

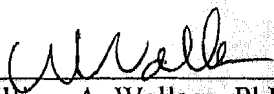
**Guidelines for the Practical Application of  
Microscopic Traffic Simulations to  
Planned Special Events**

by

Bryan Thomas Bertoli

A Thesis Submitted to the Graduate  
Faculty of Rensselaer Polytechnic Institute  
in Partial Fulfillment of the  
Requirements for the degree of  
MASTER OF SCIENCE  
in  
TRANSPORTATION ENGINEERING

Approved:

  
\_\_\_\_\_  
William A. Wallace, PhD, Thesis Adviser

Rensselaer Polytechnic Institute  
Troy, New York

August 2008  
(For Graduation August 2008)

## ABSTRACT

Microscopic traffic simulations are often developed to assess long-term, high-impact concerns, such as network performance, design or management alternatives and recently, evacuation strategies. Planned special events are often short-term, periodic or non-recurring events that are viewed as a temporary inconvenience. Rising transportation costs coupled with a constrained transportation infrastructure and increasing traffic volumes have prompted the need for advanced and practical analysis methodologies which promote an efficient use of resources. This thesis proposes a new methodology that integrates the use of a microscopic traffic simulation into the development of a traffic management plan for a planned special event. The methodology was developed as a result of a traffic study for New York State Fair, which is held annually in Syracuse, New York.