**New York State
Association of
Metropolitan
Planning Organizations
WORKING GROUP MEETING MINUTES**

WORKING GROUP: GIS Working Group

MEETING DATE: November 28, 2016, 10AM – 2PM

MEETING LOCATION: 3rd Floor, Union Station - 321 Main Street, Utica, New York 13501

ATTENDEES:

Adirondack/Glens Falls Transportation Council – A/GFTC: Kate Mance (phone)
Binghamton Metropolitan Transportation Study – BMTS: John Sterbentz (phone)
Capital District Transportation Committee – CDTC: Teresa LaSalle
Elmira-Chemung Transportation Council – ECTC: Mike Perry
Genesee Transportation Council – GTC: Chris Tortora
Greater Buffalo-Niagara Regional Transportation Council – GBNRTC: Kimberly Smith
Herkimer-Oneida Counties Transportation Study – HOCTS: Jeff Quackenbush, Ethan Brennan, Erin Tylutki
Ithaca-Tompkins County Transportation Council – ITCTC: Not Present
New York Metropolitan Transportation Council – NYMTC: Yun Hai Zhang
Orange County Transportation Council – OCTC: Lauren Burns, Coleman
Poughkeepsie-Dutchess County Transportation Council – PDCTC: Stephanie Rockwell (phone)
Syracuse Metropolitan Transportation Council – SMTC: Jason Deshaies, Andrew Frasier, Elizabeth Hassett
Ulster County Transportation Council – UCTC: David Staas (phone)
Watertown Jefferson – WJCATC: Not Present
New York State Department of Transportation – NYSDOT: Kevin Hunt, Korey McCallister, Jim Vitale
RSG: Christine Sherman

MINUTES:

1. **10:00 – 10:10AM: Introductions/Agenda (All)**

2. **10:10 – 11:05 AM: Roll Out of NYSDOT Transportation Asset Management System (Jim Vitale, NYSDOT)**

   - Jim Vitale works on the Information Technology Services (ITS) side of NYSDOT and is interested in knowing where opportunities are for information-sharing across the MPOs as the asset management system progresses.
   - Steve Wilcox came up with the notion that MPOs, localities, and counties can buy into the asset management program. Not sure where that would evolve to in terms of how local stat systems can use the tool.
   - Wilcox is the head of the program. Mike Rossi assists. Jim is the ITS project manager involved in all phases of the project.
   - Started this effort in January 2011 after two years of an RFP process to select the vendor. In 2011, NYSDOT engaged the firm Agile Assets based out of Austin, TX, to begin work. The goal of the effort was a bridge inspection package and an enterprise asset management system. There was a lot of effort across Agile Assets, NYSDOT, and ITS.

- The effort began with the Bridge Data Information System (BDIS), which includes inventory, inspection, flags, load rating, and vulnerability assessment of bridges and large culverts.
- The Bridge Management System (BMS) includes analytics associated with bridges.
- One challenge was posted when the program went live in 2015 directly following USDOT's new standards for elements and inspections. Therefore, before this asset management system was fully stabilized, NYSDOT was charged with updating the system to accommodate the new inspection and inventory methodology. This update took a year and went live in April 2016. The system is now stable.
    o Question: Which rating system does NYSDOT employ?
    o Response: NYSDOT is using national bridge standards now. An integral part of this system is that it can function as a translator—translating from old NYSDOT elements to current AAHSTO elements. This allows users to use old data to compare to current data.
- The Structure Management System (SMS) includes inventory and inspection of assets such as overhead sign structures, noise barriers, and retaining walls.
- Agile Assets designed the BMS module to optimize expenditures on bridges and large culverts. The model looks at existing conditions and deterioration curves for elements and develops a list of potential projects. The software is then capable of identifying the 'best' projects based on conditions. This module will replace the structures needs tool.
- The Pavement Management System (PMS) is Agile Assets' sweet spot. The firm has been doing this type of work for a while, so NYSDOT plans to use much of their system's "out-of-the-box" capabilities. Their system is highly configurable through an Oracle database. Much of the workflow is stored in the Oracle database, which is key to the implementation. PMS also has the optimization functionality for pavement projects.
- Once SMS, BMS, and PMS are live, NYSDOT will use Portfolio Manager(formerly "asset trade off analysis") to help identify the best mix between SMS, BMS, and PMS improvements—this would mean developing the utility function to rationally and objectively determine on which projects to spend money without subjective intervention. There are obviously subjective considerations that can be brought into the mix, but this is a mathematically optimized asset planning tool. The overall vision is to have everything (all of the state's physical assets) programmed through the use of this tool.
- The Right of Way (ROW) module is an add-o that will replace NYSDOT's current system, a program called Sesame. The new program is now being implemented through the Agile Assets contract.
- Maintenance Management System (MMS) is being developed to replace "MAMIS"—the application developed by Booze Allen for DOT. The MMS module will include assets such as snow and ice beats, audible roadway delineators, pavement marking, drainage systems, sign supports and panels, ADA ramps, sidewalks/crosswalks, small culverts, signals, and facilities.
- The Asset Management System will be an online application. It will require a username and password (one individual to one license) and can be accessed through any internet-connected device.
    o Question: Will it be a read-only format?
    o Response: Yes—it can be a read-only license. The user may or may not be able to download data. This needs to be worked out with NYSDOT.
- Kevin Hunt is putting together a tool with the Esri Roads and Highways environment that will assist in correctly placing linear bridge locations on the network in the appropriate location rather than having each bridge be a point asset. The new bridge locations will include the start and end of approach to have the deck mapped and maintained on the Milepoint linear referencing network. They are also loading local roads into Roads and Highways so that the locations will be accessible for linear referencing.
- Through the design work on the modules, NYSDOT is making decisions to move each of the asset inventories forward. Most of them are incomplete and some do not exist as of today, which is why NYSDOT is designing these standardized containers for the assets.

- o Question: Are assets only being collected on the state system, or are local roads included?
- o Response: All bridges are included. Generally, the other assets are being maintained on the state system.
- o Question: Will each module require a separate access request?
- o Response: No, the same account would be used. The vision is to look at the state system, but local and regional entities maintain their assets in the same way. Therefore, the state would love to have these local agencies as partners; this would benefit everyone.
- o Question: Under which module are guiderails? If an agency was conducting an inventory, would they be able to obtain information from the dataset?
- o Answer: Guiderails fall under MMS. Kevin Hunt can provide a geodatabase for agencies doing inventories or similar activities. NYSDOT hopes to standardize as much as possible, so it would be great to share the datasets and information. Region 5, for example, is using a third party to assist in putting together a regional database—so not all data can be standardized, but NYSDOT is working towards that. There are various tools for asset management. For example, Fugro is a tool for collecting asset location information. Another agency is collecting information and comparing costs and benefits of Fugro versus another technology for managing asset information. Much of the inventory information under the MMS module will come from this information.
- o Question: What is the cost per county for full rewrite access?
- o Response: There will be a one-time fee for each seat. That fee is still to be determined. It would allow for access to your county or region. NYSDOT has paid for the development of the tool, so the user will have to stick with what DOT lays out for each data field. MPOs, counties, etc. will have to adapt a work process to match the product.
- o Question: How will standardization work?
- o Response: Standardization would likely occur after the system goes live. An agency can engage Agile Assets to figure out how to integrate their data into the system. Mike Rossi is a good person to talk to about this if there are further questions.
- The next step in the system's development is going live with the new version. This version will include map-based location editing abilities. (e.g., Instead of trying to type in route and milepoint information, the user can use the mouse to move the asset to the location at which they would like it to be. NYSDOT hopes to go live with this capability throughout all of the modules by the end of 2017.
- The Roadway Inventory System replacement is big project that is planned to begin in early 2017 and go on for 14 months. Agile Assets is doing all of this work, while NYSDOT staff is intimately involved in the process and configuration.
    - o Question (posed by NYSDOT): What is the big use of this to the MPOs? Access to data? Access to the analysis? The management system component of this?
    - o Response: For HOCTS, the notion of not having the ability to export data is a hurdle. In the past, the agency has always exported NYSDOT datasets/shapefiles to work with. From there, the MPOs, etc. can create a consumable document or map.
    - o Response: There is also concern that state products do not comprehensively show the entire system.
- NYSDOT is hoping to get closer to a local system in the future. NYSDOT will also look into making the information downloadable in a GIS layer. NYSDOT hopes to move toward both a statewide GIS platform (i.e., shared services) and internal to the agency as a system of engagement. NYSDOT is looking at implementing ArcGIS online.
    - o Comment: Right now it is difficult to find the most recent versions of different datasets. The enterprise system would be valuable as a way to pinpoint the latest information so a user does not have to search/email around for the latest information.

- Clearances and weight limits are another important type of inventory for which NYSDOT is developing a database. NYSDOT is working on the oversize/overweight credentialing system that will be the oversized vehicle permitting system and handle the routing automatically. NYSDOT will be sending a release for the soft launch of that system sometime early next year. The NYSDOT team is interested in extending this capability to other partners and will eventually encourage agencies looking for this capability for their area to connect with NYSDOT staff.
  - o Question: In terms of the linear referencing system, how far out are the decimals going? Hundredth of a mile precision is not adequate for some uses.
  - o Response: The Roads and Highways product did not handle the hundredth-of-a-mile-precision very well (e.g., it caused some issues with the way Roads and Highways maintained the network). NYSDOT abandoned that measure for Roads and Highways. For maintenance, however, NYSDOT will use seven decimal places to maintain the Milepoint LRS network and business data. Initially, NYSDOT will find assets on the linear referencing system using the routes tool on GIS for quality control (i.e., ensuring that the right road is associated to the right place) and they will determine if the precision level needs to be better or worse.

3. **11:05 AM – 12:00 PM: GIS-Related Updates from NYSDOT (Kevin Hunt, NYSDOT)**

- Jim Vitale is the project manager for the enterprise management linear referencing project, as well. The Milepoint Network is in production now in Roads and Highways. The Federal Aid Eligible Network is maintained by Highway Data Services in Roads and Highways. NYSDOT staff have been fully-consumed with the Local Highway Build for the past couple of years. We hope to wrap it up in time for next year's HPMS. By next summer, NYSDOT anticipates having all local roads loaded into the Milepoint Network in Roads and Highways. It is a Highway Data Services project. They are about to finish visits with DOT Regions 8 and 9, so the only areas remaining will be New York City and Long Island in terms of finalizing the GIS network for local roads.
- During the visits to each Region, NYSDOT invited the municipalities to join in a discussion of the project, some of the issues they come across, and concerns of losing mileage (funding based on mileage). NYSDOT found that they were able to answer many questions and concerns and have discussions about individual roads. NYSDOT provided the updated inventory of the highway system ahead of time to show exactly what they did and why they did it. NYSDOT sought to apply standardization across the network using the rules that the agency set forth. NYSDOT will make the inventory change to Roads and Highways at the same time as the inventory is revised and prepared for next year's HPMS. As a result, any impact will be applied to all municipalities at the same time.
  - o Question: How long after the HPMS submittal will this to be available to the MPOs?
  - o Response: Next year's submittal will be different, as NYSDOT is loading all routes into Roads and Highways. They are not sure how this process will go, but once it is completed, they will export the network from Roads and Highways, send to HPMS, and make that Milepoint Network available to everyone.
  - o Question: How can MPOs use the network?
  - o Response: We would like to give stakeholders at the agency the ability to use the data on the system.
  - o Question: Will there be an online application for local highway supervisors to log in to this?
  - o Response: There is not one right now, but it is possible through the platform. There could be some combination. NYSDOT encourage this group to make these types of needs known. For example, there is the potential to cooperate on maintenance through the Roads and Highways environment. That application could be extended externally, but that is a decision for DOT to make.

- o Comment: Agencies sometimes catch errors; it could be helpful to have the ability to make the change in house or push out to NYSDOT.
- o Comment: It would be great to combine the release of the milepoint system for all roads with a training so users can get an idea of how to work with the system and be able to create similar networks. A webinar/webex could be a good venue for such a training. The timing also makes sense given the release of the full network.
- NYSDOT is working with Esri and Agile to set up the out-of-the-box integration. This will be on the published version of the milepoint system.
- Local Highway Build
  - o Mike Fay was named the director of Highway Data Services—replacing Anthony Torre.
  - o Patrick Kemble assumed the position of Highway Inventory lead.
- Assets LRS is currently a work in progress.
- NYSDOT is embarking on a new, Oracle-based capital program on the system called Primavera. The new system will have a GIS component to locate projects of the NYS Milepoint LRS network.
  - o This work will be underway next month.
- ELA ends at the end of this calendar year.
  - o NYSDOT approved ELA for next three years.
  - o It will cover the transportation agencies and includes tax/finance, economic development, and gaming commission agencies. These other agencies have small GIS footprints, though.
  - o NYSDOT would like to add ArcGIS online to the ELA. They are not sure what the ArcGIS online footprint or GIS portal imprint will be—it will likely require a more detailed discussion with Esri.
  - o NYSDOT is invested in the capital program and asset management systems. Esri and Agile Assets were teamed up and invited to participate on the system of engagement concept. Esri is bringing in ArcGIS Online as a way to make data and apps available through the ArcGIS Online page. NYSDOT is looking forward to this over the next year.
  - o NYSDOT is working with Esri on the administration of ArcGIS Online to ensure it is being deployed effectively. They would like to use the ArcGIS platform to share information and allow multiple users by MPO or possibly an organizational implementation. These users may need publishing or administrative capabilities. NYSDOT understands from talking with Esri that they will need to name the users to make it effective to everyone. Name users should become available next year.
  - o NYSDOT is in the process of identifying the various caveats associated with ArcGIS online. The program takes time to learn and is evolving. Right now there are eight people in different departments in different counties working with it.
  - o NYSDOT noted that editing in ArcGIS Online should be fine, as there are clear rights that users can administrate. The issue could be in delegating the responsibility of the administration, as well as authorization of who is able to see the information. It would require a lot of named users. An alternative would be a portal approach, which would not work for the agencies outside of the DOT firewall. Any experience that agencies have should be passed on to NYSDOT.
    - § Question: What is the difference between Pro and Online?
    - § Response: You need to be a named user. If you do not have an ArcGIS Online account, Pro is useless. The amount of named users for each MPO will be provided by NYSDOT. Kevin Hunt will double check on the availability.
    - § Question: Does ArcGIS Online come with Pro?
    - § Response: Clarified following the meeting. ArcGIS Pro requires an ArcGIS Desktop license along with an Esri named user. Kevin Hunt will learn more about how Pro works. There may be issues if there is an extra cost. NYSDOT will need to identify the extra cost and how to quantify it.

- Response: It is important to remember that every GIS user at an agency needs the whole package in order for it to work; otherwise, there can be compatibility issues.
  - o The NYS vision, led by the NYS GIS Program Office is that the state would have the platform and ultimately create a data store that all of the local governments around the state could use and provide through one platform. This is likely a few years off on the horizon.

4. **12:00 – 1:00PM: Lunch \ Roundtable Discussion (All)**

5. **1:00 – 1:30PM: Presentation of HOCTS Sanitary Sewer Asset Management System / Pavement Condition Reporting (Jeff Quackenbush & HOCTS Staff, HOCTS)**

- HOCTS is using the program Lucity as an asset management interface. It allows you to right click on a feature and look up in the asset management system.
- There is a separate Lucity menu that provides information about the spatial entity. It allows you to pull out information and documents from a record. Jeff Quackenbush demonstrated the sewer/ storm water module.
- The pricing for Lucity it is one set price, but you have access to each module. It also includes a mobile version, which allows users to do in-field work. Field technicians collect in the field, and the information goes directly into the database.
- Every instance of an inspection has several photos taken in the field associated with it. The photos and videos are very useful.
- Lucity suns on a SQL server. Once in a while, the user will have to go into the background and change settings but not often.
- HOCTS created an organized plan for the asset management process. Staff will first locate an asset with a GPS receiver to create the structure in the inventory. They will fill in the general database characteristics (e.g., it has tabs/groupings of data regarding the asset). The user can also look at the inspections or a work order administered on the asset in the past. The next phase is to send out a detailed inspection crew to do a MACP inspection. The crew goes out with laptops and collects the data.
- The Lucity database allows for various queries. For instance, you can sort through inspections based on the person who conducted the inspection, through a certain characteristic, etc.
- It would be great to have this type of system for more types of assets.
- The development and editing of the system occurs on two layers. Users must VPN into the server to get the data.
  - o Question: For the photo inventory, are the inspectors taking photos and uploading onto the system or is it a mobile app?
  - o Response: HOCTS staff upload the photos, but it is possible to use a mobile app. At the time of the inventories, some of this technology had not matured, so they used a digital camera and laptops/tablets.
- There is a big SQL server in the background. The user must be savvy with the server technology to make it work. It is easy to handle with some practice.
  - o Question: How many fields of data are there?
  - o Response: There are thousands, as this is the intent of Lucity. The user loads the Lucity database into the SQL server, and it works from there. The user should not change field names or widths. It includes import tools to set up and do field mapping. The points and lines are just a geodatabase. Everything that an engineer could need is in the database and accessible in minutes.
- For the HOCTS Road Scoring System, the goal is to do the entire county on a three-year cycle.
- HOCTS scores the Federal Aid Network each year. They are now working on the county system. The Federal Aid and County systems overlap, but the networks do not overlap. This results in a

system of both county roads and the Federal Aid System. There is an attribute in the dataset that allows for the user to identify the overlaps.

- HOCTS staff use the GPS computer and camera, which is connected directly to ArcMap. When connected, the GPS will show a curser of where you are on the system/which segment you are on. One staff member drives, while the other has the laptops and scores the pavement condition.
- It is set up with a symbology default to zero. The edits are then saved automatically, so the system tracks which areas are covered with a new symbology.
- The program allows the user to segment roadways on the network on the fly (e.g., if only half of a segment is paved, the user can split the segment to score the portions differently. HOCTS tries not to make segments smaller than a tenth of a mile. Sometimes joins are necessary, but are less frequent than splits. HOCTS noted that they keep the Roads file separate from the Centerline Miles file to avoid all of the splits in the Centerline Miles file.
- For reporting to the county, HOCTS color-codes the pavements by the score in a map format.

6. **1:30 – 1:45PM: Pedestrian Safety Action Plan GIS Package (Jason Deshaies, SMTC/All)**

- GIS Working Group members should coordinate with their Safety Working Group members to discuss the use and planning around the Pedestrian Safety Action Plan GIS Package.

7. **1:45 – 2:00PM: Training Discussion/Wrap Up/Conclusions (All)**

- There is the opportunity for a training in 2017.
- Potential training topic ideas include:
  - o ArcGIS Online (May be difficult in terms of having enough licenses available.)
  - o Network Analyst
  - o Adobe Illustrator Training (May be better to have a consultant. Could be an issue if agencies do not have Adobe licenses.)
  - o Model Builder/Python Scripting
- Christine Sherman ill look into options, discuss with the GIS Working Group members, and will pass along suggestions to the Executive Board. Once a topic is selected.