



case studies

customer success stories from the paramics community

Project

Simulation of ITS Solutions for Incident Management

Organization

National Center for Transportation and Industrial Productivity (NCTIP), New Jersey Institute of Technology (NJIT)

Sector

Intelligent Transportation Systems, Incident Management

Objective

Demonstration using simulation to estimate user benefits of using ITS in managing traffic during an incident.

Highlights

- Intelligent Transportation Systems
- Dynamic Message Signs
- Adaptive Signal Control Systems
- Incident Management

Contact Point

Keir Opie, Manager of Simulation and Modeling

eopie@njit.edu

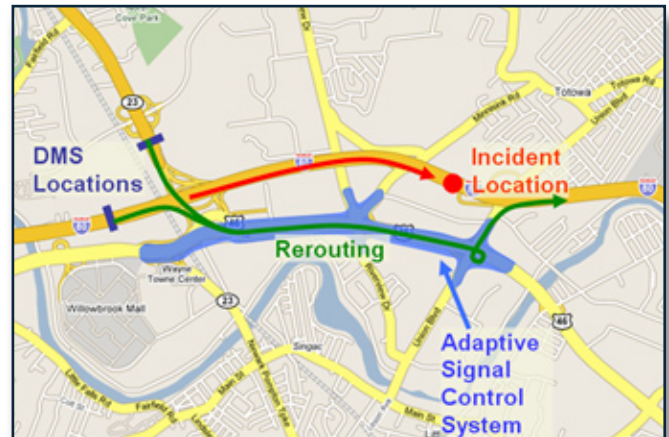
ph: 973.596.5259

transportation.njit.edu



Simulation of ITS Solutions for Incident Management

Completed as a demonstration project in approximately one week, this case study illustrates the use of microscopic simulation in the evaluation of Intelligent Transportation Systems (ITS). In this particular case study, a Paramics model was built and used to estimate the user benefits from ITS systems during an accident on a major interstate. ITS systems simulated include the use of Dynamic Message Signs, or DMS, to advise upstream traffic of an alternative route along the parallel major arterial, and an Adaptive Signal Control System along the parallel arterial route to modify signal timings to accommodate the increased traffic demands from detouring traffic.



The case study consisted of a hypothetical ITS deployment in Northern New Jersey to help manage traffic during an accident. The accident was assumed to block one of four lanes on I-80 EB, and had a clearance time of one hour.

Simulation runs demonstrated the system-wide user benefits of advising drivers to use alternative routes to avoid the accident location via messages on the DMS. In addition, combining the use of the DMS system and use of advanced signal control systems to modify signal timings to accommodate the increased traffic on the parallel arterial further increases the user benefits. Estimations show that benefits from the ITS solutions will exceed the life-cycle costs of the equipment, even without considering benefits from non-incident related uses of the ITS components.

