DEVELOPMENT AND CALIBRATION OF REGIONAL DYNAMIC TRAFFIC ASSIGNMENT MODELS FOR THE ESTIMATION OF TRAFFIC PERFORMANCE MEASURES IN NEVADA

Key Points:

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Associate Professor, UNR:
Dr. Zong Tian

Research Associate, UNR:
Dr. Dongmei Lin

Associate Professor, ASU:
Dr. Xuesong Zhou

PROBLEM

Dynamic Traffic Assignment (DTA) is a method for estimation of some traffic performance measures. It can provide measures such as time dependent link volume, speed, density, queue length, and can track individual vehicles. A DTA model was built for the Reno-Sparks areas and RTC of Southern Nevada however, the calibration for the models are limited due to lack of detailed data and time constraints.

OBJECTIVE

Since the RTC of Washoe County maintains the regional TransCAD travel demand model, the up-to-date network and Origin Destination demand data was obtained from RTC. Other software used was DTALite for developing the DTA model and NeXTA was implemented as the user interface. Instead of creating a statewide DTA for Nevada, the focus is to better the calibration of the current DTA models for the two urban areas in Nevada.

Contact Information:

Nevada Department of Transportation Research Division
Annex 14-15
1263 South Stewart Street
Carson City, NV 89712
(775) 888-7895
https://www.nevadadot.com/doin

METHODOLOGY

The model was developed by following five major steps. The first step was importing the network and demand data from TransCAD into NeXTA. The second step was to perform a dynamic traffic assignment in DTALite to achieve an equilibrium to produce an initial DTA model. Step three included preparing the field data and run Origin Destination Matric Estimation for initial network calibration. Step four was to validate and demand modifications to better match the observed counts versus simulation volumes. The final step was to cut a subarea and perform further analysis in micro simulation software packages.

IMPLEMENTATION POTENTIAL

DTA provides a connection between regional travel demand forecasting and micro-simulation models. DTA is capable of representing current traffic performance and evaluate near-term traffic flow impacts from network changes. This is especially helpful when forecasting traffic flow pattern changes and operational impacts due to incidents such as work zone, special events, and accidents