1. **NYS GIS Activities Update**

Hunt provided a status update on current NYSDOT activities including NYSDOT’s System of Engagement and other external facing applications/web services, as well as its current work efforts with ESRI and other partners. A copy of the PowerPoint presentation prepared by NYSDOT is attached.

- **Certified Business Enterprise Viewer** – This application allows users to search disadvantaged, minority-, and women-owned business enterprises that are required to be included on projects by FHWA and other agencies. This application uses data from the Empire State Development catalog and is updated on a weekly basis. The NYSDOT is working on a data interoperability module to import data into its geodatabase warehouse and publish it on viewers such as the CBE Viewer.
• Materials Suppliers Viewer – This application is intended for use by contractors looking for NYSDOT-approved suppliers of aggregates and other materials. Users can look up suppliers by entering a search radius. NYSDOT is updating the database to add different types of suppliers. The Materials Supplier Viewer replaces the KML file that was available previously.

• NYS Bike Routes Viewer – This viewer replaces the old NYS Bike Route Viewer that contained information such as horseback riding trails amongst other items that NYSDOT did not have responsibility for. This data was added by downstate regions. Given the difficulty of maintaining this database, under Karen Warf’s leadership at the office of traffic and safety for pedestrians and bicyclists, the team re-visited the old Viewer. The decision was made to create a new Viewer with state bike routes as a starting point. There has been discussion to reach out to MPOs and regions to maintain this database.

• NYSDOT System of Engagement – Hunt explained that, as part of System of Engagement, NYSDOT had developed 26 applications including the three viewers discussed above. Most of these apps are internal to NYSDOT at this point. While this project was successful in providing a proof of concept to staff both inside and outside NYSDOT, the effort was put on hold in spring 2020 due to the current budget constraints. However, it is highly likely that this project will be restarted in the future. At this time, the System is being developed based on requests received through the agency’s internal governance process.

Hunt provided an update on the Enterprise Asset Management Program; Roadway Inventory System 2; Roadway Data Mart; Highway Work Permits; Crash Location Entry, Analysis and Reporting (CLEAR); and Right of Way applications.

  ▪ Enterprise Asset Management Program (EAMP) – A major platform upgrade affecting various components of the Maintenance Management System (MMS) was completed in early-spring 2020. The ITS GIS geodatabase “system of records” will host information on “secondary assets” and serve as an inventory while these assets will be managed in AgileAssets.

  ▪ Roadway Inventory System (RIS) 2 – The Smart Entry Engine (SEE) interface provides the ability to edit and maintain the roadway inventory inside the ESRI roadways and highway geodatabase.

  ▪ Roadway Data Mart – It is a publishing environment under which pavement, traffic, and roadway inventory data will be made available in geospatial and tabular format for various reporting needs.

  ▪ Highway Works Permits – Project is more than 60% complete and it is anticipated to be released in spring 2021.
- Crash Location Engineering, & Analysis Repository (CLEAR) – This application, which replaces Accident Location Information System (ALIS), is scheduled to be released in spring/summer 2021.

- Right of Way – DOT released an RFP in summer 2020. This project will enhance how ROW information is maintained.

Hunt reminded the group that NYSDOT had sent out ArcGIS 8.1 licenses in mid-July 2020. Each MPO was provided with one concurrent use ArcGIS advanced license and up to five ArcGIS single use basic licenses. He also summarized the NYSDOT GIS Map Services that are available on DOT’s website.

A list of key questions and discussion items on this agenda item follow:

**Q1. How do you capture data on small culverts?**
**A1.** Small culvert inventory at NYSDOT is incomplete even on state highways. Data has been collected as part of inspections by NYSDOT as well as consultants. NYSDOT is also considering extracting some information from as-builts as the digital processes evolve. Data on secondary assets has also been collected through contractors using mobile and lidar technology as well as through Fugro but that effort has been focused on signs, guardrails, and other assets that can be “seen” as opposed to small culverts.

**Q2. What is the source for getting crash data today?**
**A2.** ALIS would be the source to get crash data. The DOT will maintain ALIS until CLEAR is available. Individuals could also reach out to Andrew Sattinger at NYSDOT in case there are issue with ALIS.

**Q3. Is Framework Portable still available for some of the services?**
**A3.** Yes, Framework Portable is available, but it is being semi-maintained. Some data such as streets and boundaries are being updated but other datasets not so much. It is recommended to access/download GIS data from web services available on NYSDOT’s website or Program Office datasets.

### 2. ArcGIS Online Services – Status

Quackenbush inquired if any of the users were still having issues with publishing maps after NYSDOT had made necessary adjustments or experiencing technical difficulties with ArcGIS Online services. Quackenbush reminded the attendees that he along with Deshaies were handling the ArcGIS Online management. While all the advanced licenses have been distributed, several basic licenses were still available in case anyone needed them.

### 3. Remote Working Experience Discussion

The WG members discussed their experience working remotely during the Covid-19 pandemic, including technical challenges and workarounds to use GIS software application and accessing data in a remote (work from home) setting.
• HOCTS – Used Virtual Private Network (VPN) successfully and seamlessly to conduct their daily work activities including GIS tasks. Some of the data intensive GIS activities required staff to come into the office and download data on their laptops. Staff used tools, such as WebEx and Zoom for collaboration and communication as well as Gmail accounts were set up.

• SMTC – The agency purchased an upgraded Zoom license to communicate and collaborate in a virtual environment. The agency was in the process of migrating to Office 365 and use “cloud” based server as opposed to in-house email and data/file servers. While the current set up allowed for easy use of some software applications, such as MS Word and MS Excel, the use of GIS was not seamless. Discussed technical issues such as speed and connectivity working with GIS data and application over the internet in absence of VPN. Currently, SMTC does not have an ArcGIS Enterprise server. Need for equipment, fiber and connectivity for in-office solution or “cloud” based server was emphasized.

• UCTC – Staff had access to data and files via VPN. However, for accessing GIS data and application, staff used Remote Desktop as opposed to data server via VPN.

• CDTC – Staff was set up to use VPN and it worked seamlessly. However, there were issues when downloading and working with aerial imagery in ArcGIS Pro. Used Zoom with headsets and web cam for virtual meetings and collaboration.

• OCTC – Remote Desktop was the tool of choice. Staff used MS Teams and Office 365 as collaboration tools. ESRI had approached OCTC to consider ESRI Roadmap as a solution.

Q1. What are the steps moving forward – if you don't have ArcGIS servers, is it appropriate to use ArcGIS online?

A1. While there is no one-size-fits all solution for accessing and working with GIS application in a remote environment, users should be aware that large data sets on ArcGIS Online impacts the rate at which credits are consumed.

4. ArcGIS Pro/ArcGIS 10.8 Release – Where is everyone with regard to Pro/ArcMap?
Quackenbush reiterated licensing information Hunt shared earlier in the meeting under agenda item #1. HOCTS has two full-time ArcGIS Pro users. There were several benefits to using ArcGIS Pro especially in terms of integrating with the online services and resources. LaSalle pointed out effectiveness of the two virtual training sessions conducted by ESRI in March 2020 and shared her experience using ArcGIS Pro as well as technical issues and workarounds with creating layouts. Quackenbush complimented ESRI on their successful delivery of the two full-day virtual training sessions.

5. Traffic Count Program – Status Update
Rossi provided a demo of the new and improved Traffic Data Viewer (TDV) that was developed as part of the System of Engagement project. Various features and functionality of the TDV were highlighted, such as filtering traffic data by direction, accessing truck
counts and truck percentage as separate items, ability to access data based on a user-defined geographic area, such as county, region as opposed to using station IDs and create charts/graphs on the fly. In addition, data from the TDV can be exported into other software applications in CSV or MS Excel file formats. Furthermore, traffic data will be updated annually and when it is released in January 2021, existing traffic data for 2019 would be made available. A copy of the PowerPoint presentation is attached.

A list of key questions and discussion items on this agenda item follow:
Q1. Who should HOCTS send traffic counts (short counts) to at NYSDOT?
A1. Rossi responded that HOCTS could send traffic count data to him or Kurt. However, he would check internally with staff and provide a contact.

Q2. Will it be possible to provide a copy of this presentation?
A2. Yes, Quackenbush or Jain will send out a PDF version of the presentation with the meeting notes.

6. Pavement Condition Reporting
a) Has anyone seen any data from the NYSDOT scanning program?
The group discussed NYSDOT’s on-going effort on pavement condition rating and reporting. It was pointed out that this current effort was based on new data collection methods and metrics. The MPOs were curious to get access to this new pavement condition reporting information. Rossi mentioned that the data was being reviewed and would be released once all the data transformations between the old and new methods were reconciled.

A list of key questions and discussion items on this agenda item follow:
Q1. When the pavement condition information is released, will the MPOs be able to see data from the profile vehicle or metrics that go into the pavement rating so that they are to be able to assign good, fair, or poor rating?
A1. Rossi responded that NYSDOT was sensitive to federal reporting requirements. He assured the MPOs that they would be able to derive appropriate ratings consistent with performance reporting requirements based on the pavement condition information.

Q2. What is the timeline to release the pavement condition rating data?
A2. As of now, there is no set timeframe to release this data.

b) Pavement Condition Rating – Fraiser shared SMTC’s experience with collecting pavement condition data using ESRI’s QuickCapture. He explained the process SMTC staff deployed to collect pavement condition data at the block level, which included installing cameras on the vehicle and more importantly workflow process to set up QuickCapture to enable field data collection efforts. A copy of the PowerPoint presentation is attached.

A list of key questions and discussion items on this agenda item follow:
Q1. What is the cost of software and what are you running on?
A1. With ESRI ArcGIS Online account, the software application is free. The software application is running on iPad.

Q2. Was the point data collected using Collector joined to line data?
A2. Intensive geoprocessing effort was used to spatially join point data to lines. This was done entirely in a desktop environment.

c) Sidewalk Condition Inventory – SMTC Experience
Deshaies stated that the project goal was to provide the City of Syracuse with detailed condition ratings for all sidewalks and explained initial preparation steps required for field data collection effort. These steps included digitized sidewalks at the parcel level based on aerial imagery, assigning unique identifiers, and assigning scores to indicate completeness of the sidewalk. Deshaies pointed out that since these steps involved a laborious manual process, he developed a model to automate this process. Furthermore, some of the unique features of the model were also highlighted. Fraiser described the ArcGIS Pro workflow and process used by SMTC staff to collect field data using ArcGIS Collector. A copy of the PowerPoint presentation is attached.

A list of key questions and discussion items on this agenda item follow:
Q1. How long does it take to collect data in one city block all the way around?
A1. It depends on block density. SMTC has completed data collection in two neighborhoods. Based on the experience so far, it took 10 staff hours per week over six weeks.

Q2. Will it be possible to provide a copy of this presentation?
A2. Yes, a copy of the presentation will be sent out with the meeting notes.

d) HOCTS Experience with using Drones
Since the meeting ran over the scheduled timeframe, Quackenbush decided to push this agenda item to the next GIS WG meeting. He did mention that HOCTS had used drones to capture some aerials imagery in a relatively short time span.

e) Training Needs?
Given the effectiveness of the spring 2020 virtual training delivered successfully by ESRI, the GIS WG members expressed keen interest in conducting another ESRI virtual training session in fall of 2021.

The meeting adjourned with the potential of setting up a fall 2020 virtual meeting.
NYSMPO GIS Update

November 11, 2020
Certified Business Enterprise Viewer

Updated weekly from DBE and NYS M/WBE sources
Material Suppliers Viewer
Updated nightly from NYSDOT’s AASHTO SiteManager system
NYS Bike Routes Viewer
NYS Bike Routes maintained by the NYSDOT Office of Traffic and Safety
ITS Transportation Portfolio Projects

System of Engagement
- The third year of a three year project has been put on hold by NYSDOT due to budget constraints.
- NYSDOT, Esri and ITS completed 26 “apps” during the project.

- Enterprise Asset Management Program (AgileAssets EAM System)
  - Major platform upgrade completed in March 2020. This upgrade allows work on new modules, including the Maintenance Management System MMS, to continue.
  - As new EAMP modules come online, ITS GIS will be consuming and publishing new data from the AgileAssets EAM system.
  - ITS GIS continues working with NYSDOT on processes to collect and maintain “secondary assets” incl signs, guiderail, small culverts, drainage, etc.
ITS Transportation Portfolio Projects

• Roadway Inventory System 2
  • Relies on the Esri Roads and Highways solution and the upgrade to 10.7.1 (in progress) to maintain the Milepoint LRS network and the roadway inventory.
  • Project schedule is currently being re-baselined.

• Roadway Data Mart
  • A new publishing environment roadway inventory, pavement and traffic data.
  • Contains geospatial and tabular data for publishing and reporting needs.

• Highway Work Permits
• Crash Location Entry, Analysis and Reporting
• Right of Way
ITS Transportation Portfolio GIS Updates

- NYSDOT GIS Users at ArcGIS Desktop 10.7.1.
  - All except Esri Roads and Highways Users users (expected late Summer)
  - 10.7.1 is likely to be the last Desktop upgrade for NYSDOT

- Very limited use of and support for ArcGIS Pro
  - we are finishing a software distribution package for ArcGIS Pro 2.5 and plan to distribute to the GIS Coordinators and some power users this Summer.

- Using VDI for GIS users in NYSDOT Region Offices

- NYSDOT ArcGIS Enterprise environment being upgraded to 10.7.1
NYSDOT GIS Map Services

- Bridges and Large Culverts
  https://gis.dot.ny.gov/hostingny/rest/services/NYSDOT_Structures/MapServer

- Traffic Signals
  https://gis.dot.ny.gov/hostingny/rest/services/Asset/NYSDOT_TrafficAsset/MapServer

- NYS Bike Routes
  https://gis.dot.ny.gov/hostingny/rest/services/Framework/State_Bike_Routes/MapServer

- Functional Class
  https://gis.dot.ny.gov/hostingny/rest/services/Geocortex/FC/MapServer

- Certified Business Enterprise
  https://gis.dot.ny.gov/hostingny/rest/services/Projects/Certified_Business_Enterprise/MapServer

- Material Suppliers
  https://gis.dot.ny.gov/hostingny/rest/services/Projects/Material_Suppliers/MapServer
UPDATED TRAFFIC DATA VIEWER

MIKE ROSSI, NYSDOT HDSB
EXISTING TRAFFIC DATA VIEWER

• You can access the current TDV here: https://www.dot.ny.gov/tdv

• Gives Volume, Class and Speed data from our Short Count and Continuous Count locations.

• Data is “current” up to 2017
NEW AND IMPROVED TRAFFIC DATA VIEWER!

- You can now Filter the data by Direction. Can also filter based on estimate or actual counts.
- The CSV export is the same as the Count, Volume, and Speed statistics that are already available.
- AADT Values refreshed annually.
- Short Count Values refreshed as processed.
NEW AND IMPROVED TRAFFIC DATA VIEWER!

- You can now visually show the AADT separate from Truck ADT and Truck %.
NEW AND IMPROVED TRAFFIC DATA VIEWER!

- Expanded Search Capability! No need to search only by BIN or Station ID. Now you can search by address, town, etc.
COUNT INFORMATION

Visualize Volume, Class and Speed Counts
COUNT INFORMATION

Create Tables on the Fly using an easy interface
COUNT INFORMATION

Select your datasets by map extents or by area.
COUNT INFORMATION

Charts displayed by direction and combined for each count.
### COUNT INFORMATION

Data Tables at your fingertips. Export to .csv

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**Count Information**

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**Chart Results**

Average Hourly Weekly Volume
DRILL DOWN FOR MORE!

Select individual count locations.
Pop-up shows relevant data
Displays for each direction and combined
Provides graphs of hourly data
COUNT INFORMATION

Get Volume, Class and Speed Statistics
HOW COOL IS THAT?
• Contains the latest full year of data (2019)
• Automatically refreshes every year
• Updates nightly with latest short count information
• Available by the end of August
SMTC Pavement Rating
2020

Working with ArcGIS QuickCapture

Andrew Frasier
Last Year - Collector

- Created offline basemap
- Added point for each block
  - Each rating had its own point style preset
- Allowed for electronic data collection as we rated all of the City of Syracuse (+/- 400 miles) for the first time.
- Con: to place each rating took a few steps, but worked overall.
This Year – QuickCapture

- “Big Button” style allows for quick data capture
- Can still use BadElf GPS
- Easier to collect multiple data points at once (road type: improved / unimproved)
- Map side-by-side to aid in navigation (landscape on tablet) – can see points as placed
- Con: “offline mode” not seamless (yet)
QuickCapture Project

• Set up separately in desktop browser environment using QuickCapture Designer (sign in using AGOL account)
• Can create buttons and select which layers (from AGOL) you want to collect data for
  • Add these first to your AGOL account
• Use side-by-side map
• When saved, add project to the mobile app
Going Offline in QuickCapture

- True offline maps (as seen in Collector) not possible right now – potentially in future
- Need to use map packages (MMPK or VTPK) to be able to “see” map offline
- To see already completed ratings (from previous sessions) involves a few extra steps in workflow
Workflow

• Set up Pro map to include all layers you want in the offline map
• For basemap, used Create OSM Vector Tile Package tool, then downloaded and added to Pro
  • Struggling using other options…
• Use “Share as Mobile Map Package” function in Pro when prepared – will add to your AGOL account
• Add this MMPK to the QuickCapture project
Downsides (For Now)

- Will need to repackage MMPK after every rating session and upload to QuickCapture
  - Unlike “Sync” function in Collector
  - Want to show in background map where data was collected in previous sessions
  - Eliminate potential “double-rating”
Future updates to come…

Questions?

afrasier@smtcmpo.org
Sidewalk Condition Inventory

DATA PREPARATION

JASON DESHAIES
SMTC
Project Goal

Provide the City of Syracuse with detailed condition ratings for all sidewalks.

Existing Data

- 585 miles of sidewalk digitized in Syracuse
- Block level sidewalk segments
- Basic score for completeness (25, 50, 75, 100%)
  - Digitized from aerial photos
Existing Dataset

Block level segments
New Dataset

Parcel level segments
Unique Identifier – Parcel ID & Road Name
How did we do it?
Potential Issues

- Island parcels with same road name
- Parcels that cross roads
- Sidewalks that are closer to the parcel across the street
- Sidewalks in areas with no parcels
- Large parcel issues
Result

- Individual sidewalk segments by parcel and street
- Ready to collect condition information

Once condition information is collected join to parcels for additional analysis (i.e. average sidewalk condition by land use)
Questions?

JASONDESHAIES@SMTCMPO.ORG
Collecting Sidewalk Data

Using ArcGIS Collector

Andrew Frasier
Project Overview

• City of Syracuse wants to take over sidewalk maintenance, and charge a yearly fee
  • Currently maintenance falls to abutting property owner
• Needs condition data and other attributes at *parcel* level
  • Currently does not exist
• Original plan: SMTC builds tool and does technical support

• COVID-19 inhibited City’s ability to collect data
• SMTC agreed to collect condition data in a subset of neighborhoods as a proof-of-concept pilot project
Lots of Data, Many Segments

• Extensive back-end work to make GIS layers compatible with project needs
• Approximately 20 fields needed to be filled in
• No need to “create” geography – just edit attributes on existing lines
  • Domains are your friend...
• Also collecting parking sign info in some neighborhoods
Setting up the Project

- Created everything in Pro first
- Allow “Rating Completed” field to alter segment color to keep track of data collection
- Saved each layer as a “Web Layer” and then created map online in AGOL
Setting up the Data Collection

• Make sure you “Enable Sync” in each web layer and set up web map for offline mode

• You can create “Map Areas” to cache to the device for offline work
  • For this project, we set up a map area for each neighborhood

• Make sure map and layers are shared to appropriate users
Using AGOL

- Used AGOL to change a couple things, since Pro and AGOL don’t always do things the same way
  - Symbology: arrows at ends of segments
  - Pop-ups: when to use them, and when to disable them
  - Visible extent
Using Collector

• Collector is simple – just download app, log in, and select map
• Connect to BadElf GPS Unit using Bluetooth
  • Make sure to set as provider in Collector settings
• Will need to “sync” map when back in office and connected to internet – uploads all edits for the day, across users
• Data collectors coordinate with each other to make sure they are getting data on different segments
  • Generally, one on each side of street and can stay within eyesight
Back up data

- Once a week, download collected data to local server
  - Probably overkill, since everything is in AGOL... but better safe than sorry
Known issues... working on (some of) these

• Cannot delete a dropped point – causes syncing issues
• Opening AGOL data (collected in field) back into Pro causes some issues with Domains
• Overwriting web layers from Pro to AGOL does not always work as intended and sometimes causes syncing issues
• iPads overheat if too long in the sun
• Long process, and a lot of sidewalk...
Official shoutout to data collectors: Thomas Bardenett, Marcus D’Agostino, and Kevin Kosakowski

Questions?

afrasier@smtcmopo.org