UTRC - Technical Support for Use of NPMRDS Project
TWG Meeting on NPMRDS Web-Tools
SUNY AVAIL
Meeting Minutes

Date: 2/27/2014
Time: 10:00 AM – 11:30 AM ET

Attendance
In Attendance at UAlbany:
Jim Davis - NYSDOT
Angel Canales - NYSDOT
Richard Batchelder - NYSDOT
Alan Warde - NYSDOT
Chris O'Neill - Capital District Transportation Committee
Sree Nampoothiri - CDTC
Catherine Lawson - Albany Visualization and Informatics Lab
Alex Muro - AVAIL
Eric Krans - AVAIL
Eric Conklin - AVAIL

In attendance via GoToMeeting:
Lynn Wieskopf - NYSDOT
David Staas – Ulster County Transportation Council
Jason Deshaies – Syracuse Metropolitan Transportation Council
Jody Binnix – Genessee Transportation Council
Matt Grabau - Greater Buffalo-Niagara RegionalTransportation Council
Ali Mohseni - New York Metropolitan Transportation Council
Munnesh Patel - NYMTC
Matthew Ryan -
Abdus Salam - NYSDOT
Aiyedun Afolabi - NYSDOT
Mike Chiume - NYSDOT
Chris Bauer – CDTC
Colin Smith – CDTC

Agenda
NPMRDS Web-tools
1. Discussion of TWG Role.
   a. TWG plan for monthly web-meetings (possibly next one face to face)?
2. Description of UTRC Peer Advisory Group and its role.
3. Initial look at the data and observations about complexity of the download and database building process (thumbnail of Task 2 thinking).
4. Discussion of other tools and the congestion/reliability/bottleneck measures they tend to focus on that may be candidates for consideration in Task 3.

<ol type="a" start="1">
NYMTC LIE analysis and as one example.
<ol type="i">
Did NYMTC use their local traffic monitoring counts?

Discussion about Traffic Message Channel (TMC) data.
Preliminary observations on HPMS/NPMRDS data association possibilities and gaps. What are we trying to accomplish by associating HPMS and NPMRDS?

<ol start="5">
Initial tour of beta NPMRDS web-tool.

Notes

Many thanks to Colin Smith, from RSG, for taking and sharing this detailed set of notes.

<u>Introduction</u>

Questions to answer: technical working group will help answer these:
- What do you hope the NPMRDS data can do for your MPO?
- What types of analyses and planning applications will it support?

NYSDOT: NYSDOT is looking to build and enhance a common platform using open source tools so that each data product assignment that NYSDOT supports is incrementally building our collective capacity to use these datasets. We are starting with the NPMRDS as a case study, and are looking to build on other work already done in the state, e.g. by Buffalo and NYMTC. NYSDOT's overall effort through the UTRC program is to bring in knowledge from the different universities, in this case starting with the AVAIL center at SUNY Albany, and develop products that the MPOs can all benefit from.

SUNY Albany: our approach is to build an API that others can build on across the MPO community and the other universities. We are using open data and open source code principles. In this case there are disclosure limitations (based on HERE data) but access will be as open as possible subject to those limitations.

<u>Data description and tool demonstration</u>

SUNY Albany: The NPMRDS data are grouped by traffic messaging channel (TMC) segments. We have uploaded data and been able to associate it with TMC segments on a network by direction. The data come in 5 or 15 minutes time bins, but is often missing some time slices. We will make it available in different time aggregations, from 15 minutes, to hourly, etc., and up to annually. The data are initially just transit time over the segment, and not speed, so that needs to be calculated based on the length of the segment. We have completed splitting the GIS data into separate directional links so able to display two directions for each link.

SUNY Albany showed a demonstration of the existing NYMTC tool. Tool allows users to pick a specific time frame and display the data on a map. NYMTC is currently adding the most recent 2014 data, and is also adding features to make the processed data downloadable. NYMTC is willing to share the code with SUNY Albany and they will follow up with a discussion to facilitate that.

There was a discussion about performance measures: reliability/variability measures are of interest. The new web-tool could display change over time, e.g. a graph of speeds on a link over time.

SUNY Albany showed a demonstration of the tool they have developed for an FHWA project to display network and count data. They demonstrated a graph showing AADT at count sites, which when moused over highlights the sites of the map. This is an example of combining a map and chart in an interactive manner. Below that was another chart showing for each site monthly variation to demonstrate seasonality across the different sites. The maps also show the AADT from HPMS as well as the count locations.

SUNY Albany is also working on the NYS Freight Plan and will be using the tool developed here to support the freight analysis work.

SUNY Albany showed a demonstration of the web-tool, noting that it is currently running on a small server and so it is not ready for general access or for displaying large amounts of data. SUNY Albany demonstrated morning peak data in Albany, and showed interface features such as a slider to move through the hours selected. Looking at short time periods (e.g. hourly) can lead to coverage limitations in the data, particularly on lower volume facilities at off peak times of day, e.g. very early morning. The web-tool will allow access to the data easily for any time period for anywhere in the state.

SUNY Albany is currently working on converting from time to speed and moving to a more powerful server. Then will be building more advanced features:
- Calculating performance measures (e.g. deviation from average speeds)
- Ability to show truck data vs. auto data
- Selecting routes of interest
- Downloading shapefiles of data

NYMTC found that the truck data was much sparser than the auto data.

SUNY Albany showed the /doc page on the website, which contains the API documentation. Using the API is an alternative approach to accessing that data for developers building other tools on top of the data.

Questions and discussion:

The TWG discussed the data background and issues such as conversion of data from individual GPS traces to averages over 5 minutes for each segment. The actual approach used for this is proprietary to HERE and the data released by FHWA is already aggregated, so we don't know how the data are converted from individual records to the average 5 minute time bins.

The TWG suggested that it would be useful to display the data as difference from the posted speed or the free flow speed, so that the color ramp could more easily demonstrate deviation from free flow and indicate congestion. This is different from the difference from average because the average includes all of the congestion. It would also be useful to include volumes to allow calculations of total delay. There was discussion about how to link HPMS or other network data including functional class and posted speed to the TMC segments. The TWG suggested that the slider could show a "moving hour" at 15 minute increments.

Approach to data selection were discussed:
- Currently selection is by county, but likely to add selection by route or multiple counties.
- TWG were asked to consider what are top 3 to 5 ways that would like to select the data?
- On the FHWA project too, SUNY Albany have implemented a route selector tool, where the user can mouse over the map and select a predefined route.
- SUNY Albany plan to county selection ability, but also have MPO areas. Also might want text based route or area selection.

SUNY Albany and NYSDOT are looking to learn from the NYMTC work, the work with TRANSCOM, University of Maryland tools, and other experience around the country for what has been done elsewhere and proved useful.

SUNY Albany staff are available to the group to answer questions and provide help with getting access to the tool (once the beta version of the tool is made available).

NYSDOT have three or four other ideas for follow on projects to this one, including GTFS data processing, transit inventory data, and HPMS data. Also considering accident data, incident data, and other similar data sets.

Next steps:
- Locate a time to set up a regular time. Friday AM seem promising. SUNY Albany will send out a poll
- SUNY Albany will continue development, e.g. implement speed, moving to publicly available service so group can start to review
- SUNY Albany will have a discussion with NYMTC to learn from their work
- The TWG is to think about use cases and share those with NYSDOT/SUNY Albany