

**PROGRAM PLAN
SAMPLE PROJECT SUMMARIES
FOR THE
METROPOLITAN WASHINGTON
MANAGEMENT, OPERATIONS, AND
INTELLIGENT TRANSPORTATION SYSTEMS
(MOITS) PLANNING PROGRAM**

WORKING DRAFT

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

Draft 0.4

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Project Name: Define a Regional Concept of Operations for Data Warehouse

Estimated Start Date: 1/14/11

Estimated Duration: 6 months

Estimated Budget: \$300,000

Project Description:

This project will investigate and document the concept of operations for a Regional ITS Data Warehouse in the Metropolitan Washington Region. The project shall include a description of how the Data Warehouse should operate, and identify specific user needs for collecting, storing, and querying region-wide traffic and transit information. The project will also investigate and document the existing systems and mechanisms to capture this information today, identify regional gaps in data, provide recommended actions for member agencies to consider for improving regional data, and identify potential impacts this new system will have on existing procedures and systems. The project shall also identify what party should be responsible for hosting and operating the Data Warehouse and also develop a written security policy for the Data Warehouse.

The documentation produced by this project should conform to industry best practices and follow a widely recognized outline format for Concepts of Operations such as IEEE 1362.

Project Name: Document Regional System, Data, and Meta-data Requirements

Estimated Start Date: 7/1/11

Estimated Duration: 6 months

Estimated Budget: \$300,000

Project Description:

This project will translate the information contained in the Concept of Operations into specific measurable requirements for Regional ITS the Data Warehouse. The requirements will include requirements for the system (e.g., capabilities, performance, etc.), requirements for the data to be stored by the system (i.e., the primary parameters of interest in the data warehouse, such as speed, volume, etc.), and the requirements for the meta-data to be stored by the system (i.e., information about the actual data recorded, such as the time the data was collected, the technology used to collect the information, etc.)

All requirements will be documented according to industry best practices. This includes using widely recognized outlines for the system requirements, such as IEEE 1233, and widely accepted data formats such as the TMDD, ADMS, and ISO 14817 as well as ensuring that all requirements are properly traced to user needs as identified in the Concept of Operations.

This project will also update the Concept of Operations to ensure that the Concept of Operations is kept up-to-date as the project progresses forward.

Project Name: Develop Model Agreements for 3rd Party Use of Data

Estimated Start Date: 12/16/11

Estimated Duration: 4 months

Estimated Budget: \$ 0.00

Project Description:

Several agencies within the metropolitan region have entered into agreements with third parties for the acquisition of certain data. The terms of these agreements are usually negotiated between the data provided and the individual agency without allowing sufficient time for the agency to consider the full impact the agreement may have on regional projects. This project will develop a model agreement for these agencies to use when entering into these negotiations.

Each clause of the model agreement will be traced to the logic used to derive the clause and accompanied with a full explanation of the impacts that would result if the clause were removed.

This project shall be performed by public sector staff and has zero dollars allocated against this project. Funding for the project shall come from the existing staff time for the agency staff.

Project Name: Document Regional Design Guidelines

Estimated Start Date: 3/10/12

Estimated Duration: 5 months

Estimated Budget: \$ 200,000

Project Description:

The key to a successful data warehouse is to minimize variability in how data is collected and managed. This project will investigate how each agency currently collects and plans to collect the data to be stored in the data warehouse and will highlight differences that may lead to complications in data comparisons.

For each difference, the project team will investigate possible approaches to mitigate the problem. The team will document all options considered and will work with the regional agencies to develop and document the recommended solution to addressing the problem.

These recommended solutions shall become the regional design guidelines for agencies to follow when deploying transportation technologies that provide data to the Regional ITS Data Warehouse.

Project Name: Tailor Regional ITS and TMC Standards for Data Warehouse

Estimated Start Date: 4/5/13

Estimated Duration: 5 months

Estimated Budget: \$ 120,000

Project Description:

The FHWA has funded the development of several ITS Standards; however, these standards do not yet provide a complete long-term inter-operable solution for system interfaces. Many of these standards must be constrained to those features needed for a region, tailored to meet unique local conditions, and refined to support proper version control among systems.

This project will consider the unique needs of the data warehouse as identified in the requirements and the Concept of Operations and will specify the preferred standards-based interface for the data warehouse. While this document will be based on the various ITS standards, it will extend code lists to accommodate local needs and will ensure that all messages conform to XML-industry best practices for messaging, including proper version control structures to allow maximum interoperability with future versions of this specification.

Project Name: Upgrade RITIS to Data Warehouse

Estimated Start Date: 8/23/13

Estimated Duration: 6 months

Estimated Budget: \$ 300,000

Project Description:

Once there is consensus on a concept of operations, a set of formal requirements, and the data to be exchanged; the region will be able to implement the vision for a regional ITS data warehouse. Given that the Regional Integrated Transportation Information System (RITIS) already collects much of the information that would be needed within a data warehouse, it is envisioned that the data warehouse would be realized by upgrading RITIS to support these new features. While other options may exist, the preliminary budget and schedule estimates are based upon this assumption.

This project develops the upgraded system design, implements that design for expanding RITIS into the regional ITS data warehouse, and tests the resulting system against the requirements identified for the Regional ITS Data Warehouse by previous projects.

Project Name: Operate and Maintain the Data Warehouse

Estimated Start Date: 2/7/14

Estimated Duration: 26 months

Estimated Budget: \$ 800,000

Project Description:

A data warehouse will need constant maintenance support to ensure that the system is reliable. This support will include normal operations and maintenance activities such as making backups of the data, maintenance of the operating system, etc. The activities also include supporting evolving software development needs of the data warehouse and applications or systems attached to it.

Project Name: Develop Regional Transportation Management Plans for Major Events

Estimated Start Date: 4/8/11

Estimated Duration: 12 months

Estimated Budget: \$ 450,000

Project Description:

Major events can significantly disrupt traffic patterns and agencies should plan in advance to mitigate the impacts of such events, whether they are planned events (e.g., inauguration, sporting events, Christmas shopping, etc.) or unplanned events (e.g., hazmat spill, terrorist attack, etc).

Many of these events will require the coordination of activities of multiple jurisdictions. This project will identify a list of the 10 highest priority regional events and develop regional transportation management plans for each of these events.

Project Name: Develop the Concept of Operations for Multi-Modal Coordination

Estimated Start Date: 9/23/11

Estimated Duration: 5 months

Estimated Budget: \$ 75,000

Project Description:

This project will investigate and document how the various regional agencies envision using multi-modal information to enhance the performance of their own systems. The documentation produced by this project should conform to industry best practices and follow a widely recognized outline format for Concepts of Operations such as IEEE 1362.

Project Name: Tailor ITS Standards to Meet Regional Needs in Multi-Modal Coordination

Estimated Start Date: 2/10/12

Estimated Duration: 4 months

Estimated Budget: \$ 50,000

Project Description:

Based on the defined concept of operation, this project will identify the preferred standards-based interface for multi-modal coordination. While this document will be based on the various ITS standards, it will extend code lists to accommodate local needs and will ensure that all messages conform to XML-industry best practices for messaging, including proper version control structures to allow maximum interoperability with future versions of this specification.

Project Name: Explore and Analyze Integration of Real-time Traffic and Transit Data into Trip Planning Applications

Estimated Start Date: 6/2/12

Estimated Duration: 3 months

Estimated Budget: \$ 50,000

Project Description:

This project will investigate the viability of creating an agency-maintained, web-based, trip planning application that integrates real-time data from all regional transportation agencies into a seamless interface. The goal of such an effort would be to provide the public with a reliable tool that could be used to determine the best travel option based on real-time conditions. The challenge in such a project would be the effort required to integrate the number of different data sources. This project will investigate how feasible such a project might be.

Project Name: Export Real-time AVL Data from WMATA

Estimated Start Date: 6/2/12

Estimated Duration: 6 months

Estimated Budget: \$ 187,500

Project Description: This project exports Automated Vehicle Location data for WMATA buses from WMATA's Transit Management Center to Traffic Management Centers in the region.

Project Name: Export Real-time AVL Data from Other Transit Agencies

Estimated Start Date: 6/2/12

Estimated Duration: 6 months

Estimated Budget: \$ 120,000

Project Description: This project exports Automated Vehicle Location data for buses associated with any non-WMATA transit agency from their Transit Management Center to Traffic Management Centers in the region.

Project Name: Develop Multi-modal Regional Trip Planning Tool

Estimated Start Date: 6/2/12

Estimated Duration: 6 months

Estimated Budget: \$ 150,000

Project Description:

Project Name: Develop Venue for Joint Traffic/Transit Operations Planning

Estimated Start Date: 1/14/11

Estimated Duration: 1 month

Estimated Budget: \$ 0.00

Project Description: This project uses public sector staff time to plan and develop a venue for joint traffic and transit operations planning. The results of the project are a series of planning meetings to coordinate traffic and transit operations.

Project Name: Develop Regional Traffic Signal Priority Plan

Estimated Start Date: 1/14/11

Estimated Duration: 12 months

Estimated Budget: \$ 75,000

Project Description:

Traffic signal priority has been shown to improve the travel time reliability for busses; however, there are financial and congestion costs associated with installing and operating these systems. This project will evaluate the major routes in the metropolitan area to determine a prioritized list of locations where traffic signal priority might offer the greatest benefits with acceptable impacts to other traffic.

Project Name: Determine Roles and Responsibilities of Public Sector in ATIS

Estimated Start Date: 1/14/11

Estimated Duration: 3 months

Estimated Budget: \$ 0.00

Project Description:

The public sector agencies will meet to determine their roles in providing traveler information. Issues to be addressed include:

- Determining what sort of 511 service should be provided to the metropolitan region and
- Determining the extent to which the agencies should provide user-friendly traveler information directly to the public versus providing raw data to others so that they can develop the user-friendly interfaces for the public.

Project Name: Enhance Regional Travel Time Determination

Estimated Start Date: 4/8/11

Estimated Duration: 9 months

Estimated Budget: \$ 50,000

Project Description: This project examines what algorithms should be used in calculating regional travel times and also examines what additional data or information is required to enhance the reliability and accuracy of the travel time calculation.

Project Name: Tailor ITS Standards for Regional Needs in ATIS, Operations and Traffic Management

Estimated Start Date: 8/25/12

Estimated Duration: 8 months

Estimated Budget: \$ 150,000

Project Description:

The FHWA has funded the development of several ITS Standards; however, these standards do not yet provide a complete long-term inter-operable solution for system interfaces. Many of these standards must be constrained to those features needed for a region, tailored to meet unique local conditions, and refined to support proper version control among systems.

This project will consider the unique needs of the region as related to ATIS, operations, and traffic management. The project will then specify the preferred standards-based interface to meet these needs. While this document will be based on the various ITS standards, it will extend code lists to accommodate local needs and will ensure that all messages conform to XML-industry best practices for messaging, including proper version control structures to allow maximum interoperability with future versions of this specification.

Project Name: Develop MATOC Alerts to Media

Estimated Start Date: 4/30/16

Estimated Duration: 1 month

Estimated Budget: \$ 0.00

Project Description:

This project defines, develops, and deploys a traffic alert system for communicating real-time traffic alerts from MATOC to regional media outlets. The project uses public sector staff time to define and develop the alert system. The system could be as simple as sending fax messages or e-mails from MATOC staff to media outlets or as complex as setting up media outlets with computer systems to share MATOC information.

Project Name: Develop RITIS into Regional ATIS Data Engine

Estimated Start Date: 12/16/11

Estimated Duration: 6 months

Estimated Budget: \$ 150,000

Project Description: This project expands the functionality of RITIS into a regional ATIS data engine. The project defines and implements new capabilities that transform RITIS into the regional data warehouse.

Project Name: Provide Data Feeds to 3rd Parties and Encourage Application Development

Estimated Start Date: 6/2/12

Estimated Duration: 3 months

Estimated Budget: \$ 10,000

Project Description:

This project provides a data feed from the regional ITS data warehouse to any interested third party that wants to use the data for traveler information applications. The project defines and documents the interface to the regional data warehouse and implements the interface.

Project Name: Provide Regional Congestion Map

Estimated Start Date: 6/2/12

Estimated Duration: 3 months

Estimated Budget: \$ 50,000

Project Description:

This project develops a regional traffic congestion map based upon current traffic conditions. The congestion map shall be made available to the public as a part of the web site of participating agencies.

Project Name: Provide Electronic MATOC Alerts to Public

Estimated Start Date: 6/2/12

Estimated Duration: 3 months

Estimated Budget: \$ 50,000

Project Description:

This project creates an electronic or e-mail based traffic alert system for sending traffic alerts to members of the general public. This system is similar to the emergency alert service already implemented by a number of member agencies in the region.

Project Name: Develop Regional Managed Lane Network Plan

Estimated Start Date: 1/14/11

Estimated Duration: 9 months

Estimated Budget: \$ 75,000

Project Description:

The Metropolitan Washington region has managed lanes on several of its major interstates and these facilities will be expanding in the near future with the introduction of HOT lanes on a portion of I-495. Interestingly, most of the managed lane systems used in the metropolitan area use a unique design and operate according to different rules. The variety of rules for using these lanes is likely to lead to confused drivers and it is well known that driver confusion can result in increased accidents. This problem is likely to get worse as more managed lanes are deployed over time.

This project will begin to develop a region-wide plan for how the various managed lanes can be operated and advertised to minimize driver confusion. The project team will work with the operating agencies to determine what operational changes might be acceptable while also investigating the state-of-the-art in advertising managed lane rules and transitions between sections with different rules.

Project Name: Evaluate I-495 HOT Lanes Project

Estimated Start Date: 9/23/11

Estimated Duration: 3 months

Estimated Budget: \$ 0.00

Project Description:

The I-495 HOT lanes project will be the first congestion-priced managed lane facility in the region and is expected to use state-of-the-art technology to determine vehicle occupancy. This project will evaluate the success of this project using a number of metrics, including the impact on travel times for managed lanes and unmanaged lanes, determining the level of acceptance of the congestion-pricing concept by the public, and determining the accuracy of the vehicle occupancy sensors.

Project Name: Develop regional managed lanes operational coordination process

Estimated Start Date: 12/16/11

Estimated Duration: 5 months

Estimated Budget: \$ 0.00

Project Description:

This project uses public sector staff time to define and develop a coordination process for operational practices related to managed lanes operations. At the current time, managed lanes are operated on a per agency basis. In the very near future, coordination across jurisdictional boundaries will need to occur. This project defines and develops the framework for regional coordination for managed lanes operations.

Project Name: Establish Regional Performance Goals for Traffic Management

Estimated Start Date: 7/1/10

Estimated Duration: 3 months

Estimated Budget: \$ 25,000

Project Description:

This project established regional performance goals for traffic management in the region. The performance goals are based upon the regional vision of the TPB and will be used to quantify how well the region is meeting traffic management needs.

Project Name: Signal Optimization Along Regional Corridors

Estimated Start Date: 9/23/10

Estimated Duration: 12 months

Estimated Budget: \$ 0.00

Project Description:

This project performs signal optimization along four regional corridors. The project assumes that each corridor will require 3 months to optimize. The corridors shall be defined by the participating stakeholders and assumes that public sector staff time shall be used to perform the optimization.

Project Name: Development of Regional Standard Operating Procedures

Estimated Start Date: 8/25/11

Estimated Duration: 6 months

Estimated Budget: \$ 75,000

Project Description:

This project develops regional standard operating procedures for dealing with traffic conditions and incidents that are regional in scope.

Project Name: Deploy ICM Technologies

Estimated Start Date: 9/20/12

Estimated Duration: 2 years

Estimated Budget: \$ 0.00

Project Description:

This project uses existing resources within the participating agencies to deploy Integrated Corridor Technologies along major corridors in the region. Each deployment would occur under the owning agency's jurisdiction with project status and results shared among all regional partners.

Project Name: Connect TMS via Reliable Communications Media

Estimated Start Date: 9/20/12

Estimated Duration: 2 years

Estimated Budget: \$ 3,000,000

Project Description:

This project deploys a dedicated, secure, and reliable communications media among the participating traffic and transit management centers. The purpose of the project is to assure that regional information can be shared in an environment where normal communications has been adversely affect.

Project Name: MATOC Operations and Expansion

Estimated Start Date: 9/20/12

Estimated Duration: 3 years

Estimated Budget: \$ 4,500,000

Project Description:

This project continues the regional coordination activities associated with MATOC. It also takes advantage of recent advances in the regional capabilities to enhance MATOC operations.

NOTE: check the budget on this project with andy

Project Name: Tailor ITS Standards for Regional Parking Needs

Estimated Start Date: 9/20/12

Estimated Duration: 3 months

Estimated Budget: \$ 25,000

Project Description:

The FHWA has funded the development of several ITS Standards; however, these standards do not yet provide a complete long-term inter-operable solution for system interfaces. Many of these standards must be constrained to those features needed for a region, tailored to meet unique local conditions, and refined to support proper version control among systems.

This project will consider the unique needs of the region as related to regional parking needs. The project will then specify the preferred standards-based interface to meet these needs. While this document will be based on the various ITS standards, it will extend code lists to accommodate local needs and will ensure that all messages conform to XML-industry best practices for messaging, including proper version control structures to allow maximum interoperability with future versions of this specification.

Project Name: Develop Regional Parking Lot Database

Estimated Start Date: 12/13/12

Estimated Duration: 4 months

Estimated Budget: \$ 25,000

Project Description:

This project uses the results of previous projects to develop a regional parking lot database. This database identifies the location, capacity, and detailed characteristics of all park and ride parking lots and associated commuter parking lots throughout the region.

Project Name: RT Parking Management at Selected Metro Stations

Estimated Start Date: 4/4/13

Estimated Duration: 18 months

Estimated Budget: \$ 1,800,000

Project Description:

This project performs real-time parking management at selected Metro stations by taking the parking lot information and identifying how many parking spaces are available at various locations. This information is then distributed to the public via Variable Message Signs and traveler information outlets.

Project Name: Working Group to Harmonize Regional Payment Options

Estimated Start Date: 8/21/14

Estimated Duration: 1 month

Estimated Budget: \$ 0.00

Project Description:

This project uses public sector staff time to develop a working group that will seek to harmonize regional payment options for transportation services. Under the current approach, traveler may end up using multiple payment options to pay for specific services (eg parking, metro fair, toll roads). This working group will seek to harmonize the payment options across the region and reduce the difficulty that traveler encounter when paying for transportation services.

Project Name: Semi Annual Summit for M&C Activities

Estimated Start Date: 9/23/10

Estimated Duration: 3 years

Estimated Budget: \$ 0.00

Project Description:

This project uses public sector staff time to develop and execute semi annual summits related to maintenance and construction activities for the next three years. Each year, a summit shall be held in March and September to coordinate upcoming maintenance and construction activities.

Project Name: Analysis of need information to coordinate M&C activities

Estimated Start Date: 7/1/10

Estimated Duration: 3 months

Estimated Budget: \$ 35,000

Project Description:

This project performs an analysis of the available and required information for coordinating maintenance and construction activities.

Project Name: Develop Tool for sharing M&C Information

Estimated Start Date: 9/5/13

Estimated Duration: 9 months

Estimated Budget: \$250,000

Project Description:

This project develops a data sharing tool for sharing maintenance and construction information among regional stakeholders. DESCRIBE DETAILS of PROJECT

Project Name: Integration of M&C Activities into Regional Planning & Operations

Estimated Start Date: 5/5/14

Estimated Duration: 3 months

Estimated Budget: \$ 0.00

Project Description:

This project uses public sector staff time to integrate more closely the regional maintenance and construction coordination results from the M&C summit into the region's planning and operations activities.