

Research Project Description Form

Project Number: RTI TRP 08-02

Project Title: Intelligent Transportation Systems in WV: Evaluation, Needs Assessment, and Professional Capacity Building

Primary Investigator Contact Information:

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Project Objective:

1. Evaluation of ITS Deployments: Initially this will take place along I-64 using historic and current traffic data, crash data, and incident response times. This evaluation will then be conducted on four other corridors that have been targeted for ITS deployments.
2. Needs Assessment for ITS Stakeholders. Public and private stakeholders will be identified and surveyed and determine their ITS data needs. RTI will house and maintain an ITS Data Archive, that will become a component of the Transportation and Economic Development Information System (TEDIS). Information will be disseminated from the archive to the stakeholders.
3. Professional Capacity Building: RTI will establish a training program for traffic management center operators which will be administered at the Multimodal ITS center.

Abstract:

Intelligent Transportation Systems use roadside video cameras, weather sensors, and roadway sensors to monitor the roadway, weather, and traffic flow to detect incidents. Traffic incidents are the primary cause of delay in congested urban areas, and account for an even larger proportion of delays in smaller urban areas. Decreasing incidents will reduce the likelihood of secondary incidents, which are often more serious. Other impacts include lessening congestion, lowering fuel consumption, and decreasing air pollution. Intelligent Transportation

Systems can help reduce the amount of time that it takes to restore normal traffic flow after an incident by: detecting and locating the incident more quickly; notifying emergency personnel; managing traffic flow around the incident, and; alerting motorists of delays and alternate routing options.

This research project is significant to the WVDOT because the evaluation will help justify further financial support for additional ITS deployments in the state. This will allow the WVDOT to show the financial, safety, and moral value of investing in ITS to the public and state leaders by quantifying improved traffic safety and reduced congestion delays, fuel consumption and air pollution. Another benefit of this research will be the broad dissemination of ITS data to relevant stakeholders that may lead to other public benefit.

Task Descriptions:

- Task 1.1: Inventory current and anticipated data sources.
- Task 1.2: Review and provide feedback on ITS deployment project.
- Task 1.3: Review current incident response protocol in West Virginia.
- Task 1.4: Design and implement data archive at RTI DR/TC.
- Task 1.5: Establish baseline conditions and performance measures.
- Task 1.6: Collect ongoing data to evaluate the ITS deployments.
- Task 1.7: Summary of findings.
- Task 2.1: Identify ITS data stakeholders and their representative.
- Task 2.2: Identify ITS data components that are anticipated to be available.
- Task 2.3: Survey stakeholders to determine ITS data needs.
- Task 2.4: Conduct stakeholder meeting to discuss ITS data needs.
- Task 2.5: Design ITS data flow model.
- Task 2.6: Implement ITS data dissemination procedure.
- Task 3.1: Scope DR/TC in Huntington.
- Task 3.2: Develop ITFC training program.
- Task 3.3: Conduct ITFC training.
- Task 3.4: Evaluate ITFC training.

Milestones, Dates, Schedule:

Project Duration: December 2007-November 2012

Year	2008				2009				2010				2011				2012			
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task 1.1																				
Task 1.2																				
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Task 3.1																				
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Task 3.3																				
Task 3.4																				

Yearly and Total Budget:

Total: \$250,000/year for 5 years = \$1,250,000 total

Student Involvement:

Two research associates and various undergraduate students will be used throughout the course of this project.

Relationship to Other Research Projects:

The ITS data archive established as part of this project will serve the long-term research needs for the WVDOT and RTI. Most of the data will be readily available to researchers for other projects. The Multimodal ITS Center will also serve as a platform for evaluating ITS applications in the railroad and maritime industries.

Technology Transfer Activities:

The specific results of the project will be submitted to the FHWA for inclusion in the ITS Benefits database. ITS information and data will be made available to the public via a website and other means for decision-making purposes.

Potential Benefits of this Project:

Determine the benefit of the West Virginia DOT ITS deployment project, identifying stakeholders and disseminating relevant data to those stakeholders, assist WVDOT in maximizing the benefit of the ITS deployment project.

TRB Keywords:

Intelligent Transportation Systems, evaluation, performance measurement