



I-95 CORRIDOR COALITION

SCOPE OF WORK FORM

Project Title: Mid-Atlantic Truck (MATOps) Study

Project Code: 3-14-5-F

Coalition Funding Amount:

Program Track: 5 (Intermodal Movement of People and Goods)

Program Year: 14

SECTION A – BACKGROUND

Introduction

Between 1970 and 2004, the population of the Coalition region increased by over 30 million or 38 percent. The New York-Northern New Jersey metro area alone grew by 1.6 million while the Washington-Baltimore region added nearly a million new residents. With this population growth have come increased economic activity and increased traffic. A greater percentage of the region's population is taking more frequent and longer trips, and over three-quarters of the additional trips are by truck and car on the region's highway system. Annual vehicle miles of travel (VMT) within the region have increased by 140 percent since 1970 and now exceed 550 billion VMT annually. Truck ton-miles of travel in 1997 exceeded 195 billion ton miles, accounting for over 70 percent of all ton-miles of freight transportation in the Coalition region. (A ton of freight moved one mile is counted as one ton-mile.) The increased use of East Coast ports by shippers importing goods from Asia have also added to the demand for better freight and truck transportation services. The

additional traffic is straining the region's highway capacity, which has not expanded to keep pace with economic and population growth.

The result has been considerable congestion and delays to automobiles and truck traffic, with potentially significant impacts on the region's air quality and natural environment. Delays to trucks are of particular concern to the region because the region's economy is highly dependent on reliable and cost-effective truck-freight transportation. Truck delays add to the cost of freight shipments, increasing the cost of doing business in the region and the cost of living. The delays come at a time when shippers and receivers are putting more pressure on motor carriers to reduce shipment costs and improve service to support fast-cycle, on-demand supply chains.

State departments of transportation and the U.S. Department of Transportation (DOT) are aware of the problem and recognize that effective solutions will require coordinated and collaborative action by both the public and private sectors. In an effort to bring together public and private stakeholders around a common vision, the U.S. DOT has proposed a *Framework for a National Freight Policy*. The framework lays out a vision and objectives for the freight transportation system, then outlines strategies and tactics that public and private sector stakeholders can pursue to achieve them. Two of the key elements of this framework are to ***improve management and operations of existing facilities by focusing on bottlenecks***; and to ***identify potential institutional changes and arrangements to improve freight operations***.

To address these two objectives, six Mid-Atlantic states (Delaware, Maryland, New York, New Jersey, Pennsylvania, and Virginia), in cooperation with local, regional and national motor carriers, have come together to work on this Mid-Atlantic Truck Operations Study (MATOps). The objective of the study is to identify major highway freight bottlenecks affecting the performance of the Coalition region's highway system, and develop solutions—especially funding and institutional approaches—that will reduce congestion, delays, and costs to truck-freight transportation and the region's economy. By identifying and evaluating common system-wide issues across jurisdictional boundaries, this study will lay the groundwork for managing system capacity across modes, enhancing existing and building new institutional relationships, and developing system-level priorities and programs for making improvements. The study also complements and builds upon several key initiatives of the I-95 Corridor Coalition, including the Regional Bottlenecks Study, which was funded in the Coalition's Year 13 work plan and will lay the groundwork for understanding freight and passenger movements on the region's highway system; and ICAT (Integrated Corridor Analysis Tool), which will be a key tool to understand and display the impacts of these bottlenecks on system operations.

Objective

The objective of MATOps is to identify and analyze key bottlenecks causing delays to trucks traveling on the Mid-Atlantic region's highway system and develop a consensus-based approach for addressing them.

Approach

The approach to this project is modeled on the approach to the Coalition's prior Mid-Atlantic Rail Operations (MAROps) study in which five states and three railroads identified major regional rail choke points and established priorities for improving them. The project will:

- Identify the key highway freight bottlenecks;
- Estimate the truck hours of delay and safety impacts they cause;
- Trace those delays back through industry supply chains to identify their probable impacts on carrier productivity and businesses operations;
- Outline a system-level program of improvements to reduce the delays and costs associated with truck bottlenecks in the Coalition region; and
- Develop institutional and funding approaches that will allow the states and the private sector to set priorities for the improvements and marshal funding to implement the solutions.

The MATOps study will engage key regional highway freight system stakeholders (state DOTs, MPOs, economic development agencies, and ports; and motor carriers, state and national motor carriers associations, shippers, and receivers) to guide the direction and focus of the study. Although the focus of this study is on longer distance and regional trips, roadway improvements are made on the local level. Therefore, it is important to involve both state DOT and MPO representatives on the steering committee. The larger stakeholder group will help the project team identify highway truck bottlenecks and assess their significance to business; and help validate key transportation, supply chain, and business trends that are affecting freight transportation and the trucking industry in the Mid-Atlantic region. The stakeholder group will also help sustain a continuing dialogue between the public and private sector in the region, and encourage public-private and multi-jurisdictional cooperation on trucking-related issues in the region.

For the purposes of this study, the project team will assume a roadway-based definition of a bottleneck, the causes of which are either a capacity reduction (due to lane drops, grades, curves, lateral clearances, etc.) or a level of demand that the given capacity cannot meet (due to merging, diverging, weaving, etc.). The project team will utilize a classification system, with three types of causal-based bottlenecks:

- Type I: Demand surge, no capacity reduction
- Type II: Capacity reduction, no demand surge
- Type III: Combined demand surge and capacity reduction

SECTION B – TASKS AND DELIVERABLES

Task 1: Convene Steering Committee

Task 1 Description

The objective of this task is to identify the trucking and freight transportation stakeholders in the region and assemble a project steering committee. The task will start with the recruitment of volunteers from the Mid-Atlantic state DOTs and MPOs. Once the state representatives are identified, the project team will work with this group to identify appropriate representatives from economic development agencies, turnpike authorities, ports, motor carriers, state and national motor carriers associations, shippers, and receivers. This additional group will serve as the stakeholder committee, and be asked to provide their perspectives as well as review and comment on key documents throughout the process.

Task 1 Deliverables

MATOps steering committee; description of the committee's role and responsibilities; and a schedule of steering committee meetings.

Task 2: Review bottlenecks and planned improvements affecting truck operations

Task 2 Description

We will begin the review by drawing on the Regional Bottlenecks Study being conducted by the Coalition as part of the Coalition's Year 13 work plan. We anticipate that the Regional Bottlenecks Study will identify the key highway freight bottlenecks; estimate the truck hours of delay and safety impacts they cause; and give us preliminary insight into the effects of those bottlenecks on commodity flows and supply chains. In addition, we will investigate the use of American Transportation Research Institute (ATRI)/FHWA truck travel time data derived from Qualcomm vehicle positioning (GPS locations in time and space, mapped to the highway network). These data are useful for looking at long-distance truck trips and the problems trucks encounter by time of day. The data also provide a basis for monitoring ongoing changes in performance in the Corridor. The data also provide a basis for monitoring ongoing changes in performance in the Corridor. If the ATRI data allows for the measurement of higher quality delay estimates than would be possible with other available delay modeling techniques, then we will purchase data for the most severely impacted truck bottlenecks in the region.

Once the quantitative analysis is complete, we will solicit information from the state DOTs regarding the bottleneck locations, including any technical studies of delay and impacts as well as planned improvements. Working with the steering committee, we will highlight the bottlenecks that most severely impact movements on the region's highway system. We will then investigate whether any capital or operating improvements have been planned that will affect the future performance of the bottlenecks. The final focus of the task will be to assemble the information to provide a system-level view of highway freight bottlenecks.

Task 2 Deliverables

Technical memorandum listing, describing, and mapping major highway bottlenecks affecting freight truck traffic and any planned improvements to the bottlenecks.

Task 3: Describe truck trips, commodity flows, and supply chain patterns through these bottlenecks.

Task 3 Description

Task 2 will identify the bottlenecks and provide information about the number of trucks caught up the bottlenecks and the truck hours of delay accumulated by these trucks. It will provide us with a highway system perspective of the bottlenecks, answering questions about the number, location, magnitude and duration of the bottlenecks. Task 3 task will build a picture of the bottlenecks from the perspective of the motor carriers and shippers, answering questions about the number of bottlenecks encountered during a truck trip, the impact of the cumulative delay on trip reliability and shipper supply chains, etc. To do this, we will use available information on truck travel patterns, commodity flow patterns, and economic activity. When applicable, we will utilize mapping tools (e.g. Google Maps) to identify key bottlenecks. We will supplement this information with available information on economic development trends, trade patterns, and supply chain practices. We will then use telephone or in-person interviews with steering committee members and others that they recommend to build a picture of how truck trips, commodity flows, and supply chain patterns are affected by bottlenecks and how carriers and shippers adjust to them. As part of this task, a sensitivity analysis will be performed to examine the potential impact of changing truck travel patterns so they do not arrive at the bottlenecks during congested times. This will explore the potential value of demand management and travel information strategies may have on bottleneck performance.

This task will not provide a detailed and definitive picture of all truck operations and supply chains across the Coalition region. It will, however, describe the major patterns and develop an approach

that can be applied in more detail in future studies or be adapted by the states and the private sector in developing solutions to bottlenecks.

Task 3 Deliverables

Technical memo summarizing the findings and conclusions about truck trips, commodity flows, and supply chain patterns through the major truck bottlenecks.

Task 4: Outline a system-level program of bottleneck improvements to reduce the delays and costs associated with highway bottlenecks in the Coalition region.

Task 4 Description

Working with the steering committee and other interested stakeholders, we will outline a system-level program of bottleneck improvements to reduce the delays and costs associated with highway bottlenecks in the Mid-Atlantic region. The program will be based on the best professional judgment of the participants, and the suggested priorities and phasing of the improvements will reflect the steering committee's consensus on the relative benefits and costs of the improvements. We will make as much use as possible of available quantitative and qualitative information on the benefits, costs, and risks of improving the bottlenecks. In developing improvements we will consider capital, operating, pricing, and regulatory strategies, looking for policy and program packages that will most effectively address the needs of the states, carriers, and businesses. Where possible, we will identify how the benefits, cost, and risk might be allocated among states, MPOs, carriers, and shippers and which might take the leadership in funding and implementing the improvements.

Task 4 Deliverables

Technical memorandum outlining a phased and prioritized program improvements, with basic information on the benefits, costs, and risks of each; the jurisdictions and other parties affected; and suggested roles and responsibilities for further development of the program.

Task 5: Develop institutional and funding approaches that will allow the states and the private sector to set priorities for the improvements and marshal funding to implement the solutions.

Task 5 Description

In parallel with Task 4, we will develop institutional and funding approaches that will allow the states and the private sector to set priorities for the improvements, utilize incentive or other voluntary programs, and marshal funding to implement the solutions. We will build on the lessons learned from the MAROps program; current work by NASTO and AASHTO on national and regional highway programs and policies; the Coalition's Multi-State Financing Forum; the U.S. DOT's proposed Corridors of the Future Program; and on-going work by the Federal Highway Administration's Office of Freight and the Office of Operations.

Task 5 Deliverables

Technical memorandum summarizing the findings, conclusions, and recommendations regarding appropriate institutional and financing mechanisms for making improvements to major truck bottlenecks.

Task 6: Produce draft and final reports

Task 6 Description

Under this task, we will produce a draft and final report for the project, summarizing the objective, approach, findings, conclusions, and recommendations of the study. The report will include an executive summary, a technical report, and a Powerpoint presentation that can be adapted for use before general or technical audiences. A draft report will be compiled and then provided to the steering committee and stakeholders for comments. Comments will be incorporated, and the report will be finalized.

Task 6 Deliverables

Draft and final reports.

SECTION D - SCHEDULE

This project is scheduled to last 10 months, from March 1, 2007 to December 31, 2007.

Project Scope of Work Approval

The Project Management Team for all projects consists of a Project Coordinator/Manager, Coalition Staff, Program Track Lead(s), and consultant(s). Projects are performed either through

the competitively procured consultant contract or through Coalition Member Agencies. Scopes are developed in the following manner:

Projects performed by Coalition Consultants: The assigned Coalition Consultant under the supervision of Coalition Staff will prepare the scope of work for the project. Coalition Staff will ensure coordination with both the Project Coordinator/Manager and Program Track Lead(s). The levels of scope approval include: the Project Coordinator/Manager, Consultant Staff in consultation with Program Track Lead(s), and Consultant Team Program Manager.

Projects performed through Member Agencies: The Project Coordinator/Manager will prepare the scope in consultation with the Member Agency and Coalition Staff. Coalition Staff will coordinate with Program Track Lead(s). The levels of scope approval include: the Project Coordinator/Manager and Coalition Staff in consultation with Program Track Lead(s).

The Coalition Staff approval is the final step in the approval process for all projects and signifies that all required Project Staff have approved of the scope of work.

The Project Manager/Coordinator, Coalition Staff, and Consultant Program Track Lead will retain copies of the executed version of this form as part of the official project records.

Project Manager Submittal

I have prepared the attached scope of work that is hereby submitted for approval of the Consulting Team Program Track Lead (consulting team projects)/Member Agency Point of Contact (member agency sponsored projects) and Coalition Staff Contact.

Signature

Date

Consulting Team Program Track Lead Approval (For Consulting Team projects only)

I have reviewed and approved the attached scope of work and hereby submit it for the approval of the Consulting Team Program Manager.

Signature

Date

Consulting Team Program Manager Approval (For Consulting Team projects only)

I have reviewed and approved the attached scope of work and hereby submit it for the approval of the Coalition Staff Contact.

Signature

Date

Sponsoring Agency Point of Contact Approval (For Member Agency hosted projects only)

I have reviewed and approved the attached scope of work and hereby submit it for the approval of the Coalition Staff Contact.

Signature

Date

Coalition Staff Contact Final Approval

I have reviewed and approved the attached scope of work.

Signature

Date
