NYSDOT Region 11 (NYC) ITS System

The New York State Department of Transportation (NYSDOT) Region 11 Office, which covers the five boroughs of New York City, operates a Joint Traffic Management Center (JTMC), formerly the Joint Traffic Operations Center (JTOC). This is used to control Intelligent Transportation System (ITS) programs on several limited-access New York State highways within NYC. The JTMC is on the ground floor of a city-owned building at 28-11 Queens Plaza North in Long Island City. The location and operation of JTMC requires a close working relationship with partner agencies: the New York City Department of Transportation (NYCDOT) and the New York City Police Department (NYPD). JTOC controls ITS systems on some of the most congested interstate corridors in NYC, including the Cross Bronx Expressway (I-95); the Van Wyck and Whitestone Expressways (I-678); the Staten Island and Gowanus Expressways (I-278); and the Long Island Expressway (I-495). The JTMC is operated seven days a week, 24 hours a day.

The system covers about 75 miles of the state highway system, operates 150 closed-circuit television (CCTV) cameras; 64 overhead Variable Message Signs (VMS); four Highway Advisory Radio (HAR) systems; and 200 vehicle detectors. In the next few years, additional systems will expand the mileage to about 120 miles of the system (out of 170 miles), providing coverage on most of the critical highways in the city. The amount of field equipment will increase at a proportional rate. (The NYCDOT system includes more than 200 CCTV cameras; 20 VMS; more than 200 vehicle detectors; and more than 6,000 computerized traffic signals.)

JTMC posts real-time traveler information onto the 511 New York public Web site via the IEN (Information Exchange Network) and seasonally, on the WTA (Winter Traveler Advisory). Some roadway cameras can be viewed on the Web site.

Other areawide systems have been implemented by TRANSCOM, such as the Regional Architecture Database, TRANSMIT (for toll tag reader traffic detection) and IRVN (Inter-Regional Video Network). TRANSCOM has installed workstations at the JTMC that can access these systems. Another program aimed at improving multiagency coordination for incidents, IIMS (Integrated Incident Management System), also operates at JTMC. Additionally, field units of the Highway Emergency Local Patrol (HELP), the New York State program that contracts the services of the NYPD to provide freeway service patrols on selected NYC highways, communicate with dispatchers located within the JTMC.

A primary objective of the NYSDOT Region 11 ITS Program is to implement a comprehensive citywide Advanced Traffic Management System (ATMS) for the limited-
access state highway network in NYC. To accomplish this, the Region selected to split the citywide ATMS into five sub-regional systems for implementation. These sub-regional systems include the Bronx and Manhattan ATMS, the Western Queens ATMS, the Staten Island ATMS, the Brooklyn ATMS and the Eastern Queens ATMS.

For several years, the Region has aggressively advanced the implementation of the ITS program. Construction of three of the five sub-regional systems is ongoing with construction of the remaining systems scheduled to begin shortly.

The ITS program partners with the private sector to provide design, construction, operations and technical support, software development, system training, system maintenance support and system operational support. A limited number of software interfaces is being used by system operators to control the VMS, CCTV and vehicle detectors already installed. Usually a different software program will be utilized for those VMS, CCTVs and vehicle detectors coming into operation until that system’s control software is integrated with those in operation.

System Maintenance

Maintenance of the ITS systems at the JTOC before the project’s acceptance is provided through the implementation (construction) contracts. As the construction is completed, continued equipment maintenance is needed. “Where and When ITS Maintenance” contracts provide this maintenance support work.

Under this contract, the JTOC operators will have a role in detecting when equipment fails, through reports, personal observation, etc. There may be specific instructions to follow (depending on the piece of equipment) to help determine the nature of the problems and possibly provide solutions. If the operators cannot fix problems, they will record them on Trouble Tickets. These are then submitted to the state’s Engineer-In-Charge of the implementation (construction) contract or the Where and When maintenance contract, as appropriate, who will follow up with the appropriate work orders. After being notified that the repairs have been made, the JTOC operators will confirm that work.

System Expansion

In 2008, the JTOC operations center has been transitioning into a new common space called JTMC. Completion of the center construction was expected in fall 2008. Although new field elements will be added to the system in the next several years, the JTMC-based equipment (servers, workstations, etc.) will not change significantly. As the system matures, New York City’s involvement in the daily operations at the JTMC will increase. Through the Master Agreement in place, the City of New York is the primary agency responsible for operations and maintenance of the State Arterial system in New York City.