



NEW YORK STATE ASSOCIATION OF MPOs MODELING WORKING GROUP

**August 25, 2017
Conference Call
9:30 AM – 11:00 AM**

MEETING NOTES

Participating

- Alex Muro, AVAIL
- Richard Batchelder, NYSDOT
- Gerry Bogacz, NYMTC
- Chris Bauer, CDTC
- Jody Binnix, GTC
- Lauren Burns OCTC
- Angel Canales, NYSDOT
- Michael Chiume, NYMTC
- Jim Davis, NYSDOT
- Mark Debald, PDCTC
- Jason Deshaies, SMTC
- Erik Krans, AVAIL
- Catherine Lawson, AVAIL
- Jack Mance, A/GFTC
- Ali Mohensi, NYMTC
- Alex Muro, AVAIL
- Chris O'Neill, CDTC
- Munnesh Patel, NYMTC
- David Staas, UCTC
- Alan Warde, NYSDOT
- Michalis Xyntarakis, CS

1. Introductions

Eric Krans (AVAIL) opened the meeting. Meeting participants introduced themselves.

2. Tool Updates

The AVAIL team walked the Modeling Working Group through various updates made to the NPMRDS tool, including:

- Network bottleneck methodologies. The study team implemented an algorithm that takes into account upstream and downstream links to identify the spatial extent of the bottleneck. Challenges in the implementation include selecting the number of upstream and downstream links to check as well as identifying congested upstream links that lie on a branch of the congested corridor.

- Differences between INRIX and HERE performance data and the rationale behind the usage of either dataset.
- A new activity dashboard that sends automatic notification updates to users that have signed up for a particular report.
- A new route selection creation tool that will incorporate the ability to show TMC end points for all the TMCs that are included in a selected route. In terms of visualization, roadway segments are shifted to the right of roadway to easily separate two opposing directions that share the same centerline.
- The study team will start preparing the User Manual and present a draft version in the next meeting.
- In the immediate future the study team will start discussing how performance targets are implemented in the tool. Choosing 2016 or 2017 as the base year may have significant implications on the magnitude of target performance measures.

The study team discussed in detail updates in the HERE and INRIX datasets and specifically their differences in terms of TMC speeds. The topics discussed included:

- Differences in roadway classification.
- Discrepancies in speed estimates for the same TMC or corridor. INRIX appears to implement some smoothing techniques that take into account speeds at adjacent time periods or links, while HERE appears to report only instantaneous speeds.
- INRIX appears to have greater network coverage.
- INRIX arterial speeds seem to be more intuitively reasonable than HERE arterial speeds, which generally seemed to be too slow.
- The team compared freeway speeds and asked if free flow speeds of 55 mph on freeways with a 55 mph speed limit are reasonable. Team members pointed that lower free flow freeway speeds may be attributed to:
 - Traffic moving at different speeds in different lanes.
 - Commercial vehicles being over represented in the probe vehicle dataset.
 (Subsequent to the meeting, O’Neill found that INRIX speeds on the Northway in the 65 mph speed limit zone were in the low seventies, which corresponds with driving experience.)
- INRIX has produced a new shapefile that has ADT for trucks

3. Additional Upcoming Features

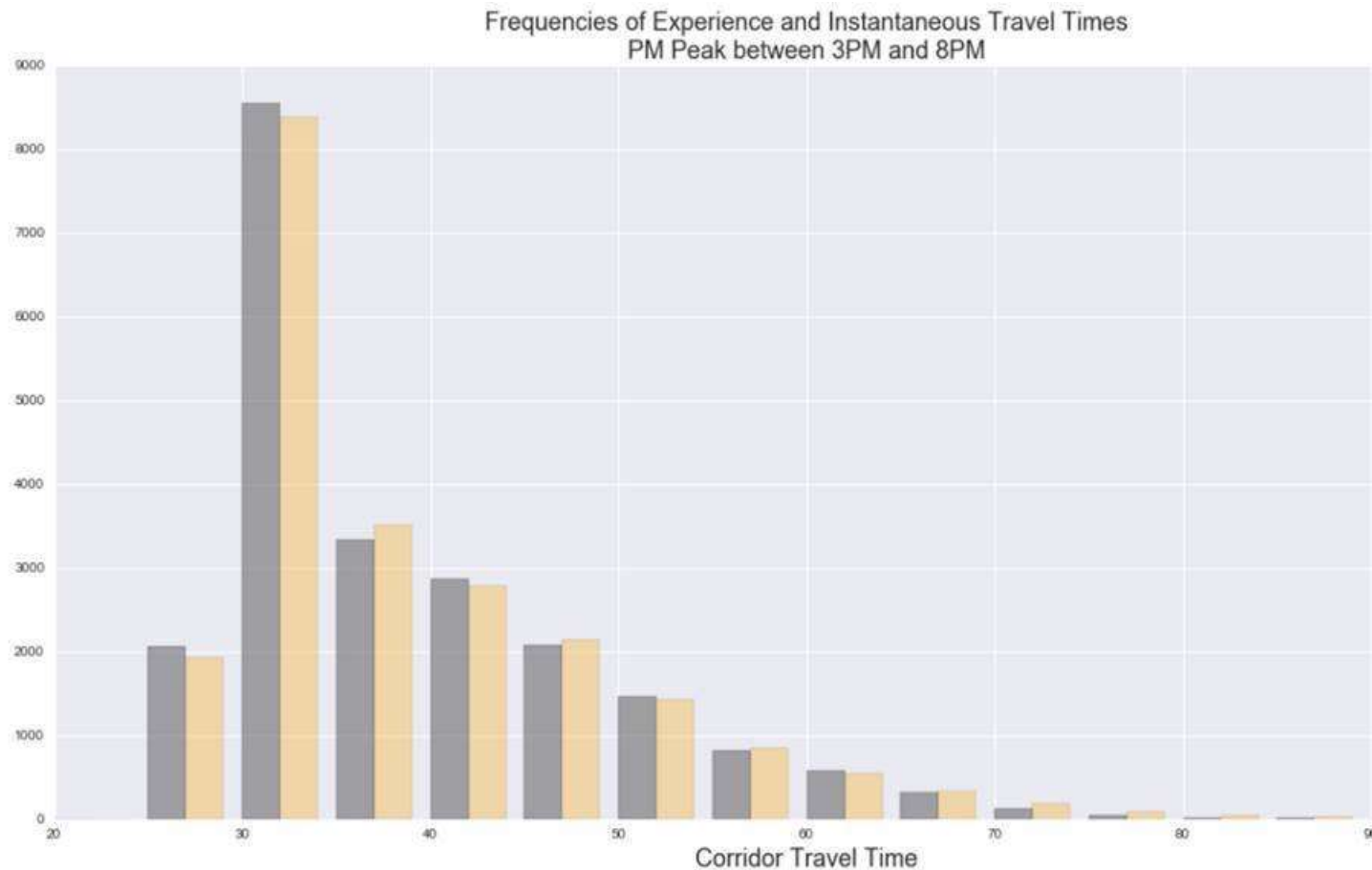
- Performance Measures. The team will add functionality to map an entire MPO by a given performance measure.
- Bottleneck Methodologies. The team is researching additional bottleneck methodologies to incorporate into the tool. The team has identified the two most applicable methodologies for bottleneck identification and quantification. By the end of September the study team will select the most appropriate methodology. The selected bottleneck methodology will be compared with similar TTI methodologies.
- Loading performance data takes about 1 minute to appear on the visualizer. The study team is looking for ways to optimize loading to reduce down time.
- In the month of September the study team will allow the user to create a sub network (i.e. a single county) to analyze.
- The user will be able to list all routes for a given MPO through the user interface.

Subsequent to the meeting, Michalis Xyntarakis provided the following analysis.

There are two ways to calculate corridor travel times. One is called the instantaneous travel time and takes into account TMC speeds from the same time interval. So to calculate the corridor speed at 4 PM you take into account link speeds at 4 PM. The other method is called experienced travel time. To calculate corridor speed at 4PM you start at 4 PM but you trace time as the vehicle moves and depending on vehicle speed you pull TMC speeds at 4:05, 4:20, 4:50, depending how long it took the vehicle to traverse the corridor. The second method (experienced travel time) is obviously more realistic but it is more complicated.

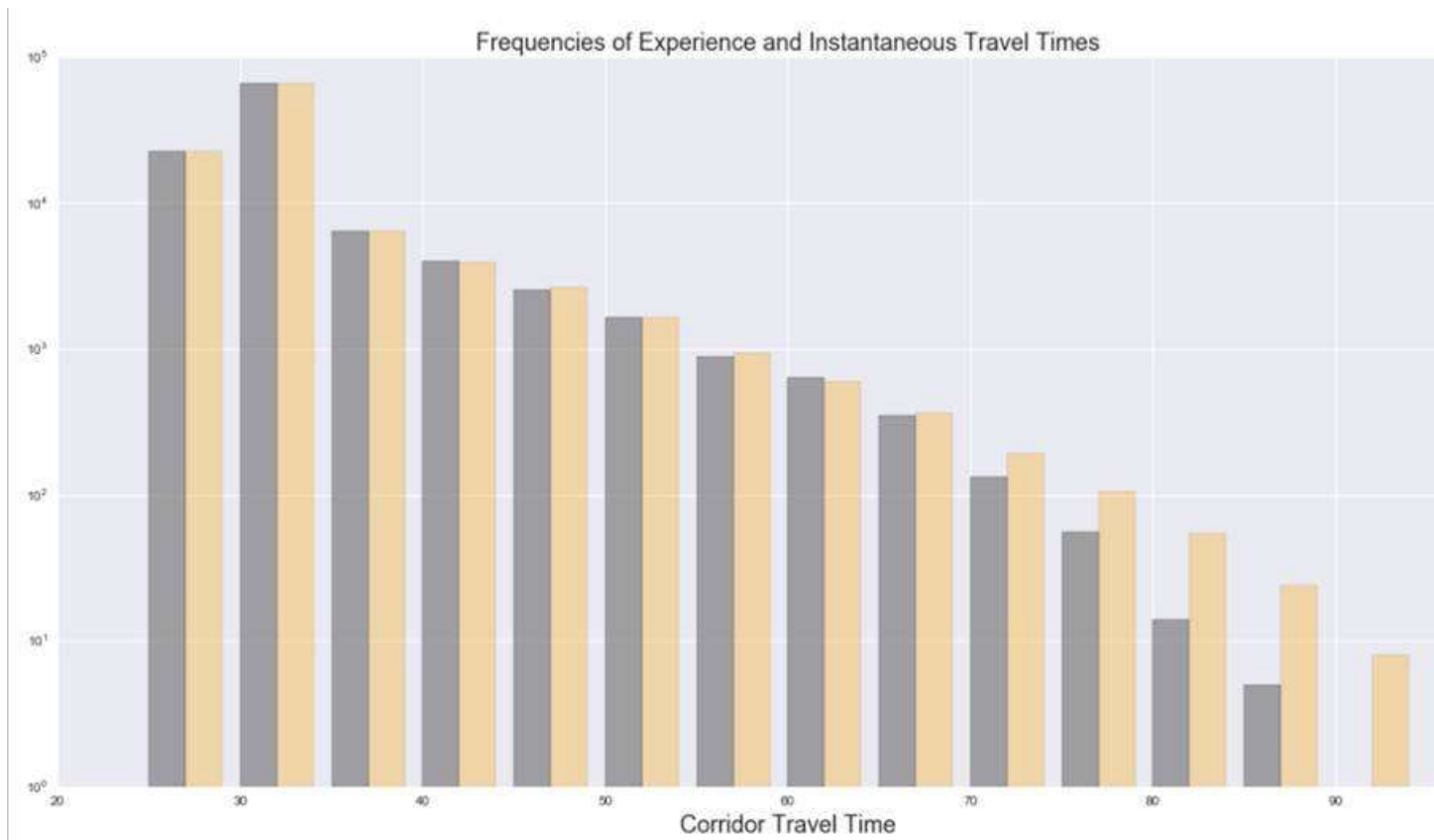
I did some comparison using HERE data on I-95 NB in Miami Florida. The two methods produced similar distributions. However, calculating the travel time index may differ as much as 5 % in my data. On the other had if you plot experienced versus instantaneous travel time you see a lot more dispersion.

Yellow below is instantaneous:



If you are to analyze outliers there are significant differences at the tail that are not seen in the above plot.

In the following plot I am using a non-linear y axis that shows the tail clearly. In the dataset there are about 15 experienced times between 80 and 85 minutes. In contrast there are about 60 instantaneous corridor travel times between 80 and 85 minutes. I would say that instantaneous travel time produces more outliers.



If you are to plot one against the other you see a decent amount of dispersion around the diagonal. If an incident happens, instantaneous travel time is going to underestimate travel at the onset of congestion.

Experienced vs Instantaneous Travel Times
PM Peak between 3PM and 8PM

