

# TRB Committee on Regional Transportation Systems Management and Operations (RTSMO) -AHB10

## **TRIENNIAL STRATEGIC PLAN**

March 2008 - March 2011

### **A. General Information & Background:**

#### **Previous TSM Committee A3A03:**

The previous TRB standing committee on TSM was formed in the early 1980s as an outgrowth of the latest Surface Transportation Assistance Act requirement that MPOs include a TSM element as part of their Transportation Improvement Programs (TIPs). The TSM elements contained projects, such as traffic engineering improvements and transit, which did not rely on building of new capacity. Although the TSM element ceased to be a legislative requirement many years ago, the TRB TSM committee continued in existence and sponsored activities in support of the TSM concept as reflected in the committee's scope.

This committee was concerned with plans, programs and methods to facilitate the organization, management, operations and services of all elements of an urban transportation system in ways that will improve efficiency and effectiveness of the transportation system. The committee's activities in recent years included sponsoring sessions at the TRB Annual Meeting on incorporating operations into the planning process.

#### **Recent History & Evolution:**

The evolution and support for the original concepts imbedded in TSM have greatly accelerated over the last decade. The 1992 ISTEA required the implementation of a series of management systems, including Congestion Management Systems for metropolitan areas. Subsequently, TEA-21 added management and operations as required elements of regional and statewide planning. Since 1999, the National Dialogue on Transportation Operations, culminating in the 2001 National Operations Summit, has added support, substance and tools to this movement. The metropolitan-wide aspects of the systems management and operations philosophy have become major interest areas of FHWA, AASHTO, AMPO, ITS America, ITE and many other organizations. Transportation organizations and decision makers at all levels are adopting the philosophy of systems performance measurement and customer satisfaction – two driving forces behind the regional transportation systems management approach.

This evolution spawned a number of related efforts in which TRB played a leading role, including:

- o FHWA's Working Group on Planning and Operations further evolved the thought process of regional transportation systems management.
- o A national forum on regional operating organizations for urban areas generated a dialogue on the various models for coordinating operations across jurisdictional boundaries in metropolitan areas.

- o An initiative to link data professionals with transportation operations professionals to create a better understanding of the most appropriate ways to collect, analyze, and use transportation data to enhance the operations of the transportation system.

**Reconstituted AHB10 (formerly A3A03) Standing Committee on Regional Transportation Systems Management & Operations:**

The reconstituted A3A03 standing committee brought together within TRB the various elements of regional transportation systems management in metropolitan areas. The new AHB10 is to help provide the following:

- o A forum within TRB that more accurately reflects the evolution in thinking on regional transportation systems management and operations.
- o A committee that can help TRB play a key role in the continuing evolution of this philosophy.
- o Coordination among other TRB standing committees with activities and interests in this area, including committees addressing various elements of operations, planning, data, performance measurement, ITS, and transportation issues in major metropolitan areas.
- o A home for closely related but currently scattered subcommittees within TRB and for future subcommittees that come under the regional TSMO umbrella.

**RTSMO Committee Scope, Mission and Focus:**

**Scope:**

This committee is concerned with regional transportation systems management and operations to maximize transportation system performance in metropolitan areas, including coordinated and integrated decision-making approaches to operations and the harmonization of operations with planning, construction, preservation, and maintenance of transportation facilities.

**Mission:**

This committee considers transportation systems management and operations in a regional context. We share regional approaches to transportation problems by identifying research opportunities, creating knowledge, and disseminating information.

**Goals:**

- o Encourage regional collaboration and coordination to improve transportation service and efficient agency operations, e.g., incident management, special events, emergency response.
- o Investigate mechanisms (technical tools, processes, partnerships) for incorporating operations in regional transportation planning and investment decision-making.
- o Support improvement in transportation system performance through regional transportation systems management and operations (RTSMO) strategies that include both capacity and non-capacity solutions.
- o Identify opportunities for increasing the reliability and predictability of transportation system performance through RTSMO.
- o Encourage measurement, quantification, and reporting of regional transportation system

performance and reliability.

- o Encourage consideration of strategies to enhance safety for both motorized and non-motorized users in RTSMO.
- o Investigate opportunities to enhance security and preparedness by incorporating emergency operations into the transportation planning process.
- o Promote professional capacity building programs to expand awareness and understanding of RTSMO.
- o Provide a linkage among elements of TRB that encompass components of RTSMO to improve knowledge, practices, and policies.
- o Encourage involvement of non-traditional stakeholders.
- o Advance the state of the art/state of the practice by stimulating research into technology, tools, institutional relationships, and analytical techniques that can facilitate and enable RTSMO.
- o Identify, encourage, and support research that seeks to develop integrated corridor management and control strategies that improve mobility across all systems and modes.

## **B. Review Of Committee's Activities During The Past Triennium:**

### TRB Critical Issues That Fall Under the Scope of RTSMO:

- o *Congestion mitigation* is a primary goal of improved regional transportation systems operations that will yield benefits with improved movement of people and goods via private vehicles, public transit and commercial carriers. RTSMO has expended considerable support and focus on the initiative to link planning and operations that strives to achieve improved land use coordination and collaboration with the transportation system and offer opportunities to improve the efficiency of existing systems in lieu of costly roadway capacity expansions.
- o Strategies for *emergency response and recovery* to large scale events such as natural disasters and terrorist strikes must be integrated into the regional management and operations of the transportation system.
- o *Energy* and *environmental* issues can be positively influenced through efficient and well coordinated regional transportation systems. Conservation of energy usage, reduction of carbon footprint, decreased emissions, etc. are all linked to the RTSMO mission and goals.
- o *Institutional* issues that result in fragmented responsibilities and sub-optimal system operations are an on-going challenge that RTSMO is striving to address.
- o Enhanced *safety* can be realized through optimal system-wide transportation operations that reduce driver frustrations, which often lead to unacceptable and dangerous behavior such as aggressive driving and road rage.

- o *Equity* issues involving transportation options for disadvantaged and older populations can be addressed through enhanced bus transit operations as part of an overall strategy to optimize regional transportation systems. Bus / transit modes are often the only choice for these populations and, to the extent operational efficiencies are realized, greater opportunities may be available. As an example, bus rapid transit that carries suburban commuters to downtown employment centers could also transport inner city workers to suburban employment opportunities on the return trip.

#### Committee Activities And Areas Of Interest:

- o The committee has promoted ongoing activities that include conducting paper reviews, sponsoring podium and poster sessions at the annual meeting, sponsoring workshops, defining needed research and ranking research problem statements, hosting presentations on current and emerging topics of interest at Committee sessions, and holding two sessions per year, with the mid-year meeting usually co-located with other committees or organizations having interests and activities that are complimentary with RTSMO's mission and goals.
- o Co-sponsored 2005 mid-year meeting with AASHTO Standing Committee on Planning, AASHTO Subcommittee on Systems Operations & Management (SSOM) and TRB Freeway Operations Committee. Agenda topics and sessions of mutual interest included the National Transportation Incident Management Coalition (NTIMC), National Transportation Operations Coalition (NTOC), linking planning and operations, data for operations and performance measurement, multi-jurisdictional operational challenges, etc.
- o Continued goal of liaison with other committees and organizations to maximize interaction with related committees dealing with planning, data and operations thru 2006 mid year meeting held at the North American Travel Monitoring Exposition and Conference (NATMEC) with the Urban Transportation Data & Information Systems Committee, Highway Traffic Monitoring Committee, the Travel Survey Methods Committee, the National Transportation Data Requirements Committee, and the Statewide Transportation Data & Information Systems Committee. The committee is committed to working with other TRB committees and organizations to support their efforts that address or could interact with Regional Operations and identify and fill in any gaps we can address within our structure.
  - Initiated a task to develop a Glossary of Regional Transportation Operations Terms.
  - Sponsored a Workshop on Sharing Data on Transportation System Operations.
  - Sponsored a Workshop on How To Coordinate Planning & Operations. The Workshop featured best practices and lessons learned from cities, states, MPOs, and transit authorities. Opportunities to better coordinate planning and operations were identified through use of statewide and regional planning data, ITS Regional Architecture, performance measures, and analysis tools.
- o To further communication and facilitate interaction among committee members, friends

and other TRB committees; the Communications & Outreach Sub-committee has established a RTSMO Committee web site at <http://rtsmo.cts.virginia.edu>. The web site was activated in 2007 with further development planned and/or underway. The website will warehouse presentations from RTSMO sponsored sessions and workshops to serve as a ready resource.

- o Addressing the RTSMO committee Strategic Direction was the focus of the 2007 mid year meeting thru a brainstorming exercise and group breakout sessions. The purpose was to refine the committee's goals, develop action items for the next 1 to 2 years, and set new task groups. Addendum No. 1 contains issues identified at that meeting, which will be the focus of many committee activities.

#### Committee Research Problem Statements:

The committee develops new Research Problem Statements and Synthesis Topics on an ongoing basis for publication and advancement for potential funding under the National Cooperative Highway Research Program (NCHRP). In August 2007, the Committee posted a Research Problem Statement entitled "Quantifying Benefits and Costs of Regional Transportation Systems Management and Operations." The Research Needs subcommittee works with other subcommittees, task forces and individual members to develop research needs/problem statements to advance the state of the practice in applying transportation systems management and operations strategies at the regional level. While the RTSMO Committee looks to NCHRP and other programs such as the Transit Cooperative Research Program (TCRP) and the Strategic Highway Research Programs (SHRP II) as the primary vehicles for performing research into topics identified by the committee and its members, the RTSMO Committee also recognizes that the TRB Research Needs Database provides an opportunity to inform a wide range of transportation stakeholders about research priorities. The Research Needs Database provides a resource for informing academicians and others of the research needs and priorities of the transportation industry.

#### C. Planned Activities In Next Triennium:

##### Justification For The Retention Of the Committee:

The RTSMO committee is a relatively new TRB committee whose work is evolving along with several relatively new national initiatives championed by FHWA, AASHTO, ITE, ITS-America, AMPO, and others. Its mission and goals speak directly to several of TRB's Critical Issues - Congestion, Emergencies, Energy & Environmental, Institutional, Safety, and Equity. One of the primary justifications for establishing RTSMO was to provide an overarching committee within the TRB community that could integrate and collaborate with the many existing committees that had some interest or core activity in promoting the operations component of transportation systems in a regional context. To that end, the committee strives to reach out and co-sponsor and co-locate mid year meetings, workshops, conferences, etc. The committee also identifies closely with the mission and goals of coalitions such as NTOC, NTMIC and NATMEC. The Chair of the RTSMO committee is a member of NTOC. The committee has set an ambitious agenda

for itself in pursuit of coordination, collaboration and leadership in promoting regional transportation systems operations that can add positive outcomes to TRB's identified critical issues.

Recommendation For Any Revisions To The Scope, Organization, Or Membership Of The Committee:

The current (1/2008) membership roster is at 18 allowing up to 7 additional appointments for full membership. The committee conducted an internal strategic direction workshop at its 2007 mid-year meeting, which will be utilized in the coming months to refine any needed changes to its scope, mission or organization.

Current committee organization:

Chairman - Dr. Walter H. Kraft

Secretary - Mac Lister

Permanent Sub-Committees:

- Communications & Outreach
- Paper Reviews
- Meetings
- Research Needs Problem Statements

Task Sub-Committees:

- Data & Operations
- Planning For Operations
- Multi-State Corridors
- Partnerships for Regional Operations
- Measuring & Quantifying Performance
- Regional Systems Engineering Approach To M&O
- Strategic Plan Update
- Glossary Update
- Freight

Committee Goals And Objectives For The Next Triennium:

The 2007 mid year meeting held at Woods Hole focused a day and a half on strategic direction for the committee. The products of that workshop (attached as Addendum No. 1) will be utilized in the near term to define and establish, as appropriate, new goals and objectives along with any identified refinement of the existing scope, mission, and goals. As a minimum, the Committee anticipates continuing progress in certain core initiatives for which it has organizational groups already underway as listed above.

The Data & Operations Sub-committee provides a focus for the Committee on research and approaches to activities such as measurement, quantification, analysis, coordination,

sharing, fusion, and retrieval of data and information about the operations and performance of regional transportation systems, including their typical use and variability in use. The Sub-committee has identified several goals under four categories - research, needs and requirements, education and training, and performance measurement.

The Planning For Operations Sub-committee is focused on engaging both the planning and operations communities to accomplish the following: 1) through collaboration, leading to research and assistance, enhance the planning and operations functions to improve and strengthen the key linkages that will be needed for effective transportation systems management and operations in the 21st. century and 2) through collaboration, leading to research and assistance, enhance the planning and decision-making process so that investments in operations provide regional benefit, when possible.

The Communications Sub-committee provides a forum for RTSMO Committee members to coordinate, review and communicate in between January and mid-year Committee meetings. Objectives for the sub-committee include:

- Maximize in-person committee meeting time by having periodic conference calls and updates on current Committee activities
- Establish an electronic forum (via Committee website, yahoo group or other means) where drafts can be posted and accessed.
- Keep RTSMO committee page updated with current membership, committee mission/vision, and subcommittee information
- Help maintain current web site established by Committee with meeting materials, materials for interim reviews, and other pertinent information or links
- Support outreach and definition of what the RTSMO does by providing a one-stop resource of Committee and Sub-committee activities.

The Performance Measurement Subcommittee supports activities of the full Committee, identifies research needs for performance measures that will illustrate the effectiveness of operations projects, summarize users of performance measure information, and identifies role of performance measures in benefit/cost analyses.

The Meeting Planning Sub-committee is responsible for organizing, with input from TRB staff, the meeting logistics for the mid-year and TRB annual meetings of the full committee. Every effort will be made to ensure that the meeting agendas are meaningful and effective with respect to accomplishing the overall mission of RTSMO. The meeting planning sub-committee will contact the chairs of the other sub-committees and RTSMO committee leadership to determine agenda items and other meeting needs. The sub-committee will also coordinate with other TRB Committees to arrange joint meetings when desired and/or appropriate. Mid-year meeting locations will be considered with respect to potential for site tours of interest to the committee, locations that provide opportunities for joint meetings with other communities and ease of travel for members.

The Strategic Planning Sub-committee facilitates discussions concerning appropriate changes to the RTSMO scope, mission and goals as appropriate to address TRB's critical issues and core mission, to identify new activities in response to evolving items and issues emanating

from other TRB committees and from the many external organizations and coalitions that RTSMO aligns with.

The Glossary Update Sub-committee was newly established this January to update and publish a draft document prepared by the committee in 2006. The purpose of this document is to define common terms for use in dealing with regional transportation systems management and operations.

The Freight Sub-committee was established this February to investigate the issues of freight within a regional context.

Planned Committee Activities:

- Sponsor a National Conference On Advancing Regional Operations. The conference objectives and overall purpose is to bring together representatives from various regional transportation and public safety stakeholder groups with national "thought" leaders to accomplish the following objectives:
  - Identify and document the opportunities, challenges, and benefits of various regional approaches to the operation of our transportation systems.
  - Formulate and document new and innovative approaches, programs, and models to regional operations that can be advanced to local, regional, and State agencies, including those involved with planning, traffic engineering, transit, public safety, planned special events, and emergency preparedness, and
  - Formulate and document a research and programmatic agenda that will enable Federal, State, and local agencies to advance the concepts and practices developed at the National Conference to actual practice.

The conference is proposed for early December 2008 in Washington, DC.

- Hold its 2008 mid year meeting in co-location with the Freeway Operations (AHB20) Committee and in conjunction with the Freeway and Tollway Operations Conference in Florida
- Produce a TRB Circular containing a Glossary of Terms associated with management and operations.
- Participate in peer reviews for FHWA, AASHTO, AMPO, NTOC and ITE on matters related to better coordination of management and operations at the Statewide and metropolitan levels.
- Actively promote Committee activities via peer exchange and/or web-cast(s).

Verification That The Committee's Research Problem Statements are Complete, Up To Date, And Posted:

The Committee has posted an initial Research Needs Statement, "Benefits and Costs of Regional Transportation Systems Management and Operations," on the TRB Research

Needs Database\* A Synthesis topic on best practices for outreach/communicate benefits of regional collaboration has been submitted, and additional research needs statements are under development.

---

\*

[http://rns.trb.org/advanced\\_project.asp?ddlType=RNS&orgType=S&status=&date\\_params=&lower\\_date=1900&upper\\_date=2099&sb=&so=a%3A%3AAscending&fl=k%3A%3AKeywords+%28Title+or+Description%29&t1=&selectOrgs=c&txtOrgs=AHB10%2C+Regional+Transportation+Systems+Management+and+Operations&sc=xx%3A%3AAll+Categories](http://rns.trb.org/advanced_project.asp?ddlType=RNS&orgType=S&status=&date_params=&lower_date=1900&upper_date=2099&sb=&so=a%3A%3AAscending&fl=k%3A%3AKeywords+%28Title+or+Description%29&t1=&selectOrgs=c&txtOrgs=AHB10%2C+Regional+Transportation+Systems+Management+and+Operations&sc=xx%3A%3AAll+Categories)