



New York State
Department of Transportation



NJTPA

NORTH JERSEY
TRANSPORTATION
PLANNING AUTHORITY



**THE PORT AUTHORITY
OF NY & NJ**



TRANSCOMSM
TRANSPORTATION OPERATIONS COORDINATING COMMITTEE

NJTRANSIT
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**NYMTC PFAC PRESENTATION 6/19/2014
USDOT INTEGRATED CORRIDOR MANAGEMENT (ICM)
DEPLOYMENT PLANNING GRANT PROCESS**

Commissioner Polly Trottenberg, New York City Department of Transportation (NYCDOT)
Presented by: Assistant Commissioner Mike Marsico, P.E., NYCDOT, Division of Traffic & Planning
Presented on: June 19th, 2014



NEED FOR ATDM & ICM

- Complex metropolitan region with Multiple jurisdictions, competing technologies, advancements in probe data and ITS capabilities and operational and planning needs varying by corridor , neighborhood, borough, etc...
- The caliber and work done in the region by the MPO's , Agencies, Authorities and TRANSCOM have set the bar to new levels.
- The need to capitalize on the work done became evident to many of the key transportation professional in the region which sparked the desire for renewed inter-agency collaboration regarding integrated operations and planning
- ATDM and ICM strategies are the logical next step, consisting of operational coordination of multiple agencies
- With support from FHWA, a group of agencies started to work towards strategies sharing information, best practices and working together to maximize the output and benefit to our users.
- Goal of ATDM and ICM strategies is to improve mobility, safety, and other transportation objectives for travelers and goods movement
- Successful development of a concept of operations in a key corridor is potential model for other ICM TMS & ITS system deployments in the region; key outcome is inherent system synergies, economies-of-scale that can be produced in era of tight fiscal uncertainties.

TIMELINE

Milestones in multi-agency participation and preparation of ICM-495 application:

- Best Practices Peer-to-Peer Exchange for ATDM – May 2011
- Developing & Institutionalizing an ATDM Program in New York – April 2013
- Workshop on Use of ATDM DSS & Analytical Tools – July 2013
- Analysis Tools for Operations Planning – August 2013
- Development of ATDM Solutions for Deployment – September 2013
- FHWA Workshop on Emergency Preparedness Planning – September 2013
- ICM Deployment Planning Grant solicitation released – November 2013
- ICM-495 Concept of Operations Study application submitted – January 2014
- New York Interagency ATDM Operations and Planning Workshop – May 2014

OPERATING/PLANNING AGENCIES

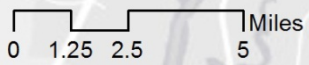
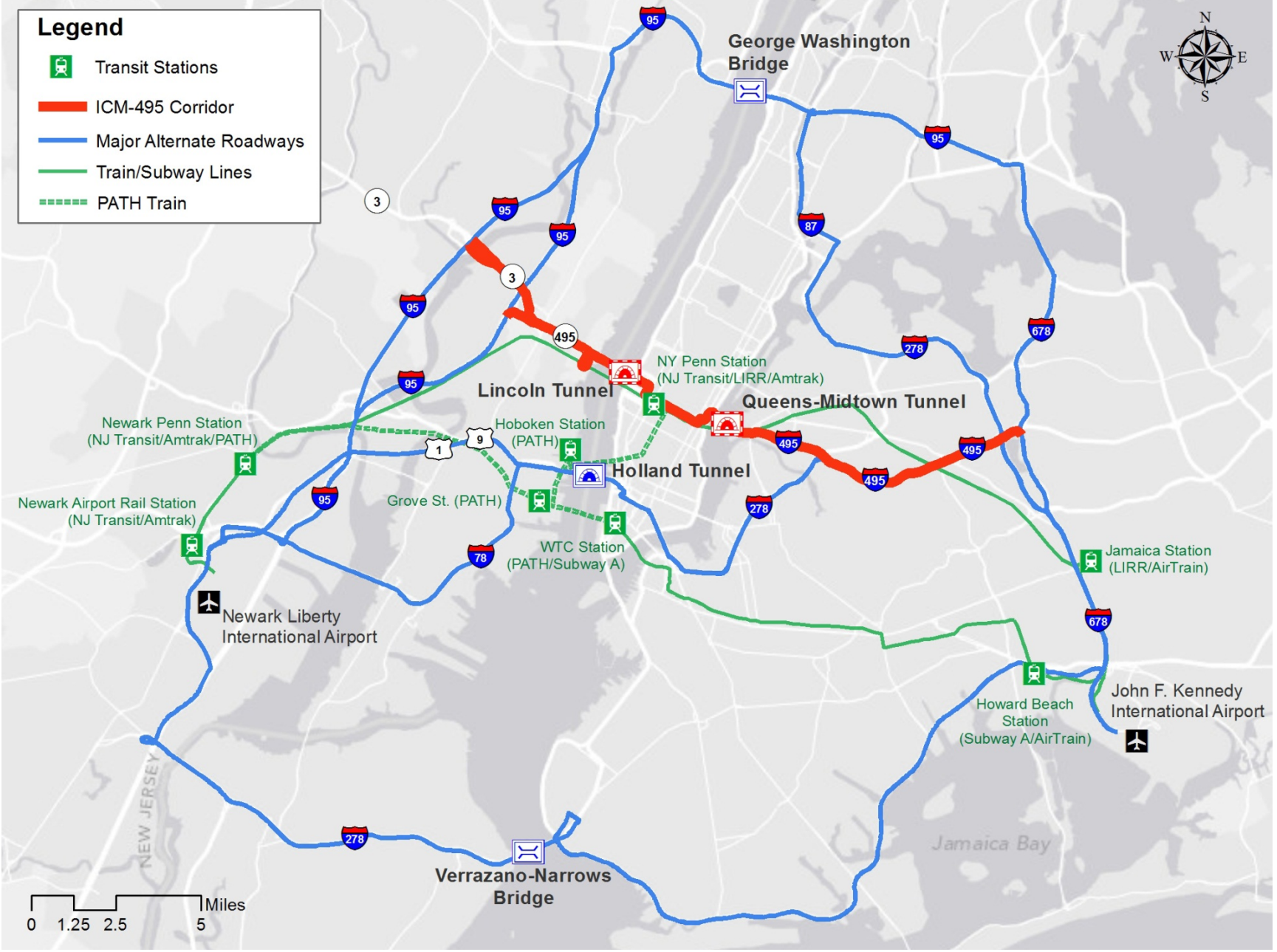
Jurisdiction	Operation Agency / Authority	Planning Agency
New York	<ul style="list-style-type: none"> ▪ New York City Department of Transportation (NYCDOT) ▪ New York State Department of Transportation (NYSDOT) ▪ Metropolitan Transportation Authority (MTA) <ul style="list-style-type: none"> ○ Bridges and Tunnels (B&T) ○ New York City Transit (NYCT) ○ Bus Company ○ Long Island Rail Road (LIRR) 	<ul style="list-style-type: none"> ▪ New York Metropolitan Transportation Council (NYMTC)
NY & NJ	<ul style="list-style-type: none"> ▪ Port Authority of New York and New Jersey (PANYNJ) ▪ Port Authority Trans-Hudson Corporation (PATH) ▪ Transportation Operations Coordinating Committee (TRANSCOM) 	<ul style="list-style-type: none"> ▪ Federal Highway Administration (FHWA)
New Jersey	<ul style="list-style-type: none"> ▪ New Jersey Department of Transportation (NJDOT) ▪ New Jersey Transit Corporation (NJ Transit) ▪ New Jersey Turnpike Authority (NJTA) 	<ul style="list-style-type: none"> ▪ North Jersey Transportation Planning Authority (NJTPA)

POTENTIAL CORRIDORS FOR AN ICM CONCEPT OF OPERATIONS

- Initially three corridors were considered; I-495/Route, I-278/Gowanus Expressway and I-95/Cross Bronx Expressway.
- I-495 was selected for the following reasons.
 - Centrally located in New York / New Jersey metropolitan area with population of over 20 million people
 - The Corridor connects the New Jersey Turnpike (NJTP, a section of I-95) to Van Wyck Expressway (I-678) and traverses Midtown Manhattan a critical
 - Diverse residential, commercial and industrial uses interact with the Corridor along its entire length
 - Two regional key facilities – Lincoln Tunnel (connects NJ and Manhattan), and Queens-Midtown Tunnel (connects Manhattan and Queens)
 - The Corridor services a large travel shed area with an extensive highway network, including expressway facilities, their approach roads, and the surrounding principal and secondary arterial networks providing the circulatory system for the movement of people, goods, and services

Legend

-  Transit Stations
-  ICM-495 Corridor
-  Major Alternate Roadways
-  Train/Subway Lines
-  PATH Train



ICM-495 CORRIDOR DESCRIPTION

(MANHATTAN /QUEENS)

Queens Midtown Tunnel

The Queens Midtown Tunnel is a highway tunnel and toll road in New York City. The deployed ITS assets along the Queens Midtown Tunnel include:

- CCTV cameras and Fiber
- Weather System covering all the bridge facilities with both surface and atmospheric sensors
- NTCIP complaint VMS and VSLS
- TRANSMIT System
- Lane Use Signal Control System
- Video Incident Detection
- Advanced Traffic Information System
- The Operations Central Command Center (OCCC) is the nerve center of MTA B&T Operations, including linkages to individual facilities and the JTMC Integrates all the facilities to one another and to OCCC

ICM-495 CORRIDOR DESCRIPTION (NY/NJ)

Lincoln Tunnel

The Lincoln Tunnel connects NJ 495 to Midtown Manhattan. The three-tube configuration of the Lincoln Tunnel provides for unique operational flexibility. The directional ability of the tubes enables the tunnel facility to address varying traffic demands as they arise throughout the day. The Lincoln Tunnel ITS assets monitored and controlled from the communications desk include:

- Dynamic Message Signs
- CCTV surveillance cameras
- Lane-Use Control Signals
- Changeable Speed Limit Signs
- Video-based vehicle detection system stations
- TRANSMIT readers

ICM-495 CORRIDOR DESCRIPTION (TMC)

Two of the critical Traffic Management Centers (TMCs) for this corridor are:

- **Joint Traffic Management Center (JTMC)** - consists of representatives of the New York transportation and emergency response agencies, including NYSDOT, NYCDOT, and NYPD. The JTMC is responsible for managing traffic in New York City and detecting and responding to roadway incidents.
- **Statewide Traffic Management Center (STMC)** - established by NJDOT, is operated jointly with the New Jersey Turnpike Authority and the New Jersey State Police. The STMC is operational 24/7, and is jointly staffed by personnel from each of the participating agencies. Each agency manages its own roadways from the STMC, but the co-location affords efficient and effective “statewide” coordination of response to traffic incidents and emergencies. The fiber network converge provides access to a wide range of roadway information including video feed from more than 400 traffic surveillance cameras, as well as roadway metrics, weather, and roadway surface condition data.

ICM-495 CORRIDOR DESCRIPTION (CONT'D)

ICM-495 will leverage and build upon numerous ongoing programs including but not limited to:

- Congestion Management Process
- Drivers First Initiative
- Drive Smart & Bike Share and PARK Smart
- TRANSCOM Data Fusion
- I-495 Managed Use Lane
- Midtown in Motion
- New York & New Jersey 511 and Rideshare
- New York & New Jersey ITS Programs
- Off-Hour Deliveries
- Select Bus Service
- Smart Move Program
- Truck Routing and Bridge Strike Mitigation
- NYMTC TIG

ICM-495 VISION

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.

The ICM-495 Concept of Operations will be the first key step toward this Vision...

ICM-495 CORRIDOR CONCEPT OF OPERATIONS

- Formal document that provides a user-oriented view of ICM approaches and strategies and the associated operations
- Developed to help communicate this view to stakeholders and to solicit their feedback
- The con ops will address the operational scenarios and objectives, information needs, overall functionality, and the institutional environment in which ICM is deployed, operated, and maintained
- The con ops will document the results and findings from the 'concept exploration' and 'system conception' stages, laying out the ICM concept, explaining how things are expected to work once it's in operation, and identifying the responsibilities of operating agencies and stakeholders for making this happen
- The con ops documents answers to the following questions:
 - ✓ **What** - the known elements and the high-level capabilities of the system
 - ✓ **Where** - the geographical and physical extents of the system
 - ✓ **When** - the time-sequence of activities that will be performed
 - ✓ **How** - resources needed to design, build, operate, and maintain the system
 - ✓ **Who** - the stakeholders involved with the system and their respective responsibilities
 - ✓ **Why** - justification for the system, identifying what the corridor currently lacks, and what the system will provide.

NEEDS ANALYSIS AND SYSTEM CONCEPT FORMULATION

- Identify possible operational scenarios/concepts – including, but not limited to:
 - ✓ Enhanced, cooperative, and integrated policies among operating agencies/stakeholders
 - ✓ Enhanced communications among network operators and stakeholders
 - ✓ Improved efficiencies of cross-network junctions and interfaces
 - ✓ Enhanced mobility opportunities, including shifts to alternate routes and modes
 - ✓ Real-time traffic and transit monitoring
 - ✓ Real-time information distribution (including alternate networks)
 - ✓ Congestion management (recurring and non-recurring)
 - ✓ Enhanced incident management
 - ✓ Travel demand management
 - ✓ Public awareness programs
 - ✓ Alternative transportation pricing and payment programs

THE ICM PROPOSAL IS JUST THE BEGINNING...

Maintaining collaborative momentum and building an ICM/ATDM framework

- Continue to develop multi-agency sponsorship and buy-in
- Multi-agency workshops keep the conversation fresh and relevant



NYMTC – May 22, 2014

I-495 CORRIDOR ATDM WORKSHOP

MAY 22, 2014

- Defining a high level view of essential ATDM and ICM program elements, including:
 - Challenges and potential ways to overcome
 - Programs, resources and assets
 - Preliminary strategies
- Part of a broader NYSDOT Statewide ATDM Framework
- Part of foundation for ICM Concept of Operations development (pending USDOT grant award) and Managed Use Lane study

CHALLENGES OF ATDM IN I-495 CORRIDOR

- ✓ Capacity of transit and parking
- ✓ Privacy and safety concerns (with apps and data)
- ✓ Jurisdictional barriers
- ✓ Reliability of travel time info in saturated areas
- ✓ Determining public vs. private roles
- ✓ Linking real-time transit and highway information
- ✓ Data integration and dissemination
- ✓ Incident clearance
- ✓ Understanding the traveler profile (who are we trying to impact?)
- ✓ Liability of alternate route recommendations
- ✓ “Softer” infrastructure doesn’t get support and funding as easily
- ✓ Community concerns (for instance HOV extension)

OPPORTUNITIES OF ATDM IN I-495 CORRIDOR

- ✓ Engaging private sector and PPPs
- ✓ Engaging businesses (employer portals)
- ✓ Leveraging agency relationships and partnerships (MMN)
- ✓ Using data for en-route diversion
- ✓ Conducting additional analysis to better understand the profile of our traveler
- ✓ Use of performance measures at a regional scale, including for person and goods throughput
- ✓ Social media and crowdsourcing
- ✓ Incorporating freight into regional planning
- ✓ Additional TMC to TMC communication (with all operators)
- ✓ Development of a decision support system
- ✓ Demonstrating value to the customer
- ✓ Addressing first and last mile needs

STRATEGIES OF ATDM IN I-495 CORRIDOR

- ✓ Extending priority lanes
- ✓ Customer incentive programs
- ✓ Dynamic, real-time parking information
- ✓ Off-hour deliveries
- ✓ Predictive travel time
- ✓ Bike-sharing at park & ride lots
- ✓ Dynamic shoulder hardening for quicker clearance of incidents
- ✓ Adaptive signal control and transit signal priority
- ✓ Customizable, personalized multiagency platform for traveler info
- ✓ Queue warning
- ✓ En-route notifications on travel information and alternate routes (including arterials)

QUESTIONS



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