

ITEM 11 - Action

June 16, 2010

Approval of the Strategic Plan for the Management, Operations, and Intelligent Transportation Systems (MOITS) Planning Program

Staff

Recommendation: Receive briefing on the Strategic Plan for the Management, Operations, and Intelligent Transportation Systems (MOITS) Program and adopt Resolution R26-2010 to approve the plan.

Issues: None

Background: The Strategic Plan identifies MOITS-related projects or actions for future consideration by regional stakeholders, and will help guide upcoming MOITS committee activities. At the May 19 meeting, the Board received a time-shortened briefing on the strategic plan. The executive summary of the plan is attached and the full strategic plan is available on the [MOITS web page](#).

NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD
777 North Capitol Street, N.E.
Washington, D.C. 20002

**RESOLUTION APPROVING THE STRATEGIC PLAN FOR THE TPB MANAGEMENT,
OPERATIONS, AND INTELLIGENT TRANSPORTATION SYSTEMS (MOITS) PLANNING
PROGRAM**

WHEREAS, the National Capital Region Transportation Planning Board (TPB), the metropolitan planning organization (MPO) for the Washington Region, has the responsibility under the provisions of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU) for developing and carrying out a continuing, cooperative and comprehensive transportation planning process for the Metropolitan Area; and

WHEREAS, under SAFETEA-LU, one of the areas to be considered by MPO and statewide planning processes is to “promote efficient system management and operation;” and

WHEREAS, the TPB Vision, which was adopted on October 21, 1998, states in policy goal 3: “... the region’s transportation system will give priority to management, performance, maintenance, and safety of all modes and facilities;” and in policy goal 4: “... the region will use the best available technology to maximize system effectiveness”; and

WHEREAS, the TPB has regularly identified transportation management and operations as a regional priority; and

WHEREAS, the TPB created an Intelligent Transportation Systems (ITS) Task Force in 1997 and an ITS Policy Task Force in 2000; expanded the scope of these Task Forces in 2001 to include transportation management and operations; and in 2007 established the Management, Operations, and Intelligent Transportation Systems (MOITS) Technical Subcommittee as a standing subcommittee; and

WHEREAS, the primary missions of the MOITS Technical Subcommittee are to advise the TPB, the MOITS Policy Task Force, the TPB Technical Committee, and other TPB subcommittees on technical matters of the management, operations, and technologies of the region's transportation system, as well as to provide a forum for advice, information sharing, and coordination on these issues among TPB member agencies, implementers of ITS projects, and other stakeholders; and

WHEREAS, the MOITS Technical Subcommittee and staff work in close coordination on management, operations, and technology issues of mutual concern with the Regional Emergency Support Function 1 (RESF-1) Emergency Transportation Committee established under the public safety program and committee structure of the Metropolitan Washington Council of Governments; and

WHEREAS, the District of Columbia, Maryland, and Virginia Departments of Transportation (DDOT, MDOT, and VDOT) and the Washington Metropolitan Area Transit Authority (WMATA), in partnership with the TPB, have established the Metropolitan Area Transportation Operations Coordination (MATOC) Program to conduct real-time information sharing and interagency coordinated transportation management, with the MOITS Program providing planning advice and input in support of the MATOC Program; and

WHEREAS, members of the MOITS Technical Subcommittee identified the need to develop the Strategic Plan for the MOITS Planning Program to help guide upcoming MOITS activities and to identify a set of potential regional-level integrative management, operations, and technology projects for future funding opportunities; and

WHEREAS, the Strategic Plan for the MOITS Planning Program has identified a number of findings and recommendations in support of the TPB Vision and reflective of the priority the TPB has placed on regional transportation management and operations.

NOW, THEREFORE, BE IT RESOLVED THAT the NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD approves the Strategic Plan for the Management, Operations, and Intelligent Transportation Systems Planning Program.

EXECUTIVE SUMMARY

STRATEGIC PLAN FOR THE METROPOLITAN WASHINGTON MANAGEMENT, OPERATIONS, AND INTELLIGENT TRANSPORTATION SYSTEMS (MOITS) PLANNING PROGRAM

DRAFT

**National Capital Region Transportation Planning Board
Metropolitan Washington Council of Governments**

June 16, 2010

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EXECUTIVE SUMMARY

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AGENCY: The Metropolitan Washington Council of Governments (COG) is the regional organization of the Washington area's major local governments and their governing officials. COG works toward solutions to such regional problems as growth, transportation, the environment, economic development, and public safety. The National Capital Region Transportation Planning Board (TPB) conducts the continuing, comprehensive transportation planning process for the National Capital Region under the authority of the Federal-Aid Highway Act of 1962, as amended, in cooperation with the states and local governments.	
ABSTRACT: This document examines the status of and identifies potential actions in transportation management, operations, and technology in the National Capital Region, in the context and supportive of the adopted Vision (1998) of the National Capital Region Transportation Planning Board. The report also includes a program plan of specific potential regional projects beneficial to transportation operations in the National Capital Region, as well as a set of best practices by which state and local agencies of the region can help support through technology and operations the regional goals of the TPB Vision.	
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EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

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TABLE OF CONTENTS

Introduction and Background 1

MOITS and Other Key Regional Efforts 1

Regional ITS Architecture and the Strategic Plan 2

The TPB Vision and the MOITS Strategic Direction 2

Emphasis Areas 4

Strategic Efforts and Proposed Projects 5

Best Practices 7

Performance Measurement 7

How the Public Directly Benefits from MOITS-Related Activities 8

Funding 9

Future Direction 9

Summary of the Strategic Plan’s Key Recommendations for the MOITS Technical Subcommittee and Program 10

EXECUTIVE SUMMARY

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Introduction and Background

This document presents the Strategic Plan for the Management, Operations, and Intelligent Transportation Systems (MOITS) Technical Subcommittee and program of the National Capital Region Transportation Planning Board (TPB)¹, for improving regional transportation services in the Metropolitan Washington Region in support of the TPB's regional goals and objectives. This Strategic Plan defines and promotes potential regional projects or activities for the management, operations, and application of advanced technology for the region's transportation systems, as well as to advise member agencies on management, operations, and transportation technology deployments for meeting common regional goals and objectives. The MOITS Technical Subcommittee, a subcommittee of the TPB, advised the development of the Strategic Plan.

MOITS and Other Key Regional Efforts

In addition to the MOITS committees and program, there are other important concomitant programs that address related aspects of regional transportation management and operations:

- The Metropolitan Area Transportation Operations Coordination (**MATOC**) Program is a joint program of the District of Columbia, Maryland, and Virginia departments of transportation (DDOT, MDOT, and VDOT) and the Washington Metropolitan Area Transit Authority (WMATA). MATOC's mission is to provide situational awareness of transportation operations in the National Capital Region (NCR), along with facilitating after action reviews, helping to coordinate planning meetings among the operational agencies, and helping to strengthen regional standard operating procedures. Situational awareness is achieved through the communication of consistent and reliable information that enables operating agencies and the traveling public to make effective and timely decisions. MATOC develops and maintains the tools and processes needed to facilitate coordinated operating agency responses. MATOC utilizes information compiled, formatted, and shared through the automated Regional Integrated Transportation Information System (RITIS)², and supplements RITIS information with targeted notifications and coordination activities by a designated MATOC facilitator and support staff. RITIS is known and widely utilized in the region by transportation agencies; MATOC provides the human and procedural elements of the system, helping ensure the accuracy of the information in RITIS, taking action to make notifications to key stakeholders, and advising the regional coordination of traffic and transportation systems management in response to regional incidents.



¹ The TPB is the federally designated Metropolitan Planning Organization (MPO) for the region, and plays an important role as the regional forum for transportation planning. The TPB's work program includes a line item dedicated to the support of the MOITS planning program and committees.

² RITIS is an automated system that compiles real-time traffic and transit data from agencies around the region, consolidates the data into a common format, and enables the data to be shared with agencies, the media, and the public. RITIS was developed and is maintained by the Center for Advanced Transportation Technology at the University of Maryland. MATOC's committees advise RITIS development and operations activities.

EXECUTIVE SUMMARY

- The Regional Emergency Support Function #1 - Transportation Committee (**RESF-1**) in the COG public safety committee structure addresses planning for the role of transportation as a support agency to emergency management in catastrophic or declared emergencies.
- The Washington Metropolitan Area Transit Authority (**WMATA**) as a regional-level organization addresses a number of inter-agency operations and technology coordination activities in the transit sphere. Among other activities, WMATA has spearheaded the development and deployment of the SmarTrip® farecard, used not only on WMATA services but also among most of the region's local transit agencies.



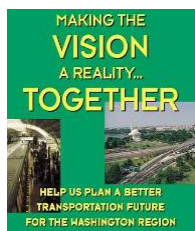
The core mission of the MOITS Technical Subcommittee and program is inclusion of the management and operation of existing transportation systems, and potential technology, in the metropolitan transportation planning process. MOITS works in close coordination with these partners:

- MOITS as a planning committee provides planning technical advice and input to MATOC as MATOC undertakes its implementation activities.
- MOITS in its focus on everyday management and operations of the transportation system provides input to RESF-1 in its role of planning for catastrophic emergencies.
- Information is regularly shared between MOITS and WMATA efforts.

MOITS, MATOC, RESF-1, and WMATA efforts, though closely coordinated, are separate because of the need for each to satisfy its own reporting chain requirements, to address unique relevant regulations (e.g. U.S. Department of Transportation vs. U.S. Department of Homeland Security), and to have the ability to convene the necessary stakeholders (information technology, operations, emergency management, transit) for its activities.

Regional ITS Architecture and the Strategic Plan

The U.S. Department of Transportation recommends the development of a Regional ITS Architecture as a systems engineering technical guidance document. Since 2002, TPB staff has maintained the [Metropolitan Washington Regional ITS Architecture](#) showing the technical connections among systems, and providing overarching guidance for the engineering of transportation information technology projects. The Regional ITS Architecture influenced the Strategic Plan by helping define the goals, objectives, major system components, and key connections among regional stakeholders and systems. In turn, this Strategic Plan will guide future updates of the Regional ITS Architecture.



The TPB Vision and the MOITS Strategic Direction

The strategic direction for the MOITS program is guided by the 1998 [TPB Vision](#) and its goals and objectives, and the MOITS Strategic Plan was developed to be in concert with and supportive of the TPB Vision. Of the eight goals articulated by the TPB Vision, two are particularly pertinent to MOITS

EXECUTIVE SUMMARY

and the Strategic Plan: *the Washington metropolitan region's transportation system will give priority to management, performance, maintenance, and safety of all modes and facilities* (Goal 3); and *the Washington metropolitan region will use the best available technology to maximize system effectiveness* (Goal 4). The TPB Vision further articulates objectives and strategies to support its identified goals, which again will be supported by MOITS and the Strategic Plan. These objectives and strategies are listed in detail in Sections 3.2 and 3.3 of the MOITS Strategic Plan, and address issues such as adequate maintenance, enhanced safety, congestion, and reliability.

The MOITS Strategic Plan builds upon the TPB Vision by identifying key tactical actions toward achieving and building upon the goals, objectives, and strategies of the Vision, including:

- **Provide regional situational awareness of transportation system conditions and of incidents or factors that may impact transportation conditions** – Regional situational awareness includes real-time information concerning the status of the transportation network and transportation assets, static information concerning schedules and resources, and dynamic information concerning evolving transportation conditions.



- **Develop and maintain regionally coordinated standard operating procedures** – Regional standard operating practices are practices followed when coordinating with other regional stakeholders. These practices include procedures for coordinating daily regional operations and responding to incidents, events, or conditions with significant regional impact.
- **Inform travelers in a timely and effective manner so those travelers will make good transportation decisions** – Informing the traveler includes providing correct and timely transportation information to public agencies, media outlets, independent service providers, and the general public.
- **Integrate technical systems and processes to maximize interoperability and ensure the beneficial and synergistic impacts of those systems working together** – Regional integration includes connecting technical systems between member agencies, establishing regional standard operating procedures, and sharing information in support of regional operations.

The MOITS Technical Subcommittee also recommends similar strategic efforts to take place or be continued in key related areas outside the MOITS purview, particularly through the RESF-1, MATOC, and WMATA processes. Notably, the RESF-1 Committee participates in strategic planning within the regional structure of public safety committees for transportation's role in catastrophic or other major emergencies, convening the necessary stakeholders for that process.

Emphasis Areas

The MOITS Strategic Plan identifies nine emphasis areas, which have been derived from the National ITS Architecture.³ These emphasis areas were judged to be: regional in nature (i.e., lend themselves to be addressed particularly at a regional level rather than locally, statewide, or nationally); strategically important; pertinent to support the TPB Vision and goals; and within the purview and missions of the MOITS program (and its stakeholders and participants):

1. *ITS data warehouse* – the compilation of ITS technical systems data into a single regional archive, formatting of the data so it may be shared, and making the data available to the region’s agencies for operations and planning activities. For example, the MOITS Strategic Plan identifies as a priority providing sufficient resources to RITIS to fulfill the role of the major regional ITS data archive.
2. *Multi-modal coordination* – as defined by the National ITS Architecture, this emphasis area focuses on two-way communications and data sharing between multiple transit and traffic agencies to improve service coordination.
3. *Transit signal priority* – regional coordination of systems that help determine the need for and processing of changes or extensions of traffic signal phases on routes and at certain intersections.



4. *Interactive traveler information* – systems such as “511” to provide traffic and transit information via an interface with customer selection options.
5. *Transportation operations data sharing* – as supported by the MATOC Program and RITIS, using a combination of automated systems and operating procedures among agency staffs to ensure regional situational awareness of transportation systems conditions and incidents.
6. *HOV lane management* – the National ITS Architecture focuses on technical systems that help HOV operations; the MOITS Strategic Plan looks beyond to regional coordination among the HOV, high-occupancy-toll (HOT) lane, and express toll lane (ETL) facilities in the area.
7. *Regional traffic management* – this emphasis area provides for the sharing of traffic information and control among traffic management centers to support regional traffic management strategies.

³ The U.S. Department of Transportation sponsors publication of the National Intelligent Transportation Systems (ITS) Architecture to help guide regional ITS architectures around the country, as well as to promote good systems engineering practices.

8. *Regional parking management* – this emphasis area supports communication and coordination between equipped parking facilities and also supports regional coordination between parking facilities and traffic and transit management systems.
9. *Maintenance and construction activity coordination* – this emphasis area focuses on processes and tools to share maintenance and construction information, for the purposes of better planning and coordination.

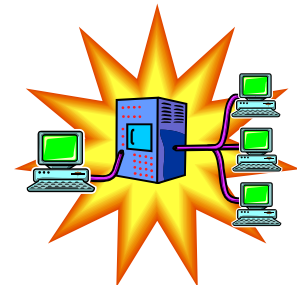
For each emphasis area, the MOITS Strategic Plan discusses its definition and regional scope, current regional status, current regional gaps, and strategic efforts and proposed projects.

Strategic Efforts and Proposed Projects

The MOITS Strategic Plan identifies a number of strategic efforts and proposed projects, described in detail in Section 6.3. “Proposed projects” are physical projects for deployment or implementation, led by the most appropriate lead agency. Both strategic efforts and proposed projects have associated cost estimates, and will need to seek implementation funding. **Proposed projects described are not fully funded; new funding would be needed to implement them.** “Strategic efforts” refers to potential activities related to regional planning or coordination. Funding estimates provided are at the sketch level, and total approximately \$22.5 million.

The proposed projects identified by the MOITS Strategic Plan are:

1. **Operate and Maintain the Metropolitan Area Transportation Operations Coordination (MATOC) Program and the Regional Integrated Transportation Information System (RITIS)** – this project annually would sustain the MATOC program to support regional operations coordination and situational awareness activities, as well as operating and maintain the ITS data warehouse and traveler information components of RITIS in support of the Washington region’s management and operations planning. Estimated funding needed: \$1.2 million (first year), \$1.6 million per year (subsequent years).
2. **Upgrade the Regional Integrated Transportation Information System (RITIS) to Enhanced Capabilities as the Regional Intelligent Transportation Systems (ITS) Data Warehouse and Regional Traveler Information Data Engine** – This project would build upon the existing RITIS, which focuses on real-time transportation systems condition data exchange, and expand its scope and coverage to become the primary transportation systems data warehouse for the Washington region and the Regional Traveler Information Data Engine for traveler information applications. RITIS is one of the core functions required to advance the region’s transportation management capabilities. Estimated funding needed: \$2.5 million.
3. **Enhance Regional Integrated Transportation Information System (RITIS) Capabilities for Intermodal Transportation Operations Data Sharing** – Develop regional systems to share real-time traffic operations data with bus transit providers and real-time bus transit information with traffic management entities to achieve coordinated and synergistic transportation management of key roadway corridors. Activities include systems engineering for multi-modal coordination data sharing, and real-time export of bus data (including automated



EXECUTIVE SUMMARY

vehicle location data) from WMATA and local transit buses for use in overall traffic management. Estimated funding needed: \$1 million.

4. **Support the Development of Multi-Modal Regional Trip Planning Tools Using Regional Data**– develop and implement data sharing interfaces for third parties to access regional data and develop a multi-modal regional trip planning tool which could then be used to provide the public the best travel option based on real-time conditions. Estimated funding needed: \$2 million.
5. **Deployment of Integrated Corridor Management Technologies on Significant Regional Corridors** – develop regional and corridor based multi-agency systems to share real-time traffic operations data with bus transit providers and real-time bus transit information with traffic management entities, supporting regional data exchange to achieve coordinated management of key roadway corridors. Estimated funding needed: \$7 million.
6. **Deploy Real-Time Parking Availability Information Systems at Key Metrorail or Other Publicly-Owned Park-and-Ride Facilities** – following up on a WMATA study completed in 2009, deploy electronic systems that keep track of parking availability at key facilities, and make this information available to commuters in a timely fashion. Estimated funding needed: \$1 million.



7. **Develop a Regional Set of Transportation Management Plans for Major Planned Events** – develop a number of transportation management plans that can be applied to planned events at the times they occur. These transportation management plans would describe the procedures that participating agencies would follow in normal operations for a major planned event. These plans could also help provide technical input to the region’s emergency management agencies in their planning for major emergencies. Estimated funding needed: \$1 million.

Strategic efforts identified by the MOITS Strategic Plan are:

8. **Develop a Regional Managed Lanes Operations Coordination Process for the Washington Metropolitan Area** – the Washington region has a number of “managed lanes” facilities in operation or planned for the region. “Managed lanes” is a blanket term

encompassing high-occupancy-vehicle (HOV) lanes, high-occupancy/toll (HOT) lanes, and express toll lanes (ETLs). These facilities differ in ownership, configuration, and usage rules, but are common in that they are all managed in a way different from general purpose lanes. To date, no venue or process exists where the owners and operators of these various facilities are brought together to coordinate and examine potential operations improvements or synergies among the facilities. This project would establish a venue and process for the coordination of the operations of managed lanes facilities in the Washington region (i.e., an annual managed lane facilities operations summit). Estimated funding needed: \$250,000.

9. **Develop and Initiate a Venue and Process for Maintenance and Construction**

Coordination – this project would develop and initiate a forum and process for the transportation agencies of the Washington region to cooperatively examine, coordinate, and adjust the schedules of maintenance and construction projects to avoid unnecessary traffic conflicts and other negative impacts. Estimated funding needed: \$250,000.

10. **Develop and Initiate a Venue and Process for Interjurisdictionally Coordinated Signal Timing for Regional Corridors** – this project would develop and initiate a forum and process for the transportation agencies of the Washington region to cooperatively examine, coordinate, and adjust signal timing to improve safety and reduce unnecessary delay. Estimated funding needed: \$300,000.



Best Practices

The MOITS Strategic Plan identifies a number of recommended “best practices” for consideration by the member agencies and jurisdictions. For this document, the term “best practice” is defined as a process or activity anticipated to be especially effective in achieving a desired outcome, which in the case of the MOITS Strategic Plan is support of the TPB Vision and goals. Best practices should also have consensus agreement among stakeholders. Included are best practices that apply to MOITS program activities (for example, “make MOITS activities and recommendations data-driven and performance measurement-oriented”), as well as best practices that apply at the level of individual agencies and jurisdictions (for example, “support management, operations, and technology needs through the use of engineering practices and standards”).

Performance Measurement

The MOITS Strategic Plan recommends use of a few key performance measures, along with a number of other potential metrics, which can indicate the impact of programs and services on the transportation system. The MOITS Strategic Plan performance measures are identified in conjunction with the federally-required Congestion Management Process component of the TPB’s long-range transportation plan (CLRP). As with the CLRP and other plans, the MOITS Strategic Plan considers “direct assessment” metrics such as traffic volumes, speeds, vehicle miles of travel, and transit ridership. It also considers widely-used calculated measures such as

level of service and travel time index. Safety measures such as number of fatalities or incident duration are additionally important. Tracking these measures will provide data for potential future goal setting.

Perhaps the performance measurement method that best allows comparability to a wide range of strategies or actions is benefit-cost analysis. The U.S. Department of Transportation publishes information (www.itsbenefits.its.dot.gov) on the expected benefits and benefit-cost ratios of ITS and operational programs based on national experience. This web site and other literature has been the current basis for assessing the potential benefit-cost of MOITS-related activities. In the literature, management, operations, and technology activities have had estimated benefit-cost ratios of 7:1 to 25:1 and higher. The MOITS Strategic Plan cites a number of examples.

The MOITS planning program needs to pursue and expand upon its benefit-cost analysis activities to better understand and illustrate the potential impacts of considered activities and deployments specific to the Washington region.

How the Public Directly Benefits from MOITS-Related Activities

Members of the public have needs from the region's transportation system. They need to get to their destinations, and to do so in a safe and timely fashion. They need information on system conditions and any disruptions. They need information on choices they have for accomplishing their travel. MOITS activities can help address these needs. The emphasis areas and proposed activities of the MOITS Strategic Plan help particularly in the following ways:

- *Safety* – better incident management can reduce the duration of each incident, and reduce the chances of secondary incidents in traffic backups. MATOC and other traffic management programs help by providing earlier and better incident notifications, as well as improved situational awareness throughout the duration of the incident. A member of the traveling public not caught in a traffic backup or involved in a secondary incident is a safer member of the public.
- *Reduced delays* – traffic management activities such as HOV Lane Management, Multi-modal Coordination, and the MATOC Program help enable efficient management of existing systems along with reducing incident duration helping save travelers time and reduce unnecessary delays. Express bus services using Transit Signal Priority may save time for bus trips in key corridors.



- *Better availability of information* – travelers benefit from and can make better travel decisions knowing the most up-to-date information on travel conditions, using the sources they know and trust, such as radio traffic reports, web sites, and smart phone apps. Activities such as MATOC and RITIS can facilitate the wider and timely availability of transportation systems condition information. Publicized traffic management plans for major events can help travelers plan accordingly and make better travel decisions.
- *Better quality of information* – accuracy of information is key for travel decisions by the public. Questions such as whether to travel, when to start, what mode to take, and what route to take depend rely upon good information about the status of the transportation

system. Improving the accuracy of available information is beneficial to these decisions, supported by the MATOC and RITIS programs through radio traffic reports, web sites, and smart phone apps.

- *Better responsiveness of transportation systems to traveler needs* – when transportation agencies have better knowledge of their systems, such as where and when congestion and traffic incidents occur, or when traffic or transit demands are highest, the agencies can better prepare for and provide operations that answer these needs. For example, a bus will come when it is most needed. Resources to address incidents will be available where and when incidents are most likely to occur. A term often used in strategic planning is being “data-driven” – better actions are undertaken because transportation managers are well-informed by data and knowledge about our systems. MOITS activities such as ITS Data Warehousing, MATOC, and RITIS can provide agencies better data, so those agencies in turn can provide better services to travelers.
- *Increased travel options* – technologies and associated operations and management activities enable the public to have more options for travel, such as the use of high occupancy/toll lanes or other variably priced lanes, or bus transit services that utilize priority engineering or technology strategies (e.g., transit signal priority).

Funding

Securing adequate and sustained funding for management, operations, and technology efforts remains challenging in this era of fiscal constraints, as well as the structural lack of dedicated funding streams for such activities. Start-up of MATOC and other regional activities has benefited from one-time federal grants and earmarks, but sustainment funding heavily depends on each agency’s funding, subject to the agency’s priorities and competing projects. Because funding is currently performed on an ad hoc basis, consistent regional operations progress is slowed.

How much funding is needed? Costs for operational projects are moderate in comparison to major capital projects. The costs of the proposed projects in the MOITS Strategic Plan are in the range of \$250,000 to \$8 million. Studies have shown the benefit-cost ratio of operational projects or activities to be in the range of 7:1 to 25:1, so they are quite beneficial. Limited funding has been accessed to date. If funding can be provided sooner, or activities more fully funded, the region could reap the benefits of the efforts in the near term.

A dedicated funding stream for regional efforts, such as a federal categorical funding source, would be the most effective for sustaining regional operations efforts. Until such a funding stream is available, the MOITS participants will continue to seek and use funding as available from the operating agencies, and seek to supplement that funding with federal grants and other ad hoc funding pools.

Future Direction

The MOITS Program will build upon the successes of its activities since its 1997 inception, continue to apply lessons learned, and use the MOITS Strategic Plan as a guide for upcoming activities. The MOITS Technical Subcommittee will continue to advise the TPB on management, operations, and intelligent transportation systems issues as they relate to



the CLRP and provide a forum for information exchange among the member agencies. The projects of regional interest defined in the MOITS Strategic Plan should be pursued and shepherded to completion, with the advice and coordination of MOITS. These activities will be dedicated to furthering the transportation management, operations, and technology goals of the TPB Vision.

Summary of the Strategic Plan's Key Recommendations for the MOITS Technical Subcommittee and Program

The MOITS Strategic Plan hereby concludes with a summary of important recommendations from throughout the plan. These recommendations should help guide the future activities of the MOITS program with the metropolitan transportation planning process, and the MOITS Technical Subcommittee.

1. The MOITS program should continue advising the TPB, as well as serving as a regional forum for information exchange, on the topics of transportation management, operations, and technology.
2. The MOITS program and other key regional groups, including the Regional Emergency Support Function #1 (RESF-1) Emergency Transportation Committee, the Metropolitan Area Transportation Operations Coordination (MATOC) Program, and Washington Metropolitan Area Transit Authority operations and technology groups, should continue and strengthen coordination and collaboration among their activities and participants.
3. The MOITS program should strengthen its focus on the Strategic Plan's identified tactical actions: situational awareness, standard operating procedures, informing travelers, and systems interoperability.
4. The role of the MOITS program in defining and developing regional projects should be strengthened.
5. The MOITS program should encourage member agencies and jurisdictions to follow the best practices identified in the Strategic Plan.
6. The MOITS program should strengthen its understanding of performance measurement and benefit-cost analysis to better advise decision makers on potential impacts (including for congestion and air quality), and comparison to traditional capital investments.
7. The MOITS program should work to inform decision makers on the specific strategic efforts and proposed projects identified by the Strategic Plan, and encourage funding for these and other beneficial activities.

