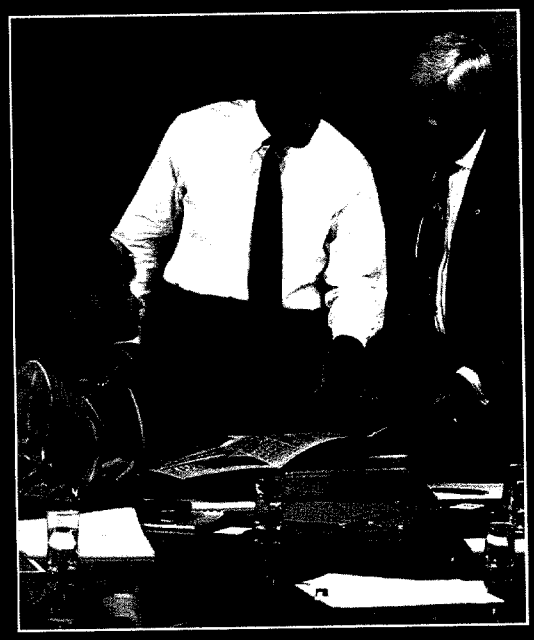
Let's Talk It Over: Interagency Cooperation Facilitates Success

A Case Study

The New York, New Jersey, Connecticut Metropolitan Area TRANSMIT Operational Test



Ensuring Integration of Intelligent Transportation Systems Products and Services

August 2000

Foreword

Dear Reader,

We have scanned the country and brought together the collective wisdom and expertise of transportation professionals implementing Intelligent Transportation Systems (ITS) projects across the United States. This information will prove helpful as you set out to plan, design, and deploy ITS in your communities.

This document is one in a series of products designed to help you provide ITS solutions that meet your local and regional transportation needs. The series contains a variety of formats to communicate with people at various levels within your organization and among your community stakeholders:

- **Benefits Brochures** let experienced community leaders explain in their own words how specific ITS technologies have benefited their areas;
- **Cross-Cutting Studies** examine various ITS approaches that can be taken to meet your community's goals;
- **Case Studies** provide in-depth coverage of specific approaches taken in real-life communities across the United States; and
- **Implementation Guides** serve as "how to" manuals to assist your project staff in the technical details of implementing ITS.

ITS has matured to the point that you are not alone as you move toward deployment. We have gained experience and are committed to providing our state and local partners with the knowledge they need to lead their communities into the next century.

The inside back cover contains details on the documents in this series, as well as sources to obtain additional information. We hope you find these documents useful tools for making important transportation infrastructure decisions.

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Preface

This case study is one of a series of documents that examine institutional and other nontechnical impediments that public sector participants encounter in deploying ITS. The purpose of these reports is to provide successful strategies that were used to overcome these barriers, strategies that representatives of state and local governments can follow in planning and deploying ITS products and services.

This case study reflects information gathered from discussions with representatives of TRANSCOM's (Transportation Operations Coordinating Committee) member agencies and staff, from previous reviews of the TRANSMIT (TRANSCOM's System for Managing Incidents and Traffic) operational test, and from interviews conducted as part of the Institutional Benefits Study Area of the national evaluation of the metropolitan Model Deployment Initiative (MDI). The authors appreciate the support and cooperation of the TRANSCOM staff and member agency representatives in developing this document.

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Background

Introduction

Intelligent Transportation Systems (ITS) products and services are most effective when integrated within a metropolitan area. However, to ensure technologically and geographically seamless deployment, this integration requires the cooperation and coordination of many jurisdictions and agencies that are responsible for transportation management within the metropolitan area. This case study describes a model that promoted cooperation among multiple agencies and the technological innovation that developed as a result of the culture of this coalition.

Cooperation among numerous agencies and across jurisdictions will promote the successful implementation of ITS products and services.

During the implementation of numerous ITS operational tests, several issues hindered interagency coordination. Some test participants believed that full cooperation might never be achieved because agencies would continue to have conflicting philosophies and priorities. Also, the lack of proper communications among participating agencies impeded the progress of some projects. By establishing the proper channels of communications and by clearly defining agency roles and responsibilities (usually committing these to writing), participants often resolved agency issues.

In the New York-New Jersey-Connecticut (NY/NJ/CT) Metropolitan Area, representatives of the numerous transportation agencies focused on achieving cooperation and coordination, which led to the successful implementation of the TRANSMIT (TRANSCOM System for Managing Incidents and Traffic) Operational Test. "The extensive number of jurisdictions, operators, and transportation agencies within the NY/NJ/CT Metropolitan Area created obstacles that had to be overcome," stated Dennis Keck, ITS Coordinator for the New Jersey Department of Transportation. "Representatives of the area's public agencies recognized that we had to communicate and cooperate with one another if we were to surmount these barriers and provide travelers with the seamless transportation information that both commuters and tourists want."

Achieving Coordination

Two efforts, in particular, spurred interagency cooperation in the region. The first was the creation of the TRANSCOM (the Transportation Operations Coordinating Committee), a coalition of 15 traffic, transit, and police agencies in the tri-state area. TRANSCOM was established in 1986 with a mission to provide a means for setting up a regional cooperative approach to transportation management and improve interagency response to transportation incidents. Collectively, the TRANSCOM member agencies are responsible for the safe and efficient operation of 38 limited-access highways consisting of more than 6,000 lane miles, more than 2,000 miles of commuter rail track, thousands of trains and buses, 19 tunnels and bridges, three major airports, various port facilities, and three major bus terminals located in the tri-state TRANSCOM network area.

TRANSCOM
TRANSPORTATION OPERATIONS COORDINATING COMMITTEE

Achieving Coordination

"Over time, representatives of the transportation agencies in the NY/NJ/CT Metropolitan Area recognized and accepted that they could no longer build their way out of congestion," noted Michael Ascher, President of the Triborough Bridge and Tunnel Authority and Chairman of TRANSCOM. "We recognized that technology offered the opportunity to address our transportation and mobility problems, but this technology had to be implemented at a regional level. To do so, however, each agency had to cooperate with one another and even give up some of its autonomy. This has led to our success."

The TRANSCOM Executive Committee provides overall program direction and policy guidance. It comprises the chief executive officers of its 15 member agencies. A unanimous affirmative vote of all members is required to authorize any action or determination. The Technology and Operations Committee consists of the senior operations and technical personnel from the member agencies. They make recommendations to the Executive Committee on budget, operating, and technology issues. Other working groups, such as the Finance and Policy Working Groups, are formed and disbanded based on the needs determined by the Technology and Operations Committee. A General Manager oversees and directs the day-to-day management and operation of TRANSCOM. TRANSCOM staff are provided by member agencies. Personnel on loan to TRANSCOM from member agencies are considered in-kind services and are provided in lieu of cash membership obligations.

The second effort that sparked interagency coordination was the creation of the E-ZPass Interagency Group, which comprises representatives from 11 toll agencies from New Jersey, New York, Pennsylvania, Maryland, and Delaware. The foundation for this organization was established during the mid-1980s, when an interagency technical committee was formed to develop system standards for electronic toll collection for the region. In 1990, executives of the toll agencies determined that the successful implementation of an electronic toll collection system for the region required a regional management structure. Since 1990, an executive committee consisting of agency heads has met at least quarterly to coordinate the work of various subcommittees. These subcommittes range from policy, to technical, to marketing.

In 1991, the original seven agencies jointly adopted an interagency policy statement that endorsed a plan to procure a unified and compatible system of tags and readers. The plan sought to ensure that one automatic vehicle identification toll tag could be used for travel throughout the entire region. The testing and selection of an electronic toll collection system motivated the representatives from these toll agencies to form the E-ZPass Interagency Group.

"...technology had to be implemented at a regional level. To do so, however, each agency had to cooperate with one another and even give up some of its autonomy."

—Chairman of TRANSCOM Michael Ascher

Overcoming Obstacles

The first obstacle that the E-ZPass Interagency Group members had to overcome was the issue of whether to purchase a read-only or a read-write system. The agencies with tollbooths that collect a fixed toll only needed read-only technology. The toll authorities with closed toll systems desired the read-write technology so that they could track entry as well as exit points of their customers. Additionally, all recognized that if an electronic toll collection system was to migrate to the communications methods required for advanced traffic management and traveler information systems, the electronic tags must be capable of two-way communications. After a period of negotiations, the members reached a consensus and selected the read-write technology.

"The E-ZPass agencies are successful because they realize that compromise and consensus are necessary for the implementation of efficient and effective intelligent transportation systems."
—E-ZPass Interagency Group Program Director Rena Barta

Rena Barta, Program Director of the E-ZPass Interagency Group, emphasized that "the E-ZPass agencies are successful because they realize that compromise and consensus are necessary for the implementation of efficient and effective intelligent transportation systems. The Interagency Group agencies continue to work together to benefit their customers, many of whom are customers of multiple toll agencies throughout the region."

TRANSCOM members, many of whom are also involved with the E-ZPass effort, saw the benefits of building incident detection and congestion monitoring functions upon the E-ZPass system. Additional readers could be installed along the highway to provide TRANSCOM with regional incident detection and congestion management data. The members postulated that, while maintaining customer anonymity and confidentiality, vehicles participating in the E-ZPass system could be used as probes to detect congestion and incidents and assess such factors as vehicle speed and travel times. Therefore, they moved forward to assess the feasibility of and to design an advanced traffic management system operational test based on electronic toll collection technology.

TRANSCOM members reasoned that, if the operational test was successful, it could ultimately provide the region an extensive traffic surveillance system at a reasonable incremental increase over the cost of providing electronic toll and traffic management for toll collection only. Because both E-ZPass and the advanced traffic management system were needed in the region, the participating members decided to integrate the elements of the two systems, which would produce economies of scale, such as reduced hardware and software needs. After TRANSMIT was accepted as an operational test, a steering committee consisting of representatives from the Federal Highway Administration, TRANSCOM staff, and the seven TRANSCOM agencies who operate the bridges and roads in the study area was created to oversee the operational test. This committee coordinated its work with the E-ZPass Policy and Technical Committees.

A feasibility study for TRANSMIT was completed in January 1993. It endorsed the electronic toll and traffic management approach and provided a preliminary system design. The final system design was completed in December 1993. It was at this time, however, that the E-ZPass Policy and Technical Committees postponed selecting a vendor for the E-ZPass

technology because more testing needed to be done to determine if any read-write technologies met the E-ZPass specifications. This action created an obstacle for the TRANSMIT Steering Committee members and forced them to adjust their approach in implementing the TRANSMIT project.

As originally designed and documented in the feasibility study, the TRANSMIT hardware was to be installed in a corridor from Staten Island to central New Jersey. However, the three toll authorities in the Staten Island corridor decided to wait for the E-ZPass read-write technology. The New York Thruway Authority, however, opted to install its initial E-ZPass system using read-only technology and then upgrade to read-write equipment once it became available. Because of this change, TRANSCOM members decided unanimously to move the TRANSMIT test site from the Staten Island-to-New Jersey corridor to roadways in the Bergen County, New Jersey, and Rockland County, New York corridor. This decision was made eaiser because TRANSCOM members had previously developed a regional perspective to traffic management

The new test location would cover the northern five miles of the Garden State Parkway, as well as the New York State Thruway from the Spring Valley Toll Plaza to the Tappan Zee Bridge Toll Plaza. The members agreed that this action would ensure that the TRANSMIT objectives would be achieved with only a minimal slip in schedule. A new steering committee comprising representatives from the FHWA, TRANSCOM, and the three newly affected agencies, only one of which was in the original committee, was formed. An extensive change in geography, beneficiaries, and scope took place, and it was accomplished with the unanimous support of all the TRANSCOM member agencies.

John Platt, Executive Director of the New York State Thruway Authority (NYSTA), stressed that "interagency cooperation is the key to the success of the TRANSMIT project. The traffic information generated by the system is shared with member agencies and disseminated to the public. And, because several agencies were involved in the development of TRANSMIT, a cost-effective, integrated system was created and economies of scale were realized." The TRANSMIT independent evaluator, the Institute for Transportation at the New Jersey Institute of Technology, estimated that by integrating the electronic toll collection technology with TRANSMIT, the incident and traffic management system cost 45 percent less than a system using video imaging, 36 percent less than a system using inductive loops, and 27 percent less than a system using microwave technology.

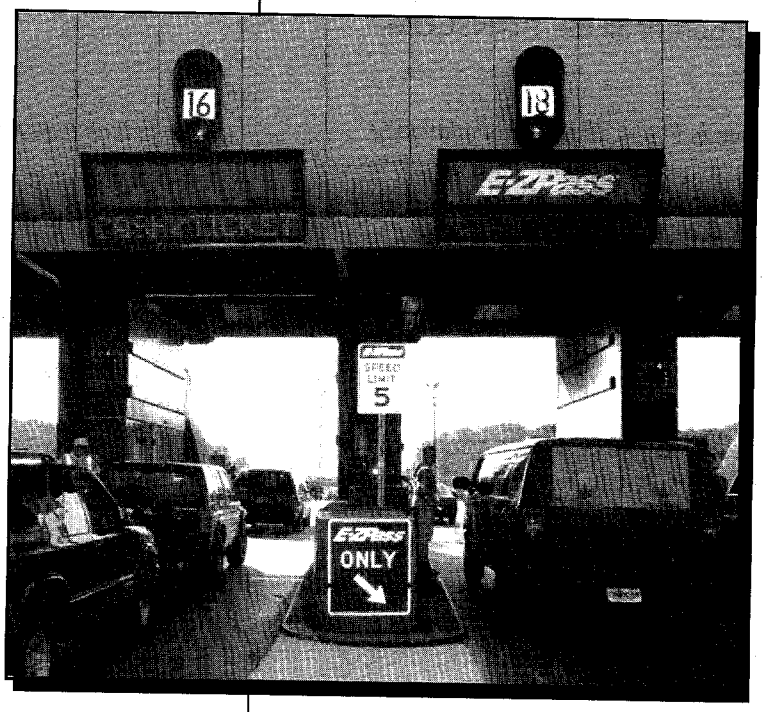
To resolve administrative and technical obstacles between the agencies and reduce the system implementation time, the TRANSMIT Steering Committee developed an alternative contracting approach used for handling projects involving multiple jurisdictions. This approach allowed member agencies to have control over the review of the bid packages and the contractor selection procedure. The selected consultant, in turn, was given the responsibility of resolving the incompatibilities between the systems of the different agencies in a way that resulted in a simpler system.

"... interagency cooperation is the key to the success of the TRANSMIT project."
—NYSTA Executive Director, John Platt

Moving Forward

As described earlier, the first stage of the TRANSMIT system covers 22 miles of the New York State Thruway and the Garden State Parkway. Along the 11-mile stretch from Spring Valley to Tarrytown on the Thruway, the probability of detecting incidents ranged from 92-95%. On the heels of this success, TRANSCOM members have selected expansion sites for the second phase of TRANSMIT. Over 100 miles of roadways will be implemented. While some areas will be instrumented for the purpose of producing travel time data, others, including the original Staten Island corridor, will be instrumented for incident detection and traffic management. Therefore, the seven member agencies who were originally expected to receive the system, will have it implemented on their facilities. There will be upgrades to the original software that will give the member agencies new features, such as origin and destination data.

TRANSCOM, New Jersey Transit, and the Port Authority of New York and New Jersey have teamed up to use the TRANSMIT and E-ZPass technology for a transit application. NJ Transit buses, which will be equipped with E-ZPass tags, will be monitored from the approaches to the Lincoln Tunnel in New Jersey to the Port Authority Bus Terminal entrance ramps in Manhattan. The primary purpose of this application is to help NJ Transit staff manage their fleet of buses that move along this route, one of the heaviest traveled transit routes in the world. NJ Transit 'starters' located within the Bus Terminal will have hand-held devices that will display expected bus arrival times in real time and the comparison of this arrival time with their scheduled time. This information will assist NJ Transit staff in identifying buses that are delayed and in managing the assignment of buses to the gates in the terminal. These buses that are equipped with transponders will also be used as probes to provide travel times and incident information to the TRANSMIT system.



The use of E-ZPass technology is also being considered in another application. The E-ZPass Interagency Group is working with operators of parking facilities to develop a method to electronically pay for parking through the E-ZPass system.

Conclusion

Open interaction among transportation officials results in smoother deployment of intelligent transportation systems. In areas where officials reported a "considerable" level of interaction, they also purported to have a "positive" opinion of intelligent transportation systems. This interaction, however, requires an increased level of communications, which was fostered by the forums created by regional ITS activities, such as incident management programs and ITS planning studies, and leads to cooperative ITS development. Steering committees for these activities serve as catalysts for getting representatives of the various transportation agencies to work together. These committees also proved to be effective tools for promoting continuing interaction.

These forums also bolstered a systems integration approach for deploying ITS. The "stovepipe" (single-agency) approach to project development does not always produce an integrated system and, therefore, may not reap the full benefits that can be gained from deploying ITS products and services. Planning the deployment of ITS as regional systems rather than as isolated infrastructure improvements will create the systems integration needed to achieve the maximum potential from deploying an intelligent transportation system. As Matt Edelman, the General Manager of TRANSCOM, recounted, "You need to be open to new organizational approaches, but it should be done in a way that integrates and respects existing institutions. As the TRANSMIT project has shown, no one agency has to be "in charge" for an area's transportation agencies to work cooperatively for the good of the entire region."

"...no one agency has to be 'in charge' for an area's transportation agencies to work cooperatively for the good of the entire region."
—TRANSCOM General Manager Matt Edelman

The interagency cooperation that was established in the NY/NJ/CT Metropolitan Area continues to benefit the region. In 1996, the tri-state area was selected as a metropolitan Model Deployment Initiative site. From a regional perspective, the Model Deployment Initiative provides great potential for TRANSCOM and its members to serve the public more directly. The results of the Model Deployment Initiative activities will be a region-wide, multi-modal traveler information system. The data generated by the TRANSMIT project is a key component of the Model Deployment Initiative. When merged with other data supplied by the TRANSCOM member agencies, it will form the basis for providing accurate, up-to-date, and much-needed travel information to the commuting public.

For more information on the TRANSMIT project, refer to the *TRANSMIT System Evaluation (EDL #9004)*. For more information on metropolitan ITS deployments, refer to the document, *Successful Approaches to Deploying a Metropolitan Intelligent Transportation System (EDL #8483)*.

All of these reports are available on the Electronic Document Library (EDL) at http://www.its.fhwa.dot.gov/cyberdocs/welcome.htm. This document is available on the EDL as document number 11493. For additional related documents, and ITS training courses, please contact your regional office or refer to the Web sites listed on the back cover.

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