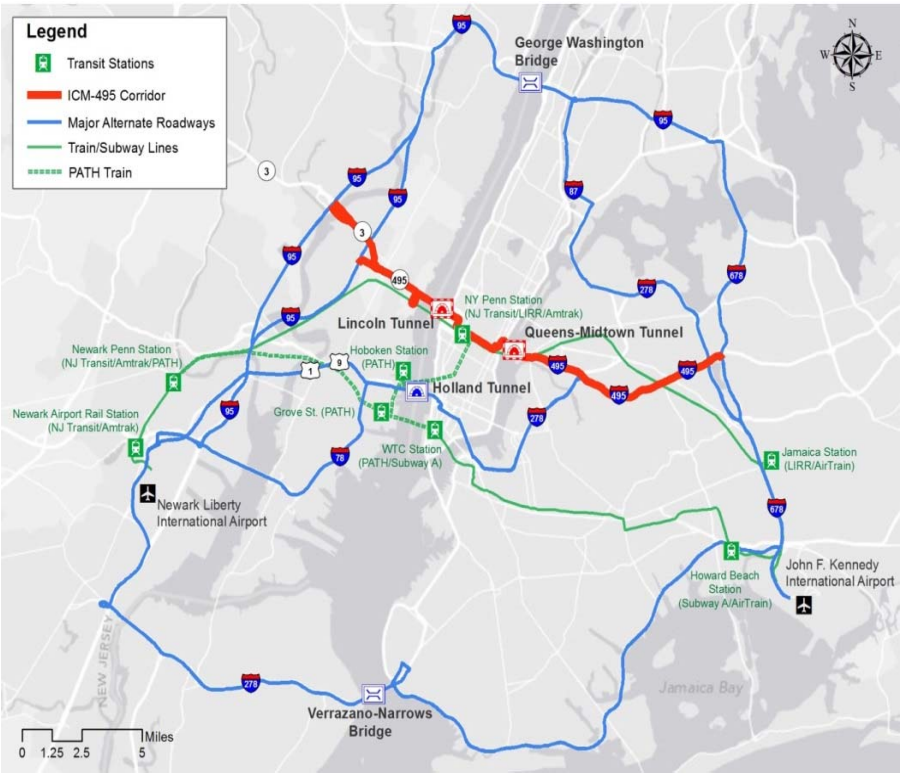
ICM-495 Corridor Concept of Operations Study

Project Overview

Corridor Overview

The Interstate-495 ICM corridor (the ICM-495 Corridor or the Corridor) is centrally located in the New York-North Jersey metropolitan region, home to 19.8 million people and the most populated area in the United States. The Corridor includes sections of I-495 and Route 3 (NJ 3) in New Jersey and I-495 (the Long Island Expressway or Queens-Midtown Expressway) in New York.



The Corridor connects the New Jersey Turnpike (Interstate-95) to the Van Wyck Expressway (Interstate-678) and traverses 34th Street in Midtown Manhattan. The Corridor links three key regional facilities: the Lincoln Tunnel, connecting New Jersey and Manhattan under the Hudson River; the Port Authority Bus Terminal, the largest terminal in the US and busiest in the world by volume of traffic; and the Queens Midtown Tunnel, connecting Manhattan and Queens under the East River. Local street grids, key regional facility approach and access roads, and the surrounding arterial networks with diverse residential, commercial, and industrial uses interact within the ICM-495 Corridor along its entire length including: Union City and Secaucus in New Jersey, Midtown Manhattan, and neighborhoods in Queens characterized by dense residential and commercial development. The ICM-495 Corridor is shown in **Error! Reference source not found.** below.

ICM Focus Areas and Goals

The following vision statement has been identified for the ICM-495 ConOps development:

> "To enhance the current transportation management systems of the ICM-495 Corridor by using state of practice solutions to build integrated, balanced, responsive, efficient, effective,

> and equitable programs and systems that actively reduce traveler demand; monitor and control traffic; and improve the mobility, reliability, and safety of all users. Solutions and resources will create a balanced network that reflects integration of pre-existing programs and systems with modified and new deployments. Improving overall corridor performance will be a priority by providing better knowledge about real-time conditions and alternative travel options within practical operational, institutional, and financial constraints."

This vision statement reflects the desire of partnering agencies and authorities to optimize traffic flows within the ICM-495 Corridor and its transportation networks in balanced and integrated ways – between various mass transit alternatives, expressways, and arterials; freight and passenger travel; and public and private transportation modes in a manner that equitably accommodates all users of the ICM-495 Corridor.

The purpose of the ICM initiative is to align the relevant congestion management processes for the New York/North Jersey metropolitan region to build integrated, balanced, responsive, efficient, effective, and equitable programs and systems that actively reduce congestion; address traveler demand; monitor and control traffic; and improve the mobility, reliability, and safety of all users. The ConOps will establish the technical and administrative framework within which the partnering agencies can pursue an integrated corridor management approach.

The project will develop an Integrated Corridor Management System (ICMS) or a 'system of systems,' – a set or arrangement of autonomous and useful transportation management system deployments that are progressively integrated over time into a larger system that delivers unique capabilities and functionalities resulting in measurable improvements in congestion, mobility, reliability, safety, sustainability, and quality of life. The ConOps will focus on meeting the four goals identified for the ICM-495 corridor:

1. Optimize mobility, reliability, efficiency, and safety;
2. Strengthen corridor level decision support;
3. Dynamically manage interconnecting of networks, systems, and facilities with an emphasis on multimodal operations which improve person trip reliability; and
4. Promote multimodal transportation system use and freight mobility.

ICM Grant Lead Agency

New York City and New York State DOT

Tasks

The ICM-495 Corridor ConOps will implement the following action items:

- Assist the ICM-495 Partnership in the establishment of an ICM framework of ATDM, TMS, and ITS operational deployments involving multi-agency and multimodal applications
- Reflect extensive internal and external outreach resulting in the definition of ATDM, TMS, and ITS concepts and strategies which can be implemented within a ICM framework
- Describe the environment and assess the needs as delineated by stakeholders and corridor analysis with emphasis on areas of recurring congestion (bottlenecks and chokepoints) and non-recurring congestion (incidents, construction zones, and special events) that impact general and multimodal traffic flow by both peak and non-peaks periods
- Identify the key impacts and roles associated with TMS, ATDM, and ITS solutions - what they will and will not do in terms mitigating areas of oversaturated conditions for both general and multimodal traffic within an ICM framework
- Use operational scenarios to describe how concept deployments should perform under different conditions. In these scenarios, all stages of concept design, implementation, operations, and maintenance will be considered within an ICM framework to:

  - Optimize throughput and travel reliability within the corridor through the use of ATDM, TMS, and ITS solutions
  - Prioritize reducing multimodal travel time and improving person trip reliability through priority treatments for multimodal vehicles and intermodal connections
  - Improve integrated operations planning and travel predictability
  - Dynamically manage interconnecting of networks, systems, and facilities with emphasis multimodal operations
  - Improve coordinated incident and emergency management within the corridor through preplanning of response to incidents and emergencies and the use of dynamic management tools
  - Enhance the ability of travelers and operators to select alternative travel routes and high- or multi-occupant modes through ATDM, TMS, and ITS solutions
  - Improve goods movement trip reliability
- Delineate varying operational scenarios and concepts that will identify high-level functional requirements for near-, mid-, and long-term deployment of ATDM, TMS, and ITS solutions within an ICM framework.