Memorandum

To: Ann Hartell, TRB

From: Project Team, NCHRP 03-131

Date: May 29, 2020

Re: Implementation of Research Findings and Products

# Summary of Project

Integrated corridor management (ICM) takes an integrated, multimodal/multiagency approach to congestion management. Rather than address the shortcomings of the separate roadways and modes in isolation, ICM treats the individual transportation components (highways and roads, transit, parking lots, bicycle and pedestrian trails, etc.) as elements of an interrelated transportation corridor. ICM uses technology and operational strategies as tools for transportation operators to address recurring and non-recurring congestion, and optimizes performance of the transportation infrastructure. ICM promotes interjurisdictional coordination and the use of a broad toolbox of transportation system management and operations (TSMO) strategies to optimally detect, monitor, and respond to events and changing conditions. General benefits of ICM include improved mobility, reliability, and safety, and reductions in fuel consumption and fuel emissions.

Building on fundamental concepts dating back nearly 15 years, including the deployment of two model demonstrations in Dallas and San Diego, ICM projects are being planned and implemented on a range of corridors across North America. To support the growing interest and activity in ICM, Project 03-131 produced a comprehensive guidebook to assist state, regional, and local practitioners in planning, developing, implementing, deploying, and operating ICM solutions. This synthesis report – which seeks to identify key ICM foundational elements, scalable methodologies, and best-practices to be covered in the final guidance document – draws upon existing publications, real-world planning and deployment activities, ongoing research, and the relevant experiences, insights, and expertise of the research team.

The objective of this research was to develop guidance for agencies planning and implementing multimodal, integrated corridor management. The guidance features multiple real-world examples drawn from a variety of contexts and an appropriate range of agency capabilities.

# Summary of Findings

This report provides an overview of current recommended practices for the planning, design and development, and operations and maintenance of an ICM system. This guidance document outlines information in several areas considered critical for planning, developing, implementing, and operating & maintaining an ICM system.

The study team collected the information in this report through literature searches on existing ICM research, ICM deployments, ICM planning grants, and the tools used in the development of ICM in the transportation industry, and other resources for transportation agencies (e.g., the Federal Highway Administration [FHWA] ITS Program).

The intended audience of the research products is public agency staff, academia, and contractors involved in planning, designing, implementing, maintaining, managing, and operating integrated corridor management systems to improve the operations of their transportation networks in a more multi-agency, multi-modal approach. This document should allow readers to gain a further appreciation of how ICM planning fits into the current planning process, some of the key lessons learned from other metropolitan areas who have planned and, in some cases, implemented ICM systems. Readers are assumed to have a general awareness of intelligent transportation system (ITS) technologies and transportation management principles.

# Research Products

1. Guidebook
* The Guidebook provides an overview of ICM, the key lessons learned from previous ICM projects, and a step-by-step guide for pre-planning, planning, developing and deploying, and operations and maintenance of ICM.
1. Project Presentation
* The Project Presentation provides an overview of the project, and the key findings for the 4 phases of ICM planning provided in the Guidance Document.
* This presentation is designed to be used for providing briefings on the project, and its key findings. It could also be used by practitioners to brief clients considering ICM.
1. Project Fact Sheet
* The Project Fact Sheet provides an overview of the project, and the key findings for the 4 product outputs of ICM planning provided in the Guidance Document.
* This product can be used to provide a quick overview and marketing materials to ensure availability and use of the guidance document are understood.
1. Project Q&A
* The Questions & Answers document provides key questions and answers for the project, to include definitions for ICM and the application of the guidance document.
* This product can be used to provide as part of marketing materials to ensure availability and use of the guidance document are understood.

# Implementation Recommendations

Our team recommends several implementation activities to support the outreach, and knowledge transfer of the research results and guidance created as part of this project. The primary activities recommended include:

1. Presentations to trade groups and conferences
* TRB Annual Meeting to include ACP10 Regional Transportation Systems Management and Operations Committee, ACP20 Freeway Operations Committee, and other related committees.
1. Development and presentation of workshops to assist regions with beginning or improving their ICM Programs and to provide assistance using the guidebook processes.

**Guidance Overview Workshop (full day):**

**Purpose:** This Workshop is designed to bring together all the jurisdictions, functions and agencies responsible for transportation management within a corridor or region. The Workshop will introduce the Guidebook, its processes, and assist agencies with beginning the pre-assessment phase of the Guidebook.

**Agencies Responsibilities**

* Identify Corridor and Stakeholders
* Invite Stakeholders to workshop
* Define the Role of Metropolitan Planning Agencies
* Provide a copy of any Existing MOUs

**Workshop Agenda**

Introduction (15 min)

Background and Objectives (60 min)

Current ICM Planning Process (15 min)

BREAK

Pre-Planning for ICM Discussion (60 min)

Planning for ICM (60 min)

BREAK

Planning for Design and Deployment (30 min)

Planning for Operations and Maintenance (30 min)

Breakout Sessions – Stakeholder Views (60 min)

BREAK

Takeaways / Next Steps (30 min)

**Outcome and Benefits:** At the conclusion of the workshop the participants will have developed a better understanding of the ICM Planning process for all phases of an ICM Program.

**Planning Assistance Workshop (full day):**

**Purpose:** This Workshop is designed to bring together all the jurisdictions, functions and agencies responsible for managing the surface transportation assets associated with a specified corridor and the associated “Travel Shed” area. This workshop will introduce the Guidebook, and provide agencies with assistance for the Planning Phase of the Guidebook.

**Agencies Responsibilities**

* Identify the Champion
* Identify Corridor and Stakeholders
* Invite Stakeholders to workshop
* Provide a copy of Regional Architecture
* Provide a copy of ITS Strategic Plan
* Provide a copy of Inventory of all regional and local ITS Assets (Current and Planned)
* Define the Role of MPOs
* Provide a copy of any Existing MOUs

**Workshop Agenda**

Introduction (15 min)

Meeting Purpose

Agencies roles and responsibilities, ICM understanding, Issues, Challenges, What is in it for me?

What is ICM and Why ICM? (15 min)

Agency’s Perspective (15 min)

ICM Case Studies from Literature Review (20 min)

ICM Corridor Definition and Validation (30 min)

Corridor

Influence Areas

Stakeholders

System Engineering Process (15 min)

BREAK

Vision, Goals and Objectives (30 min)

Review Typical ICM Goals and Objectives

Prioritize

System Needs (60 min)

Sub-System Needs

Functional

ITS Assets (Existing and Planned) (30 min)

BREAK

Recommended Projects / Solutions (60 min)

System Gaps

BREAK

Operational Concept (30 min)

What Next? (10 min)

**Outcome and Benefits:** At the conclusion of the workshop the participants will have developed an outline of a plan forward, one that should jump-start the implementation by reducing the time needed for project planning. There will be a clear vision of the final program status, a measured approach to get there and a listing of the actions to be taken and interagency agreements that must be implemented to take advantage of this integrated approach to managing the surface transportation system assets.