

## **CONGESTION BUSTER TASK FORCE TRAFFIC MANAGEMENT SUBCOMMITTEE**

Americans drive more than 2.6 trillion miles a year on our nations roadways. The increasing demand for travel caused by our expanding economy has resulted in transportation systems reaching the limits of their existing capacity. This has created congestion on these systems, particularly when demand peaks such as during the workday commuting periods. In New Jersey roadway congestion has become one of the public's major quality of life concerns.

The Congestion Buster Task Force was established by the New Jersey Legislature with the fundamental goal of identifying means for relieving roadway congestion. A Traffic Management Subcommittee was created within the Task Force to deal with the operational aspects of the State's roadway network. The charge here was to identify changes or improvements that would make the network function more efficiently, allowing its users to travel in a less restricted and safer environment. The measures of congestion relief appropriate for these types of improvements are typically the amount of reduction in vehicle delay time or the amount of reduction in vehicle travel time over a segment of the network.

The Traffic Management Subcommittee is made up of the following members:

Ken Afferton-Edwards & Kelcey, Inc. –Subcommittee Spokesperson  
J. P. Miele-Chairman, Committee for a Smart New Jersey  
Dotty Drinkwater-Committee for a Smart New Jersey  
Bill Ragozine-Cross County Connection  
Lt. Col. Lee Cartwright- Division of State Police  
Hamou Meghdir-North Jersey Transportation Planning Authority  
Kurt Aufschneider-NJDOT support staff

The Traffic Management Subcommittee has met to assess issues of roadway operations within New Jersey, to review relevant public comments received via the Task Force's Web Site and to formulate solutions for relieving congestion. The recommendations for traffic management related improvements that have evolved from this effort are as follows:

### **RECOMMENDATION #1**

Facilitate the rapid clearance of traffic incidents on New Jersey roadways by legally establishing the duty of drivers to move vehicles to the side of the road if no major injury or vehicle damage is sustained. Also, grant authority to responding agencies to remove incapacitated vehicles from State and Interstate highways, when conditions allow it. These practices have gained popularity in many places around the country. Push bumpers such as those provided by NJDOT to the State Police, allow law enforcement officers or public agency vehicles to push away a variety of vehicles, albeit not all. Exemplary legislation addressing this issue is State of Georgia Code 40-6-276 entitled "Duty to Remove Vehicle From Roadway or Expressway or Multilane Highway: Removal of Incapacitated Vehicle from State Highway", which authorizes appropriate members of law enforcement or other agencies to remove disabled vehicles off the travel lanes by pushing them to the shoulders when feasible. The law

also establishes the responsibility of drivers involved in minor accidents, where vehicles are still operable, to immediately remove their vehicles from the travel lanes.

#### HOW WILL CONGESTION BE REDUCED

When a traffic accident occurs, particularly on major roadways and during rush-hours, the vehicles cannot currently be moved off the roadway until enforcement officials authorize the removal, even when the incident is minor. Immediate and residual traffic congestion results. Moving the vehicles off to the side of the road immediately will drastically improve traffic flow and thereby reduce congestion.

#### WHO DOES THIS RECOMMENDATION AFFECT

All New Jersey Drivers  
New Jersey Enforcement Officials

This strategy will help the traveling public when incidents occur that are not severe or extreme. Since most incidents are of the type where vehicles are still operable, or where such assistance as pushing vehicles off the roadway lanes is viable, vehicle hours of delay will be reduced across the roadway network.

#### WHAT ARE THE COSTS & COST SAVINGS IN OTHER AREAS (if any)

There will be a cost for advertising to inform New Jersey drivers of when to move vehicles involved in incidents immediately to the roadside-estimate \$500,000. Also, there would be a need for approximately \$1.5 million (1000 vehicles at \$1500 per vehicle) for a State wide initiative to install push bumpers on law enforcement and public agency vehicles.

On the benefit side, there will be cost savings to the motoring public for the associated reduction in vehicle hours of travel delay. Assuming a minimal value of \$10/hour per driver experiencing delay from an accident, it is not difficult to project that in only one urbanized county a duty-to-remove law could save the public up to \$1 million in delay time during a typical commuter day.

#### HOW WILL RECOMMENDATION BE IMPLEMENTED

Legislation similar to that adopted by the State of Georgia would be introduced in New Jersey and there would be subsequent notification to NJ drivers and law enforcement officials by the NJ DMV.

#### LEGISLATION REQUIRED, if any

Legislation would be needed to require immediate movement of vehicles to the roadside involved in incidents which is non-life threatening and do not involve severe vehicle damage. Use Georgia legislation as a starting point.

## **RECOMMENDATION #2**

Implement, maintain, and/or expand off-peak value pricing toll incentives programs on all tolled facilities.

### **HOW WILL CONGESTION BE REDUCED**

Already-demonstrated reduction in peak-hour travel on the NJ Turnpike. This reduction should be witnessed on the other major tolled roadways as well.

### **WHO DOES THIS RECOMMENDATION AFFECT**

All Toll Authorities and Agencies.

### **WHAT ARE THE COSTS & COST SAVINGS IN OTHER AREAS** (if any)

Budgetary impact on toll roads and authorities needs quantification. NJ Turnpike, NJ Highway Authority and Port Authority of New York and New Jersey have already determined these numbers, since peak-hour pricing is in place for these roadways/bridge-tunnel facilities. By using this information, however, it is possible to introduce value pricing on other toll facilities in such a way as to have no negative effect impact on overall expected toll revenue for an implementing agency.

On the benefit side, the NJ Turnpike data suggests that their Value Pricing program served to achieve a shift of about 1/2 of one percent of its daily traffic from peak to off-peak periods. This equates to 3500 vehicles moving out of the peak period. If this same degree of impact could be attained on the Garden State Parkway, the Atlantic City Expressway and the Delaware River toll crossings, a shift of an additional 6000 vehicles out of the peak periods could result.

### **HOW WILL RECOMMENDATION BE IMPLEMENTED**

Use E-ZPass as the mandatory pre-requisite for off-peak value pricing. E-ZPass Customer Service Account Posting systems would need modification to accommodate new pricing by peak hours, etc.

### **LEGISLATION REQUIRED** (if so, explain)

None.

## **RECOMMENDATION # 3**

Provide an information system to enable any caller or web site visitor to obtain directions and real-time travel time information to get from any place in New Jersey to any other place in New Jersey or neighboring major cities (e.g., NYC, Philadelphia) using NJ Transit and other ridesharing programs (such as those offered by many TMAs) which provide shuttle services to/from transit stations. Start with Northern New Jersey, Trenton Area, and Camden-Philadelphia Area. Enhance the system to establish real-time shuttle/bus travel/schedule information and reserved parking system for park and ride lots. Widely publicize the information system.

### **HOW WILL CONGESTION BE REDUCED**

Encouragement and promotion of mass transit utilization to move people out of cars and into trains and buses particularly during heavy commuter hours.

#### WHO DOES THIS RECOMMENDATION AFFECT

NJ Transit, TRANSCOM, North Jersey Transportation Planning Authority, DVRPC, NJDOT Traffic Management Operations – North and South Jersey, park and ride lot operations, including reservation system and operation

#### WHAT ARE THE COSTS & COST SAVINGS IN OTHER AREAS (if any)

Approximately \$2 million would be needed to expand the existing TRANSCOM (TRIPS 1,2,3) information system to include route and schedule information for transit operations in southern New Jersey. Plus there is the need for cooperation of (provision of real-time data by) toll agencies, TRANSCOM, NJDOT Operations, NJ Transit and other south Jersey transit operators. There would additionally be on going operating and advertising costs that could reach \$500,000 per year.

#### HOW WILL RECOMMENDATION BE IMPLEMENTED

Additions to existing information systems such as those of TRANSCOM (TRIPS 1,2,3) and NJDOT Operations, etc., as well as modifications to various web sites, and the enactment of a Toll-Free Telephone Voice Response Unit which is constantly updated to reflect timely information.

#### RECOMMENDATION #4

Enact real-time traffic and alternative routing information systems for the general public and commerce to help divert demand away from congested roadways. Provide timely and accurate travel information to the general public including the prospective utilization of “#511” – the federally-established national traveler information number similar to the "911" concept – will enable the public the means by which to make well informed decisions about travel alternatives. Both the means to communicate the availability of alternatives plus the means to determine those alternatives should be considered. Widely publicize the information system.

#### HOW WILL CONGESTION BE REDUCED

Provision of timely and accurate travel information to the general public including the prospective utilization of N511 -- the federally-established national traveler information number similar to the “911” concept -- will enable the public the means by which to make well informed decisions about travel alternatives. Both the means to communicate the availability of alternatives plus the means to determine those alternatives should be considered. Providing pertinent and timely information could enable the individual to make an informed choice of mode, route and departure time, so as to avoid congestion, and thereby alleviate it. The information regarding viable alternatives should be reliable, and easily and readily conveyed to individuals so that travelers actually utilize the alternatives. TRANSMIT and TRIPS 1,2,3 plus Route Guidance Systems, Incident Management Systems, and NJ Transit/mass transit information systems are first steps toward building an extensive information system, but innovative ways to allow everyone to make better informed congestion-relation choices about mode, route and departure time, must also be developed. This includes both pre-trip information for travelers as well as in-vehicle communications. Such information systems could be developed and implemented on a staggered schedule to effect gradual but lasting and

long-term congestion relief. Promotion of the developed systems for general use would be key to achieving significant diversions from congested arteries.

Working with the ports, truck sheds, shippers and receivers, provide real-time traffic information so that effective freight transport scheduling and schedule modifications can be accomplished. Combining real-time traffic and alternative routing information with real-time freight scheduling will enable more efficient transport time utilization (trucks not stalled in traffic impacting unscheduled arrivals contributing to port and truck shed congestion, etc.), thereby reducing costs as well as congestion.

#### WHO DOES THIS RECOMMENDATION AFFECT

NJ Transit; TRANSCOM; Toll Agencies and Transportation Authorities; NJDOT; traveling public

#### WHAT ARE THE COSTS & COST SAVINGS IN OTHER AREAS (if any)

Basic ATIS (Advanced Traveler Information System) – for Northern New Jersey (half of state) - \$20 million plus \$2-3 million/year to operate. Estimated cost of call to the 511 system - \$1 per call ongoing – this is +/- 50% confidence level (large uncertainty level here since wireless carriers have not yet agreed to be actively involved).

It is difficult to quantify the benefits from a driving public having real time information about congestion levels on their planned route of travel. The FHWA's ITS benefits publications give no quantitative information regarding such benefits. However, it is reasonable to expect that by having a more informed public at least 2000 vehicles per day would move to less congested routes during peak periods of travel.

#### HOW WILL RECOMMENDATION BE IMPLEMENTED

Expand existing transportation agency systems to incorporate GPS Routing and real-time traffic and transportation information. Could be broadcast through existing HAR locations, radio stations (perhaps devoted station for 24-hour traveler information), and in-vehicle devices (perhaps consumer subscription service?).

#### LEGISLATION REQUIRED (if so, explain)

Probably not, except for budget approval.

#### RECOMMENDATION #5

Retime traffic lights on congested State highways to be more responsive to current traffic conditions. Past experience has indicated that intersections with traffic light timing plans that have not been updated within the past two years are likely to be causing the public a 5% to 10% increase in overall travel time delay.

#### HOW WILL CONGESTION BE REDUCED

Intersections with traffic signals will be more responsive to current traffic conditions during peak hours and overall travel time delay through these intersections will be reduced.

## WHO DOES THIS RECOMMENDATION AFFECT

NJDOT and users of the State route system.

## WHAT ARE THE COSTS & COST SAVINGS IN OTHER AREAS

There are currently 5000 signalized intersections on New Jersey's State highway system. It is estimated that about one fifth of these are in highly congested areas, currently have no volume based adaptive control and have not been retimed within the past two years. These 1000 intersections would have their performance appreciably enhanced by signal retiming. The cost of this effort would be approximately \$3 million.

The benefits accrued to the public would be reductions in delay time associated with use of the effected intersections. A rough estimate of the total value of the reduced delay time (assuming a \$10/hour per driver cost for experienced delay) would be \$250,000 per year per intersection.

## HOW WOULD THE RECOMMENDATION BE IMPLEMENTED

NJDOT would issue a consultant contract to study the involved intersections and develop revised signal timing plans. NJDOT would then install the new plans on the signal controllers for affected intersections.

## LEGISLATION REQUIRED (if so, explain)

None

## RECOMMENDATION #6

To increase the present level of service of the Emergency Service Patrol (ESP) provided by NJDOT along selected Interstate highways. To add service to chronically congested areas and provide new service in other facilities not served today. This recommendation will result in reducing congestion by reducing vehicle hours of delay (VHD) a critical CMS performance measure.

## HOW WILL CONGESTION BE REDUCED

Presently, incidents include a variety of non-recurring events such as flat tires, abandonment, out of gas, debris break down, etc. Not all incidents require police presence. Often and for the majority of times, incidents can cause delays because vehicle are still on traveling lanes or in a position where traveling public must slow down or stop to avoid the cause of the incident. Increased ESP activity will help remove the cause of such incidents more rapidly, therefore allowing traffic to flow freely quicker. With the level of incidents responded to by ESP averaging over 1000 per month for the Northern District (TOC North) alone, it is essential that this program be increased.

WHO DOES RECOMMENDATION AFFECT; NUMBER OF TRIPS SAVED

The recommendation will not reduce trips but will affect and reduce vehicle hours of delay caused by incidents encountered on these facilities. Since the vast majority of incidents are not crashes, this recommendation has the potential of reducing congestion significantly.

WHAT ARE THE COSTS & COST SAVINGS IN OTHER AREAS (if any)

The following are very general estimates for one vehicle and driver:

Labor:	\$ 70,000 (annual)
Maintenance:	\$ 10,000 (annual)
Equipment:	\$ 80,000 (procurement cost)
TOTAL:	\$160,000

One truck for the following areas:

1. Interstate 195 from Trenton Exit 16 at Great Adventure
2. Interstate 78 from Port Elizabeth to Route 24
3. Interstate 78 from Route 24 to I-287
4. I-287 from I-78 to I-80 (the existing one will serve from I-80 to NY State line)
5. I-80 from NJ Turnpike to Route 17 area at Saddle Brook  
(the existing one will serve from Route 17 exit to Route 3)
6. I-80 from Route 3 to I-287  
(the existing one will serve from I-287 to the present boundary west of I-287)
7. Route 24 from I-78 to I-287

Total recurring cost for labor and maintenance will be approximately \$560,000 annually. The cost of equipment will total approximately \$560,000 for seven trucks.

Cost savings result from reduction in vehicle hours of delay to the driving public. Past performance indicates that each service patrol will respond to 5 incidents per day. For a per vehicle delay cost \$10/hour and assuming incident response reduces travel delay by 10 minutes, the cost savings to the public for the proposed expansion of service patrols would approach \$100 million per year.

HOW WILL RECOMMENDATION BE IMPLEMENTED

The recommendation will be implemented by NJDOT as part of its CMS and safety program.

LEGISLATION REQUIRED (if so, explain)

No

SUBMITTED BY (Name of Subcommittee)

Traffic and congestion subcommittee

## **RECOMMENDATION # 7**

Establish and promote a program to encourage the use of either state or employer-sponsored shuttle services linking job sites to nearby train and bus stations or to park and ride facilities. The program could use transit vehicles and vans for reverse commuting, including the element of computerized dispatching and guaranteed or emergency rides home. Give free or subsidized transit passes for all government employees who work in congested corridors.

Further, alter government-employee start and end times to outside of the peak hours, with some government employees' schedules remaining within the peak hour, work times. Encourage government employees to schedule meetings and conferences for start times outside of peak hours.

In a Secondary Phase, target a few large employers along certain segments of congested highways (e.g., Rte. 287) to alter employee start-end times.

### **HOW WILL CONGESTION BE REDUCED**

Targets a specific and “understanding” significantly-sized group of travelers to encourage utilization of mass transit vs. cars.

### **WHO DOES THIS RECOMMENDATION AFFECT**

All State Employees

NJ Transit

State Budget

Secondary Phase: Large employers along heavily-traveled routes.

### **WHAT ARE THE COSTS & COST SAVINGS IN OTHER AREAS** (if any)

Costs are difficult to quantify as much of what is recommended could be accomplished within existing Government Agency and private sector resources. However, there would be a need to fund the subsidies to government employees who switch to transit use. Also, some new shuttle services would have to be established. An allowance of \$3 million/year for these latter efforts appears reasonable.

Up to 1000 vehicle trips could possibly be removed the peak travel period via the successful implementation of this effort.

### **HOW WILL RECOMMENDATION BE IMPLEMENTED**

Probable Gubernatorial Policy required for all State Agencies

Utilization of State Vehicle Fleet

### **LEGISLATION REQUIRED** (if so, explain)

Budget approval only.



## **RECOMMENDATION #8**

Implement Traffic Responsive Signals and Ramp Metering to manage traffic flow.  
Implement Automatic Incident Detection to decrease the impact of the major causes of congestion.

Expand the derivative uses of the E-Z Pass infrastructure platform to include traffic volume monitoring for use in providing timely, efficient, and accurate information to the traveler; publicize and broadcast this information.

### **HOW WILL CONGESTION BE REDUCED**

Better management of traffic flow through traffic signal monitoring and adjustment.  
Reduction in congestion resulting from roadway/facility accidents/incidents by rapid detection, response, and clearance of incident.

Provision of travel-time delay information will encourage traveling public to avoid congested roadways and seek alternative routes or travel times.

### **WHO DOES THIS RECOMMENDATION AFFECT**

NJDOT

Toll Agencies and Transportation Authorities

Traveling public.

### **WHAT ARE THE COSTS & COST SAVINGS IN OTHER AREAS (if any)**

Expansion of TRANSMIT to cover an additional 20 major roadway segments would cost approximately \$2 million, plus \$100,000 of annual operating and maintenance expenditures. Implementation of at incident verification systems (CCTV) on major roadways (assuming 80 cameras) would run about \$4 million, plus \$200,000 in annual operation and maintenance costs. Traffic signalization, remote monitoring and adjustment, and ongoing operational costs would be incurred. Assuming 10 new closed loop systems yields a need for \$20 million in capital dollars and \$500,000 in annual operating and maintenance needs.

The benefits from these improvements would be system wide reduced delay time for the driving public. For the Transmit highway segments, assuming a value of \$10/hour per driver experiencing incident delay, a \$10 million /year benefit could be accrued to the public for each segment upgraded. For the signal systems, a benefit of \$ 500,000/year could be accrued for each system installed.

### **HOW WILL RECOMMENDATION BE IMPLEMENTED**

Through State and Local DOTs and Transportation Authorities which can deploy and utilize TRANSMIT-type systems plus have jurisdiction over traffic signalization points.

Broadcast through existing HAR sites, expansion of HAR sites, radio broadcasts, plus potential Website and telephone VRU-provided information.

### **RECOMMENDATION #9**

Identify specific congestion-reducing (not sprawl) capital projects such as I-78 missing ramps on the Garden State Parkway and widening of the NJHA Driscoll Bridge; NJ Turnpike, Route 1, Route 287, southern NJ Roadways, etc.

### **HOW WILL CONGESTION BE REDUCED**

Alleviates congestion at roadway/facility exits by “spreading it out” to other exit points along the facility/roadway.

### **WHO DOES THIS RECOMMENDATION AFFECT**

NJ Highway Authority

NJ Turnpike

NJDOT

Local Municipalities

### **WHAT ARE THE COSTS & COST SAVINGS IN OTHER AREAS (if any)**

Capital improvement costs:

I-78/Garden State Parkway Ramps - \$65 million

Driscoll Bridge - \$200 million

Strategic widenings of I-287, Route 1 and NJ Turnpike - \$400 million each.

Benefits from these major capital investments would accrue in terms of reduced travel time and reduced delays to drivers. The value of the regained time could easily reach \$10 million per year for each of the implemented improvements.

### **HOW WILL RECOMMENDATION BE IMPLEMENTED**

Construction of new ramps and widenings via the affected roadways / facilities / jurisdictions.

### **LEGISLATION REQUIRED (if so, explain)**

None.