

MOUNTAIN-PLAINS CONSORTIUM

RESEARCH BRIEF | MPC 20-424 (project 572) | December 2020

Incorporating Tourism Data in Traffic Estimation on Wyoming Low-Volume Roads



the **ISSUE**

With 8.5 million visitors in 2016, tourism is the second-largest industry in Wyoming. Yellowstone and Grand Teton National Parks were among the top 10 most-visited national parks in 2016. The combination of low population density and natural scenery makes Wyoming a good place for epic road trips.

A transportation management plan is needed to accommodate rural roads with higher traffic volumes. The installation of traffic counters on roads is an effective way to estimate traffic volumes. However, it would be prohibitive to install traffic counters on all roads, particularly for rural low-volume roads. An alternative to the traffic counters is to develop a travel demand model to estimate traffic volumes. Most previous studies mainly focused on estimating traffic volumes in urban areas and Interstate highways.

the **RESEARCH**

This study is the third phase of a continuing study to developing travel demand models to estimate traffic volumes on low-volume roads in Wyoming. This study identified input data sources and incorporated tourism-related data into the previously developed travel demand model and developed methods to estimate tourism-related traffic volumes on low-volume roads in Wyoming.

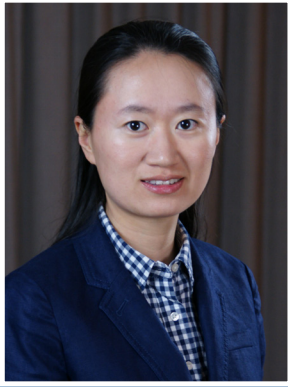


A University Transportation Center sponsored by the U.S. Department of Transportation serving the Mountain-Plains Region. Consortium members:

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Project Title

Incorporating Tourism Data
in Traffic Estimation on
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the FINDINGS

1. A travel demand model is useful and practical for estimating traffic volumes on low-volume roads. A variety of tourism-related parameters, including ADT at park entrances, park area, and number of park campsites, were considered in trip generation to estimate the number of trips.
2. Compared with the actual traffic counts, the travel demand model has an 88% prediction accuracy after incorporating tourism into the model, which captures the traffic flows on low-volume roads near tourism destinations. Local roads with high traffic volumes should be given priority in transportation planning and maintenance.
3. The results of this study indicated that the travel demand model is capable of working with a variety of tourism datasets and can be used to predict traffic volumes in the future. Traffic volume data do not exist for the majority of low-volume roads. A travel demand model is a cost-effective method to obtain those traffic volumes.

the IMPACT

The research provides the Wyoming Department of Transportation (WYDOT) and consultants with information about the tourism-based travel demand model and offers direction on the preparation of model input datasets. The improved travel demand model can provide guidance for road system planning, traffic management, road safety, maintenance, and improvements.

For more information on this project, download the entire report at <https://www.ugpti.org/resources/reports/details.php?id=1020>

For more information or additional copies, visit the Web site at www.mountain-plains.org, call (701) 231-7767 or write to Mountain-Plains Consortium, Upper Great Plains Transportation Institute, North Dakota State University, Dept. 2880, PO Box 6050, Fargo, ND 58108-6050.



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