NCHRP 20-68A – "US Domestic Scan Program"

Scan 07-04 Best Practices in Regional, Multi-Agency Traffic Signal Operations Management

Description of Scan

Sustaining effective traffic signal coordination, both within and across jurisdictional boundaries, has proven to be a daunting task for an increasing number of transportation agencies responsible for the management and operation of traffic signal systems. An increasing number of agencies are realizing that a regional approach to managing and operating traffic signal systems may be a viable alternative to independently sustaining the funding and technical expertise that is essential to effectively managing a traffic signal program. Interestingly the challenges to regional traffic signal operations are typically not technical, but rather institutional.

Cross jurisdictional traffic signal coordination provides substantial benefits to the road user by establishing consistent signal operations across a region, as well as the typical reductions in travel time, stops, and delays. Transportation agencies responsible for the management and operation of traffic signals can also benefit from a regionalized approach to traffic signal management by pooling resources to provide ongoing and sustained staff training, development of signal timing plans, and performance of maintenance activities.

The purpose of this scan is to examine the cooperative agreements, organizational and institutional structures, programs, policies, and operational practices that have enabled agencies to successfully engage in regional traffic signal management programs. This scan will particularly address the interactions of agencies at local, regional, and state levels to ensure effective traffic operations and system maintenance.

Specific objectives of the scan:

- Examine the components of cooperative agreements that foster and enable regional traffic signal coordination and management.
- Examine if, and how, the regionalization of traffic signal coordination reduces travel time, stops, and delays on arterials that traverse multiple jurisdictions.
- Examine how the concept of regional traffic signal management and operations allows resource sharing and consistent operation of traffic signals.
- Examine certification and training needs of operations and maintenance staff involved in the effort.
- Explore the funding mechanisms in place to sustain regional traffic signal operations and how participating agencies contribute to management operations and maintenance expenses.
- Identify technical challenges to overcome and strategies to ensure the effective coordination of traffic signal timing across multiple jurisdictions.

This scan is expected to build a domestic network of knowledge and peer exchange to gain insight on the best practices, organizational structures, technologies, and lessons learned to catalyze the development of regional traffic signal management programs. This domestic scan will provide opportunities for stakeholders to share experience and knowledge in developing regional cooperative agreements, planning, design, implementation, maintenance, and operation of regional traffic signal systems.

Original Scan Proposal Title: Regional Traffic Signal Operations Domestic Scan – Operating Without Boundaries

Last Revised April 28, 2008

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Execution Schedule

Milestone	Anticipated Date
Chairs and Team Members Identified	April, 2009
Desk Scan Completed	Deferred
Prescan Meeting Held	Deferred
Scan Conducted	Deferred
Draft PowerPoint submitted by SME	Deferred
Draft Report Delivered to NCHRP and Panel	Deferred
Final Report Delivered to NCHRP	Deferred

Estimated Scan Cost and Funding

Estimated cost: and duration: $ 80,000; 2 week
Anticipated Fund from FHWA : $ 25,000

Last Revised July 17, 2009