

Estimating Annual Average Daily Traffic Using Statewide Traffic Data Programs: Missing Data Analysis

Authors : Muhammad Faizan Rehman Qureshi, Ahmed Al-Kaisy

Abstract : State highway agencies usually operate system-wide traffic monitoring programs for collecting traffic data. Of particular importance is the traffic volume data that is used in the estimation of the Annual Average Daily Traffic (AADT). State Departments of Transportation (DOTs) measure the AADT at locations of permanent ATR and WIM stations and estimate the parameter at all other locations using short-term counts. Traffic counters at the permanent ATR and WIM stations frequently malfunction and result in a specific period(s) of inaccurate or missing data. The study used ATR and WIM data from the state of Montana to examine the effect of missing data on the accuracy of AADT estimation. Two random sampling techniques were used, and three scenarios of data availability were considered in the investigation: one, two and three weeks of data within each month. The study results showed that the increase in AADT approximation was not proportional to the increase in the amount of missing data. Given the extreme scenario of missing data (all permanent stations missing data simultaneously) and the relatively lower effect on AADT approximation, it can be concluded that the current practice in treating missing data does not involve a considerable compromise in the accuracy of AADT estimation.

Keywords : traffic monitoring program, AADT, missing data, adjustment factors, traffic data collection, permanent stations

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