Derivation of Van Aerde Traffic Stream Model and Studying the Effect of Ramp Metering

Studying Van Aerde model for Deerfoot Trail, Calgary, CANADA

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***Abstract*— With increase in population, demand for traffic is increasing tremendously. As a consequence congestion on urban freeways or highways during the morning and evening peak hours is always increasing. This research examines the traffic condition on Highway 2(i.e Deerfoot Trail), Calgary,Canada by providing ramp metering (funded by Government of Canada in Collaboration with MITACS Globalink Program).**

In order to accommodate increasing traffic demand, constructing new highways and adding lanes is not always the best option. Instead proper management of transportation system can help in increasing its efficiency. It is therefore important to increase our understanding of traffic flow models to help estimating the efficiency of different road facilities and therefore prepare us to make enlightened decisions in the design process of new road facilities or improving older ones.

This research examines the traffic condition on Highway 2 (i.e Deerfoot Trail),Calgary,Canada by providing ramp metering

The research Project consists of 2 phases:

1. **Calibration of Deerfoot Trail with Van Aerde Model using Microsimulation tool Quadstone Paramics, and**
2. **Analyzing the efficiency of Ramp Metering (RM) by examining its impact on the Macroscopic Fundamental Diagrams (MFD) for Deerfoot Trail.**

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