National Capital Region Transportation Planning Board

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Memorandum

To: MOITS Technical subcommittee

From: Daivamani Sivasailam
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Subject: Management Operations and Intelligent Transportation System (MOITS)
               Strategic Plan

Background

At the February meeting of the MOITS Technical Subcommittee there was discussion on the MOITS Strategic Plan and staff agreed to review the existing plan and report on the status of projects recommended in the plan. This memorandum reviews the MOITS Strategic Plan, the ten regional projects listed in the plan and what the region has achieved in the four years since the development of the plan.

The MOITS Strategic Plan was developed and adopted on June 20, 2010 and serves as a blue print for many of MOITS activities.

The Strategic Plan development was guided by two of TPB Vision Goals that relate to Management, Operations, and ITS Technology.   The plan lays out tactical solutions to achieve the strategic objectives, and pointed out nine emphasis areas. The goals, tactical solutions, and emphasis areas are discussed below.

TPB Vision Goal 3: The Washington metropolitan region's transportation system will give priority to management, performance, maintenance, and safety of all modes and facilities.

TPB Vision Goal 4: The Washington metropolitan region will use the best available technology to maximize system effectiveness.

Tactical Solutions

The following tactical solutions would help us move towards achieving the TPB vision goals.

- Provide regional situational awareness of transportation system conditions and of incidents or factors that may impact transportation conditions

- Develop and maintain regionally coordinated standard operating procedures

- Inform travelers in a timely and effective manner so those travelers will make good transportation decisions

- Integrate technical systems and processes to maximize interoperability and ensure the beneficial and synergistic impacts of those systems working together

Emphasis Areas

The emphasis areas shown below 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.

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.

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.

Finally the Strategic Plan listed ten (10) regional projects with preliminary cost estimates to achieve the objectives and goals. The projects and the status of the projects are discussed below.

Projects

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).

      Status: The region has been providing full funding to MATOC which has been operating successfully with a manager, an analyst, and two operators and has won plaudits from the stakeholders for timely notification of regional incidents, and coordination during planned special events such as the Presidential Inauguration. MATOC's activities are governed by a Steering Committee, and three subcommittees (Information Systems, Traffic Operations and Transit Operations). Another success has been the forum for snow emergency managers group under the MATOC umbrella that has been able to create a coordinated approach to tackling winter weather in the region.

RITIS is also a success story with over 2000 users in the region and being used as a data warehouse for the I-95 corridor coalition and a number of other state DOT's outside our region.

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.

      Status: RITIS has continued to evolve with a number of features in addition to its core capabilities as a data warehouse, with video sharing, chat features, and VPP analysis suit. RITIS continues to be the primary tool employed by a number of non-transportation personnel for situational awareness during emergency situation.

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

      Status: RITIS provides real time traffic operations data using vehicle probe project (VPP) data. Efforts are underway to bring static bus transit providers route information into the system. The goal is to eventually bring in real time bus data using automated vehicle location information but this is still on the wish list for RITIS and has not been funded.

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.

     Status: MATOC steering committee has been discussing development of a multi-modal regional trip planning tool working with RITIS developers. After numerous iterations MATOC Steering Committee has selected a set of requirements that will be available for users of the tool and has given the go ahead for development of a prototype of the tool. The prototype should be available for testing in the next 9 to 12 months.

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.

     Status: VDOT has made progress in developing a preliminary ICM project plan for the I-95 Corridor taking into account stakeholder inputs. A number of meetings were held in the region explaining the plan by VDOT personnel including MOITS. The project along the I-95 corridor extends from Fredericksburg in Stafford County to the District of Columbia. VDOT is also implementing an ATDM project along the I-66 corridor in Northern Virginia.

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.

     Status: Airports in the region have installed technology that informs parking availability at lots.

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.

     Status: No formal plans have been developed. MATOC has however played a role during major planned events such as the Presidential inauguration, July 4th festivities, and major sporting events.

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.

Status: MATOC operations subcommittee have invited managed lane operators to the group and now includes participation by managed lane operators, but no additional formalized coordination venue has been established.

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.

Status: MATOC working with the MATOC steering committee has made progress and a venue will be created under the MATOC umbrella for bringing together personnel in charge of issuing maintenance and construction permits patterned after the snow managers group. MATOC convened a meeting of the important stakeholders for a workshop on April 18, 2014, and regular meetings are now expected to continue.

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.

Status: The Traffic Signals Subcommittee of the MOITS Technical Subcommittee has served as a forum for exchanging ideas and interaction among the signals managers in the region. However no formal regional signal timing exercise has been undertaken in the region.

Summary: In the four years since the development of the MOITS Strategic Plan, the region has made strides in achieving the objectives laid out in the plan. All the four tactical solutions were pursued such as MATOC/RITIS providing regional situational awareness, and informing travelers on a timely fashion through the 511 systems. In the emphasis areas RITIS has evolved into an ITS data warehouse system, the regional transit agencies in cooperation with the traffic agencies is implementing Transit signal priority projects in a number of corridors with funding secured through TIGER grants. Two groups one for coordinating severe weather situations and a new group for coordinating maintenance and construction activities in the region has been formed. Even with lean budgets and tough economic situation faced by state and local governments, out of the ten projects identified in the MOITS Strategic Plan, the region pursued high payoff projects and has fully implemented three projects (1, 2, and 5), achieved partial progress with six projects (3, 4, 6, 7, 8 and 9), and made no progress with one project (10). The region will continue to pursue all the projects and also update the strategic plan when the need arises.