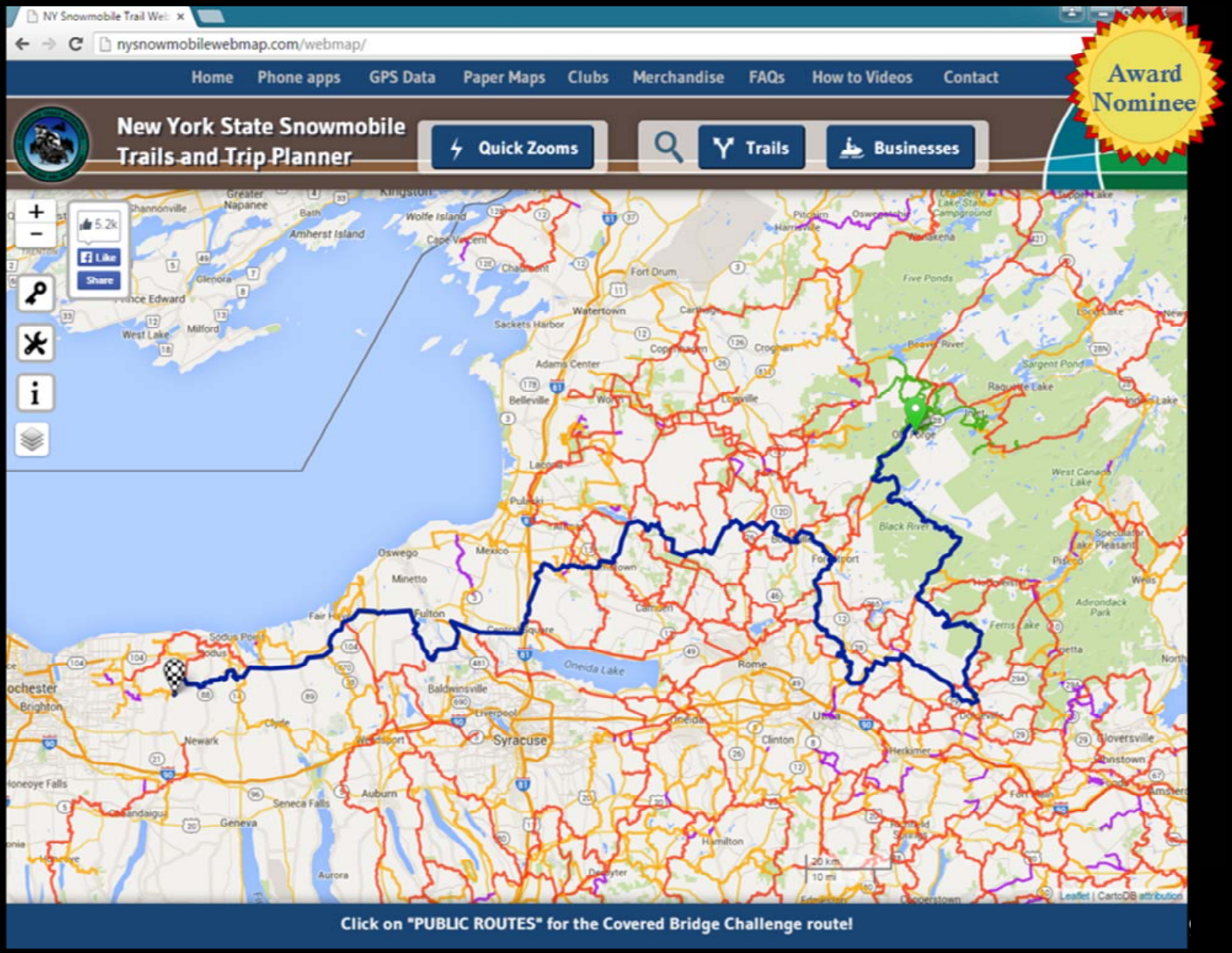
Erin Pence, Genesee County Department of Planning (erin.pence@co.genesee.ny.us)

One of the more colorful pieces of Genesee County mapping work helps to support volunteers at the Genesee County Park and Forest, as they work to remove black swallow wort (an invasive plant) from the park lands.



Ian Shiland, New Jersey Highlands Council (ishiland@gmail.com)

A geoprocessing service that creates a report in pdf format based on a selected parcel in an interactive map. Python's open source Reportlab tool kit is utilized to generate
a pdf which is comprised of several pages of maps and attributes resulting from the geoprocessing functions.



Linda Rockwood, Mohawk Valley GIS (linda@mohawkvalleygis.com)

The statewide snowmobile promotional website NYSnowmobileWebmap.com has been enhanced to include routing along the 11,000 mile trail network. Routes can include multiple stops, loop back to start, and be repositioned by dragging, then transferred to mobile devices and GPS receivers to follow on the trails.

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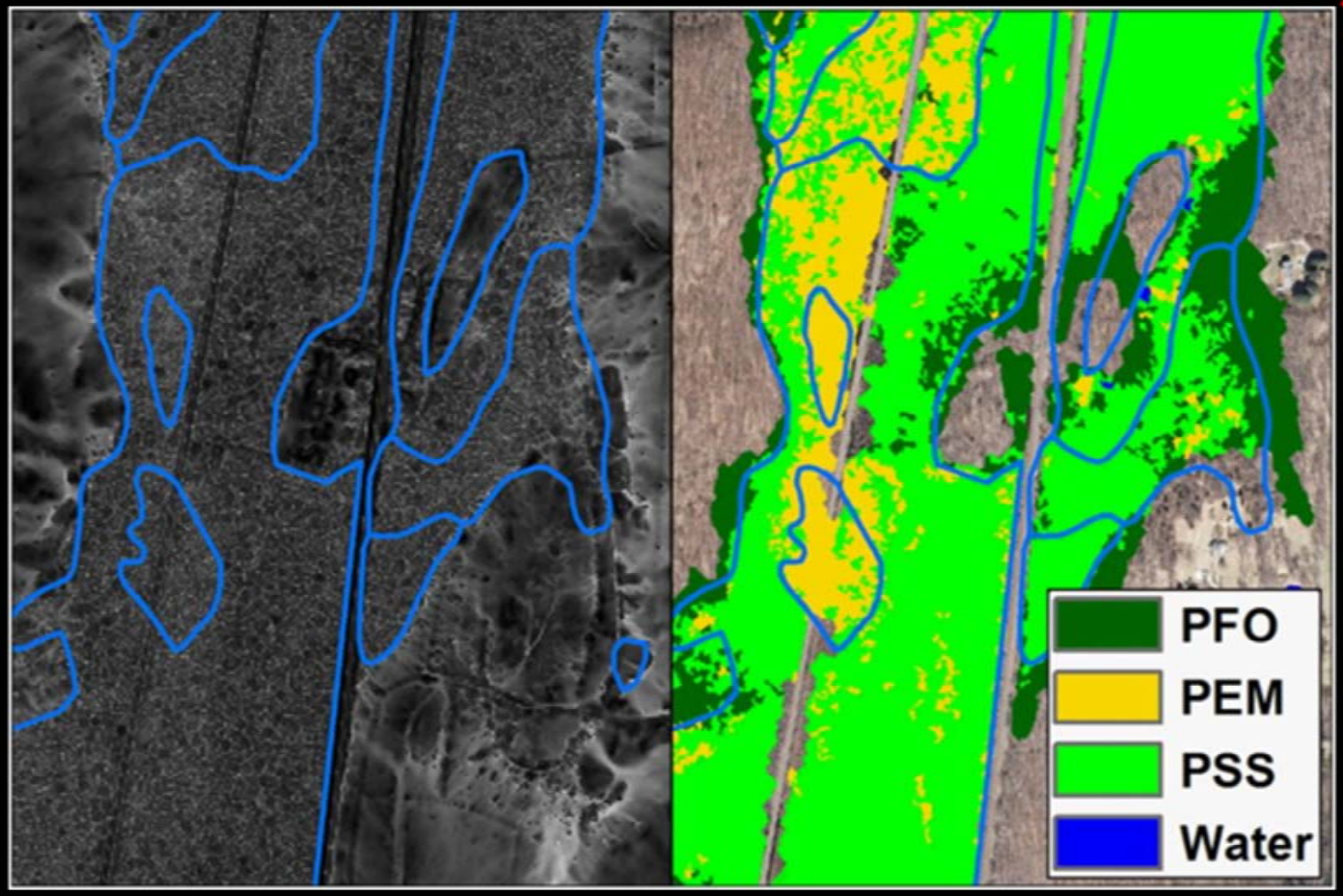
Michael Naughton, Town of Huntington (mnaughton@huntingtonny.gov)
This ArcGIS Online map shows points collected with different GPS device combinations and an AutoCAD file made after the new light fixture installation in a newly built parking lot (late 2014). iPad with Garmin Glo (G), iPad only (I), GeoXH with real time error correction(Star). Lines and dots from imported AutoCAD file created by our engineering department.

98



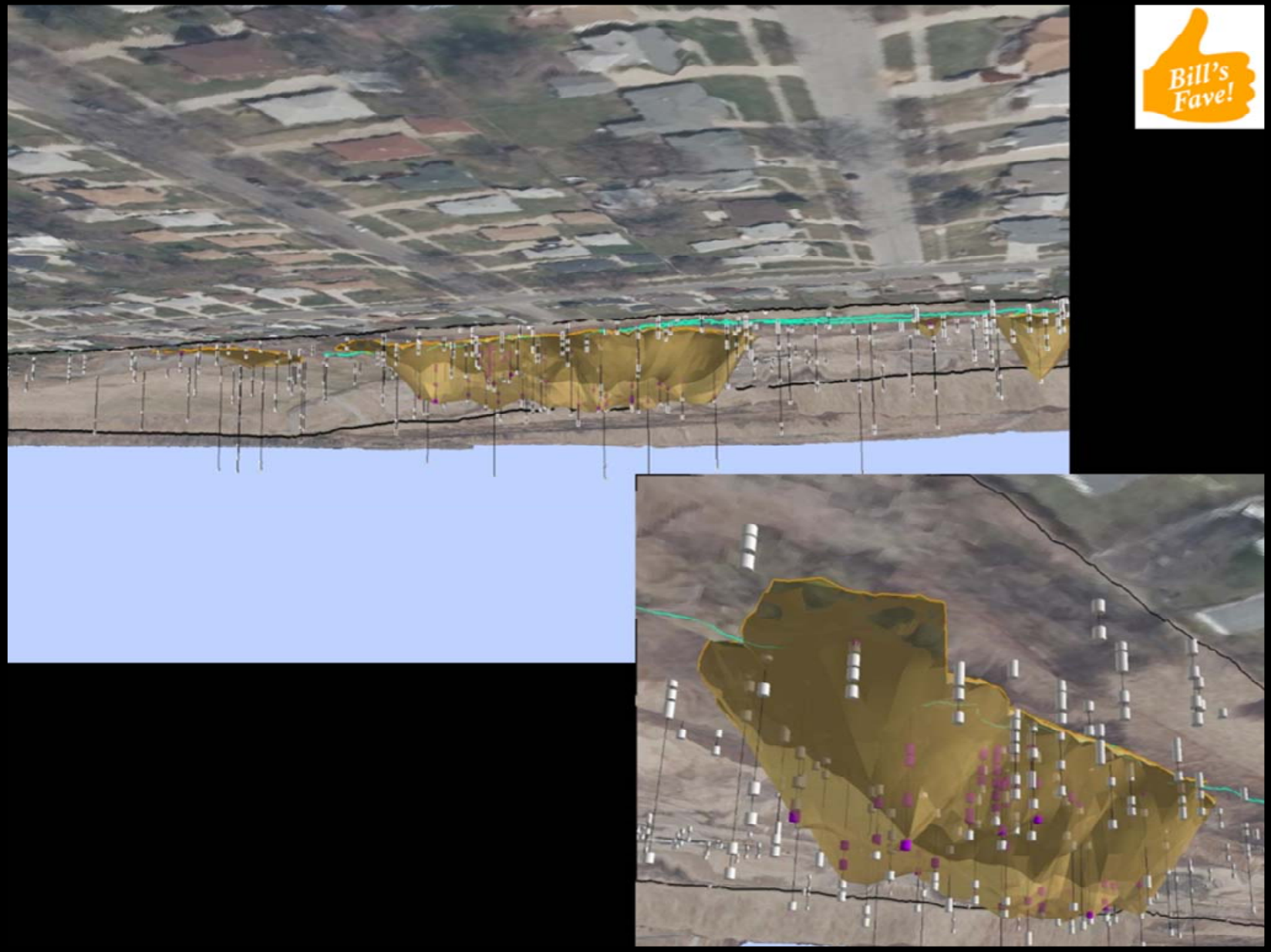
Award Nominee

Karen Kwasnowski, GroundPoint Technologies LLC (klkwasno@gmail.com)

The NYC Department of Environmental Protection's Bureau of Watershed Management completed a pilot project to update NWI maps using LiDAR and Infra-red imagery. The project team included GroundPoint Technologies, the University of Vermont Spatial Analysis Lab and Quantum Spatial. The effort used eCognition software to successfully map wetlands at significantly higher resolution than the current NWI, and should drastically reduce the cost of mapping the entire 2500 square mile watershed.

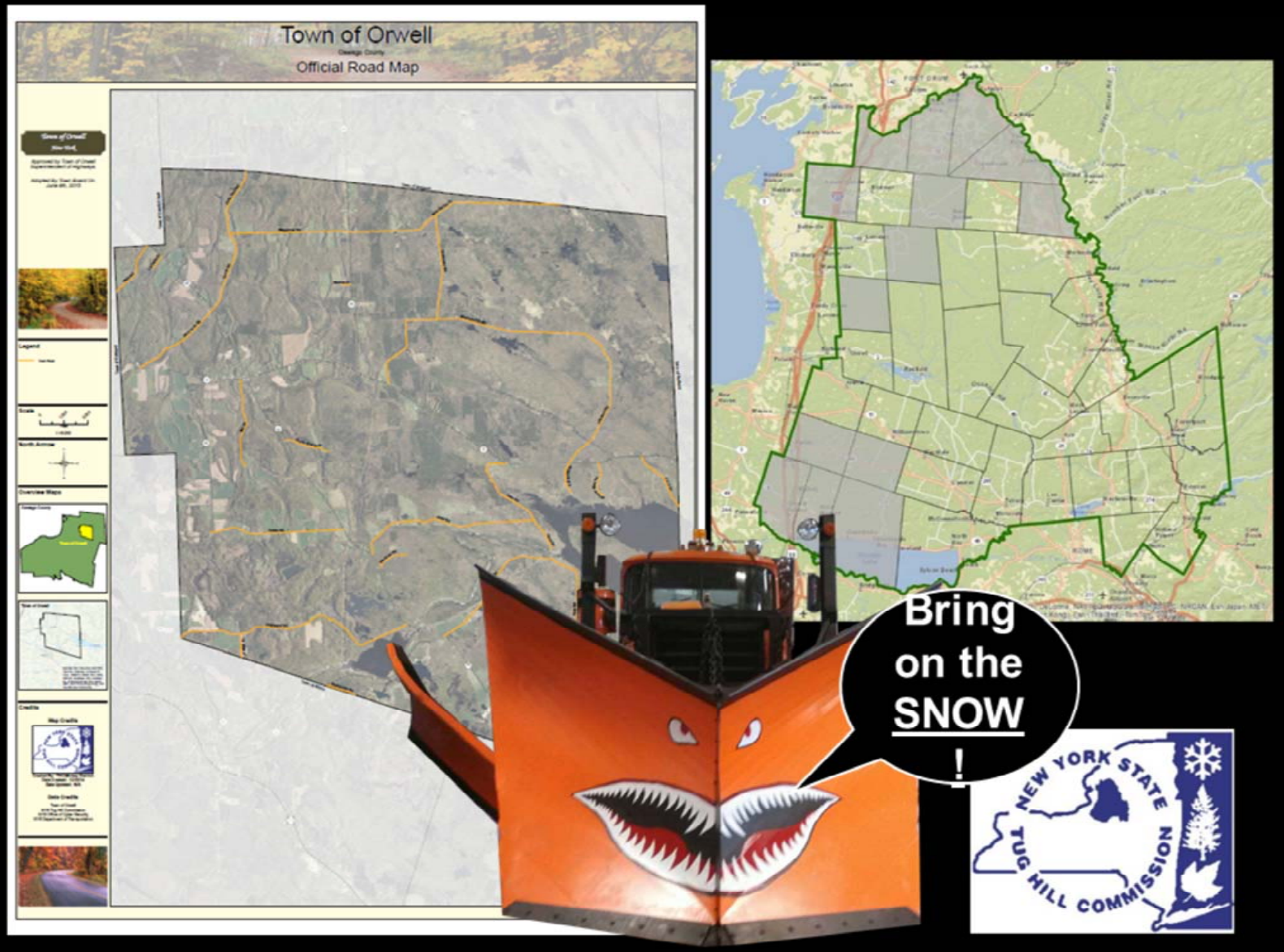
John Sherin, mapzzles.com
(jmsherin@optonline.net)
Interactive map puzzle app targeted for 4th grade students to explore geography concepts, in this case understanding the villages and hamlets in Oyster Bay.

100



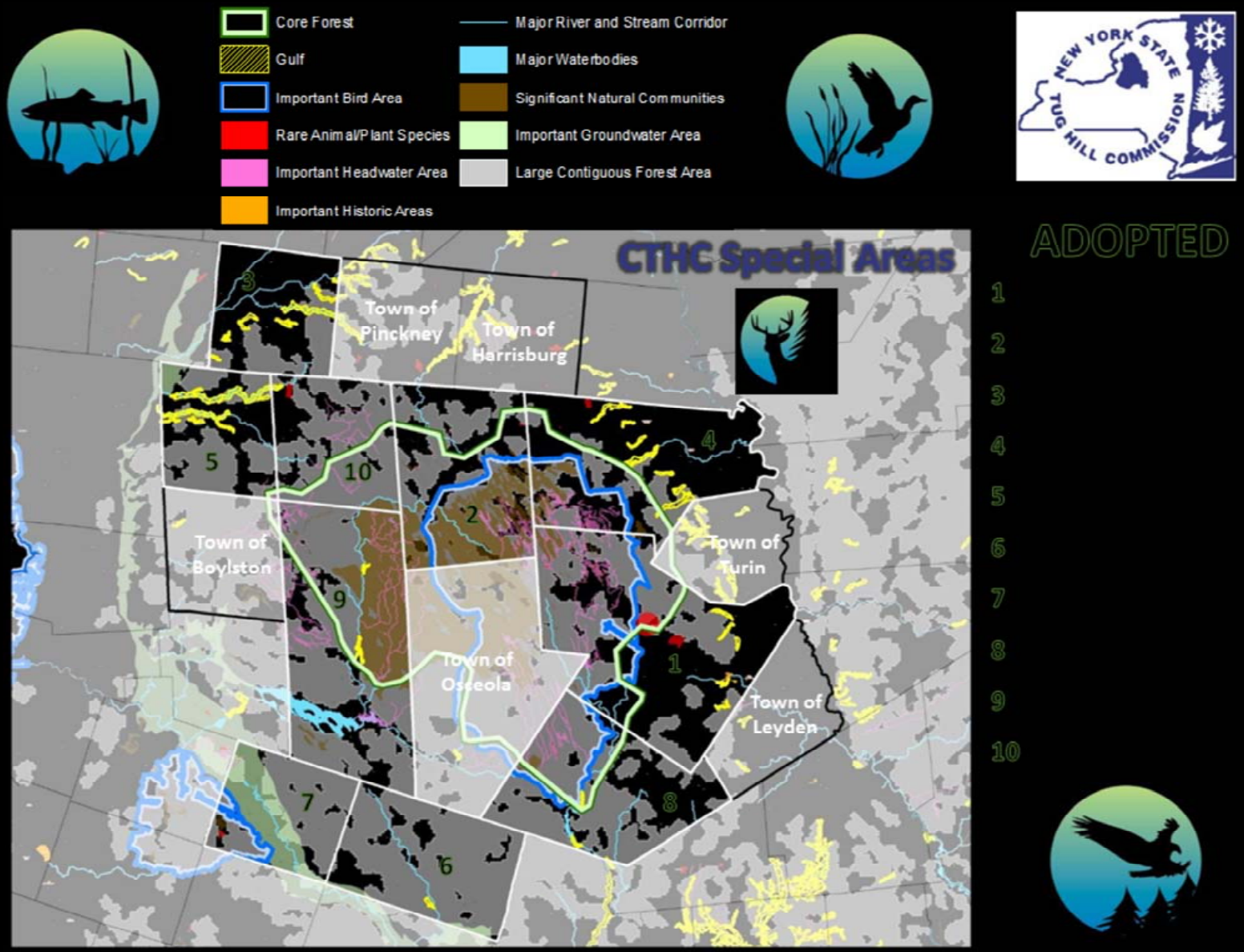
Shawn McCabe, US Army Corps of Engineers – Buffalo District (shawn.p.mccabe@usace.army.mil)

The U.S. Army Corps is utilizing Geostatistics and ArcGIS 3D Analyst to help estimate and visualize volumetric amounts of radiologically-impacted soils, sediment and groundwater at sites contaminated by activities related to the nation's early atomic energy program.



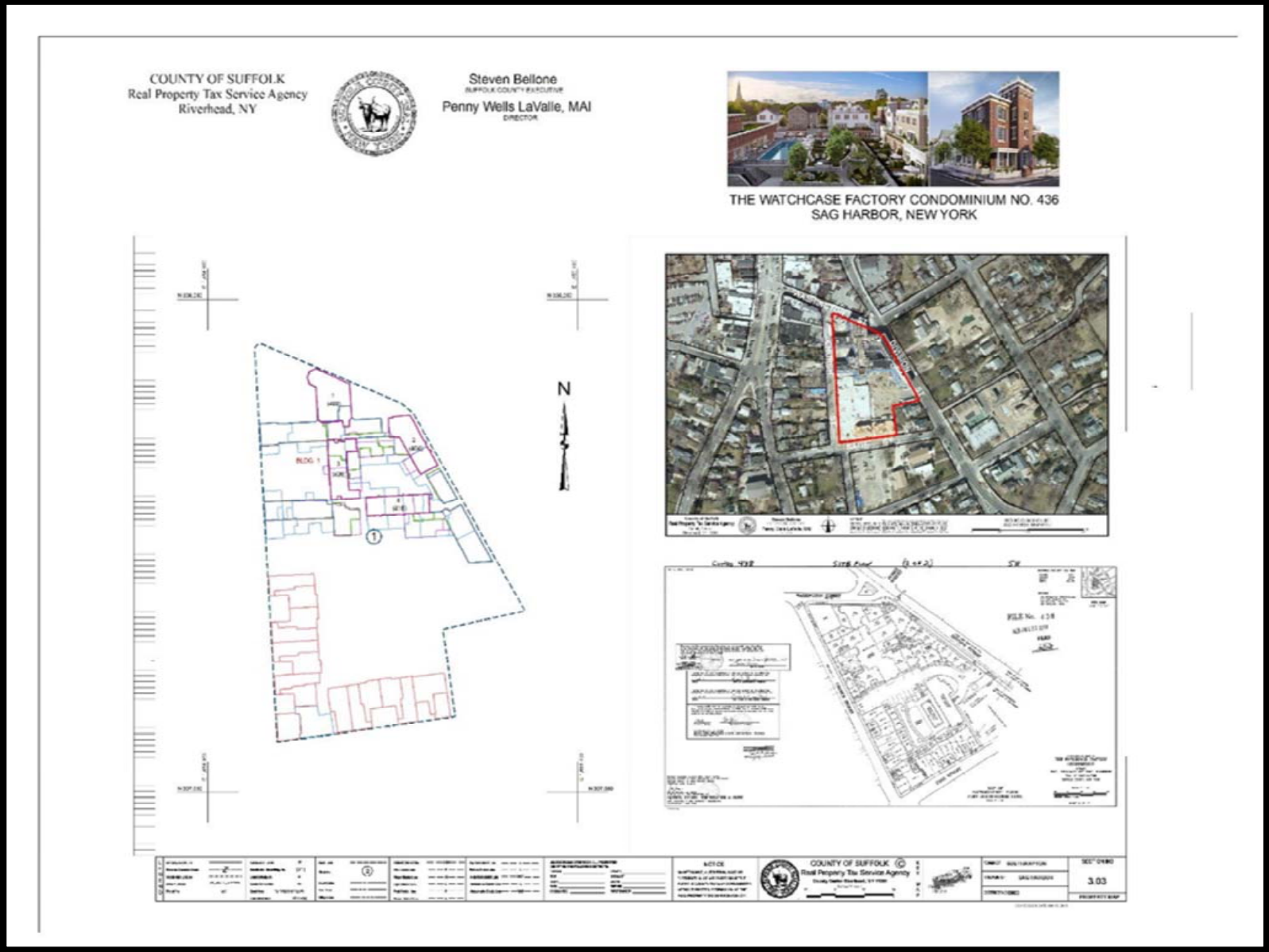
Phil Street, Director of Planning, Tug Hill Commission (mickey@tughill.org)

The Tug Hill Commission's Planning Department has been assisting regional local governments with their official road mapping. As of today, 27 of the 41 towns in the region have adopted new official road maps. Mickey Dietrich has gone out with each Highway Superintendent interested in adopting new official road maps and rode around with them on their roads marking dead ends, changes in road classifications, changes in road names, and marking roads they would like to abandon. He knows the roads in the Tug Hill Region very well!

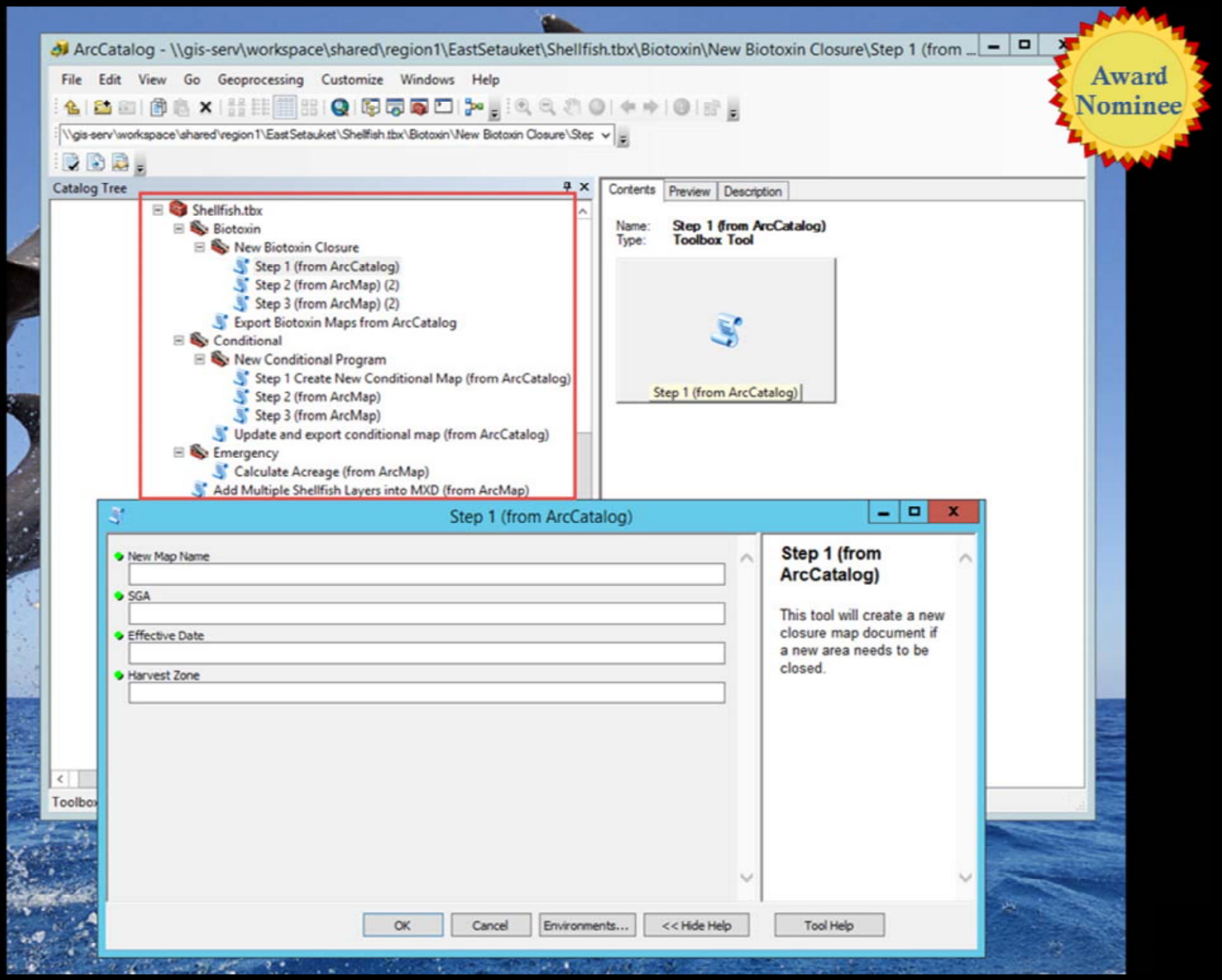


Katie Malinowski, Director of Natural Resources, Tug Hill Commission (mickey@tughill.org)

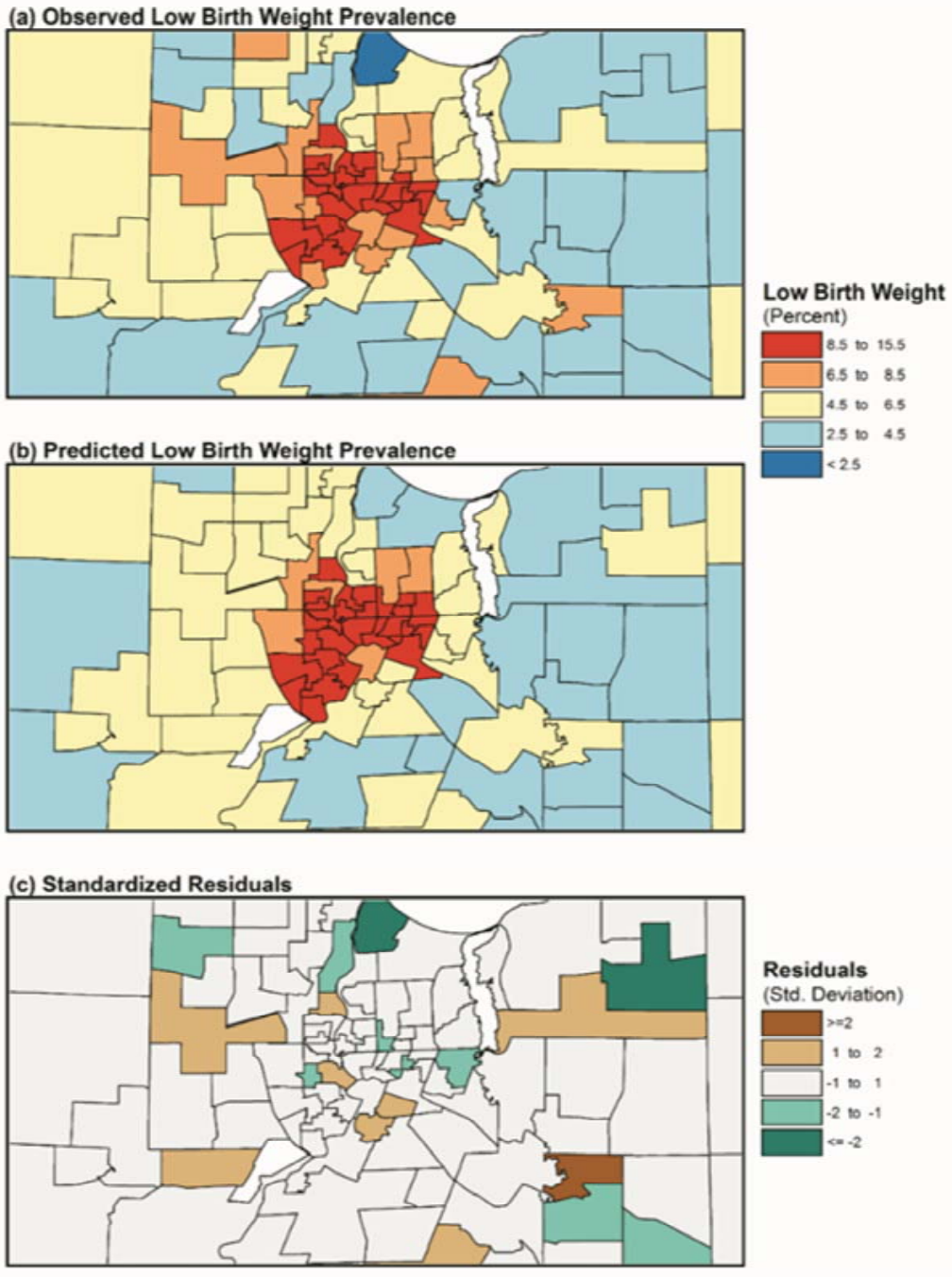
The Tug Hill Commission's Natural Resource Department has been working with a group of local governments within the Cooperative Tug Hill Council (CTHC), which have been interested in adopting special areas in relation to the Tug Hill Reserve Act. As of today, ten local governments have fully adopted these special areas. Some of the special areas were created through GIS analysis work done by the Tug Hill Commission.



Penny Wells-LaValle, Suffolk County Real Property Tax Service Agency (penny.wellslavalle@suffolkcountyny.gov)
Real Property's drafters came up with a particularly unique condo they prepared for tax map ad valorem. They all participated in the final look of the poster. It was a challenge due to the configurations of the condos on different floors.
My kudos go to: Janette Harden- Supervisor, David Triebs, Janet De Blasi, Carol Mac Carthy, Joe Stasys.



Melisa Albino, NYS DEC (melissa.albino@dec.ny.gov)
NYSDEC Bureau of Marine Resources GIS Application
A custom ArcGIS toolbox was created for the Shellfish Unit to streamline the creation of frequently updated maps. These script tools combined with the custom dialog boxes allow staff to quickly make maps for use in print and on the web.

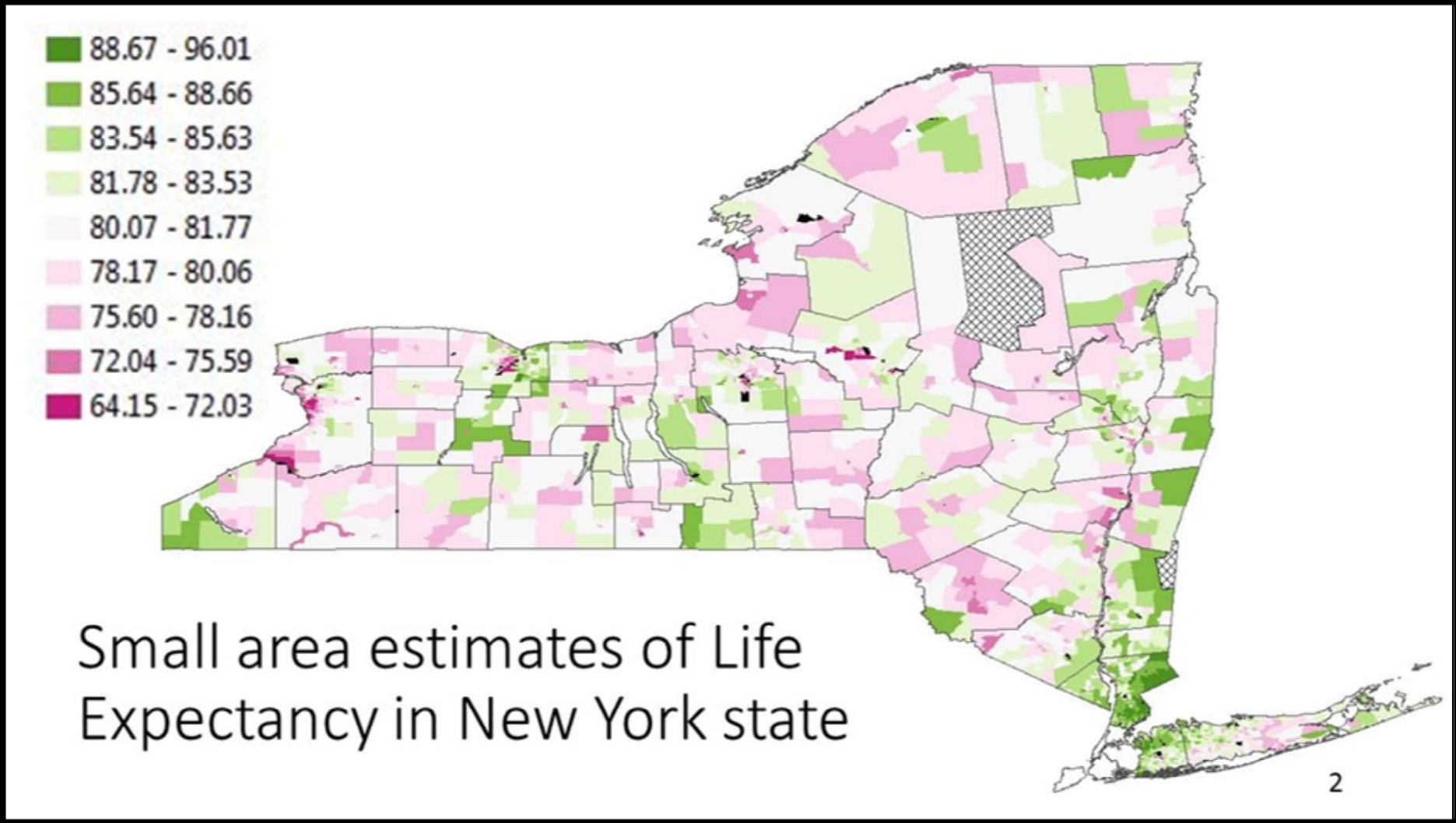


Tabassum Z Insaf, NYS Dept of Health (tabassum.insaf@health.ny.gov)

Social determinants of health project. The Environmental Public Health Tracking (EPHT) program is involved in multiple projects involving small area estimation methods for health data. For this example a spatial regression model was used to determine social determinants of low birth weight (LBW) in New York State. Smoothed maps with predicted prevalence were developed to identify areas at high risk of LBW. Spatial patterns of residual variation were analyzed to identify unique risk factors. Small-area analyses of health outcomes can identify areas for targeted interventions and display unique local patterns that should be accounted for in prevention strategies.

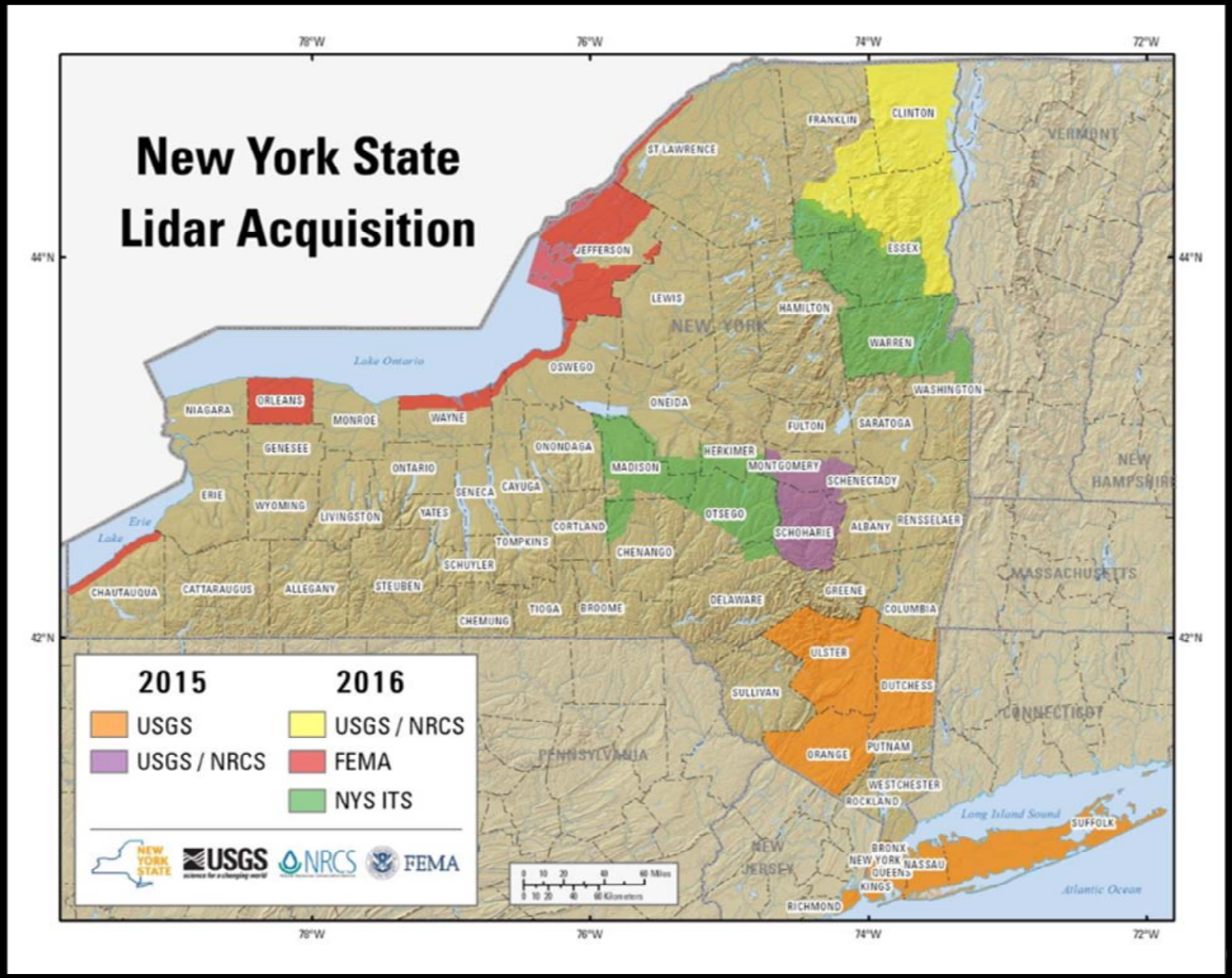
Brady Simmons, NYC Parks (brady.simmons6@gmail.com)

The map shows a change in confirmed territories for common marsh birds in Old Place Creek, Staten Island, NYC (orange points, 1st survey in 1994, blue points, 2nd survey in 2005). The surveys were started by the Natural Resources Group, NYC Parks in the 1990's to track the impact of oil spills around Staten Island.



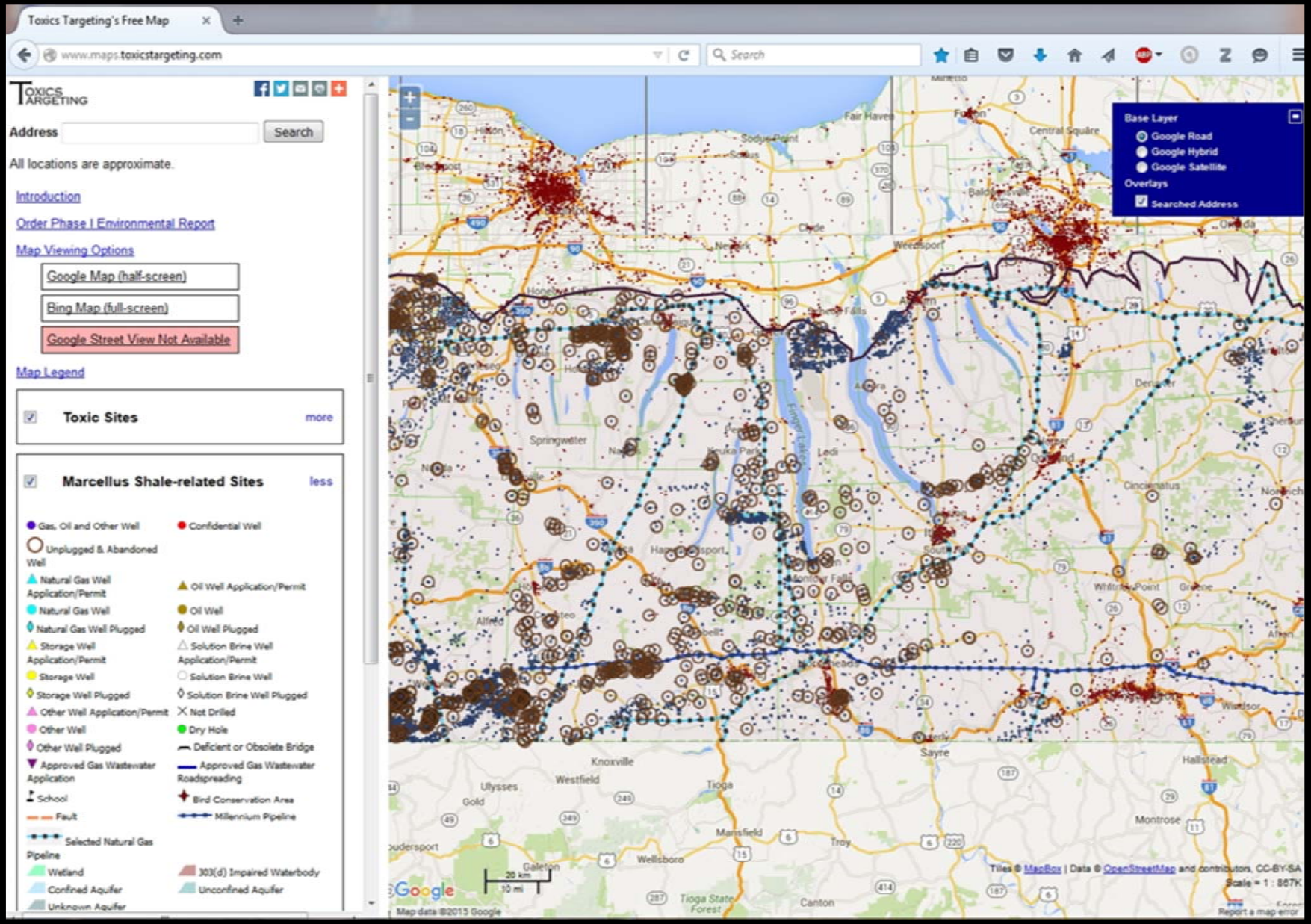
Douglas Done, NYS Dept of Health (douglas.done@health.ny.gov)

Douglas is a PhD students in our bureau. He has been helping us with calculating small area estimates of life expectancy in New York State as part of the Council of State and Territorial Epidemiologists (CSTE) 's SCALE project. This project is a part of the larger initiative in the Environmental Public Health tracking Program to develop and display small area estimates of multiple health outcomes.

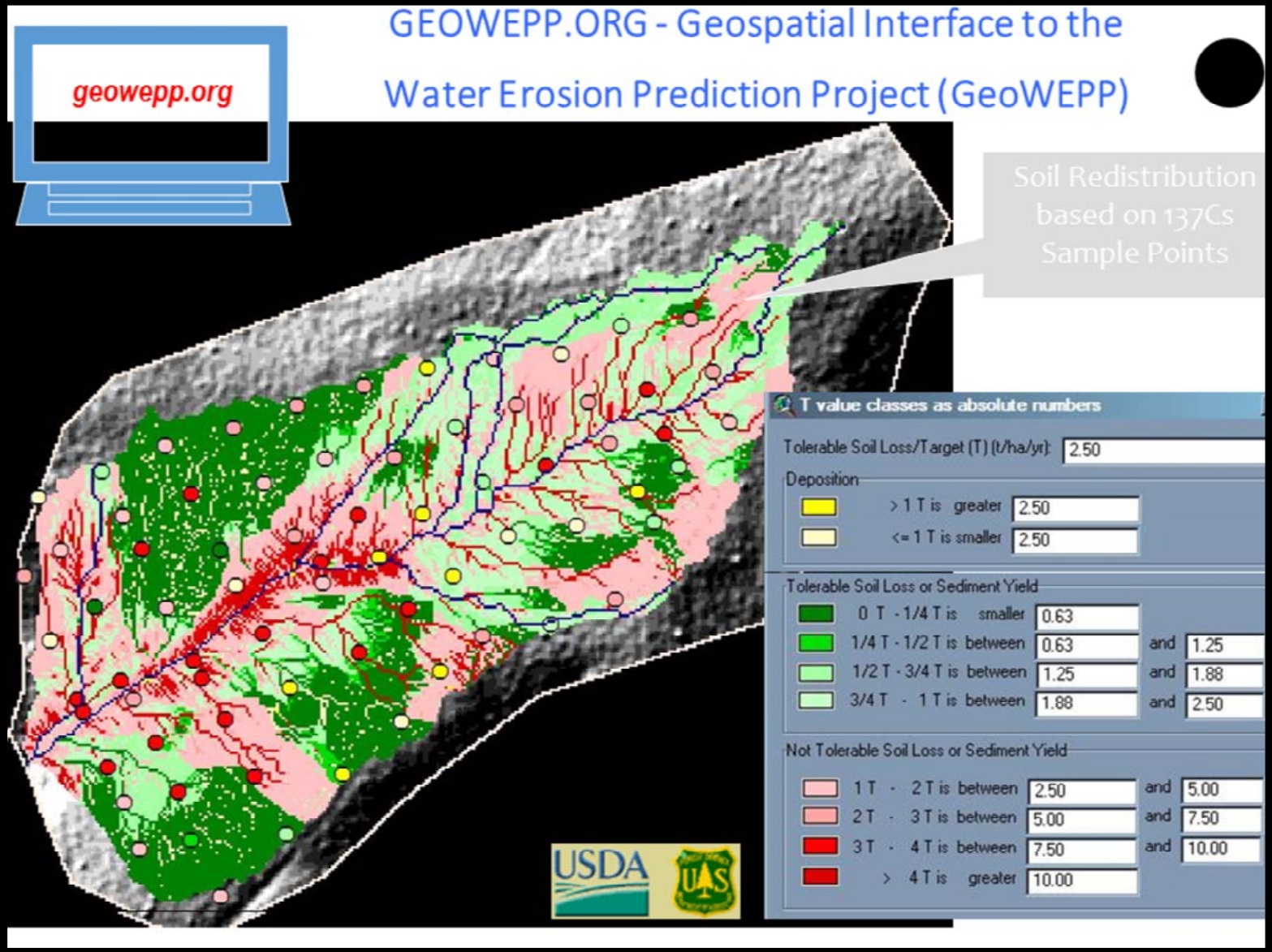


Doug Freehafer, US Geological Survey (dfreehaf@usgs.gov)

The USGS delivered over 8,200 square miles of new lidar data for New York, including New York City, Long Island, as well as Schoharie, Montgomery, Dutchess, Orange and Ulster counties. In addition, lidar acquisition was completed for Essex and Clinton counties with funding support from USDA-NRCS. The inclusion of the NYS-ITS lidar project for Washington and Warren counties will enable the completion of the first high resolution elevation data set for the Lake Champlain basin, set for delivery in 2016.



David Jorgensen, Toxic Targeting (jorg7788@yahoo.com)
Toxics Targeting's web map displays known and potential toxic sites and other environmental features. In this example unplugged and abandoned gas and oil wells can be viewed.



Chris Renschler, SUNY-Buffalo (rensch@buffalo.edu)

This image is produced by the software GeoWEPP, a 15-year research project that went through all stages of design, development, validation and implementation. The forest service and the blm is using the model for pre and post fire hazard mitigation. Geowepp can be used for any assessment of soil erosion, runoff and sediment yield evaluation of any land use and/or climate change. In fact it can be used to schedule spatially and temporally land use change at a watershed scale to optimize the negative impact on soil loss on-site as well as downstream/-hill runoff and sediment yields on a continuous or short and long-term design storm scenario setting. Full info at: http://geowepp.geog.buffalo.edu/.

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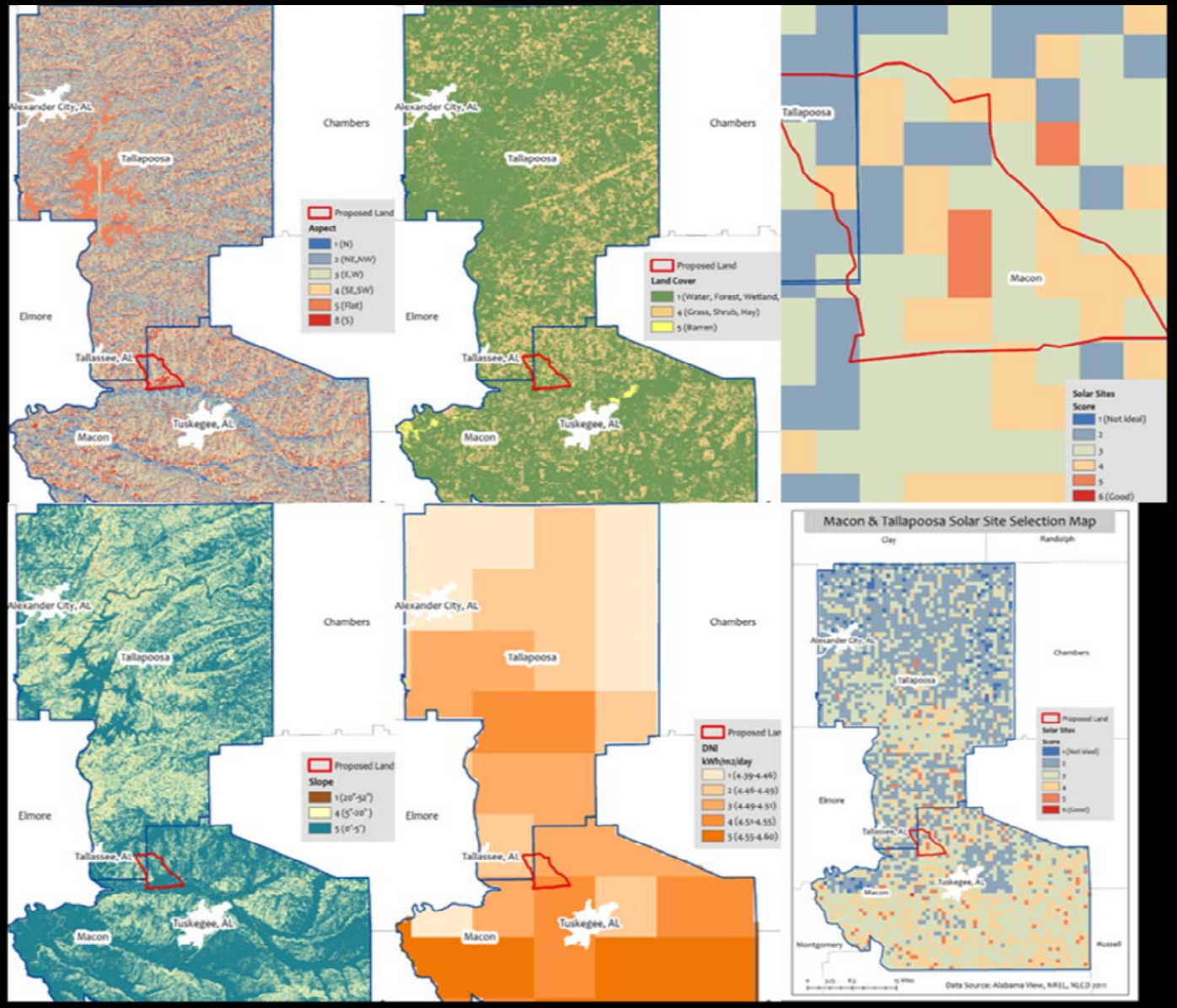
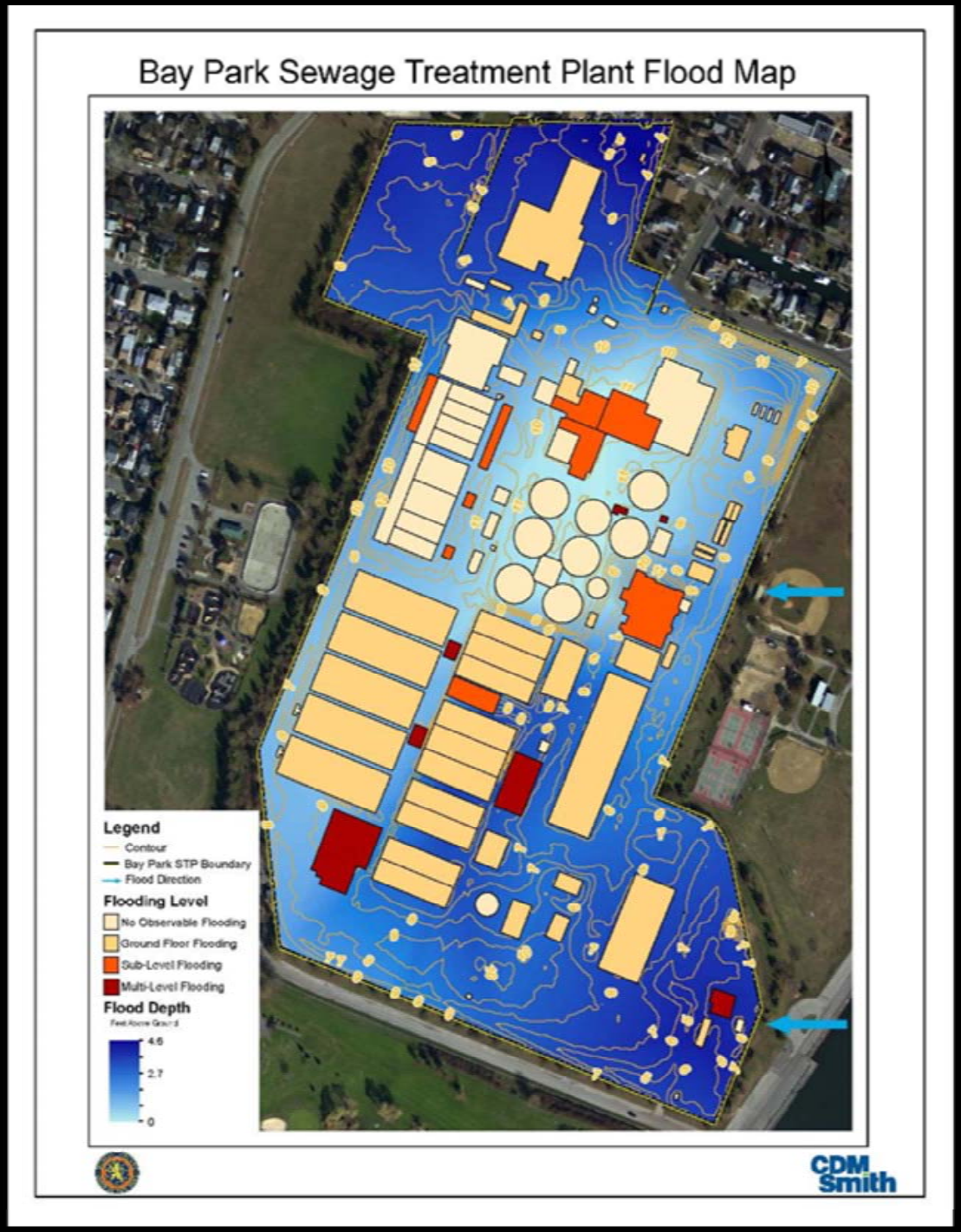
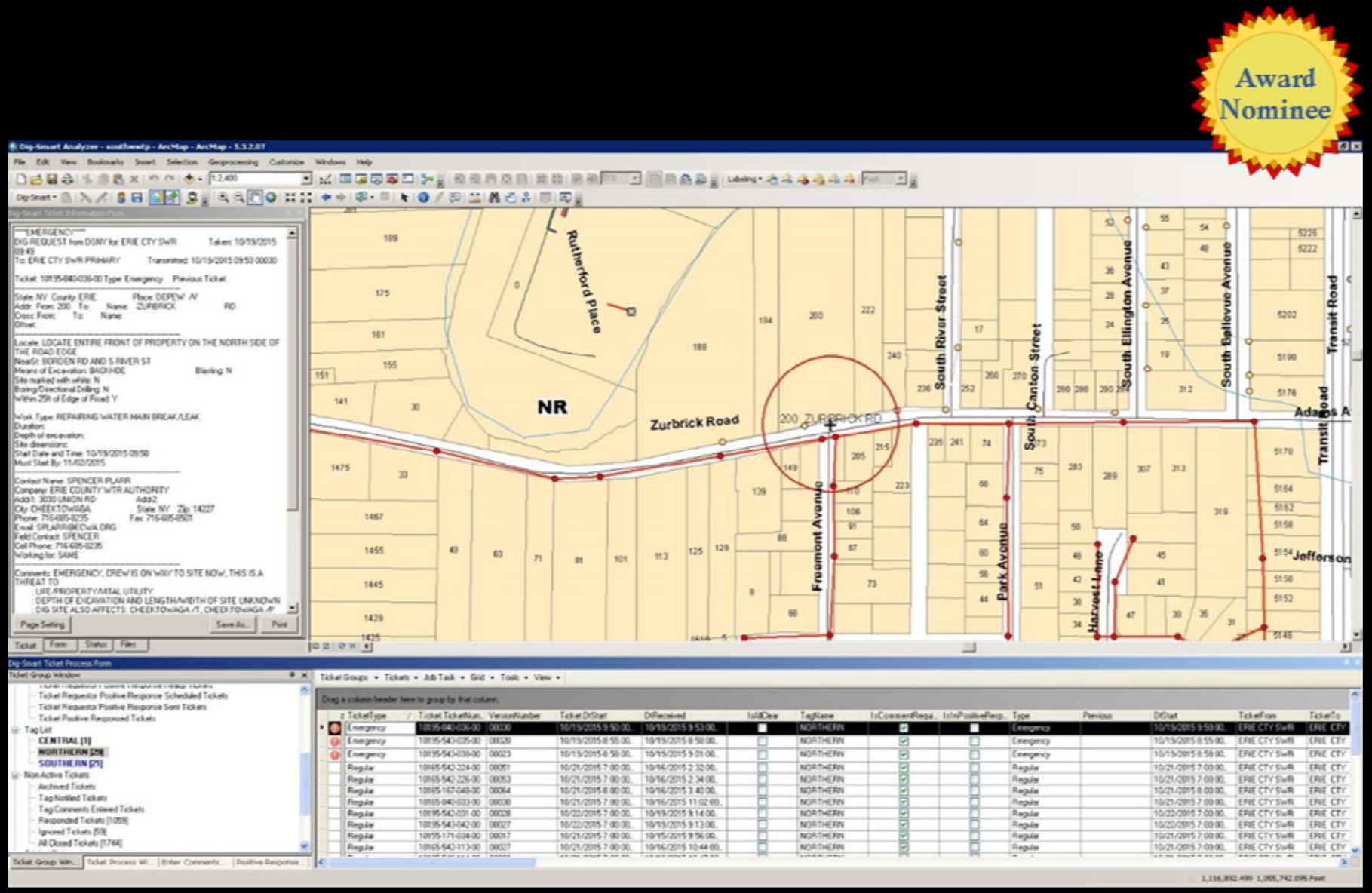


Yi Hong, Climate Institute (yi.hong@mail.utoronto.ca)

This work examined four aspects in Macon and Tallapoosa counties in Alabama: aspect, direct normal irradiance (DNI), land cover and slope, and a synthesized weighted overlay map was created based on the four indicators and it was used to determined whether the proposed land in Alabama is an ideal place for an solar installation industrial park. To sum up in one sentence, this GIS project would be “Using weighted overlay analysis to evaluate the land selection of solar installation in Macon and Tallapoosa, Alabama.

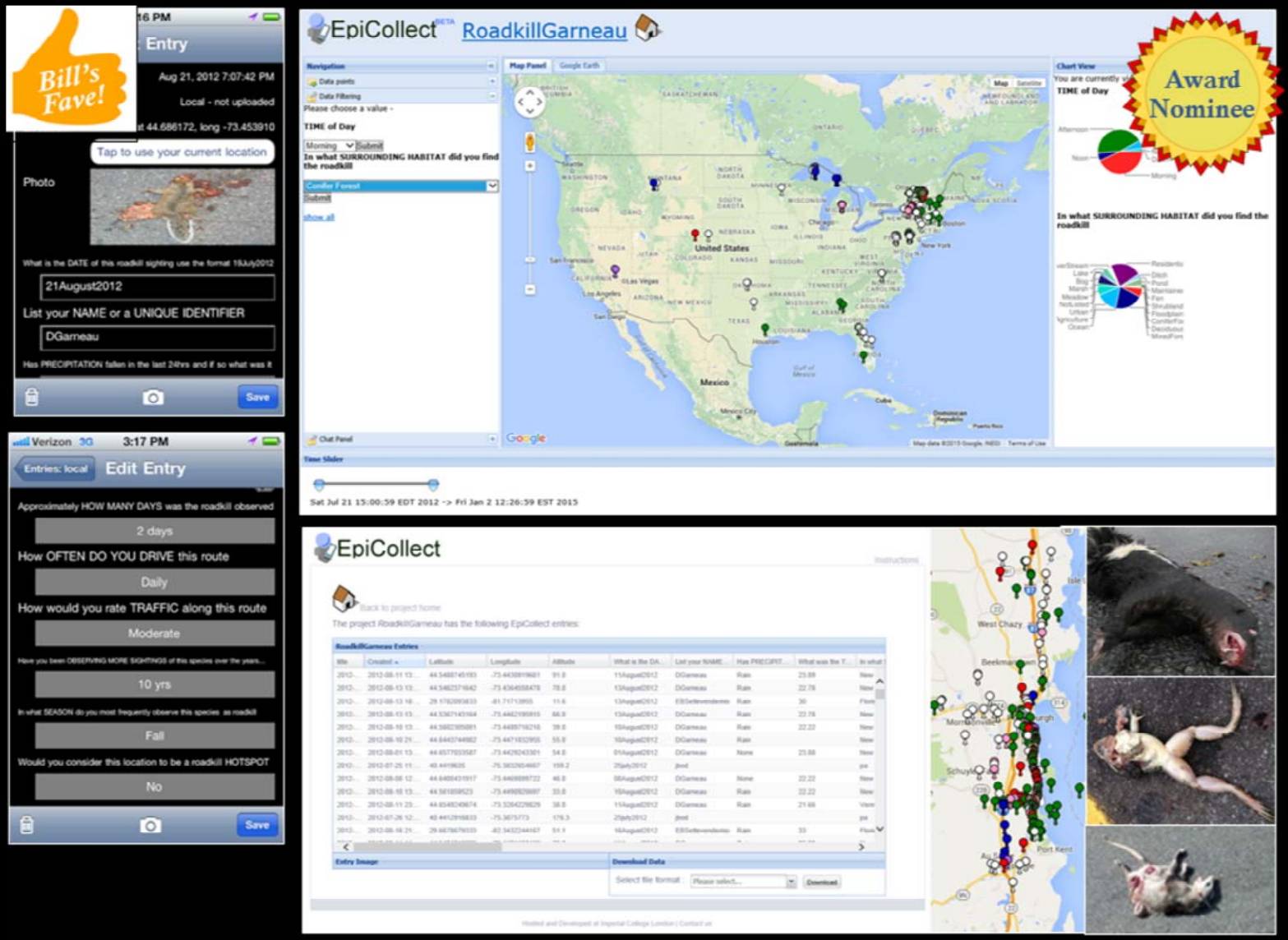


Bala Aboki, CDM Smith (balakdam.inc@gmail.com)
The flood map graphic illustrates the flood depth and building impact at the Nassau County Bay Park Sewage Treatment Plant in Nassau County during Hurricane Sandy. Flood data was obtained via High Water Mark (HWM) data collection and surveys to determine flood height. The HWM data also helps to put storm events within a historical context, determines the depth of flooding for structures, prepares inundation maps, and provides estimates of flood risk.



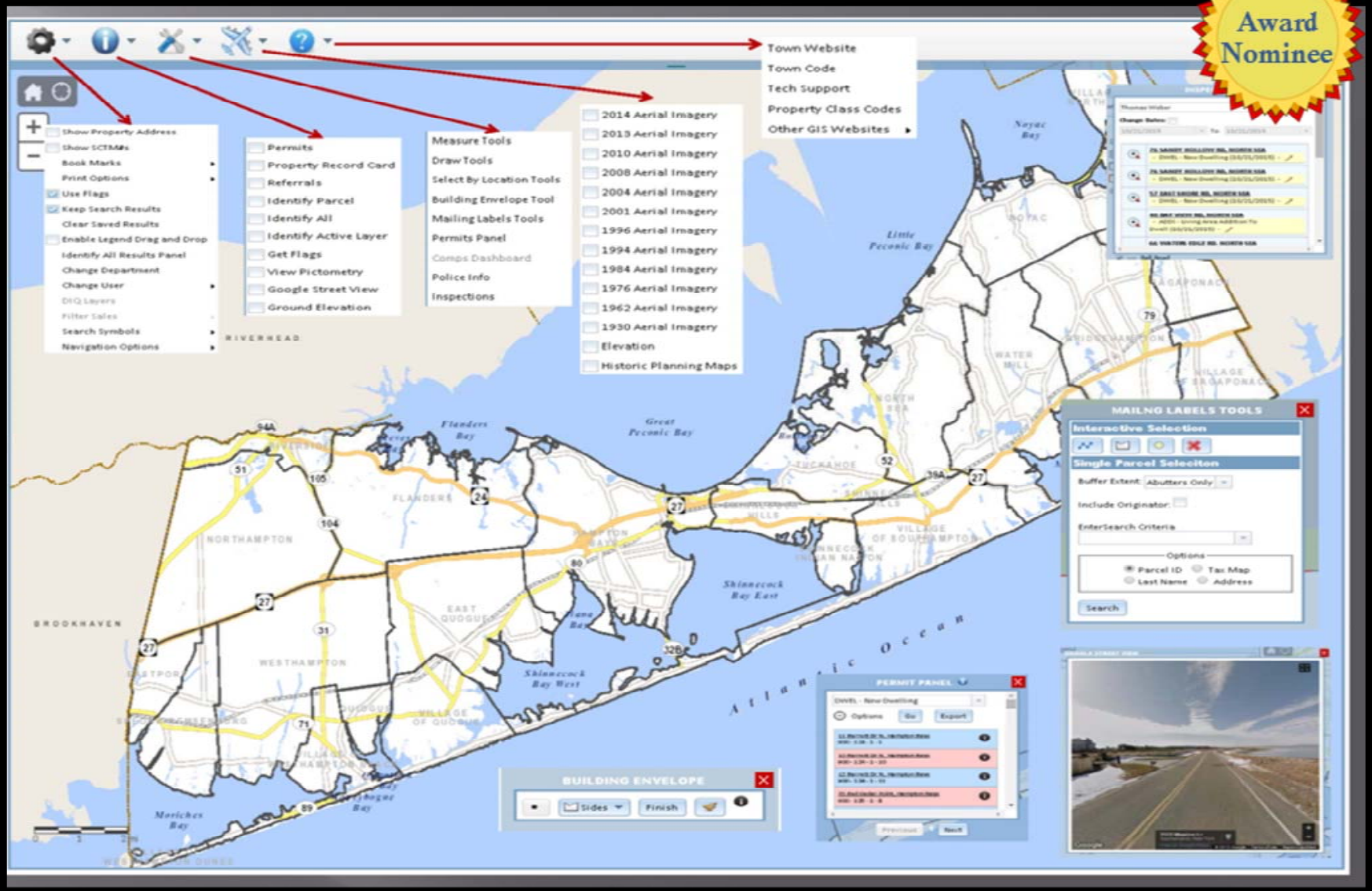
Steven Russell Jr., Erie County (steven.russell@erie.gov)

Erie County's Division of Sewerage Management uses the Enterprise version of Dig Smart and iWater's infraMAP loaded onto Microsoft Surface Pro 3's to manage our 811 Dig Safely New York, Underground Facility Protection Organization (UFPO) Program. Using the Dig Smart and infraMAP software has increased efficiency, reduced ticket process times and reduced the staff required to process daily UFPO's from 9 to 4.



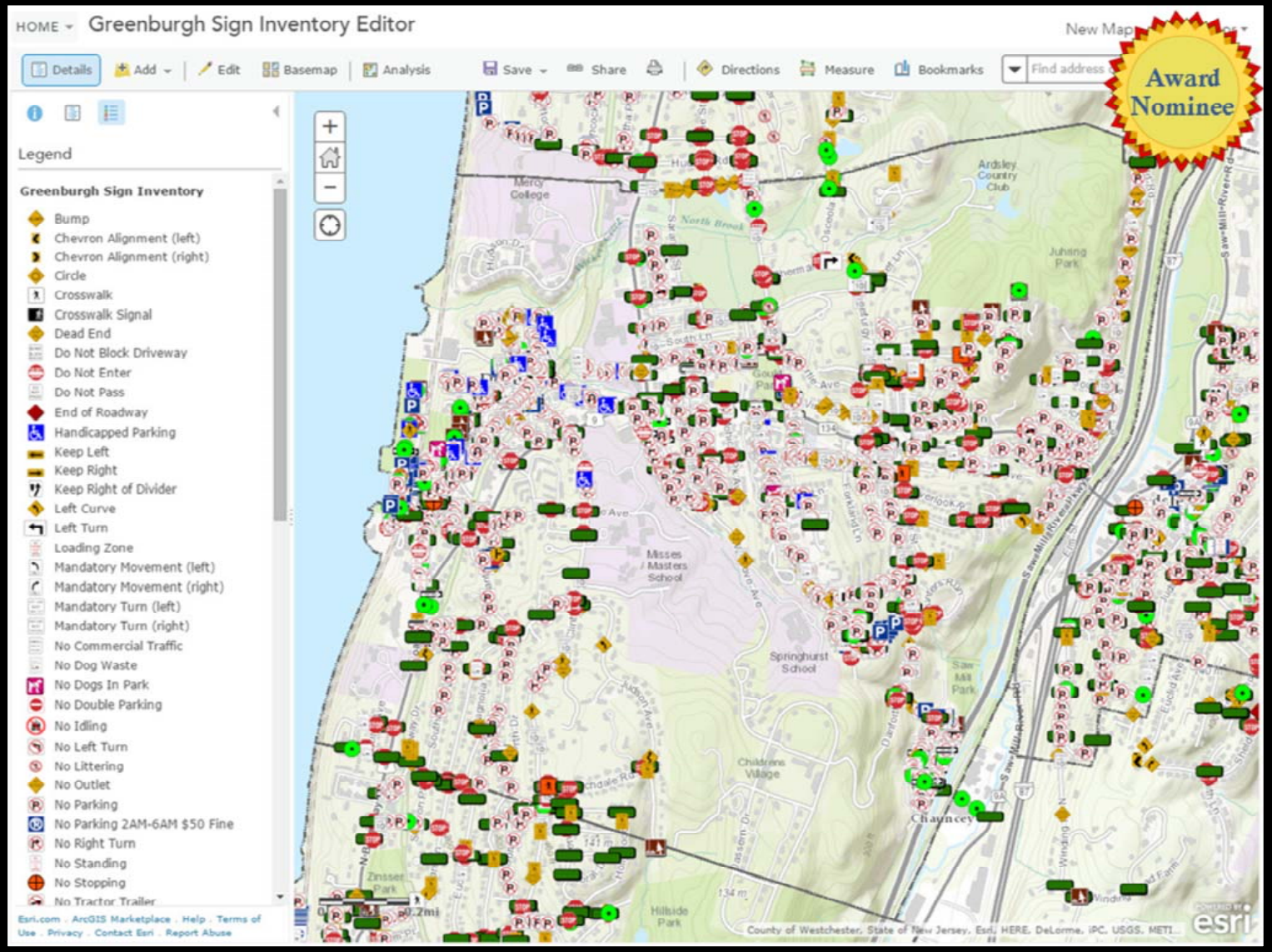
Danielle Garneau, SUNY – Plattsburgh (dgarn001@plattsburgh.edu)

The Roadkill Project allows the public to contribute to a GIS database and then view a map using readily available intuitive software. The Epicollect RoadkillGarneau app enables a user to employ smart phone to quickly submit information on wildlife sightings (in this case, usually deceased and along roadways) accompanied by basic information such as location, habitat, road metrics, scavenging and other conditions. This project encourages citizen science, helps promote observations (in a safe manner!), engages people with maps, and will contribute to the understanding of species distributions. At some future point the database may help identify areas where wildlife are prone to traffic mortality, which affords steps for mitigation.



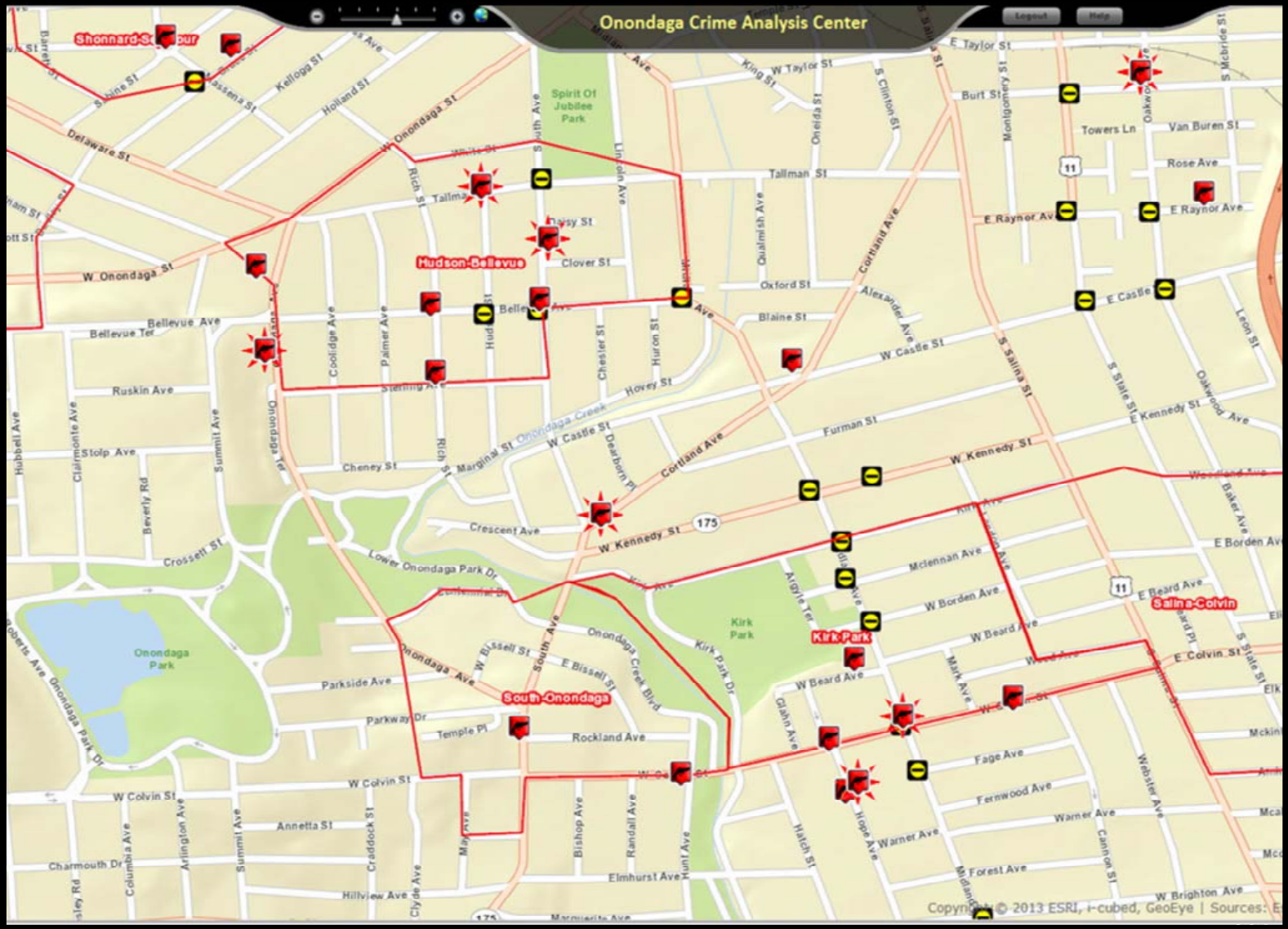
Ross Baldwin, Town of Southampton (rbaldwin@southamptontownny.gov)

Land Manger GIS is a robust web mapping applications where town employees can view parcel based information geographically or tabular. Users are able to view/overlay 90+ layers. Land Manager also interfaces with the Town's property information data base to give users real time data about taxes, assessment, building photos, inspections, and permits. Some other tools available are a mailing labels tool, building envelope tool, comps panel, permits panel and inspections tool (field editing). This application has 12 different years of Aerial Imagery as well as a Pictometry and Google Street View.



Sam Wear, Weschester County, stw1@westchestergov.com

Mobile Mapping for Street Sign Inventory -- GIS staff developed a smart phone mobile application for local governments using ESRI's Collector app to inventory and map street signs. As designed, the application leverages the county's enterprise GIS infrastructure and does not require any software from local governments. To date 27,358 signs have been mapped in 11 Westchester County municipalities. Data collection is currently underway in another municipality.



Paula Cutrone, Onondaga Crime Analysis Center, pcutrone@syracusepolice.org

The Onondaga Crime Analysis Center's (Syracuse, NY) Web Mapping Application is available to Law Enforcement personnel throughout Onondaga County. The map displayed shows an area of the City with a high concentration of shootings. The COPS cameras are indicated by the yellow and black icon while the City's POP target areas are indicated by the red polygons. The WMA is used to support enforcement efforts as part of the GIVE (Gun Involved Violence Elimination) program.

Oleg Kononenko, Russian cosmonaut, snapped this image of New York City from the International Space Station on Saturday night, October 17, 2015. Published in the New York Post on October 20, 2015; Inset: iconic "Blue Marble" photo from Apollo 17, December 7, 1972.
WFJ Commentary: We've only been able to take photos like this one from space for about 50 years. Views of the earth from space radically changed the way we think about our planet as a single, self-contained system. It used to be the you could only see any significant distance from a tall building, a mountain peak or more recently an airplane, but under the best circumstances the furthest you could see was maybe 50 or 100 miles – a mere pinprick considering the total surface area of the earth. Space imaging changed that. It made us all aware, for the first time, that this is a small place and we have to solve our problems together. As we've just seen with the showcase of previous examples, GIS gives us another new way to view our planet and these geospatial views are like different camera lenses that helps us see and understand the problems we face today. Not just the physical world, but also the social world, political world, economic world, cyber world, and much more. This also is new, and very, very powerful. And seeing how you all are using GIS to bring this information out into the light gives me confidence that we can apply these fantastic new insights to help solve our problems.

Thank You