

Institutional Issues in ITMS: TRANSCOM's Experience in NY and NJ

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TRANSCOM is a coalition of traffic, transit and police agencies in the New York metropolitan region. The Bergen County, New Jersey Police is one of the participants in this coalition. One of us writes from the perspective of the manager of this coalition. The other writes from the perspective of a key agency participant who has helped to make the coalition work. We have worked together in the last few years with an appreciation of each other's perspective, and we have faced many of the institutional issues involved in integrated traffic management systems. We have faced these institutional issues in dealing with basic problems, such as sharing information on incidents. They come up again as we develop coordinated, regional responses to incidents and major construction. They are with us as we implement proven traffic management technologies, such as remote video surveillance (CCTV) and highway advisory radio (HAR). Further, we have overcome a number of these institutional problems to the point that this region, despite its institutional fragmentation, has set the stage for being an active participant in IVHS.

Two Different Agencies - One System — Located in Jersey City, New Jersey, TRANSCOM is frequently referred to as a United Nations of traffic and transportation.[†] Like the U.N., it has considerable responsibility, but limited authority—yet, it can be quite effective when the members see how their collective interest can be enhanced through cooperation. TRANSCOM is funded, staffed and governed by its members. It has an Operations Information Center (OIC), open 24 hours/7 days a week, which shares incident information by alphanumeric pager, phone and fax, among over 100 highway and transit facilities, police agencies and the radio traffic services. It also serves as a forum for incident management planning, construction coordination and for the shared testing and implementation of traffic and transportation management technologies.

The Bergen County Police, based in Hackensack, New Jersey, is not one of the 14 members but they are active in the network. Bergen County is a heavily developed suburban county with a population of approximately 850,000. It is home to a number of corporate headquarters including Lipton and Volvo America. The key north-south corridor, I-95, passes through Bergen County, as does I-80 to the west. It is also the western terminus of the George Washington Bridge, the busiest vehicular crossing in North America. The Bergen County Police are responsible for, among other things, incident response on key Primary Highways, including Routes 4 & 17, the former feeding into the George Washington Bridge. On paper, the Bergen County Police is a local entity but, in reality, given the county's strategic location, it is constantly affecting and is affected by regional traffic.

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[†] The 14 member agencies are: New York State Thruway Authority, Metropolitan Transportation Authority, New Jersey Department of Transportation, New Jersey Highway Authority, New Jersey State Police, New Jersey Transit, New Jersey Turnpike Authority, New York City Department of Transportation, New York State Department of Transportation, New York State Police, Palisades Interstate Park Commission, Port Authority of New York and New Jersey, Port Authority Trans-Hudson (PATH) and Triborough Bridge and Tunnel Authority.

Many Jurisdictions, In All Sizes — Traffic officials visiting from other regions have said to us at times, there are “too many” jurisdictions in the New York metropolitan area, how do you get anything done? Since we have to deal with our world as it is (i.e., we are not about to have states, municipalities and toll authorities surrender control to a new regional authority), we prefer to say that we have “so many jurisdiction” rather than “too many jurisdictions.” Within these constraints, we look at the relationships among the agencies and within each agency. We then find ways of appealing to the self interest of each agency that are consistent with the collective, regional interest of all the agencies.

Before we discuss how we work to overcome institutional barriers, let’s first look at the jurisdictional structure in a bit more detail. We have five toll authority members. One deals with bridges and tunnels within New York City, one with bridges and tunnels between New York City and New Jersey, two with limited access highways in New Jersey and one with limited access highways in New York State. In addition to having two state DOTs (NYSDOT and NJDOT), NYCDOT and NYSDOT have joint jurisdiction within the city of New York, with day to day operations the responsibility of NYCDOT. The bridge and tunnel authorities handle their own incident response. The highway authorities contract with state police to do this. In New York City, incident response is done by NYCDOT and NYPD. In New Jersey, incident response on the non-toll interstates is done by the State Police. On the primaries, it is done by varying combinations of county and local police. (For example, the six miles of Route 1-9 from TRANSCOM’s offices in Jersey City to Newark are owned by NJDOT but incident response is done in different segments by the Jersey City, Kearny and Newark police departments.)

In the name of saving space, we have by no means described the complete inter-agency structure. It does give a starting point, though, for demonstrating an environment in which institutional barriers are a fact of life.

Picking Up The Phone — No matter how much cooperation you have among commissioners, no matter how much enthusiasm and support you have among operations directors, no matter how large or stable your funding is, no matter how many cooperative incident management plans you’ve developed, we have found that unless the communications officer at the desk picks up the phone and notifies the outside world when an incident takes place, all of this support and cooperation can be for naught. The number of notifications coming through TRANSCOM have increased many times over since the OIC was opened in 1986. Bergen County Police were some of the first to “pick up the phone” and call TRANSCOM. This didn’t happen overnight either; it involved time to get communications personnel to expand the framework in which they view the impact of an incident.

As people at this conference already know, and will undoubtedly hear throughout, local police already have their hands filled with an incident just thinking locally, e.g., helping the victims, doing accident investigations, arranging for vehicle removal, clearing debris and addressing any hazardous materials concerns. The fact is, though, that incidents in the Bergen County Police’s jurisdiction can affect, among others, the New Jersey Turnpike, the Garden State Parkway, the Palisades Interstate Parkway, the New York Thruway, the George Washington Bridge and even, from time to time, New York City. What helped to motivate Bergen County Police to make the call to TRANSCOM was the appreciation that these linkages work both ways. A major incident on NYC’s Cross Bronx Expressway can not only back up to the George Washington Bridge, but beyond into Bergen County. Now, when someone at the communications desk sees that Route 4 is backed up despite there being no incidents on that highway, he knows through TRANSCOM that the source of the problem lies on another agency’s roadway. He also gets updates on the incident’s severity and a notification when it clears. The importance of reaching out to others is hit home by seeing how it is in your self interest for others to reach out to you.

How Inclusive Should You Get? — The picture we painted above is one in which the jurisdictional structure is comprised of large agencies: DOTs, state, city and county police forces, and toll authorities. There is another level of jurisdictions as well, namely, numerous suburban police jurisdictions (in our region, literally hundreds). Along some of our busiest suburban corridors, you can have a different local police force at each exit. To include them in implementing ITMS can add more players than is manageable. To exclude them could be taken by local police as arrogance on the part of the larger agencies, because their communities often can be severely impacted by the handling of an incident in a major corridor.

Finding the appropriate balance between inclusiveness and exclusiveness is difficult and varies from corridor to corridor. TRANSCOM has put together traffic and incident management planning teams for six major corridors, four of which involve numerous small police forces. In this case, the decision has been made to invite the locals in. This often involves doubling the number of participants (in one corridor, between toll authorities, state DOT's, county agencies and locals, we have well over 20 agencies). It is understood that this can be a deliberate and complex process—adding more players to ensure proper implementation has, from our experience, been worth it.

With regard to our interagency incident notification network, the decision has been to be less inclusive. In Bergen County, Route 4 & 17, two major high incident roadways, go through 7 and 19 municipalities, respectively. For TRANSCOM to bring each of these agencies on to the network (for what in most cases could be a few major incident phone calls per year), it would not be worth the time invested in working with and motivating each local agency to get involved. Thus with the exception of Fort Lee (which lies in the critical location at the west end of the George Washington Bridge), TRANSCOM relies on Bergen County Police for reporting incidents on these roadways. We have found that in our region, agencies such as this have both the local sensitivities and the regional perspective.

“Turf Battles” and Personality Conflicts — Sometimes the former get mixed up with the latter, but in finding solutions, it is important to differentiate between the two. Turf battles can be based on substantive issues—while you as the advocate for ITMS believe the system as a whole will benefit, that doesn't mean that individual agencies will not be impacted in terms of a change in their role or powers. These conflicts should be dealt with head on whenever possible—ITMS advocates should not pretend that there aren't problems in their dealings with these agencies. Personality conflicts are harder to work through (though it is remarkable how some seemingly intractable turf problems suddenly go away when certain individuals go to new positions). Personality conflicts are also a function of people's training and how broadly they define their professional loyalties. Thus, a change in personnel is not so much a change from “bad guys” to “good guys” as it is a change in different individuals' views of themselves in relation to their working environment.

TRANSCOM's experience in developing its construction coordination program, while not ITMS, provides an illustration of how we work to overcome turf problems in an interjurisdictional environment. The dilemmas we had to deal with were quite similar to those that arise in implementing an ITMS. TRANSCOM set out a number of years ago to develop a program that was designed to reduce the likelihood that different member agencies would simultaneously restrict capacity by closing lanes on parallel facilities in the same direction. While it was each agency's responsibility to avoid parallel closings within its own network, it was TRANSCOM's role to get involved when the parallel facilities involved more than one agency.

In an era of tight budgets and complex infrastructure renewal projects, this kind of intervention by TRANSCOM was not always welcomed by some construction engineers. Their jobs are already complex enough, and the pressures to get projects done on time and within budget in a difficult working

environment can be enormous. The appearance of TRANSCOM, requesting an alteration of construction schedules would, understandably, not always be greeted enthusiastically. TRANSCOM did not pretend these turf issues didn't exist—indeed, we have enormous respect for the constraints these engineers work under. Rather, we have added an additional set of constraints into the equation: reductions in capacity on parallel facilities can create operational problems, customer inconvenience and political problems for all of us. While we will not go into detail on how this program then developed, the result is now a process in which agencies modify schedules to accommodate the needs of other agencies a number of times a year. Turf conflicts are implicit in a program like this—they are dealt with by understanding that, personalities aside, the agencies' engineers are expressing legitimate concerns.

Implementing Technology Improvements — The interchange of Routes 4 & 17 in Bergen County is, by the agreement of just about everyone concerned, the worst in New Jersey in terms of number of incidents. Designed generations before the current level of development in the county, it is known not only for problems for commuters, but for those trying to patronize the large shopping malls that have been built in its vicinity. Bergen County Police, NJDOT and TRANSCOM had long wanted to put some form of incident detection and motorist information system there. When FHWA funds were made available in 1990 for TRANSCOM to implement CCTV and HAR systems, this site was a prime candidate. Since we are not dealing with a region with a single agency with control over all of the limited access highways, we were faced with new interjurisdictional issues in allocating these funds and then implementing these improvements.

The TRANSCOM members established criteria for selecting sites for CCTV and HAR. Criteria, such as frequency of incidents and impact of incidents on other agencies, were designed not only to find the best sites but, ideally, to strengthen mutual support among the member agencies, as well. Even with some very stiff competition, 4 & 17 came out as one of the top projects. Again, without unified management of the limited access highway system, a separate process for design and operation of each of the selected sites had to be set up. For 4 & 17, design has been done by the owner of the roadway, NJDOT. Operation of the system, monitoring the cameras, responding accordingly to problems on site, and operation of the HAR system is to be performed by Bergen County Police. TRANSCOM will be given access to the system for messages of regional impact. An additional set of actors is involved because one of the other selected sites, CCTV at Exit 163 on the New Jersey Highway Authority's Garden State Parkway, is within a few miles of the 4 & 17 interchange. Thus, part of the Parkway's mainline is covered by the 4 & 17 HAR. The New Jersey Highway Authority will do the design for its cameras, monitor them from its communications center in Woodbridge 30 miles to the south and be given access to the HAR as well.

Certainly, we have a lot of actors involved for a fairly basic system involving three or four cameras and an HAR. All these jurisdictions are a fact of life we accepted; we all worked face to face and developed an understanding of each other's concerns. We all understood though that we all benefitted by maximizing the use of the system and this is what motivated each of us to overcome interjurisdictional issues.

Crossing State Lines — What would seem to be a more dramatic institutional issue than a major corridor separated by a state line right in the heart of a major metropolitan area? From our experience, this may be less of a problem than it seems. Advocacy for ITMS often comes from DOTs. Their staffs appreciate the spill over effects of incidents and understand that they need the help of others across state lines. (Simply put, if there is one thing a state DOT has particular respect for, it is a state line). From an administrative standpoint, having more than one state involved can be a complicating factor, as is noted further on.

State lines in themselves, do not produce any more problems for our coalition than other adjacent jurisdictional boundaries. The more complex institutional issue for our coalition has to do with identifying and appreciating one's linkages with agencies that are not immediately adjacent to one another. For the Bergen County Police, it took more time to develop an appreciation of our interdependence with NYCDOT, for example, than it did with the immediately adjacent George Washington Bridge.

One way that this institutional issue was addressed was through the development of a working interagency variable message sign (VMS) and HAR inventory. In effect, the existing investments that each agency has in these technologies are made available to other agencies through TRANSCOM. Since one often strives in using these resources to divert regional flows as far upstream from the incident as possible, one agency is often called upon to deploy resources for other agencies that are quite distant. The New York State Thruway in suburban Westchester County will put up a message on a fixed VMS sign to warn motorists that the Triborough Bridge and Tunnel Authority's Whitestone Bridge between the NYC boroughs of the Bronx and Queens is closed. The New Jersey Turnpike Authority will place a portable VMS in central New Jersey advising truckers of a temporary truck ban on the Verrazano Bridge between Staten Island and Brooklyn.

We noted before how the communications officer at the Bergen County Police was motivated to think in a regional context and call TRANSCOM. The VMS/HAR inventory has a similar effect with operations personnel. They have an incentive to deploy motorist information resources to help distant agencies because they appreciate how these agencies can help them out during major incidents and construction, as well.

Different Goals Depending Upon Professional Backgrounds — We have found that engineers and police are motivated in different ways. Police are often more resistant to ITMS initially than engineers, the latter being more responsive to the technical arguments for ITMS. Engineers are more inclined to see regional linkages because of their training. Police, on the other hand, must live from day to day with the actual on site affects of an incident, they know first hand just how bad it can be out there. So when they are ultimately convinced that ITMS will help them in their work, they can become extremely enthusiastic proponents of regional approaches.

A police lieutenant on one of our interagency incident management teams was skeptical that TRANSCOM could mobilize so many regional motorist information resources at one time. In the midst of a major incident, unknown to us, he took off in his car to Long Island, Westchester and New Jersey to see if all the messages really were put up. They were. He called up to tell us what he did and that he is convinced the system works. Since then he has been a strong advocate for our efforts—he can even push the rest of us farther than we expected to go.

Balancing Freeway vs. Local Traffic — In the forthcoming implementation of CCTV and HAR at the Route 4 & 17 interchange, the Bergen County Police are working under the assumption that quicker detection and clearance of incidents on 4 & 17 will benefit local roadways as well. Within a 3-mile radius of the Route 4 & 17 interchange there are five municipalities, and one toll authority. This represents six police departments in addition to the Bergen County Police.

Many state DOTs understandably have a major responsibility just focusing on state highways. They often lack the authority or resources to coordinate the entire network. For example, the Bergen County Road Department spends large amounts in upgrading intersections and in road widening projects. These projects are partially necessitated by the volume of vehicles attempting to by-pass the traffic congestion on the two state highways. NJDOT invests money in attempts to keep the corridor traffic moving, while doing its best to consider the secondary road traffic caused by the same congestion.

The state police department is not charged with patrolling the state highways, leaving that responsibility to local governments. The local governments believe that response and enforcement on the state roads should ideally be the state's responsibility, so dedication of municipal resources to that task is minimal. The Bergen County Police fills that "jurisdictional" gap within its own capabilities.

The objective is to balance the freeway and local road traffic into common goals for facility operations. The completion of the CCTV/HAR project will hopefully improve the quality of information to everyone and further enhance cooperation.

In Bergen County, how does one resolve the diversion of traffic from freeways onto local streets? No locality wants traffic off a freeway, yet Bergen County Police certainly don't want to keep people sitting indefinitely behind a freeway incident. In dealing with this, the state, county and localities have come to terms with the fact that diversion is going to happen anyway—they can either work together, or they can just let things happen. The county and state understand that it is incumbent upon them to use whatever technologies possible to keep traffic on the freeway system, bringing about regional diversions and minimizing the traffic stuck behind an incident requiring a local diversion. The localities have a growing appreciation of the state and county's continuing efforts and in turn, when some local diversion is inevitable, they are showing an increasing understanding of this reality.

Finding Personnel to Develop Plans — TRANSCOM has definitely found this to be an issue for its incident management planning teams, as well as some of its other programs. You can have a dozen major agencies in a room agreeing to a diversion strategy, but no one has the staff to put it all together. TRANSCOM has found that the key is to serve as staff to the interagency teams and do the work for them. Going back to the U.N. model, the best way to bring a team together is to give them authority to define and implement the plan while TRANSCOM has the responsibility to do the technical work.

This approach requires a regional entity with the staff and funding to do this in a number of corridors. TRANSCOM has found that to go beyond its six corridors to put teams together for every major corridor would require far more staff and local funding than is currently available. Given these constraints, TRANSCOM has taken the approach of building on what it learned with these teams and developing a generic approach that is applicable to major incidents and construction anywhere in our region. The VMS/HAR inventory noted previously is one element of this approach.

Developing a Regional Entity to Facilitate ITMS Implementation — Building on the point above, we have found that volunteers and the goodwill of busy people from participating agencies can only take you so far. Staff is needed with a local funding base to support this. First of course, you need the willingness on the part of all the agencies involved to create a regional entity. Those whose regions are in one state are the more fortunate ones. When creating, funding, staffing and directing a new entity, life is simpler when you only need to deal with one state's administrative process.

Again, as with the U.N. model, TRANSCOM does not have, nor does it pretend to have, power over the dozens of agencies on its network. Everything works by voluntary compliance and motivating people by linking their self interest with the regional interest. It works for us, but in a region like ours, we have no choice but to do it this way. This constraint has not limited us as we move as a region into IVHS. This year, seven agencies (three DOTs and four toll authorities) are working with FHWA to implement IVHS in the corridor between Staten Island and central New Jersey. The effort will determine the feasibility of building on electronic toll collection technology for incident detection. With IVHS, we are dealing with a complex problem, and as with other things we do, we don't pretend that there is always harmony. What matters most though is that there is a forum where people can work things out face to face for the benefit of the region and traveling public.