FDOT_Use Cases & Stakeholders_Short-term Predictive Analyses Committee

Please provide examples of use cases that you currently use your model for and those that may not be suitable to analyze using existing models. Please provide comments where applicable.

Sl.No	Existing & Desired Use Cases	Users/Stakeholders	Can Existing Modeling Tools Be Used ? (Y/N)	Comments	Commenter
1	A short-term prediction/evaluation procedure is needed to refine the traffic projections based on the regional transportation model results;- Ideally, the short-term prediction/evaluation should be a potential s**creening process** during the LRTP development; If cannot be achieved, the short-term **prediction/evaluation should be a procedure to follow before a project is entered into the 5-year work program.**	FDOT Districts - MPO's - Port/Airport authorities - Sports venues - Other?	N	Recently, a project programed for PD&E study was evaluated for viability. The PD&E study was already programed in the 5-year work program with design fund commitments. Based on the data that existed at the time of the LRTP development, MPO needs assessments and local expectations, the project was justified. The original project scope was to widen a 1.5-mile segment of 4-lane roadway to 6-lane. A pre-PD&E evaluation was performed using current and refined data. Based on the pre-PD&E evaluation the 6-lane could not be justified. The scope was significantly changed to only adding/improving turn lanes at signalized intersections to address the peak period	Raj Shanmugam (email response: January 18, 2024)
2	A process is needed to better understand the **available capacity** in a way that allows Counties and Agencies throughout the state to assess short term project alternatives while still being defendable statistically. This is key to understanding the remaining capacity within a system and how much development can be supported based on what has been approved for development in a given region. With all of this context to development and available capacity, Capital Improvement Plans (CIPs) and 5-year work program alternatives can be assessed and a **preliminary prioritization** can be provided based on how each project impacts elements of the network.	FDOT Districts - MPO's - Port/Airport authorities - Sports venues - Other?	N	Counties throughout the state are investing heavily in this type of data driven approach and would benefit from a standardization.	JJ Samus (02/02/2024)
3	Input and output which can be utilized in developing and **prioritizing** LRTP, WP, and TIP projects. o Population and employment growth o Normalized user cost o Trend of mode split shift	FDOT MPO County	Y, with heavy processing	Could be a significant effort that requires outreach to multiple MPO and County agencies to understand their processes. Processes and considerations may not be consistent across agencies. Longer term, this can be integrated into agency level project/program development phase.	Peng Zhu (2/7/24)
4	Assisting local agencies with growth management o Land use plan amendments o Input for impact analysis required for permit applications o Available capacity	County Municipality	Y, with processing	Many LUPAs rely on dated information. Provide an extra line of defense for impact analyses heavily relying on field data collection. V/C may not be intuitive.	Peng Zhu (2/7/24)

5	Incorporate more detailed roadway characteristics data to travel demand model inputs and develop model post processing tools to predict better and accurate performance measures (such as speed, delay, queue) for short-term alternative analysis of roadway construction projects.	FDOT Districts, Counties	N	Travel demand models heavily use counts for model calibration and validation and output the estimation of volumes and v/c. For roadway construction projects, these performance measure outputs are not enough for comparing alternatives. Developing mesoscopic and microsimulation models will be time-consuming. With more detailed roadway characteristics data as model inputs, we can develop post processing tool to output speed, delay, and queue using the macroscopic model approach.	Li Jin (2/11/24)
6	Identifying existing and future passive Origin-Destination (OD) patterns along a study corridor.	FDOT, MPO, County	N	Model validation is based on counts and not OD patterns.	Naresh Kotari (2/12/2024)
7	Develop a way to determine how soon the beneifts of a project can be realized rather than just benchmark a project's effectiveness on a 20 - 30 year horizon.	FDOT, MPO	Y, with heavy processing	When determining the priorities for project implementation, it would be beneficial to advance those projects that will be needed sooner. Current forecasting and planning techniques focus on the ultimate horizon without considering when along the timeline a particular project would truly begin to be beneficial. Determining how quickly project benefits are realized can both save on the costs of maintaining underutilized projects and avoid deferring projects that are in more immediate need.	Roberto Miquel (2/12/2024)
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					