



November 5, 2020  
TAC Agenda Item 7.2  
Continued From: New

**Action Requested: Information**

## NAPA VALLEY TRANSPORTATION AUTHORITY TAC Agenda Letter

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**TO:** Technical Advisory Committee  
**FROM:** Kate Miller, Executive Director  
**REPORT BY:** Alberto Esqueda, Senior Program  
Planner/Administrator  
(707) 259-5976 / Email: [aesqueda@nvta.ca.gov](mailto:aesqueda@nvta.ca.gov)  
**SUBJECT:** NVTA Travel Model Update

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### **RECOMMENDATION**

Information only

### **EXECUTIVE SUMMARY**

Napa Valley Transportation Authority (NVTA) contracted with TJKM and Resource Systems Group (RSG) Inc. to update the Napa Activity Model to make the model structure consistent with the Metropolitan Transportation Commission's (MTC's) Travel Model 1.5. This model includes a number of enhancements including a new population synthesis software, inclusion of transportation network companies (TNCs) and autonomous vehicles (this is an optional feature that can be turned on if desired) and better calibration to perform public transit forecasts. The model upgrades will provide reliable transit and highway forecasts for the next several years until the time MTC updates its model to version 2.0.

### **FINANCIAL IMPACT**

Is there a fiscal impact? No

### **BACKGROUND AND DISCUSSION**

An activity-based travel model is an analysis tool that NVTA uses to make informed decisions on how the transportation system will perform in the future. Travel models support decision making by providing projections about the impacts of capital investments, alternative transportation, land use investments and policies, as well as demographic and economic trends. Travel models produce quantitative information about travel demand and transportation system performance that can be used to evaluate project and plan alternatives.

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The Napa Activity-Based Model was developed as a version of the Metropolitan Transportation Commission's (MTC's) Travel Model One. Cambridge Systematics updated the base year of the model to 2015 conditions in 2015-16. Subsequently, TJKM updated the Peak Hour model validation. However, the model was not calibrated or validated to provide public transit ridership forecasts. The 2015-16 update to the model used MTC's 2013 Plan Bay Area (PBA) Regional Transportation Plan (RTP) land use forecasts. To maintain a relevant model, TJKM has updated the model to use the latest PBA 2040 RTP land use data and to incorporate public transit.

The previous version of the Napa Model used a 15% sample rate, which is not a technically sound approach as it can result in under or over prediction of mode split and travel in certain corridors. TJKM's experience implementing the model for Marin County has informed how to improve the sample rate in Napa, Solano and neighboring counties and adjusted it to reduce the influence of zones farther away from the county. The upgrade results in the model using more local data samples to estimate forecasts. It is expected that this methodology will better simulate travel in Napa/Solano Counties and improve transit and highway modal validation. The new population synthesis software also allows the user to make changes to specific zones impacted by a project and keep other data constant, which will produce more stable results for project impact studies.

The travel model update also generated data to gauge performance metrics for the Countywide Transportation Plan (CTP). The updated CTP, *Advancing Mobility 2045*, includes performance metrics tied to Board adopted goals and objectives and the model assisted in measuring systemwide performance.

## **SUPPORTING DOCUMENTS**

None – TKJM will make a presentation at the meeting