U.S. Department of Transportation
Federal Highway Administration

TMCUpdate

TRANSPORTATION MANAGEMENT CENTER POOLED FUND STUDY

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HOW TO JOIN

Agencies may join the TMC Pooled Fund Study at anytime during the year by committing funds at a level agreed upon by existing participants in the study. The TMC pooled fund study was approved for 100 percent State Planning and Research Program funding. Any noncommercial agency or organization that is responsible for the management and operation of any portion of the surface transportation system is welcome to participate.

State transportation agencies interested in joining the TMC Pooled Fund Study can submit funding commitment online at the Transportation Pooled Fund Program web site at: http://www.pooledfund.org. (see Solicitation No. 870; SPR-2(207))

Other agencies should complete and submit the TMC Pooled Fund Study commitment form downloadable at the TMC Pooled Fund Study web site at: http://tmcpfs.ops.fhwa.dot.gov.

Upcoming TMC Pooled Fund Study Products

The TMC Pooled Fund Study had a fruitful year in 2005. 11 projects were initiated in the past two years to develop the resources and tools that agencies need to address and overcome the challenges they are facing and to improve and advance the current state-of-practice. Eight of the 11 projects have been completed or are near completion. Products result from the eight projects will be published within the next three months. Brief descriptions of the upcoming products are provided in the following:

"TMCOps: An Interactive Software Tool for Developing TMC Operator Requirements and Position Descriptions" – TMCOps is a transportation management operations technician position description creation tool. This web-based tool was created to assist TMC managers and administrators who are responsible for analyzing staffing requirements, preparing position descriptions, developing training plans, and determining selection criteria. See *Feature Article* on Page 2.

"Impacts of Using Dynamic Features to Display Messages on Changeable Message Signs" (FHWA-HOP-05-069) – This research report documents the results of human factors driving simulator studies which examined the effects of CMS dynamic display features on motorists. Three types of dynamic display features were examined: 1) flashing an entire one-phase message; 2) flashing one line of a one-phase message; and 3) alternating text on one line of a three-line CMS while keeping the other two lines of text constant on the second phase of the message thus displaying redundant information. Guidelines emanating from this research and recommendations for changes/additions to the existing sections of the *Manual on Uniform Traffic Control Devices* are documented in an accompanied white paper. Available at: http://tmcpfs.ops.fhwa.dot.gov/cfprojects/new_search.cfm?new=0.

See Upcoming Products, Page 6

Feature Article: Interactive Software Tool for Developing TMC Operator Requirements and Position Descriptions

The TMC systems engineering process involves more than just planning and design of the TMC infrastructure. Other important activities in the design of a TMC include developing a concept of operations for the TMC and developing staffing plans and resource requirements for the TMC. It is vitally important that the TMC be staffed with transportation management operations technicians (TMOTs) who possess the appropriate knowledge, skills, and abilities (KSAs) to perform effectively, because the TMOTs are in some ways responsible for the safety of all who travel on the roadways in their jurisdiction.

Unfortunately, from a human resources perspective, TMOT position descriptions are more difficult to develop than those for other positions in state and local transportation departments. The TMC Pooled Fund Study recognized the need for a resource to aid agencies in determining and preparing job classifications, recruitment and training requirements, and career paths for TMOTs. The TMC Operator Requirements and Position Descriptions project was initiated to create that resource.

In Phase 1 of the TMC Operator Requirements and Position Descriptions project, researchers compiled a list of sixteen "task integral" TMC functions (i.e., functions that can be broken down into individual tasks that will be performed by TMOTs in TMCs). In this context, a TMC function is defined as an on-going purpose for which a set of related activities is conducted in the TMC. The activities that comprise a function are tasks, which are discrete work elements conducted by TMOTs.

The specific KSAs required to perform each task were then identified. The KSA is a standardized way of expressing the capabilities required to perform in a specific position.

- TMOT knowledge is defined as the intellectual possession and command of information necessary to qualify for the TMOT position and the information that must be acquired after assuming a position in order to perform TMOT tasks.
- TMOT skill is defined as an assessment of the level of proficiency in exercising knowledge and/or performing TMOT tasks in terms of performance time and accuracy.
- TMOT ability is defined as the basic intellectual and physical capabilities necessary to perform in a TMOT position, acquire the necessary skills, and apply the necessary knowledge.

The Sixteen Task Integral TMC Functions

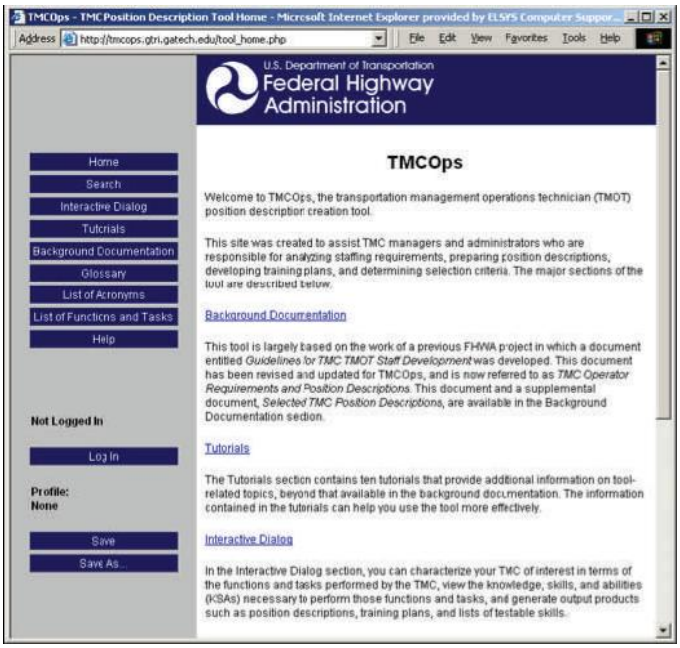
- Provide Travel Information
- Records Management
- Congestion Management
- Failure Management
- Incident Management
- Special Event Management
- Traffic Flow Monitoring
- Emergency Management
- Provide/Coordinate Service Patrols
- Reversible and High Occupancy Vehicle (HOV) Lane Management
- Traffic Signal System Management
- Transit Vehicle Monitoring
- Advanced Public Transportation Systems (APTS) System
- Environmental and Roadway Weather Information Systems (RWIS) Monitoring
- Overheight Vehicle Management
- Rail Crossing Management

The TMOT functions and tasks and the associated KSAs were organized into a set of requirements matrices, and a step-by-step process for using the requirements matrices to derive the KSAs needed for a specific TMOT position was developed. However, this manual process was fairly tedious and time intensive, and the need for a software tool implementing the process was recognized.

In Phase 2 of the project, researchers developed an interactive Web-based tool known as TMCOps that implements the step-by-step process developed in Phase 1 and provides additional functionality. TMCOps also presents the documentation developed in Phase 1, fully updated and revised for Web presentation. This information was supplemented with new material developed for the tool to assist users in understanding functions, tasks, KSAs, performance levels, and other

concepts essential to the development of position descriptions. The tool also utilizes materials developed in Phase 1 to generate customized lists of testable skills and training programs for TMOTs.

The core of TMCOps is the Interactive Dialog, which gathers information from the user about the functions and tasks performed by TMOTs in the TMC of interest and uses that information to build the list of KSAs required to perform those functions and tasks. Two variations of the Interactive Dialog are available: the full dialog, in which the user must fully characterize the TMC of interest by selecting each individual function and task performed in the TMC of interest, and the streamlined dialog, which presents to the user only tasks that affect the inclusion or exclusion of related KSAs from the KSA list. The full dialog takes longer to complete but provides the user with more functionality than the streamlined dialog, which is designed for users who want to obtain the list of required KSAs as quickly as possible.



TMCOps Welcome Screen

Users can create TMCOps user accounts that allow them to save their work securely into the TMCOps database and access their information from any location at a later time.

TMCOps can generate three types of output products: lists of testable skills, training programs, and position descriptions. The lists of testable skills consist of sets of measurable skills that can be developed into skills tests for evaluating TMOT performance. The "Assessing Skill Level" tutorial provides information on how to use a list of testable skills to evaluate skill level.

The training programs are outlines that form the basis on which full training programs can be developed. The "Developing a Training Program" tutorial provides information on how to develop a training program outline into a full training program.

A position (or job) description is a brief written explanation of a job. It is a summary of the job functions and includes the job title, purpose, tasks, responsibilities, and other information such as qualifications, work aids, equipment, conditions, and co-worker relationships. Position descriptions serve many purposes. They may be used to explain a position to potential applicants and to establish the classification and pay scale of a position, and may also be used for employee orientation, training, employee development, performance evaluation, promotion, and succession planning.

TMCOps allows users to tailor the structure and content of the position descriptions they generate. Some position description content is automatically generated by the tool, and instructional text to assist users in providing additional content is provided by the tool. The tool also provides several tutorials pertaining to position descriptions.

The full text of the *TMC Operator Requirements and Position Descriptions* and *Selected TMC Position Descriptions* documents are presented as a part of TMCOps. A 2-page user quick reference guide was developed to assist users in navigating and using the tool. Additionally, a full glossary and list of acronyms is provided, along with a context-sensitive help system to assist users in using the tool. Ten tutorials were written specifically to help users better understand functions, tasks, position descriptions, and other topics in order to use the tool more effectively.

TMCOps, support documents, and associated outreach materials can be accessed through: (1) the TMC Pooled Fund Study web site at http://tmcpfs.ops.fhwa.dot.gov or (2) the TMCOps website at http://tmcops.gtri.gatech.edu. ¢

Project Progress Reports

Ongoing TMC Pooled Fund Study projects are briefly described in the following paragraphs. Quarterly project progress reports can be accessed on the TMC Pooled Fund Study Web site: http://tmcpfs.ops.fhwa.dot.gov.

"Coordinated Freeway and Surface Street Operational Plans and Procedures"
Purpose: Develop a document that provides technical guidance and recommended practices on how to prepare plans, coordinate activities, and develop procedures and protocols to use in managing travel, controlling traffic, and providing services related to coordinating travel on freeways and arterial roadways.

Champions: Mark Newland, Indiana DOT, and Kamal Hamud, District of Columbia DOT
Status: Final report is currently being edited
Completion Date: December 2005
Contact: James Colyar: 202-493-3282; james.colyar@fhwa.dot.gov

"Developing and Using Concept of Operations in Transportation Management Systems"
Purpose: Develop a document that describes the need for a concept of operations for a transportation management system and provides technical guidance and recommended practices for developing and using a concept of operations throughout the system's life cycle.

Champion: Manny Agah, Arizona DOT
Status: Final handbook has been completed; Outreach materials are under final review.
Completion Date: January 2006
Contact: Emiliano Lopez: 410-962-0116; emiliano.lopez@fhwa.dot.gov

"Transportation Management Center Business Planning and Plans Handbook"
Purpose: Produce a handbook that provides guidance and best practices on how to develop a TMC business plan. The handbook will also outline business-planning models that were successfully employed by transportation agencies to ensure the long-term sustainability of TMCs and associated ITS applications.

Champion: Monica Kress, California DOT
Status: Final editing of the handbook is on-going
Completion Date: January 2006
Contact: Raj Ghaman: 202-493-3270; raj.ghaman@fhwa.dot.gov

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MEMBER PROFILE

Cynthia Levesque
TMC Manager
Rhode Island DOT

Ms. Levesque is the Manager of the Transportation Management Center for the Rhode Island Department of Transportation. In her position, she champions the mainstreaming of ITS, innovative procurement practices, and creating public value for the use of technology in better managing our statewide transportation system.

Ms. Levesque serves on the I-95 Corridor Coalition's Steering Committee and Highway Operations Group. Her involvement with the Coalition resulted in the acquisition of the first grant to install two Highway Advisory Systems which since then has prompted her involvement in managing that system as well as adding to it to provide full coverage for the State or Rhode Island. She authored several papers and articles and presented to professional organizations on the Rhode Island ITS program as well as on the Incident Management initiatives currently underway. She is involved in securing funding for the Rhode Island Statewide ITS Program; serves as the Rhode Island Representative on the TMC Pooled Fund Study; serves on the Statewide Telecommunications Group and is heavily involved in incorporating the TMC into all statewide plans for implementing a new radio system as well as other wireless initiatives; she is also responsible for several partnerships that have leveraged the resources of the TMC and has resulting in procuring and installing surveillance cameras on existing infrastructure and some privately owned facilities; she has recently had a paper accepted on the ITS Training of Communications Operators – an interactive training program she conceived and implement that is the first of its kind in the nation; co-founded and served as past president of the RI ITS Chapter; implemented the first traffic channel in the state; is responsible for creating and managing the TMC award winning web site; and Chairs the Rhode Island Incident Management Task Force, to name a few of her accomplishments.

Ms. Levesque received a Master of Science in Labor Relations and Labor Studies from URI in 1987.

"TMC Performance Monitoring, Evaluation, and Reporting Handbook"

Purpose: Develop a handbook that explains the need for performance monitoring and provides guidance and recommended monitoring practices. The handbook will advise how to initiate, sustain, and use information generated from monitoring, evaluating, and reporting on TMC performance and describe roles, responsibilities, functions, and support services as they relate to traffic management.

Champion: Mark Newland, Indiana DOT
Status: Final editing of the handbook is on-going
Completion Date: February 2006
Contact: Raj Ghaman: 202-493-3270; raj.ghaman@fhwa.dot.gov

"TMC Staffing and Scheduling for Day-to-Day Operations"

Purpose: Develop a document that will assist TMC managers in making staff workload and scheduling decisions, performing future staffing forecasts, estimating timelines for personnel procurement and recruiting, and analyzing staffing costs and productivity.

Champion: Manny Agah, Arizona DOT
Status: Final editing of the document is on-going
Completion Date: February 2006
Contact: Raj Ghaman: 202-493-3270; raj.ghaman@fhwa.dot.gov

"TMC Clearinghouse Development and Initiation"

Purpose: Establish a central, one-stop clearinghouse at a Web site that houses a comprehensive database of TMC-related resources. The TMC clearinghouse will facilitate the sharing of information among practitioners and the dissemination of innovative tools, processes, problem-solving efforts, and capacity-building efforts to assist TMC practitioners in performing their duties and achieving the goals of their TMCs.

Champions: Manny Agah, Arizona DOT, and David Kinnecom, Utah DOT
Status: Clearinghouse design is being developed
Completion Date: April 2006
Contact: Raj Ghaman: 202-493-3270; raj.ghaman@fhwa.dot.gov

"Regional, Statewide, and Multi-State TMC Concept of Operations and Requirements"

Purpose: Building off the existing *Developing and Using Concept of Operations in Transportation Management Systems Handbook*, this project will develop a document that will provide detailed guidance on how to develop and use concept of operations and system requirements as it applies to the life cycle of a regional, statewide, or multi-state TMC.

Champion: Jim McGee, Nebraska DOR
Status: Project initiated in November 2005
Completion Date: January 2007
Contact: Raj Ghaman: 202-493-3270; raj.ghaman@fhwa.dot.gov

"Recovery and Redundancy of TMCs"

Purpose: Develop a technical document that will synthesize current practices and state of the practices, highlight technical issues, lessons learned, and recommended practices, and detail how to plan, develop and implement redundancy design and recover plans for TMCs and transportation management systems.

Champion: Monica Kress, Caltrans
Status: Project initiated in December 2005
Completion Date: March 2007
Contact: Raj Ghaman: 202-493-3270; raj.ghaman@fhwa.dot.gov

"Procuring, Managing, and Evaluating the Performance of Contracted TMC Services"

Purpose: Develop a technical document that will provide guidance and recommended practice to TMC owners and managers in making decisions related to outsourcing portions, or in entirety, of their TMC or transportation management system operation to a private contractor or contractors.

Champion: Manny Agah, Arizona DOT
Status: Project kick-off anticipated in March 2006
Completion Date: Summer 2007
Contact: Raj Ghaman: 202-493-3270; raj.ghaman@fhwa.dot.gov

"Integration of TMC and Law Enforcement: Needs Assessment"

Purpose: Assess the current practices and identify issues, needs, and challenges that all involving agencies are facing in integrating TMCs and law enforcement. The results of this effort will lead to identification of a list of topics and issues to be addressed and a series of next steps to be considered in a further study that is intended to develop a product to provide necessary guidance to address agencies 'needs.

Champion: John Domina, Nevada DOT
Status: Project kick-off anticipated in Spring 2006

Completion Date: Fall 2006
Contact: Tom Granda: 202-493-3365;
thomas.granda@fhwa.dot.gov

"TMC Pilot Workshop Development and Delivery"
Purpose: Promote the TMC Pooled Fund Study effort and increase awareness of the Study's products and tools to a broader audience base. The focus of this project is a pilot TMC workshop to be held in the fall of 2006. Themes of the workshop will focus on current and future TMC Pooled Fund Study activities and other topics that are recommended.

Champion: John Corbin, Wisconsin DOT
Status: Project kick-off anticipated in Spring 2006
Completion Date: Summer 2007
Contact: Raj Ghaman: 202-493-3270;
raj.ghaman@fhwa.dot.gov

"TMC Clearinghouse Support Services, Phase 2"
Purpose: Enhance and improve the support services for the TMC clearinghouse website that will be available online in Spring/Summer 2006. The study will also evaluate consumer feedback and recommendations for enhancing and improving the features and contents of the clearinghouse.

Champion: TMC Pooled Fund Study Co-Chairs
Status: Project kick-off anticipated in May 2006
Completion Date: May 2007
Contact: Raj Ghaman: 202-493-3270;
raj.ghaman@fhwa.dot.gov ¢

Upcoming Products

Continued from Page 1

"Changeable Message Sign Operation and Messaging Handbook – Revised" (FHWA-OP-03-070) – This handbook is written for personnel in state, regional, and local transportation agencies that have responsibility for the operation of and/or message design for large permanent changeable message signs (CMSs) or portable CMSs. The Handbook is designed to help both new and experienced users of CMSs at various levels of the agency. It provides very specific information for entry-level personnel, reminders for experienced personnel, and higher-level information for managers regardless whether or not they work in one of the traffic management centers in the state. This handbook was revised and updated in 2005.

"Handbook for Developing a TMC Operations Manual" (FHWA-HOP-06-015) – This handbook provides guidance and recommends practices for initiating, developing, maintaining, and using TMC operations manuals. It describes the development of a TMC operations manual in the context of the integrated, interdependent world of ITS systems. It describes why operations manuals are important; it identifies the activities and participants needed to produce and update a TMC operations manual; and it provides a checklist of topics that can jump start the development of a TMC operations manual. This handbook also contains case studies illustrating transportation community practices that have been applied to the development and use of TMC operations manuals.

"Developing and Using Concept of Operations in Transportation Management Systems" - This document provides guidance to transportation professionals as they seek to develop and use a Concept of Operations throughout the life cycle of a transportation management system (TMS). It is written for transportation professionals involved in the planning, development, design, operation, and maintenance of TMSs. The guidance document is relevant to a wide audience – ranging from technical personnel to individuals with relatively little TMS experience.

"TMC Business Planning and Plans Handbook" – This handbook provides TMC managers and transportation agency executives with a step-by-step guide to multi-year business planning using sound business planning techniques. It also helps managers to understand the realm of possible alternatives for structuring a TMC and the management and operational implications of these alternatives. In essence, this handbook offers a "how-to" that focuses on evolving TMC functions, concepts, processes, and strategies and presents them within a business planning context.

"TMS Performance Monitoring, Evaluation, and Reporting Handbook" - This handbook provides an introduction to TMS performance measurement, and explores the specifics of: (1) establishing a performance measurement program; (2) individual and detailed performance measures for various functions and sub-functions of a TMS; (3) data collection, screening, archiving and processing efforts; and (4) performance monitoring, evaluation and reporting. This handbook is

intended to be a comprehensive technical reference providing guidance on how to develop, implement, improve, and sustain a continuous performance monitoring, data management, evaluation and reporting program or initiative for TMCs and TMSs.

"TMC Staffing and Scheduling for Day-to-Day Operations" – This document provides managers, supervisors, human resources personnel, and private contractors who are responsible for TMC staffing and scheduling decisions with a technical reference that addresses the concepts, methods, processes, tasks, techniques, and other issues related to work analysis, scheduling, and staff planning. Several methods for analyzing aspects of work are covered including job analysis, workload analysis, and demand analysis. General scheduling practices are discussed from who should have the responsibility for scheduling employees to manual methods for generating a schedule. Issues associated with shiftwork are addressed and strategies for employees and employers associated with scheduling are offered. ¢

Event Calendar

January 22-26, 2006	TRB 85th Annual Meeting Washington D.C.
March 19-22, 2006	ITE 2006 Technical Conference and Exhibit, San Antonio, Texas
May 7-9, 2006	ITS America 16th Annual Meeting & Exposition, Philadelphia, Pennsylvania
June 4-7, 2006	1st International Symposium on Freeway and Toll Operations, Athens, Greece
June 6-7, 2006	North American Travel Monitoring Exhibition & Conference, Minneapolis, Minnesota
July or August 2006 (TBD)	TMC Pooled Fund Study Annual Meeting, Seattle, Washington
August 6-9, 2006	ITE 2006 Annual Meeting and Exhibit, Milwaukee, Wisconsin
August 13-16, 2006	National Rural ITS Conference, Big Sky, Montana

New Publications

"Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation" (September 2005) – The report provides a snapshot of congestion in the United States by summarizing recent trends in congestion, highlighting the role of travel time reliability in the effects of congestion, and describing efforts to reduce the growth of congestion. This is the second in an annual series developed by the FHWA Office of Operations. The report pays particular attention to the concept of travel time reliability— how consistent travel conditions are from day-to-day— and strategies aimed at improving reliability. Available at: http://www.ops.fhwa.dot.gov/congestion_report/index.htm.

"Transportation Management and Security during the 2004 Democratic National Convention" (January 2005, FHWA-JPO-05-040) –This report documents actions taken by transportation and security agencies in preparation for and during the 2004 Democratic National Convention held in Boston, Massachusetts, from July 26 through July 29, 2004. The findings documented in this report are a result of a series of interviews held before and after the convention as well as data collected during the week the convention was held. Available at: http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE//14120.htm.

"Work Zone Public Information and Outreach Strategies" (November 2005, FHWA-HOP-05-067) – This document is meant to help transportation agencies plan and implement effective public information and outreach campaigns for work zones. The focus of this document is not on project selection and design, but on the travel impacts of a work zone – such as lane and shoulder closings, new traffic patterns, and traffic delay – and available travel alternatives such as different routes and travel modes. Furthermore, this document provides information and strategies for developing public information and outreach campaigns for specific work zones. This document also provides support to agencies in their efforts to implement the recently updated work zone regulations in 23 CFR 630 Subpart J. It contains of guidance, as well as many examples of work zone public information and outreach campaigns used by transportation agencies. Available at: http://www.ops.fhwa.dot.gov/wz/info_and_outreach/index.htm. ¢

MEMBER NEWS

Minnesota DOT Expands Freeway Incident Response Safety Team in the Twin Cities

The Minnesota DOT (Mn/DOT) increases its Twin Cities metro freeway incident management efforts by expanding the number of its Freeway Incident Response Safety Team (FIRST) vehicles. The FIRST team members are Mn/DOT employees, in specially equipped pickup trucks, who patrol the Twin Cities freeways to respond to roadway incidents that cause congestion and possibly secondary crashes. Beginning December 12, 2005, the FIRST program expands to 10 routes and covers up to 240 miles of metro freeway a day. The Regional Transportation Management Center (RTMC) manages the FIRST trucks and is home to the metro State Patrol Dispatch, the metro Mn/DOT maintenance dispatch and the traffic operations center. When traffic operations observers spot an incident, RTMC directs the closest FIRST vehicle to the situation. FIRST trucks assist the State Patrol with traffic control and scene security. And they can help stalled motorists with tire changes, emergency fuel and minor repairs that allow the drivers to get their vehicles off the freeway. The program operates on a $1.3 million annual budget, which pays for staff, trucks and other equipment. The benefit to the public is less roadway delay, reduced fuel consumption, fewer secondary crashes and reduced emissions.

Tennessee DOT Debuts New Road Conditions Web Map

The Tennessee DOT (TDOT) debuts a new electronic road conditions map as part of its TDOT SmartWay Information System on the department's website. This is the first major improvement to the map since the late 1990s. In its early form, the map provided road conditions only on a county by county basis. Weather related road conditions displayed on the map includes snow, ice and flooding. Users of the map can view information on a statewide, regional or local scale. Options include information about construction, roadway incidents, traffic flow and road conditions. The map will also allow the user to view TDOT SmartWay cameras and message signs in the cities where those systems have been established. Those cities include Knoxville, Nashville, and Memphis.

Virginia DOT Installs New Traffic Cameras in Time for Holiday Travel

The Virginia DOT (VDOT) added 28 new traffic cameras and 13 electronic message signs to interstates on the Southside in the week of November 21, 2005. Motorists can now log-on to www.VirginiaDOT.org to view traffic conditions on all of I-464 and the rest of I-264 west of the Downtown Tunnel. This latest addition to the growing network is part of a three phase expansion of the Freeway Traffic Management System. Operators at VDOT's Smart Traffic Center in Virginia Beach will use the cameras and new message boards to better monitor the interstates, help clear incidents more quickly, and alert motorists to problem areas. The Freeway Traffic Management System is still under construction. When complete, this third and final phase will add an additional 60 miles of coverage area to the system, and motorists will be able to use traffic cameras to view more than 113 miles of highway throughout Hampton Roads.

Rhode Island DOT Adds Live Traffic Camera Images to TV Station Traffic Reports

The Rhode Island DOT (RIDOT) has had success with an Advanced Traveler Information System (ATIS) public/private partnership in establishing a cable channel to disseminate video and other important ITS related information to the public on a 24/7 basis. In October 2002, RIDOT and Cox Communications signed a Memorandum of Understanding to make live video images of traffic conditions from CCTV cameras available to the public. On November 9, 2005, the TMC launched a new program with Cox Communications and Channels 10 and 12. Through agreements with these entities, the TMC provides for real-time traffic reports on all three channels, as well as live video streams. The Traffic Channel has been enhanced. A cooperative agreement with MetroNetworks, Cox, and the TMC is providing live traffic broadcasts Monday through Friday during peak travel times. At other times, the Highway Advisory Radio Messages broadcasting on 1630 AM with information provided by the TMC Operators will continue to be broadcast on the station.

TMCUpdate is a quarterly newsletter produced by the Transportation Management Center (TMC) Pooled Fund Study. This quarterly publication highlights major TMC Pooled Fund Study activities and achievements and shares TMC related news and resources. Reproduction (in whole or in part) and broad distribution of this newsletter is strongly encouraged. The TMC Pooled Fund Study invites inquiries about articles and suggestions for TMC developments and advancements to be covered in future issues. For more information, please contact the Program Administrator, Raj Ghaman at Tel: 202-493-3270 or E-mail: raj.ghaman@fhwa.dot.gov; or the newsletter editor, Ming-Shiun Lee at Tel: 612-373-6335 or E-mail: ming_shiun_lee@urscorp.com.