The Eastern Transportation
RITIS User Group Web Meeting – February 11, 2021
Question and Answer Summary

NOTE: Results from the polling question asked during the web meeting are provided at the end of this document.

Spotlight Presentation: Transportation Energy Analytics Dashboard

Note: **Rob Graff (DVRPC):** Another key component is the electric transmission and distribution grid at the hyperlocal level to assure placement of EVSE (charging stations) are optimized with existing grid resources and grid planning.

Response: Stanley Young (National Renewable Energy Laboratory): I fully agree - we do not have that integrated into TEAD at present, but NREL has a tool called EVI-Pro that addresses some of those concerns - need to bring that along as well.

Response: Rob Graff (DVRPC): I am familiar with EV-Pro. It is useful for what it does, but it is much too coarse-grained to address the location of grid resources, e.g., substations, transformer, distribution infrastructure, etc. For instance, it would be helpful to the electrification of local freight if warehouse siting took into account the location of such infrastructure. We've been working on this model for the demand side, and have been in touch with our utility about linking demand and supply.

Response: Stanley Young (National Renewable Energy Laboratory): I'm glad you are working on that model. I will pass along your thoughts/comments to Eric Wood related to needs with EVI-Pro. I believe the information on grid resources (sub-stations, transformer, distribution infrastructure) is difficult to access at scale, requiring local efforts.

Q: **Andrew Ludasi (New Jersey DOT):** Can it do particulates, especially for diesel? It would be very interesting to correlate that with truck traffic.

A: Mark Franz (University of Maryland CATT Lab): The tools provide estimates for PM2.5 for all engine types.

Note: **Rob Graff (DVRPC):** I would love to explore how electrifying different combinations of fleets would impact emissions, and what the demographics are of the impacted locations.

Q: **Rob Graff (DVRPC):** To what extent is this available to explore outside of this webinar?

A: Michael Pack (University of Maryland CATT Lab): We are giving all RITIS/PDA users access to the tool, but they only work for the National Capital Region and the Mid-Ohio Region.

Mark Franz (University of Maryland CATT Lab): The required data inputs for TEAD are 1- minute probe data, volumes, and vehicle registrations (preferably at the zip code aggregation level)

C: Rob Graff (DVRPC): DVRPC has access to every Vehicle Identification Number (VIN) in Pennsylvania and New Jersey at the Census Block level.

A: Michael Pack (University of Maryland CATT Lab): We should talk.

Response: Rob Graff (DVRPC): Yup. Contact me at rgraff@dvrpc.org.

Response: Stanley Young (National Renewable Energy Laboratory): I will follow up as well.

Response: Rob Graff (DVRPC): Please do. We've been working with UC Davis's PH&EV Research Center. See our work here. My colleague Jesse Buerk will coordinate follow-up.

Q: **James Li (MWCOG):** I was wondering whether the estimations of energy use/emission have been validated/compared with/to other sources of data.

A: Mark Franz (University of Maryland CATT Lab): The energy use estimates have been validated with in-field measurements from OBD data recorders in the greater DC region. We are working with NIST to validate the emissions. Initial results show the emissions are consistent with field deployed air-quality sensors.

Q: **Eileen Singleton (Baltimore Metropolitan Council):** Is the Maryland Motor Vehicle Administration data currently loaded for the whole state or just National Capital Region jurisdictions?

A: Michael Pack (University of Maryland CATT Lab): The tools only work in the DC and Columbus planning areas

A: Stanley Young (National Renewable Energy Laboratory):

That is such a conundrum. I'm very familiar with it from my tenure at the Kansas DOT. Unlocking vehicle data from state databases has proved to be quite challenging. What

we used in this initial TEAD was from a subscription data service. DVRPC has it for the state of Pennsylvania so let's talk because that is not an easy thing to get your hands on. We want to move forward in TEAD to determine sources and locations of excessive energy emissions in the form of a pie chart. CATT is already doing this with respect to congestion. Where do we waste time? We want to show a chart showing where we waste energy as well. Lastly, NREL has what we call a mobility energy productivity metric. It's a holistic metric that takes into account travel time, cost and energy. Integrating MEP into TEAD is a couple years off at minimum, but within our vision moving forward.

Q: **Rob Graff (DVRPC):** Mark - can you clarify the difference between "plug-in electric" and "electric" on this chart?

A: Mark Franz (University of Maryland CATT Lab): Plug-in electric refers to plug in-hybrid electric vehicles (primary electric motor with a reserve gas tank) and electric refers to battery only with no options for gas.

Q: **Bob Frey (Massachusetts DOT):** What emission factors are used? MOVES?

A: Mark Franz (University of Maryland CATT Lab): The emissions parameters are derived from MOVES. We call it MOVES light as it relaxes some of the inputs required to run MOVES. This allows us to support real-time and predictive applications.

Q: **Ira Levinton (New Jersey DOT):** Is the sustainability in terms of the road, the emissions, or the vehicles. Can you provide a sentence that defines the sustainability that is being measured?

A: Stanley Young (National Renewable Energy Laboratory): All three. I would like move toward what we call mobility energy productivity. We want to bring the aspects related to emissions and GHG into the same metric, discussion and evaluation tools that we use for travel time and congestion. That's how I define sustainability with respect to the TEAD analytics tools.

A: Mark Franz (University of Maryland CATT Lab): In terms of metrics, we are estimating energy use, CO2, VOC, NOX, PM2.5, and PM2.5 pre-cursor for NOX. All the metrics are estimated at the TMC/segment level for each minute.

Q: **Ira Levinton (New Jersey DOT):** Does sustainability mean that the future emissions will be reduced or at least not increased?

A: Mark Franz (University of Maryland CATT Lab): That is an excellent question. I think that is what every agency needs to define on its own. Does that mean having 50% of their registered vehicles be electrified? Does it mean maintaining or reducing emissions by X% even though vehicle miles traveled are expected to increase by Y%? CATT Lab does not have a definition of what sustainable means, but hopefully our tools will allow agencies and analysts to track the performance of energy use and emissions metrics.

Note: **Melanie Ward (City of Centennial, CO):** I love the template enhancements. Those walkthroughs sound very helpful! Thanks for those updates.

New RITIS Tools and Recent Enhancements

Q: **Matthew Glasser (Georgia DOT):** To the crowd - how do you imagine these tools might change any decision-making processes?

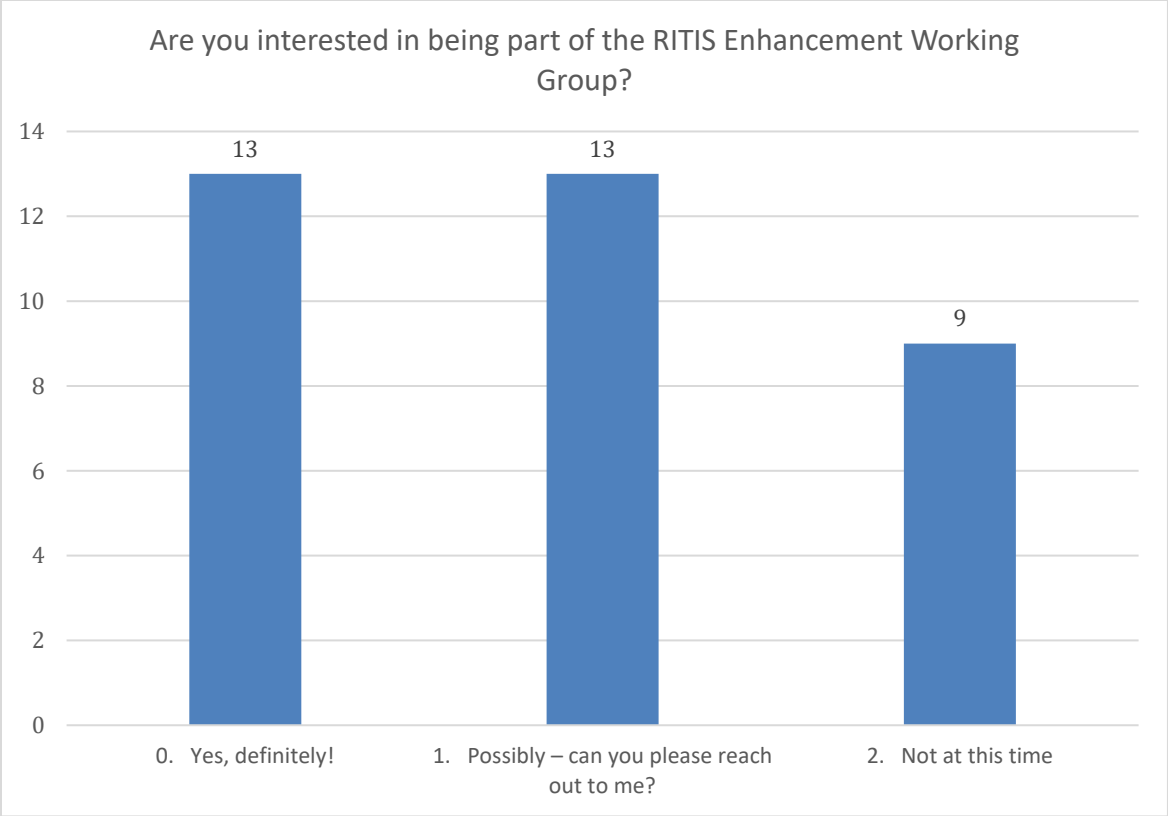
Note: **Melanie Ward (City of Centennial, CO):** I love the template enhancements. Those walkthroughs sound very helpful! Thanks for those updates.

Note: **Catherine Tulley (Southwestern Pennsylvania Commission):** GeoJSON! hooray

Note: **Michael Pack (University of Maryland CATT Lab):** With some of the things we're working on, it's hard to tell how long it's going to take to finish them. I don't want to say that we'll be ready to deploy anything by the next user group meeting. But there's a big push with several new features within the trip analytics. I can't even begin to describe here, but some exciting enhancements are going to transform the way we can analyze how people move. We're also doing some work on signal analytics tools, and we'll give a presentation on those updates during the next meeting. There's some work we're doing with tiling, mapping, and transit data integration that we should be able to talk about next time.

Agency Input Session

Note: **Michael Pack (University of Maryland CATT Lab):** We may be reaching out to some of you for clarification if we don't understand the particulars of a comment or suggestion. you can always email PackML@umd.edu or call me at 240.676.4060.


Are you interested in being part of the RITIS Enhancement Working Group?
14
12
10
8
6
4
2
0
13
13
9
0. Yes, definitely!
1. Possibly – can you please reach out to me?
2. Not at this time