

**Federal Highway Administration
Office of Operations**

Current Program Activities

As Of

December 2003

**Federal Highway Administration
Office of Operations
Current Program Activities Report**

This report has been updated and summarizes recent activity of selected programs within the Office of Operations. The revisions reflect program titles that are consistent throughout the Office of Operations. For additional information about these or other activities, contact the program manager noted in each section. Additionally, more information may be available on the Office of Operations' web site: <http://www.ops.fhwa.dot.gov>. This report will be updated quarterly.

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**Office of Operations
Program Activities**

I. NON-RECURRING CONGESTION

A. Traffic Incident Management (TIM): Program Manager, Dave Helman
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- i. **TIM Self-Assessment** – As part of the Congestion Vital Few Goal for FHWA, a TIM self-assessment tool was developed. The self-assessment is intended as a diagnostic for metropolitan areas. The tool is to be completed for the top 75 urban areas through a multi-agency panel of state and local transportation, public safety and private sector partners involved in the traffic incident management program being assessed. Trends in results will be used to guide program decisions. Individual results will not be available. Approximately 88 percent of the assessments were completed as of November 30, 2003.
- ii. **TIM Performance Measures** – The Texas Transportation Institute (TTI) performed a study of various types of performances measures used to evaluate the progress of traffic incident management programs around the country. The study included performance data collected by both transportation and public safety agencies, and examined how the data was classified, used and stored. The final report was received in December 2002. The document will be posted on the Operations Traffic Incident Management web site in December 2003.
- iii. **TIMTOW** - The Towing and Recovery Association of America (TRAA) has prepared a Traffic Incident Management Handbook for the industry. Industry members who are active in traffic incident management programs around the country wrote the document. A panel of national traffic incident management experts also reviewed it. The purpose of the document is to facilitate the understanding of traffic incident management programs within the industry and to describe how industry members should involve themselves in local programs. The draft of the document was introduced and discussed at the 2003 TRAA Legislative and Leadership Conference in Washington, DC, in March 2003. The final document has been printed distributed to the 37,000 member companies of TRAA. As a follow-up activity, TRAA is revising its three level National Driver Certification Program (NDCP) materials to incorporate material in the TIMTOW document.
- iv. **CAD FOT (Computer Aided Dispatch Field Operational Test)** -This FOT provides for the creation of teams in two states (Utah and Washington) to provide integration of data among transportation management and public safety CAD system databases to make rapid exchange of unambiguous incident-related information possible. This data integration will facilitate quicker and more appropriate response by secondary responders and provide better traffic and incident –related information to public safety agencies. The teams consist of a transportation agency and its systems integrator and a public safety agency and its CAD vendor. The Cooperative Agreements have been executed work is currently underway. The FOT is expected to be completed by January 2005.
- v. **IIMS (Integrated Incident Management System)** - The IIMS is a project in New York City (NYC) to send pictures and incident information from a first responder

on-the-scene to secondary responders (NYC Department of Transportation and Department of Sanitation). The information is provided directly to off-site supervisors enabling them to make faster and more accurate response of their resources without having to travel to the incident scene first. The project has been expanded citywide using CMAQ funds. An evaluation report of the initial deployment of IIMS was completed in October 2003.

- vi. **“Managing Traffic Incidents and Roadway Emergencies”, National Highway Institute (NHI) Course No. 133048** – The revision of this course was completed in August 2003. This workshop addresses many on-scene operations and communications issues as well as organizational issues. It will continue to be presented to mid and upper level transportation, public safety and private sector partners. The revised course is now available from NHI.
- vii. **Model Procedures Guide** - The Model Procedures Guide for Highway Incidents is being prepared under the auspices of the National Fire Service Incident Management System. The Guide addresses on-scene incident command and control protocols (Incident Command) for traffic incidents and introduces an Incident Command System (ICS) position for Traffic Control. The Guide has been completed is in editing at National Fire Protection Publications. It is expected to be available for purchase early in 2004.
- viii. **TIM Program Case Studies**- This study will investigate and document the various types of Traffic Incident Management program institutional structures in about 12 locations. The final case studies report will discuss how the programs were formed, what events or decisions lead to their formation, how they are sustained (institutionally, technically and financially), successes and failures (lessons learned), changes made since inception to support or strengthen the programs and recommendations on program structure needed to support multi-agency programs to effectively manage and resolve traffic incidents. The study is expected to be completed in July 2004.
- ix. **TIM Pooled Funds Study** – A Traffic Incident Management Pooled Funds Study is being formed. Solicitation of interested states and partners is underway. It is expected that the first meeting of the study participants to define a research program will occur in the spring of 2004.
- x. **Non-Blinding Emergency Vehicle Warning Light Systems** – This study was begun in October to investigate the effect of various emergency warning light systems on driver comprehension and behavior and on the safety of on-scene emergency responders. This study is being conducted under a cooperative agreement with the United States Fire Administration (DHS/FEMA). It is scheduled to be completed by December 31, 2004.

B. Work Zone Management: Program Manager, Scott Battles
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- i. **Work Zone Self-Assessment** - As part of the Congestion Vital Few Goal for FHWA, a comprehensive work zone self-assessment tool was developed and delivered. The self-assessment tool is designed to assist State departments of transportation (DOTs) in evaluating the state-of-their-practice and determining areas for future focus. Each State completed the self-assessment in early 2003. Results were compiled and analyzed to produce National summary reports

providing average scores and identifying areas for improvement. The National summary reports are available on the web at <http://ops.fhwa.dot.gov/wz/decision-support/self-assess.htm>. Individual state results are not available. This process has resulted in increased awareness of and communication on work zone issues and has provided valuable insight as to what the DOTs do to reduce the incidence of delay and crashes associated with work zones. This information will be used to refine outreach, research, and deployment strategies underlying the FHWA work zone program. States will be updating their scores in 2004.

- ii. **Notice of Proposed Rulemaking (NPRM) for 23 CFR 630, Subpart J** - In an effort to increase implementation of congestion and crash mitigation strategies, on May 7, 2003 FHWA published an NPRM to update its current rule (23 CFR 630 Subpart J) pertaining to work zones. The proposed rule explores broadening the existing regulations to include a requirement for state work zone mobility and safety policies, consideration of work zone impacts, and identification of work zone impact mitigation strategies. FHWA conducted significant outreach to our partners in conjunction with the publication of the proposed rule. Comments were received from 62 respondents representing both public and private perspectives. FHWA is considering the comments and deciding how to proceed.
- iii. **ITS and Work Zones Crosscutting Study** - Work zones present mobility and safety challenges to travelers and road workers. As infrastructure deteriorates and more road work is done under traffic to repair existing facilities, the use of intelligent transportation systems (ITS) in work zones is a growing consideration. Using ITS in work zones can help ease traveler frustration, manage congestion, and prevent crashes. The purpose of this study is to educate maintenance and construction engineers and public sector managers about ITS technologies for work zones. A study report and brochure cover work zone ITS application in four states, including information on why the systems were selected, design and operational characteristics, any issues/lessons learned, and the benefits derived from using the systems. The report also profiles other ITS-related work zone products, systems and techniques. The report and brochure can be obtained through the website at <http://ops.fhwa.dot.gov/wz/technologies/its.htm>. FHWA is currently developing four case study documents on applications of work zone ITS, and an implementation guide. The guide will provide information to practitioners on the considerations for selecting and implementing a work zone ITS application.
- iv. **Full Closures for Work Zones Case Study** - The purpose of this study is to raise awareness among construction engineers and managers of the applications and benefits of full road closure during rehabilitation and construction activities. Full road closures remove the worker-traffic interaction. This allows full access to the entire roadway section on which work will be performed and potentially improves efficiency and safety, and shortens the duration of work. Six field applications were researched, and project descriptions, rationale for using full closure, benefits, and lessons learned for each site were developed as part of the cross-cutting study. Information on the full road closure applications was gathered from site visits, interviews, and project related publications. A study brochure describing the findings has been published and is available via the work zone website www.fhwa.dot.gov/workzones. A study report is in the process of being published

and will be available in early 2004. FHWA is also developing three case study documents that will provide greater detail on three of the six sites studied.

- v. **Making Work Zones Work Better Workshops** - To facilitate peer exchange and introduce the community of practitioners to new strategies and technologies for mitigating work zone impacts, a workshop series -- "Making Work Zones Work Better" -- was initiated as another component of FHWA's comprehensive work zone outreach effort. This series, a partnership activity including FHWA headquarters and field offices and state DOTs, highlights the use of strategies such as ITS, full road closure, and innovative contracting, as well as other promising work zone technologies and practices. In fiscal year 2003, seven workshops were successfully presented. The workshops are structured to include discussions that lead to the identification of work zone issues and potential solutions. FHWA is capturing the commentary from the workshops to identify opportunities where FHWA can support broadly applicable improvements to work zone operations. FHWA plans to deliver approximately nine more workshops in FY04.
- vi. **Assessment of Work Zone ITS Effectiveness** - FHWA has begun a study to collect and evaluate data from up to six WZ ITS deployments to establish quantifiable results of the effectiveness of ITS applications in work zones. Measures to focus upon include measurable items such as delay, queue length, and safety. Vehicle throughput and the delivery of information on work zones to travelers are also being considered.

C. **Road Weather Management:** Program Manager, Paul Pisano
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- i. **Best Practices CD on Road Weather Management** - The CD captures a variety of traffic, emergency, and maintenance management practices that alleviate the impacts of weather. The best practices were obtained through interviews with state and local practitioners. Each practice documented includes information on the applications, results, lessons learned and contacts for further information. It is being expanded to include other success stories. Version 2.0 of this CD was released in May 2003. The CD is available via the ITS Cooperative Deployment Network (ICDN) at http://www.nawgits.com/fhwa/rw_mgt_cd_req.html
- ii. **Maintenance Decision Support System (MDSS)** - The MDSS is a decision support tool for winter maintenance managers. It fuses relevant road weather forecasts, maintenance practices, and maintenance resource data into a "one-stop shop," providing recommended winter maintenance actions. FHWA released Version 2.0 of the MDSS software in Fall 2003, and it is available from the National Center for Atmospheric Research at www.rap.ucar.edu/projects/rdwx_mdss/. The system was demonstrated in Iowa in early 2003, in coordination with the Iowa DOT and Iowa State University, and will be demonstrated again in the 2003-2004 winter.
- iii. **Fundamentals of Road Weather Management, NHI course No. 137030A.** - A one-day course has been developed to introduce transportation decisions makers to the basics behind road weather information systems and the ways that they can be applied to address a host of weather-related problems. Topics include a review of road weather problems, meteorology for the non-meteorologist, technology

resources and implementations, and case studies. The course will be available in the Summer 2004.

- iv. **Weather Responsive Traffic Management** – 21st Century Operations embraces the concept that transportation managers can improve traffic flow, even under adverse weather. Several efforts are underway to see this concept become a reality. This includes:
 - a. Documenting the ways in which weather information is currently incorporated into freeway and arterial management systems, and how the information is used. This project will be completed in the Summer 2004.
 - b. Determining which variables in traffic simulation models are most sensitive to changes in weather. Completion date for this project is December 2003.
 - c. Estimating the benefits of traffic management strategies such as weather-responsive signal timing. The completion date of this project is January 2004.
- v. **Weather and Highways Policy Forum** – In partnership with the American Meteorological Society, the FHWA sponsored a two-day forum in November 2003 to explore policy issues related to weather and highways. The output of the forum is a report that describes the issues that affect the implementation of solutions to make highways safer and more efficient, even under inclement weather conditions. The report also provides recommended steps to address the impediments to implemented solutions.
- vi. **Surface Transportation Weather Research – The Highway Environment** – In 2003 the FHWA commissioned the National Academies of Science to convene a panel of transportation and weather experts to explore the research needs that would alleviate the impacts of weather on the surface transportation system. The Board on Atmospheric Science and Climate conducted the effort, in coordination with the Transportation Research Board. Their report, which presents a surface transportation research plan, will be released in January 2004.

- D. Special Events Traffic Management:** Program Manager, Jon Obenberger (jon.obenberger@fhwa.dot.gov). Special events are an important and recurring part of the operating environment that influences the performance and reliability of travel on the surface transportation system. Planned special events have the potential to impact not only the people traveling to or providing services in support of the event, but also the normal traffic using the adjoining roadways. The advanced planning, stakeholder coordination, proactive management control of traffic the day of an event is not a commonly accepted, understood, or a consistent practice. Special events require service providers, event operators, and public agencies that normally don't work together, to plan, cooperate, and coordinate activities prior to, during, and after the event. A number of projects are planned or underway to provide a solid foundation for practitioners related to the recommended practices with planning, coordinating, managing, and controlling traffic for planned special events:
- i. **Cross-cutting Study** - This study provides lessons learned related to planning, managing travel, and controlling traffic for large and small special events from case studies from around the country. This study will be printed and promoted in the Spring of 2004.

- ii. **Handbook and Outreach Material** - This technical reference, brochure, fact sheet and technical presentation will provide recommended guidance to assist practitioners that may be involved in, or responsible for, the planning and coordination for all planned special events within a region or specific individual events. This activity is being developed in cooperation with the TMC Pooled-Fund Study and its members to gather, compile, and develop these products. The electronic versions of these products will be distributed and promoted in January of 2004.
- iii. **NHI training course** - The development of a one-day overview course and two-day workshop on managing travel for planned special events was initiated in the Fall of 2003. This course will be developed and available for presentation in the spring of 2005.
- iv. **National Conference** - FHWA, AASHTO, TRB, ITE, ITS America, and other key national interests are planning to host a national conference on planned special events to be held in the fall of 2004. The purpose of this conference will be to raise the awareness as to the importance and need to improve how public agencies plan, coordinate, proactively manage travel, and control traffic for planned special events. This conference will focus on lessons learned and how public agencies can improve the planning, coordination, and proactive management of travel for one specific event or for all planned special events within a region. A request for local agencies to host this conference will be released in January of 2004.

II. RECURRING CONGESTION

A. **Arterial Management:** Program Manager, Pam Crenshaw
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- i. **Case Studies For Regional Traffic Signal Timing-** Numerous areas throughout the country are benefiting from traffic signal coordination within their own communities and increasingly across jurisdictional boundaries into neighboring communities. Experience shows that interconnecting traffic signals and optimizing the traffic signal timing can result in travel time reductions ranging from 8-25 percent along a corridor or arterial. The most important factor in achieving coordination across jurisdictional boundaries is cooperation and communication among agencies. The greatest achievement of cross-jurisdictional coordination of traffic signal timing is when it is performed for a region. There are State DOTs, MPOs, and other transportation organizations that have in the past or are currently developing regional traffic signal timing programs. The intent of this task is to develop case studies on the successes and struggles of these programs and to provide FHWA Office of Operations with case studies of regional traffic signal timing programs that can be provided to client agencies and transportation partners as a model, guide, or framework for establishing a successful program. Completion March 2004.
- ii. **Traffic Signal Timing On A Shoestring-**This effort will explore and document the minimal amount of data collection and optimization that should be performed in a signal retiming project to acquire some appreciable benefits. This is aimed at jurisdiction or municipalities that cannot afford to perform full-blown data collection and analysis studies. Completion June 2004

- iii. **Market and Promote Highway Safety Grant (Section 402) Program Funding for Traffic Signal Retiming Programs-**There is a need to provide information on an alternative form of funding using the Governor's Traffic Safety Committee Local Highway Safety Grant Program (Section 402 Program). There is a model approach for getting this message out to our local and municipal transportation partners. Our FHWA New York Division Office directly encouraged transportation partners in the State of New York to apply for the Section 402 safety funds. This task will develop a strategy and material to help our other 51 Division Offices deliver this message to transportation partners. Completion March 2004.
- iv. **Traffic Signal Web Course CD Rom-** This project will take advantage of the internet to deliver critical information on modern traffic signal systems. Using material from the Computerized Traffic Signal Systems course and the Traffic Control Signalization and Software, this project creates 1-hour modules that practitioners around the country can access on their own schedule, topic by topic, to address their needs. Completion December 2004.
- v. **ITS in Small Communities Workshop-** This workshop will help small communities consider all of the various ITS Systems and how to apply them to address their particular needs. This will encourage the deployment of ITS in rural areas that are critical to the nationwide network. This course will be completed by April 2005.
- vi. **Data Collection/ Management Techniques and Procedures-** This initiative will develop a methodology for getting quality data from a "short count", or partial count and determining the critical intersections for traffic counts. Also the current technology will be assessed and compiled into a data management guideline. Completion June 2004.
- vii. **Traffic Detector Handbook Course CD Rom-** This CD course will be designed to provide general visual information and knowledge about traffic detectors and will follow the Handbook. This video will instruct traffic engineering practitioner, technicians and repair personnel in the theory, application and current evolution of traffic detectors, also the process of installing, repairing and replacing inductive loop detectors. Completion June 2004
- viii. **Traffic Control Systems Handbook -** The Traffic Control Systems Handbook is in the process of a comprehensive revision to reflect the changes in technology and it's associated standards, the state of the practice, and recent FHWA requirements. This updated version will continue to help users understand the basic elements of traffic control systems and serve as a basic reference for the practicing traffic engineer. Draft handbook by December 2003. Completed handbook to be distributed by March 2004.
- ix. **Communications for Traffic Control Systems Handbook -** The Communications for Traffic Control Systems Handbook is being updated to reflect the significant changes in communication technology that has occurred since the last update in 1993. The updated handbook will be a reference manual to assist practitioners with addressing the various technology issues associated

with the development of a communication system to support traffic operations. Completion by March 2004.

- x. **Computerized Traffic Signal Systems Course Primer** - This primer will consolidate the information contained in the Computerized Traffic Signal Systems Course NHI #133010. This primer will explain the Systems Engineering Process and how it relates to the planning, design, implementation, operation and management of signal systems. Available February 2004.
- xi. **Develop Traffic Signal Design Course NHI #133028** - This course provides participants with skills to evaluate the process by which signal control projects are developed, designed, implemented, maintained and operated. This course addresses the application of the manual of Uniform Traffic Control Devices to intersection displays, as well as signal timing, computerized traffic signal systems, control strategies, integrated systems, traffic control simulation and optimization software. Completion by December 2003.
- xii. **Small Communities Handbook and Video** - This handbook will be developed to deliver traffic management strategies related to small communities and rural region's traffic management systems. Within the handbook, systems that apply various ITS components for ATMS and ATIS to appropriate categories of traffic and network characteristics will be covered. Other topics covered will be, integrated and isolated traffic signals, small traffic signal systems, traffic management systems for seasonal and episodic events, and the communication systems that maybe applicable for incident, emergency and disaster management. Available September 2003. This video will provide visual information and highlight the progressive and innovative practices documented in the Small Communities Traffic Management Benefits Study. A range of small communities of various sizes and populations will be highlighted in order to capture the unique aspects of each. Available for distribution January 2004.
- xiii. **Assessment of the State-of-the-Practice In Low Cost Traffic Engineering Improvements (Primer)** - This effort will assess the low cost strategies and programs being utilized by local agencies to manage their arterials. This will include considering traffic signalization, signal hardware and software, signing, markings, and geometric design and construction. Outreach efforts to follow may consist of short-term support to help jurisdictions keep their signals re-timed on a cyclical basis, training jurisdictions on the tools available to help with arterial management, or the issuance of guidance documents. Available for distribution January 2004.
- xiv. **Access Management NHI Course No. 133078** - Program Manager, Neil Spiller (neil.spiller@fhwa.dot.gov) This course is being revised and is expected to be completed in late FY 2004. The revisions will include guidance found in the upcoming Access Management Handbook which TRB is publishing and distributing later this spring. The current course will continue to be presented through FY 2004 with the revised course offered in FY 2005.
- xv. **Access Management Library** - Program Manager, Neil Spiller (neil.spiller@fhwa.dot.gov). The library is a CD consisting of a collection of over 300 access management documents and guidelines related to techniques and design, is now available. The CD also contains past conference

proceedings for reference purposes. These CD's will be distributed to past and future course and conference participants and will be available at future conferences.

- xvi. **The TRB Access Manual** is now available for purchase through TRB. A copy of the manual has been purchased and distributed to the FHWA field offices.
- B. Corridor Traffic Management:** Program Manager, Jon Obenberger (jon.obenberger@fhwa.dot.gov). When congested traffic conditions occur on one roadway, traffic on adjoining roadways or freeway interchanges in the corridor, are also impacted. Typically, whenever congestion occurs, some of the travelers respond by shifting to another route, select a different roadway (freeway versus surface street), adjust their trip to another time of day, or remain along their current route encountering significant delays. The proactive management and coordinated control of traffic in urban corridors is a viable and effective strategy that has the potential to significantly improve the safety, mobility, reliability of travel, and mitigate the impacts of congestion when travel is disrupted on freeways or surface street roadways. The following projects will be initiated in 2003 to raise the awareness, understanding, and lay the foundation for the benefits and potential for proactively managing and controlling traffic in corridors:
- i. *Corridor Traffic Management Plans and Procedures:* This TMC Pooled-Fund Study funded and led project will develop a handbook that provides guidance and recommended practices on proactively managing and controlling traffic on freeways and surface streets in response to different congestion causing events. This project will address the advanced planning and stakeholder coordination; institutional issues, challenges, and barriers; operational policies, procedures, and control plans; real-time management of travel, control of traffic, coordination of resources, and services; supporting electronic infrastructure; and strategies to develop, maintain, and improve the use of plans and procedures within freeway corridors. The target completion date is the summer of 2004.
- C. Freeway Management:** Program Manager, Jon Obenberger (jon.obenberger@fhwa.dot.gov). Freeway systems consist of a complex collection of interdependent roadway infrastructure elements, facilities, traffic management centers (TMCs), operational strategies, service providers, and modes. Freeway traffic management and operations involves the practice of combining personnel, operational strategies, advanced technologies, TMCs, and other techniques to proactively manage travel and control traffic on freeway facilities. It provides agencies with the ability to monitor roadway conditions, control traffic, identify recurring and non-recurring bottlenecks, detect and verify incidents, implement traffic management strategies, control traffic, and provide travel conditions information to motorists. Freeway management strategies attempt to keep traffic congestion from occurring in the first place, by balancing travel demand with the available roadway capacity, and when it does occur, attempt to minimize the duration and extent of congestion. Freeway Management & Traffic Operations Initiatives:
- i. **Freeway Management and Operations Handbook** - This publication will present an overview of the various institutional and technical issues associated with the planning, design, and operation of a freeway network, associated freeway management strategies, and ITS components. The intended audience of the

Handbook is transportation professionals who are involved with or responsible for any issue or task that may directly or indirectly influence the performance of traffic on a freeway facility, including planning and design of freeway facilities, operational strategies or programs to manage travel and control traffic on freeway facilities, and the technology infrastructure to provide these capabilities. The electronic version of this handbook will be promoted in January of 2004.

- ii. **Freeway Management & Operations Training Course, NHI Course #13375** - The purpose of this training course is to provide participants with a general appreciation and understanding of the key policies, challenges and barriers, institutional issues, technical and other issues to consider in the planning, design, implementation, management, operation, evaluation, and marketing of freeway facilities. The pilot presentation for this course will be held in March with the course available for presentation in the summer of 2004.
- ii. **Managed Lane Case Studies and Primer** – Managed lanes are freeway facilities where one or more operational strategies are proactively used to maintain free-flow conditions on a specific lane or set of lanes. Managed lanes address mobility, safety, and financial objectives and can significantly improve the performance of freeway facilities. However a number of issues critical to advancing managed lanes require greater understanding (e.g., legislative authority, demand forecasting, revenue use, design, management, traffic management and operation). The following projects will be completed or initiated in 2004 to raise the awareness and understanding of the benefits and potential of various managed lane strategies.
 - a. *Houston Lane Management Case Study* will be promoted in January of 2004.
 - b. *Managed Lane Cross Cutting Study* summarizing the current practices, trends, and lessons learned based on experiences from leading agencies from around the country will be promoted in March of 2004.
 - c. *Managed Lanes Primer* identifying for senior managers the key challenges, opportunities and benefits to be aware of will be promoted in March of 2004.

HOV Lanes Initiatives:

HOV lanes are a proven and viable operational strategy to help move more people along congested urban and suburban routes. HOV facilities are a strategy to assist public agencies and transportation service providers to address the mobility, safety, productivity, environmental, and quality of life challenges they are facing within metropolitan areas. As part of an overall approach to manage the demand for travel and mitigate the impacts of traffic congestion, HOV lanes can be a practical option to adding additional unrestricted or general-purpose travel lanes.

- iv. **HOV Training Course, NHI Course #13375** - The purpose of this course is to provide participants with a general appreciation and understanding of the key policies, institutional issues, challenges and barriers, technical, and other issues to consider in the planning, design, implementation, management, operation, evaluation, and marketing of HOV facilities. This course is targeted at a wide range of individuals who may be responsible for or involved in activities that influence the HOV program, system, facility, or specific support services. This course will be available for presentation in the first quarter of 2005.
- v. **HOV Pooled Fund Study (PFS)** – This study provides a forum to identify and address the key issues and challenges that are common among agencies. The goal

is to assemble regional, state, and local agencies, transportation service providers, and FHWA to identify, propose, prioritize, and initiate projects and initiatives to address these challenges. The HOV PFS will focus on the critical program, policy, technical, and other issues that arise throughout the life cycle of an HOV facility. Current HOV PFS information can be accessed at <http://hovpfs.ops.fhwa.dot.gov>. Agencies are encouraged to join the nine current members, to initiate the following projects selected to be initiated in addition to the new projects to be selected in 2004:

- *HOV Enforcement:* Project will develop a technical reference, primer, and brochure providing guidance, recommended practices, and lessons learned with successfully enforcing HOV lanes, integrating these needs in the design of HOV facilities, and an HOV system program. The target completion date is the spring of 2005.
- *Safety Considerations of HOV Facilities:* Project will develop a technical reference, primer, and brochure providing guidance and best practices on the key issues, considerations, and potential impacts on safety related to various HOV facility issues. These factors and considerations may include: roadway design features (e.g., facility type, shoulder widths, and types of ingress/egress), transit facilities, enforcement area and traffic incident management provisions, or signing or pavement marking. The target completion date is the spring of 2005.
- *HOV Performance Monitoring, Evaluation, & Reporting:* Project will develop a technical reference, primer, & brochure providing guidance and best practices with monitoring, evaluating, and reporting on HOV system performance. These products are intended to foster improvements in the planning, design, management and operation of HOV facilities and support services. The target completion date is the spring of 2005.
- *HOV Hours of Operation and Eligibility Requirements:* Project will develop a technical reference, primer, and brochure that provide guidance and best practices on how to evaluate the benefits and potential impacts with making potential modifications in the hours of operation and or vehicles that are allowed to use different HOV facilities. This project will address specific trade-offs with setting and changing eligibility requirements and operating periods along with the supporting methodologies, process, tools, and techniques to support the analysis of these issues. The target completion date is the spring of 2005.

Traffic Management Center Initiatives: TMCs are a key component of integrated surface transportation systems. They perform the three basic functions of gathering, synthesizing and disseminating traffic and travel condition information.

- vii. **Configuration Management for Transportation Management Systems, NHI Course #137042:** The purpose of this course is to demonstrate the benefits, its role, and how configuration management supports the development and operation of transportation management systems. This course is designed for individuals engaged with or responsible for the planning, design, implementation, management, operation or maintenance of transportation management systems. Details and how to schedule this course (available in the spring of 2004) can be accessed at: <http://www.nhi.fhwa.dot.gov/default.asp>
- viii. **Changeable Message Sign (CMS) Projects:**

- *CMS Chapter in MUTCD*: Project will recommend the recommended text for a new chapter or part on CMS for inclusion in a future update of the MUTCD by the spring of 2004.
 - *Color & Animation Research*: Project will synthesize current literature, research completed, lessons learned related to the impacts of color and animation with displaying messages on CMSs. This project will also assess future trends and possible impacts of advancements in CMS technologies and the type of messages that could be displayed. It will also identify potential recommended revisions on the use of color and animation in displaying messages on CMS in the MUTCD, priorities for testing, and work plan to perform and evaluate these tests. The target date for completion is the spring of 2004.
 - *Dynamic Features of CMS*: This TMC Pooled-Fund Study funded and led project will assess the impacts of dynamically displaying messages on CMSs, identify possible revisions to the MUTCD, and provide guidance on developing and displaying flashing messages. The target completion date the fall of 2005.
- ix. **TMC Pooled Fund Study (PFS)** - The TMC PFS is a forum to identify and address issues that are common among public agencies. The goal is to assemble regional, state, local agencies, and FHWA to identify issues, suggest, select, and initiate projects and initiatives to address these issues. Agencies are encouraged to join now, to participate with the 28 current members in the activities of the TMC PFS for 2004. In the past four years, ten projects have already been initiated or completed with at least five new projects to be initiated in 2004. The latest TMC PFS information can be accessed at <http://tmc pfs.ops.fhwa.dot.gov>.

The following projects have been completed:

- *Transportation Management System Maintenance Concept and Plans*: This project produced a technical reference on how to develop a maintenance program and multi-year plan that provides the policies, resources, environment, and procedures that are necessary to support TMC operation, as well as how to integrate consideration of maintenance into all phases of the transportation management system life cycle. This document will be promoted in January of 2004. The final draft is currently available at: http://tmc pfs.ops.fhwa.dot.gov/cfprojects/new_detail.cfm?id=27&new=0
- *Changeable Message Sign (CMS) Operation and Messaging*: This TMC PFS sponsored and led project developed a handbook providing guidance and best practices on the operation, development, and display of messages on CMS. This document was written for personnel in state, regional, and local transportation agencies that have responsibility for the operation of and/or message design for permanent or portable CMS. This document is available at: http://tmc pfs.ops.fhwa.dot.gov/cfprojects/new_detail.cfm?id=25&new=0.
- *TMC Operator Requirements, Position Descriptions, and Software – Phase I*: This TMC PFS sponsored technical reference and matrices was developed to show the relationships between TMC functions, operations personnel tasks, and the knowledge, skills, and abilities a person must possess to accomplish the required tasks. The final report and spreadsheets used to generate these matrices are currently available at: http://tmc pfs.ops.fhwa.dot.gov/cfprojects/new_detail.cfm?id=26&new=0.
- *Configuration Management (CM) for Transportation Management Systems Handbook and Outreach Material*: This TMC PFS sponsored handbook, primer, brochure,

technical presentation and frequently asked questions provide guidance and best practices on CM control processes, accounting system, managing a CM program and activities, job and/or position requirements, tools, and how to apply these techniques and concepts throughout the life cycle of a system. The final versions of these products will be promoted in January of 2004. The final draft currently available at: http://tmc pfs.ops.fhwa.dot.gov/cfprojects/new_detail.cfm?id=24&new=0.

The following projects were initiated in 2003:

- *TMC Operations Concept & Requirements*: This TMC PFS sponsored and led project will develop a handbook, primer, and brochure that provide guidance and recommended practices on the need for, how to develop, and use a concept of operations and requirements throughout the life cycle of a TMC. The target completion date is the fall of 2004. The latest information on this project can be accessed at: http://tmc pfs.ops.fhwa.dot.gov/cfprojects/new_detail.cfm?id=38&new=0
- *TMC Operator Requirements & Position Descriptions – Phase 2*: This TMC PFS sponsored and led project will revise the draft technical document produced in phase 1 and develop an enhanced software product. The purpose of this tool is to allow public agencies to develop operator requirements; tasks; knowledge, skills and abilities (KSA's), and position descriptions based on the current or planned market packages or functions supported by their TMC. The target completion date is the fall of 2004. The latest information on this project can be accessed at: http://tmc pfs.ops.fhwa.dot.gov/cfprojects/new_detail.cfm?id=55&new=0
- *TMC Business Planning and Plans*: This TMC PFS sponsored and led project will develop a technical document and primer providing guidance and recommended practices on the need for, how to develop, outlines various processes, identify types of business plans, supporting management systems, and use of business planning processes for TMCs. This project will also address various business planning models that have been successfully employed by transportation agencies to ensure the long-term sustainability of applications similar to TMCs. The target completion date is the fall of 2004. The latest information on this project can be accessed at: http://tmc pfs.ops.fhwa.dot.gov/cfprojects/new_detail.cfm

Information on the following projects that will be initiated in 2004 can be accessed at:

http://tmc pfs.ops.fhwa.dot.gov/cfprojects/new_search

- TMC Operations Manual
- TMC Performance Monitoring, Evaluation & Reporting Handbook
- Estimating TMC Staffing & Resource Needs
- TMC Workshop Development & Proposal for Delivery
- TMC Clearinghouse Development & Initiation

D. Travel Demand Management (TDM) Program Manager, Wayne Berman
(wayne.berman@fhwa.dot.gov)

- i. **TDM Reference Guide – Update**: The objective of this project is to update the 1993 Reference Guide based upon a new “operations –oriented” model for TDM in a contemporary environment. The updated Reference Guide shall contain two principal sections – one to address TDM for commute trips and one to address TDM for non-commute trips. Each section will be developed based on five to ten case examples that illustrate contemporary enablers of TDM, such as information,

- technology, and financial incentives. A draft of the Reference Guide was prepared at the end of December 2003, with a final guide to be ready by June 2004.
- ii. **Managing Demand Through Traveler Information Services:** The objectives of this project are 1.) To compile existing information on how, where, and under what circumstances is traveler information services are affecting or managing demand and 2.) To package the information compiled into a colorful, easy-to-read, 25-page brochure. The brochure shall highlight the opportunities and benefits for using traveler information services to manage demand during periods of recurring and non-recurring congestion, including special events and emergencies. The project got started on October 1, 2003 and is to be completed by September 2004.
 - viii. **Commuter Choice Primer:** The new publication entitled *Commuter Choice Primer – An Employer’s Guide to Implementing Effective Commuter Choice Programs*. Has been prepared and distributed. The Primer is intended to be a concise, user-friendly reference guide for employers and transportation professionals to developing and implementing worksite commuter choice programs. This document can be accessed at <http://www.ops.fhwa.dot.gov>. A digital tool called the *Commuter Choice Decision Support System* (<http://ops.fhwa.dot.gov/PrimerDSS/index.htm>) is packaged with the Primer to enable an employer to actually develop and test out a various commuter choice programs that fit their situation. The Primer is supportive of an ongoing joint initiative by the FHWA, the FTA, and the EPA to promote government-business partnerships that enhance commuting options and opportunities for employees.

II. DAY-TO-DAY OPERATIONS

A. **Manual on Uniform Traffic Control Devices:** Program Manager, Ernie Huckaby (ernest.huckaby@fhwa.dot.gov)

- i. **MUTCD has been updated and issued as a new 2003 edition** in a final rule published in a November 20, 2003 Federal Register notice. Significant items contained in the final rule include:
 - (1) Interim approval process to get new traffic control devices implemented sooner.
 - (2) Fluorescent pink color (optional) for Incident Management signs
 - (3) More guidance on HOV Lane signing and signing on surface roadways approaching freeway interchanges
 - (4) Advance street name sign standards/guidance & larger legend size for overhead & high-speed road street name signs
 - (5) Countdown Pedestrian signals & revised pedestrian clearance time calculation guidance
 - (6) Pedestrian & disabled accessibility in work zones
 - (7) In-street pedestrian and school crossing signs
- ii. **Traffic Control Devices Pooled Fund Study** - The experimentation process for updating the MUTCD is time-consuming and involves evaluation reports. The experimental process has been used by jurisdictions as a mechanism for on-road testing and evaluation of innovative traffic control devices. FHWA has established a pooled fund study for traffic control devices that is intended to provide a quicker way to assess low risk new traffic control devices and applications. FHWA, two

local jurisdictions and 14 states have committed funds to participate on the pooled fund panel. The panel has selected four projects this year, which are:

- Navigation signing for Roundabouts
- Pavement markings for speed reduction
- Color for Transponder controlled tollbooth lanes
- Countdown pedestrian signal enhancements

B. Asset Management - Program Manager, John Harding

(John.Harding@fhwa.dot.gov)

- i. **Linkages between Operations and Asset Management** – Current activity has focused on investigating linkages between the philosophy of asset management and the deployment and management of operational assets. To establish a baseline for discussion, a paper has been completed that explores the linkages between operations and asset management. In addition to and included in the paper, a high level categorized list of operational assets has been produced to assist in framing the scope of any operations-asset management relationships. This information is being used to develop an operations asset management program plan and roadmap. We are also coordinating with The Office of Asset Management to further understand these linkages and will participate in a FHWA Asset Management Workshops scheduled for Spring 2004.
- iii. **Investigation of Signal System Assets Management Methodology and Process Elements** – This project is currently collecting data from various signal system managers across the country. The data will help identify the elements needed to develop a comprehensive traffic signal system asset management system. The project will investigate the physical, system, and human resource assets that generically comprise a typical signal system implementation. It will identify policy guidelines, data, performance measures, and the analytical tools needed to manage the assets of a signal system and produce the information necessary to support asset management decision-making. Preliminary analysis will also be conducted on the benefits of a signal system asset management approach. This preliminary analysis will include the development of theoretical alternative signal system investment plans that range from conservative to aggressive, what the risks and trade-off are between plans, and indicate what level of signal system benefits each investment strategy may yield. Results from this project will provide information need to further determine overall program needs and direction.

C. Real Time Traveler Information - Program Manager, Bob Rupert

(Robert.Rupert@fhwa.dot.gov)

- i. **ATIS/511 Guidance and Lessons Learned** – This activity provides a means to share information with others that may be planning to develop traveler information systems. The information is gathered from locations that are deploying 511 and other traveler information services. The activity includes coordination and cooperation with the 511 Deployment Coalition and its members to gather, process, and disseminate the information. As of January, seven Deployment Assistance Reports and an updated second version of the 511 Guidelines have been completed through the 511 Deployment Coalition.
- ii. **Amber Alert Guidance and Support Program** - This activity includes the Amber Alert Plan Assistance Program that provides \$125,000 to States to help them determine how transportation agency resources (e.g., changeable message signs)

can best be used when child abduction alerts are issued by law enforcement agencies, including looking at enhancements to the communications between law enforcement and transportation agencies. As of January, a total of \$4,384,520 in grants had been provided covering 35 States and the District of Columbia. This activity will also develop guidance and information about best practices for transportation agencies when issuing child abduction alert messages. This guidance will be based upon the experiences and lessons learned by agencies that have been involved in providing child abduction alert messages, and on sound engineering practices in crafting messages for display by roadside equipment. Guidance will be available by February 2004.

- iii. **Synthesis of Practice on Posting Travel Time Information on CMS** – This activity will gather information from agencies that are providing travel time information on changeable message signs, and produce a report on the impacts of that travel time information on the transportation networks. The report will also include information and experiences from these agencies about their decisions to provide travel time information and the challenges they encountered, as well as draw from external activities such as the Travel Time Workshop held in conjunction with the Annual Meeting of ITS America. The report will be completed by February 2004.
- iv. **Intelligent Transportation Infrastructure Program (ITIP)** - Program Manager, Chung Eng (chung.eng@fhwa.dot.gov <<mailto:chung.eng@fhwa.dot.gov>>) This ongoing program is designed to enhance regional surveillance and traffic management capabilities in up to 21 metropolitan areas while developing an ability to measure operating performance and expanding traveler information through public/private partnerships. Implementation activities are complete in Philadelphia and Pittsburgh. Implementation is currently underway in Chicago, Providence, Boston, Tampa and San Diego, and is imminent in Washington, D.C.

III. REGIONAL TRANSPORTATION OPERATIONS COLLABORATION AND COORDINATION (ROCC) Program Manager, Wayne Berman (wayne.berman@fhwa.dot.gov)

- A. **Regional Transportation Operations Collaboration and Coordination (RTOCC)**
 - i. **Primer on “Regional Transportation Operations Collaboration and Coordination”** - This Primer was printed and distributed to introduce the concepts and guiding principles for Regional Transportation Operations Collaboration and Coordination. A 2-hour Executive Session on this material was prepared and presented to various associations represented local, State, and regional elected and appointed officials. Three sessions were presented in FY 2003 and more are planned for FY 2004.
 - ii. **Demonstration projects on “Regional Transportation Operations Collaboration and Coordination”** – Funding is planned in FY 2004 for demonstration projects in two cities to serve as laboratories to develop and showcase Regional Transportation Operations Collaboration and Coordination. A strategy and selection criteria are being developed to have one demonstration project be centered within an MPO and the other demonstration project be centered within a State or local operating agency.

- iii. **Regional Planning for Operations Training Course** - This course is intended to provide instruction on concepts, principles, and experiences of Regional Transportation Operations Collaboration and Coordination. It is intended primarily for professionals with day-to-day experience in management and operations in both transportation and public safety communities. A pilot course and a train-the-trainer session will be delivered early 2004.
- iv. **Regional Transportation Concept for Operations** – Following a successful TRB policy study in FY 2003, guidance is planned to define a Regional Transportation Concept for Operations, articulate the benefit and importance of it, and identify the steps necessary to make it an accepted and valued action for transportation operators and public safety managers in metropolitan areas. The guidance is to be completed in late 2004.
- v. **Linking Planning and Operations** – Development of guidance, with best practices, on Linking Planning and Operations is underway and planned for completion by mid- 2004. The guidance will be used to support Planning Factor Number 6 in the Urban Transportation Planning regulations. This is a joint project between the FHWA Office of Operations and the Office of Planning, Environment, and Realty.

V. PERFORMANCE MEASUREMENT

A. Performance Measurement: Program Manager Dale Thompson

(dale.Thompson@fhwa.dot.gov)

- i. **Mobility Monitoring Program** - FHWA is working closely with TTI to develop and calculate area wide, travel-time based performance measures using archived data from freeway management systems in 21 metropolitan areas. This program which acquires archived data from ITS and traffic management centers will add 5-8 more cities to its base of 21 cities during FY 03 and will produce a third year of reporting from existing sites. Visit the mobility monitoring program web site at <http://mobility.tamu.edu/mmp>.
 - ii. **Monthly Urban Congestion Reporting** - This on-going program acquires travel time data from web sites in 10 metropolitan areas and uses it to calculate key travel time reliability performance measures. Real-time congestion data is acquired daily and monthly congestion measures are reported. Annual trend data for all 10 participating cities will be available in January 2004.
 - iii. **Developing reliability measure outreach materials** - This on-going program is exploring how travel time reliability performance measures might be “branded” to broaden acceptance of their use by public agencies. As part of the Performance Measurement program, a travel time reliability communications plan has been developed and an outreach campaign will begin in FY2004.
- ### B. Traffic Analysis Tools - Program Manager, John Halkias (john.halkias@fhwa.dot.gov)
- i. **Next Generation Simulation (NGSIM) Core Algorithms and Data Sets** – This effort is to develop a core of open behavioral algorithms in support of traffic simulation with supporting documentation and validation data sets that describe the interactions of multi-modal travelers, vehicles and highway systems. These products will be openly distributed and made freely available to the broad

transportation community. For more information, please visit the NGSIM website at <http://ngsim.fhwa.dot.gov>

- ii. **Traffic Analysis Tool Primer** - An overview of traffic analysis tools. The report will be available in January, 2004 through the website at http://www.ops.fhwa.dot.gov/travel/Traffic_Analysis_Tools/traffic_analysis_tools.htm
- iii. **Decision Support Methodology for Selecting Traffic Analysis Tools** – This is an on-going project to assist traffic engineers and traffic operations professionals in the selection of the correct type of traffic analysis tool for operational improvements. In addition, this document will assist in creating analytical consistency and uniformity across State Departments of Transportation and Federal/regional/local transportation agencies. The report will be available in January, 2004 through the website at http://www.ops.fhwa.dot.gov/travel/Traffic_Analysis_Tools/traffic_analysis_tools.htm
- iv. **Guidelines for Applying Traffic Micro-simulation Modeling Software** – These guidelines are designed to provide practitioners with guidance on the appropriate application of micro-simulation models to the estimation of traffic performance for freeways, highways, rural roads, and city streets. These guidelines will aid practitioners in the development, calibration, and application of micro-simulation models. The report will be available in January, 2004 through the website at http://www.ops.fhwa.dot.gov/travel/Traffic_Analysis_Tools/traffic_analysis_tools.htm

VI. **FREIGHT OPERATIONS**

A. **Freight Analysis**

Freight Analysis Framework State Profiles – Program Manager Bruce Lambert (Bruce.lambert@fhwa.dot.gov) FHWA’s Office of Freight Management and Operations (HOFM) will publish selected information from the Freight Analysis Framework (FAF) on a CD for distribution at the TRB annual meetings in January 2004. The CD will include State Freight Profiles and congestion maps for each State. HOFM is beginning to develop improvements to the FAF, including new benchmarks to the 2002 Economic Census, provisional estimates of current freight flows, quality checks and enhancements, and links to policy models such as the Highway Economic Requirements System (HERS). HOFM will begin supplementing the FAF with data on travel time in freight-significant corridors and delay times at border crossings. These performance measures will be described on the redesigned HOFM web site by summer 2004.

- ii. **Benefit/Cost of Freight** - Program Manager, Rolf Schmitt, (Rolf.Schmitt@fhwa.dot.gov)
HOFM has completed initial development of improved methods for estimating the benefits to shippers and carriers arising from transportation investments. Traditional benefit-cost analysis methods base the value of transportation investments on short term cost savings to highway users. The value increases

significantly when the productivity gains of longer-term adaptations of businesses to transportation improvements are taken into account. HOFM has published papers on the theoretical framework for improved benefit-cost analysis, and will publish in early 2004 a formulation of the model based on data on truck traffic, truck freight rates, congestion levels, and economic activity levels in selected freight-significant corridors.

- iii. **Freight Model Improvement Program** - Program Manager, Rolf Schmitt, (Rolf.Schmitt@fhwa.dot.gov)

HOFM is beginning to develop in cooperation with the Office of Environment and Planning a Freight Model Improvement Program (FMIP). Similar to the Travel Model Improvement Program, FMIP is intended to assess the state of the art and state of practice in freight forecasting and evaluation models, identify needs for short term improvements and long term research, and provide a forum in which the transportation community can improve both the state of the art and state of practice. The scope of this effort will be discussed as an early initiative of the revitalized Freight Council.

- B. **Freight Professional Development (FPD)** - Program Manager, Scott Johnson (Scott.Johnson@fhwa.dot.gov).

In cooperation with the Office of Environment and Planning and the Resource Centers, a one-day Freight Awareness Workshop for States and Metropolitan Planning Organizations (MPOs) was held in 2003. Information from the workshop was incorporated into the National Highway Institute (NHI) course on "Integrating Freight into the Transportation Planning Process," beginning in early 2004. Another course on "Multimodal Freight Forecasting" will also be offered through NHI in 2004. The first of the "Talking Freight" Seminar Series, cosponsored with the Office of Planning and Environment, was held on July 23, 2003. Additional seminars are scheduled for 2004. A new FPD Web site was launched in November 2003; the new Web site includes a Resource Library of freight-related information, training opportunities, academic programs, and contacts. Freight transportation best practices were compiled and posted on the FPD Web site. An FPD brochure and Fact Sheets on training opportunities, the "Talking Freight" seminars, and other FPD initiatives, as well as the results of customer outreach meetings, have been completed and distributed. Additional Fact Sheets will be developed on topics of interest to states and MPOs, including freight data, planning, and freight advisory committees. Finally, the Freight Council will be reorganized after the Transportation Research Board annual meeting to focus on the FPD and Freight Model Improvement Programs and to respond to the increasing level of concern with freight issues in the field.

- C. **Freight Size and Weight**

- i. **Size & Weight Databases and Reporting Requirements** - Program Manager, Bob Davis (Robert.Davis@fhwa.dot.gov). The databases are being updated with the latest information submitted by State DOTs and the Measures of Activity Tables and Charts have been placed on the Truck Size and Weight web page. Historic databases enabling States to track reporting requirement trends have been posted on the HOFM website by end of March.
- ii. **Training and Technical Assistance** - Program Manager, and Phil Forjan (Phillip.Forjan@fhwa.dot.gov). HOFM Size and Weight will be offering technical

assistancess to States in development of comprehensive State enforcement programs in 2003.

- iii. **Electronic Documents** - Program Manager, Phil Forjan at (Phillip.Forjan@fhwa.dot.gov).

The HOFM Size and Weight Team is developing an automated system whereby the FHWA Division Offices and State DOTs will be able to develop and transmit the required program documents through a closed computer network. Anticipated delivery date is 2005. Five States will be selected to participate in the pilot of this program, beginning in 2004.

- D. Intermodal Freight Technology** - Program Manager, Mike Onder (Michael.under@fhwa.dot.gov). To improve freight mobility and enhance its security, FHWA is pursuing an aggressive intelligent transportation systems (ITS) technologies research program in concert with industry. ITS and other new technologies will play a key role in balancing freight transportation productivity with security needs. Working with our partners in state and local governments and the private sector, FHWA has initiated several operational tests, including the Air Cargo Supply Chain Manifest (ESCM) System, electronic seals, and asset cargo tracking. The tests have been completed and nearly all the results analyzed. Growth in trade, changes in business practices, and concerns about security have also underscored the need for government/industry partnerships to standardize information exchange and implement best practices throughout the global supply chain network. FHWA is working with international organizations to develop electronic freight data exchange standards to streamline cargo transactions, thus improving mobility and security, reducing costs, and relieving congestion. FHWA is also working with industry through the Intermodal Freight Technology Working group (IFTWG) to implement operational best practices through deployment tests expected to begin in FY2004.

VII. EMERGENCY TRANSPORTATION RESPONSE

A. Emergency Transportation Response

- i. **Military Coordination Exercises** - Program Manager Al Benet (alfonso.benet@fhwa.dot.gov)

FHWA is conducting 1-day exercises with major military power projection platforms to bring together military and transportation agencies to review procedures and roadway operations during a military deployment. One exercise was conducted in FY 2003, with exercises for Georgia, California, Washington State, and New York planned for FY04, pending coordination with DOD.

- ii. **Reducing Vulnerability of Agency-Owned Telecommunications system** - Program Manager Vince Pearce (vince.pearce@fhwa.dot.gov)

The intelligent infrastructure is a critical resource in managing during a disaster. Just as the vulnerability of traditional transportation infrastructure is being assessed and measures are being taken to reduce its vulnerability, comparable efforts are needed for our electronic infrastructure. This report looked at several existing systems and analyzed what we know about agency-owned telecommunications systems and how they can be made less vulnerable to attack.

- ii. **Reducing Vulnerability of Transportation Management Centers** - Program Manager Vince Pearce (vince.pearce@fhwa.dot.gov) This project will examine the

- security of transportation management centers and will identify what measures can be taken to reduce their vulnerability.
- iii. **Emergency Management Requirements and Integration** - Program Manager Vince Pearce An initiative is beginning that will capture high-level information requirements for emergency managers. The project will also analyze various existing transportation models to assess the level to which they meet emergency managers' requirements. A follow-on project will look at how this information can be integrated to support decision-making.
 - iv. **Communications Interoperability** - Program Manager Vince Pearce (vince.pearce@fhwa.dot.gov) This project will examine the voice communication needs of transportation agencies during emergencies, what technologies are available to provide interoperability, and what initiatives are underway in the public safety community that transportation agencies should participate in so that they are able to interoperate with other responders.
 - v. **Transportation Emergency Response/Recovery Workshops** - Program Manager Vince Pearce (vince.pearce@fhwa.dot.gov <<mailto:vince.pearce@fhwa.dot.gov>>) Surface transportation is a critical element in responding to and recovering from any disaster, whether natural or man-made. A first key step in making the best use of transportation during a crisis is to have relationships in place and to have worked through core issues. This project will funded ten workshops around the nation in 2002 and 11 in 2003 to bring transportation agencies together with their partners to work through simulated terrorist attacks on the transportation system.
 - vi. **Alternate Route Development** - Program Manager Vince Pearce (vince.pearce@fhwa.dot.gov <<mailto:vince.pearce@fhwa.dot.gov>>) Not all states have well defined processes for identifying alternative routes around critical transportation infrastructure that might be damaged or destroyed. This report will provide a recommended methodology for developing such routes.
 - vii. **Emergency Operations and Planning Resource CD** - Program Manager, Vince Pearce (vince.pearce@fhwa.dot.gov). The development of a CD resource will be initiated this summer. The CD will be a "one stop shop" for transportation and emergency managers seeking guidance and/or resources for planning for transportation operations and impacts as a result of natural or man-made emergencies. The CD will be completed in Spring 2004.
 - viii. **Blackout Case Study** - Program Manager Vince Pearce (vince.pearce@fhwa.dot.gov) This study will investigate the impact of the August, 2003 blackout on surface transportation systems, and how those systems were used to manage transportation during the blackout. It includes multiple modes of transportation, and highlights ITS. The report should be available in spring, 2004.

VIII. FACILITATING INTEGRATED ITS DEPLOYMENT

A. Regional ITS Architecture Implementation - Program Manager, Pam Kordenbrock; <mailto:Pamela.Kordenbrock@fhwa.dot.gov>

All regions that have used, or are planning to use Federal funds from the Highway Trust Fund (including the Mass Transit Account) for ITS projects, must develop a regional ITS architecture by April 8, 2005. Until a regional ITS architecture is in place, all major ITS

projects must have a project level architecture to ensure proper consideration of regional integration. All ITS projects must be developed using a systems engineering process. Elements of this process include: concept of operations, functional requirements, identification of agencies and roles, identification of applicable standards, alternative analysis, procurement options, and system operations and management.

- i. **ITS Architecture Training and Technical Assistance Program - FHWA** continues to sponsor a variety of training and technical assistance activities designed to assist States and metropolitan areas develop and implement effective ITS architectures. For FY2003, this effort will focus more on use and maintenance of completed regional architectures, and systems engineering. For instance, a one-day facilitated session entitled "Using Your Regional ITS Architecture for Project Development" will be available Spring 2004. Best practices on regional ITS architectures are currently available on the architecture conformity website (<http://www.its.dot.gov/aconform/aconform.htm>).
- ii. **Regional ITS Architecture Guidance** – Version 1.0 of this document has been completed and distributed. An update of the guidance document may occur in FY04. This guidance document is the basis for the Regional ITS Architecture Process Workshop and the Architecture Process Seminar that are being conducted around the country. All sessions of the regional ITS architecture workshop and seminar will be offered tuition-free to participants. Scheduling will be done through FHWA Division Offices. Visit the ITS web site (<http://www.its.dot.gov>) for further information.

B. **ITS Standards Deployment** – Steve Clinger; Stephen.Clinger@fhwa.dot.gov, Jason Hedley; Jason.Hedley@fhwa.dot.gov. The ITS Standards Program is working toward the widespread use of standards to encourage the interoperability of ITS systems and interchangeability of devices. The Standards Program is maturing from a primarily standards development program to a standards implementation program by rapidly moving into standards implementation support. Such support includes helping to build credibility in the standards through testing and case studies, providing standards resource information, supporting training and technical assistance to deployers, developing deployment experience-based guidance such as "lessons learned," and assessing the readiness of standards for deployment.

- i. **Overview and Introductory Courses**
 - **ITS Standards Overview** - A one-day overview of ITS standards, intended for transportation professionals and policy makers involved in ITS deployment;
 - **Center-to-Center Communications and Traffic Management Data Dictionary** - A one-day introduction to the use of DATEX or CORBA to exchange data among ITS centers. Also includes an introduction to the Traffic Management Data Dictionary;
 - **Dynamic Message Signs** - A one-day introduction to the use of the NTCIP standard for dynamic message signs and other NTCIP standards, for deployers and designers of traffic control and management systems;
 - **Actuated Traffic Signals** - A one-day introduction to the use of standards for transportation professionals who are deploying traffic control and management systems using actuated traffic signal controllers.

- ii. **Advanced Training**
 - **DMS Procurement Workshop, Version 2** - Development of Version 2 of the DMS Procurement Workshop with version 2 of the Guide is expected to be completed in *Fall, 2004*.
 - **Environmental Sensor Station (ESS) Specification Guide and Training Module** - Developing the ESS Guide and the training module, target completion date, *Fall 2004*
- iii. **Technical Assistance (IQC)** - The Federal Highway Administration has established an ITS Standards Field Support Team (SFST). This Team is composed of FHWA and supported by Private Sector Specialists who are prepared to provide short-term, on-call assistance in the area of ITS Standards. The goal of the Team is to support and facilitate the deployment of Intelligent Transportation Systems that advance National and Local Needs while implementing ITS Standards.