

**NYS GIS State Agency Advisory Group
Meeting Report**
at NYS Thruway Authority, Building 10
September 5, 2018

Welcome and Roundtable Discussion Covering Mobile Data Collection Software by Agencies.

The group went around the room, introduced themselves, and discussed the mobile data collection software they use in their agencies:

- **Eric Herman – NYSTA:** Working on implementation of an ArcGIS Collector application in conjunction with ArcGIS Online to do inspections of light poles; Previously used TerraSync
- **Anyée Fields – NYSTA:** Had done earlier experimentation/testing with ArcGIS Collector
- **Jason Baum – ITS (GPO):** Will discuss more during his talk
- **Jeff Langella – ITS (GPO):** Using Esri's Collector, Survey123 and Trimble's Terrain Navigator Pro
- **Katherine Barnes – DEC:** Decent use of GPS and smartphones at DEC
- **Rob Rizzo – ITS (DOT):** Lots of historic use of Esri's ArcPad field inspections; For last year and a half, have been using both Collector and Survey123 in ArcGIS Online; In process of moving DOT's System of Engagement for field collection to an on-premises configuration; Use of Survey123 for wrong way signs, pedestrian safety, sign applications, small culvert collection, hazardous trees, cold spots, wetlands within 50' of road; Road Status Damage Assessment also a field-based application
- **Tim Daly – ITS (DEC):** ArcPad and Trimble software are still in use; Survey123 is the primary field collection tool now, with additional use of Collector
- **Mary Susan Knauss – DOT:** Trimble use for 1 meter accuracy required for program; Moving away from check in/check out applications and towards Collector; Working with surveyors' Leica equipment and will start testing other Bluetooth solutions, Bad Elf – didn't get corrections desired
- **Tim Ruhren – ITS (GPO):** Emphasized how important it is to geotag photos; Most field collection is related to the Incident Management Team; Use of Terrain Navigator; 40 iPads deployed, plus those from Fire Prevention and Control; Feed raw data into Terrain Navigator and use mobile app solution for that product on Trimble's servers; The office uses Collector and Survey123 through Esri's servers (building inspection tools), hosted on ArcGIS Online
- **Rob Zitowsky – DOT:** Survey123 used for pedestrian safety action and wrong way signage; PSAP initiative from the Governor
- **Chris O'Connor – ITS (GCO):** No additional comments on mobile data collection
- **Christina Croll – OPRHP:** TerraSync used on Trimble devices; Survey123 and Collector are used; Land & Water Conservation Fund inspections done with Survey123; SHPO's CRIS Tracker is built on TerraFlex by Trimble
- **Arjita Rai – DOH:** Bureau of Occupational Epidemiology does lot of geocoding, including use of GBAT
- **Doug Done - DOH:** Same as above, noting lots of use of the state's SAM product
- **Sean O'Keefe – ITS (DEC):** See Tim Daly's comments
- **Rebecca Newel – DOS:** Scenic Areas of Statewide Significance program often enriches data with geotagged photos; The ReclT-NY app (for crowd-sourced recreational activities) is based on Survey123
- **Peter Lauridsen – DOS:** Consistency staff field check using photos with GPS
- **Dan O'Brien – OEM:** Often receive photos from multiple sources that get put into NYResponds, and use the Common Operating Picture (COP); Looking for ways to make sense of different data sources in the system—some with locations, some without
- **Brent Kinal – DEC:** Invasive Species uses Survey123, some ArcGIS Collector, and a bit of a mash up between the two; Also starting to use Esri's Workforce software

- **John Marino – NYNHP:** iMapInvasives program uses Survey123 and the ArcGIS Collector app; Survey123 is used for the water program, and rare species; Also use Geopaparazzi Open Source tool for rare species (Tim Howard is contact)
- **Meg Wilkinson – NYNHP:** iMapInvasives app runs with Adobe's PhoneGap (for building mobile apps) on Android and iPhones; Have been using for 5 years, and getting heavy use; Noted that photos help dramatically
- **Mark Giddings – DOH:** Department of Nutrition does not use mobile collection software
- **Jerry Carlson – DEC:** Forest Health program has been using mobile apps for past 20 years using an Open Data Kit (ODK) form; Now starting to get into Survey123, and looking at change detection
- **Ken Zalewski – NYS Senate:** No mobile apps, but the SAGE (Senate Address Geocoding Engine) is now using the state's geocoding service (saving of millions of dollars)
- **Beth Nolan – GPO:** No additional comments on mobile data collection
- **Sam O'Neill – GPO:** Same as above

Survey123 and Integration with WorkForce. Brent discussed Survey123 Connect for ArcGIS application, used for building advanced surveys. He explained that Survey123 was an open source application with Open Data Kit, which Esri purchased and further developed. It allows users to develop an app in minutes. One limitation is that Survey123 only collects point data; Users collect data using forms. The development environment uses Excel spreadsheets to define fields and values. In Brent's examples, three forms run off the same database. He discussed the DEC Trap Check form, which look at an inbox or a map for status of traps, based on proximity to the user in the field. The survey works real-time with ArcGIS Online and its dashboard charts and graphs. He then described using Esri's WorkForce application on a smartphone, to look for information on Spotted Lanternfly. WorkForce allows you to create assignments for individuals working on a project. Brent is the primary developer for this. Meg pointed out the confusion with Esri use of the word "survey" meaning multiple things within the software.

NYNHP's Survey123 Apps and Dashboard Information. Meg introduced this topic by discussing the NYNHP's iMapInvasives program (nyimainvasives.org) for identifying invasive species locations. The application was started in 2010, using PostGIS and Open Layers. The upcoming iMap3 application should go live in 2019, and will be based on Esri tools. NatureServe, an international network of biodiversity data centers, is working on this project. She also described the Watercraft Inspection Steward Program Act (WISPA), which includes extensive data gathering activities through surveys and watercraft inspections. WISPA provides "leads" on potential problems, but not definitive identification of species locations, which is the goal of iMap.

John then discussed WISPA in more depth. Two hundred stewards are currently using a Survey123 form to perform these surveys. The data then goes into DEC's ArcGIS Online account, which also supplies information to viewers and editors, through web services. A dashboard, designed in ArcGIS Online, offers a live view of data from the season (about 146,000 records) and uses dynamic charts and graphs that adjust based on the area of the map zoom, and applied filters. Editors can make changes to their own datasets. Although the geographic coordinates are captured, a single location for each boat launch is used.

John then showed an application for field collection of invasive species called OAT (Observation Assessment and Treatment). This application uses ArcGIS Collector, since it includes polygon data collection, which Survey123 does not allow. Data from polygons relate to the points collected from Surveyor, which has better tools for calculations and applying logic. Trained staff, instead of "citizen scientists", use this application. While Survey123 does not require ArcGIS Online or Portal, ArcGIS

Collector does. A few people did note that ArcGIS Online seems to have some trouble with relational tables. Meg pointed out that Esri's GeoNet community forums (<https://community.esri.com/>) are a great place for people to note these issues, and that more comments are likely to receive more attention.

GPO's OpenSensorHub for Live Data Feeds. Jason discussed the OpenSensorHub software (<https://opensensorhub.org/>) his group is using as one part of a Proof of Concept for the GPO. OpenSensorHub uses an OGC web enablement standard to allow people to connect to a platform and connect to real time data through software drivers. For instance, these tools can bring in feeds of AVL data from snowplows, Mesonet weather data, and stream gages for flooding. It can also connect to real-time drone data for imagery, traffic cameras, dash cams, and body cams. It provides a single platform to ingest multiple real-time data streams. The office is also working with DOT and their vehicle locations. The GPO is starting with a 90-day proof of concept. Jason offered to talk about the results of that testing at the next meeting. They hope to eventually provide access to data through this interface to both internal users and the public, via integration with my.ny.gov.

New GIS Client Office at ITS. Chris talked about the new GIS Client Office (GCO) that he now heads, at ITS. He reports directly to Frank Winters, the state GIO. Chris noted that ITS represents 47 state agencies, and that his goal is to better thread together the ITS GIS professionals, and look to expand and leverage support for GIS across state agencies. He noted ITS's move towards the smaller, more focused "portfolio" model, and that executives across the agencies see the value in expanding GIS support. He provided a one-page handout to describe the new GIS Client Office. Primary goals include maintaining client GIS strategies, empowering ITS staff, seeking out new/innovative solutions, and operating as a Center of Excellence. The GCO is a sister office to the GIS Program Office, and focuses specifically on the agencies that ITS supports.

In the continued conversation, Rebecca asked about verifying GIS expertise when contracting, as DOS is unable to weigh in on contractor selection for their IT projects. Meg then expressed her strong interest in organizing a group to coordinate for a more detailed GIS data layer for the state's water bodies, and coordinating a hydrography framework data model. There was further discussion about this topic, and Jeff Langella and Tim Daly noted that the National Hydrography Dataset (NHD) could serve as a framework to build the additional needed information. Several others also expressed a strong interest in this.

Building Footprint Datasets. Jeff provided a presentation about the current state of building footprint mapping in NY State. One June 28, Microsoft announced that they had mapped 4.7 million building footprints in the state. This data is available free to the public. NYSERDA has also assembled a building footprint dataset for 20 counties in NY, in partnership with CIESIN (Center for International Earth Science Information Network) at Columbia University. In general, the NYSERDA data appears to be more up-to-date, complete, and detailed, but Jeff cautioned that users should consult and compare both sources, for a more complete picture. The Microsoft data is available at <https://blogs.bing.com/maps/2018-06/microsoft-releases-125-million-building-footprints-in-the-us-as-open-data>. Jeff is working with CIESIN to make the data available to the state agencies. He also mentioned that NYC has all of its building footprints available as a web service at NYS Open Data, at: <https://data.cityofnewyork.us/Housing-Development/Building-Footprints/nqwf-w8eh/data>. Jeff expects to generate a web service to provide access to building footprint data in the near future.

Rebranded Discover GIS Data NY. Tim Ruhren finished out the meeting with an overview of the newly rebranded "Discover GIS Data NY". Previously known as "The Ortho App", this application still uses the old URL (<https://orthos.dhSES.ny.gov/>), though he expects this to change. The purpose of Discover GIS Data NY is to make data more easily discoverable. He noted that in the application's "Layers" tool, users can click "User Layers", and add links to other external web services. A number of services are

provided as samples. Tim later provided this link as an example: <https://on.ny.gov/2oNGbPf>. With it, you can open Discover GIS Data NY, with the Statewide Hillshade, NYS Senate Districts, and publicly available parcels web services added to it as "User Layers". The user layers can be re-ordered and have transparency set. Discover GIS Data NY also provides the ability to download orthoimagery, DEMs, and raw LiDAR files.

The next meeting is tentatively scheduled for Tuesday, January 8, from 9:30am-12:00pm at the NY State Thruway Authority Offices. If you have any ideas for topics or would like to provide a demonstration at this meeting, please let us know. Send any questions or concerns about any of these issues to the Advisory Group Chair, Eric Herman at the NYS Thruway Authority (518) 471-5890, or eric.herman@thruway.ny.gov.