

# Strategic ITS Research and Development Plan

## Description of project

The ITS Development Unit in MnDOT's Office of Traffic, Safety & Technology is responsible for researching, developing, field testing and providing technical support for new ITS products, methods and systems. Once these products, methods and systems are developed to the point of being effective and reliable, other functional areas of MnDOT, such as MnDOT district offices, are then responsible for any routine deployment and operation of the developed systems. To focus on ITS development opportunities that will provide the best benefit, the ITS Development Unit undertook this project to analyze ITS development needs and objectives to identify emphasis areas, strategies to address those areas, and development needs to implement those strategies.

The goal of the Strategic ITS Research and Development Plan is to guide future ITS development investments. The plan was developed using an objectives-driven, data-driven process. It started with investigating the level of analysis that has been performed on the Minnesota ITS development objectives. Four objectives were selected for further analysis based on their critical impact to transportation system performance as well as data availability. The analysis facilitated the identification of emphasis areas for ITS research and development as well as potential ITS strategies and countermeasures.

A total of 40 ITS strategies and countermeasures were recommended and categorized in five groups: Safety, Work Zones, Freeway Traffic Management, Arterial Traffic Management, and Traveler Information/511.

## Lessons learned

- Congestion and delay caused by recurring peak period traffic is the main concern for transportation mobility and safety.
- Identifying key bottlenecks and their causes help develop solutions and counter measures to improve transportation operations efficiency.
- ITS technology can provide solutions to reduce incident and work zone related congestion and delay, resulting in improved safety and mobility.

## Benefits

- Identification of causes of delay and congestion help research, development and implementation of ITS counter measures that can effectively address the problems.
- Critical emphasis areas identified in the plan provide directions to further research and development of cost-effective ITS solutions to address critical issues and maximize return on investment.
- The plan helps MnDOT to objectively and quantitatively measure the effectiveness potential ITS strategies and solutions in achieving the corresponding ITS development objectives.
- Traditional roadway improvements along with implementation of targeted ITS solutions offer meaningful solutions to battle congestion problems in Minnesota's roadway network.

## For More Information

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