CONGESTION BUSTER TASK FORCE

FINAL REPORT

October 2002

Report Prepared by: **Congestion Buster Task Force**
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Preparation of this report was undertaken as authorized under New Jersey State law pursuant to P.L. 2000, Chapter 73, § 13 (N.J.S.A. 27:1B-21.26).
The content of the report is solely the product of the Congestion Buster Task Force.

CONGESTION BUSTER TASK FORCE

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Presented To:

The Honorable James E. McGreevey, Governor
The Honorable John O. Bennett, Senate President
The Honorable Richard J. Codey, Senate President
The Honorable Albio Sires, Speaker of the General Assembly
Members of the Senate Transportation Committee
Members of the Assembly Transportation Committee

Gentlemen:

On behalf of its members, I am pleased to present to you the final report of the Congestion Buster Task Force. The Congestion Buster Task Force was created by the Congestion Relief and Transportation Trust Fund Renewal Act of 2000 to make recommendations for reducing traffic congestion in the State. Task Force members were appointed by the Commissioner of Transportation and included representatives from business organizations, public interest groups, Transportation Management Associations, Metropolitan Planning Organizations, academic institutions, public members, and highway, transit service and facility providers.

The full statutory mandate of the Congestion Buster Task Force is found at N.J.S.A. 27:1B-21.26. Pursuant to this mandate, the Congestion Buster Task Force's final report outlines key findings and recommendations and identifies numerous strategies and initiatives for reducing traffic congestion in the State of New Jersey.

I wish to thank the members of the Task Force who have worked so diligently over the past year to research and prepare this report. They are a distinguished group of transportation experts who in this report have integrated a comprehensive collection of congestion mitigation policy recommendations. I also wish to thank the New Jersey Department of Transportation for providing resources and assistance to the Task Force in this effort.

Respectfully submitted,

Jim Sinclair, P.E.
Chairman, Congestion Buster Task Force

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EXECUTIVE SUMMARY AND FINAL RECOMMENDATIONS

The Congestion Buster Task Force (CBTF) has met and learned many things over the year we have worked together. Transportation costs directly impact us all – from the taxes we incur to maintain our transportation infrastructure – to the cost of goods and services we purchase – to the cost of commuting to work and other daily endeavors – to the cost of recreational activities. Time is money. The more time spent on the road, the more costs we incur. The more costs incurred on transportation, the less we have to spend on consumer goods, services and recreational activities. Businesses locate where expenses are minimized so that competitiveness and profitability, as well as worker productivity, are maintained. Clearly, a severely congested transportation system can have a direct negative impact on economic growth.

Today in New Jersey, as well as across America, people are willing to drive longer to get to work. Commuting times have increased. It has become a matter of what "level of pain" individuals are willing to endure in their travel to work. The Task Force has learned that single occupant vehicles are the predominant mode of travel, yet most individuals are not aware of the total true cost of operating an automobile. While many of the recommendations presented in this report can be implemented in a short to mid-term period, the CBTF believes that long-term strategies will have the greatest positive impact upon congestion relief. These include sound land use policies, increased transit availability and ongoing public education on the severity and costs of congestion.

The major recommendations of the Task Force for reducing congestion on New Jersey roads follow. Full recommendations begin on page 24. Most of the recommendations presented here will require financial resources and additional staff to implement. The CBTF acknowledges that the present economic climate may not allow the State and private sector to implement or advance some of the recommendations. As a result of the recent economic slowdown, the State budget is suffering from a shortage of money that may continue for the next few years. The State of New Jersey has made budget cuts, implemented some spending freezes, increased some taxes and tapped rainy day surplus accounts to cover present shortfalls. In addition, some of these recommendations may require further study to investigate ideal solutions and prepare implementation plans.

1. Encourage business community support for Transportation Management Association programs.

Transportation Management Associations (TMAs) are independent, nonprofit, public/private partnerships that work closely with employers, government and commuters to implement demand management programs in their respective service areas. The Task Force feels there is a strong relationship between TMA involvement and successful trip reduction programs. Employers with 50 or more employees at a work site are strongly encouraged to participate in TMA programs. Statewide and local business groups can directly implement this private sector initiative with the support of the New Jersey Department of Transportation (NJDOT). Local Chambers of Commerce and like groups should promote TMA services to their members. Adequate TMA funding is essential.

2. Develop a plan to implement high-speed E-ZPass on New Jersey's toll roads.

Traffic congestion, exacerbated by toll barriers**,** is a major cause of frustration for toll road users. High-speed toll lanes offer significant potential in reducing congestion, improving air quality and

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maximizing the benefits of E-ZPass. Neighboring states such as New York and Delaware have already installed high-speed or "open-road" tolling equipment. This recommendation can be pursued now, but will probably need legislation to appropriate funds for equipment, signs and possible lane reconfigurations.

3. Support demonstration projects for Parking Cash-Out.

Parking Cash-Out is an employee transportation benefit that offers workers the option of giving up their employer-provided parking space in exchange for its equivalent monetary value. For example, an employer who provides subsidized parking for their employees may offer cash allowances in lieu of a parking space. Early studies have shown that Parking Cash-Out can significantly reduce single occupancy trips to the workplace. The enactment of the federal Transportation Equity Act for the 21st Century in 1998 and New Jersey's Commuter Tax Benefit Law in 2001 removed tax barriers that limited implementation of Parking Cash-Out programs.

4. Expand the existing Park-and-Ride Program.

Present Transportation Trust Fund legislation (Public Law 2000, Chapter 73) set a goal that the Department of Transportation establish or expand at least two park-and-ride facilities through fiscal year 2005. Insufficient parking capacity and inadequate funding for new parking facilities currently hamper efforts to promote transit use and ridesharing in New Jersey. The Task Force believes that the legislative goal does not go far enough. We support development of a new five-year park-and-ride plan by NJDOT and NJ TRANSIT that seeks to provide 13,000 additional parking spaces, beyond those already funded, while preserving and maximizing existing capacity.

While this recommendation relates closely to recommendation 14 below (increased transit capacity and funding), it is listed on its own because implementation will require state and federal funding and the cooperation of many transportation providers, agencies and government bodies. The Task Force also recommends that parties investigate the possibility of private sector sponsorship for park-and-ride facilities.

5. Expand freight hours of operation to coordinate truck movements during off-peak hours.

Analysis has shown that expanded hours of truck operations could significantly reduce peak period trips.

6. Bus Rapid Transit (BRT) – BRT combines the quality of rail transit and the flexibility of buses. It can operate on exclusive transitways, HOV lanes, expressways or ordinary streets using specially designed buses equipped with comfort-related amenities. BRT systems may incorporate dedicated freeway ramps, priority treatment at traffic signals, and queue-jumper lanes (extra lanes that provide first priority to BRT at intersections). Low-floor vehicles and off-board fare collection expedite passenger boarding. BRT has been used successfully in several cities including Pittsburgh, Cleveland and Phoenix. Although this recommendation has not been fully presented and analyzed in this report, the Congestion Buster Task Force feels BRT may be an element of a successful congestion reduction plan. NJ TRANSIT is exploring its use in New Jersey.

7. Enact Transportation Enhancement District (TED) legislation.

This legislation will provide a transportation planning and financing framework to permit the assessment of fees on both existing traffic-generating properties to correct existing transportation deficiencies and on future development to ensure that adequate transportation infrastructure and transit services are put into place to accommodate traffic caused by future development. Originally introduced in the New Jersey State Assembly in 2001, the TED legislation was reintroduced in the current legislative session and now has a companion bill with Senate sponsorship.

8. Support NJDOT's Smart Move/Fast Move programs.

NJDOT's proposed Capital Investment Strategy for FY 2003-2007 includes $5 million a year for a new "Fast Move" program of congestion relief projects and $5 million a year for a new "Smart Move" program of intelligent transportation system projects. Both programs will concentrate on low-cost, quick-turnaround projects done by a combination of in-house maintenance forces and outside contractors. The first phase of these programs will be implemented by NJDOT in fiscal year 2003 under the current budget scenario.

9. Ongoing support for development of a statewide comprehensive freight plan.

The Department of Transportation is presently developing a comprehensive freight plan. The plan will analyze current freight practice and intermodal connections, as well as forecast anticipated needs. Identification of critical infrastructure investments will improve our ability to move goods efficiently and is vital for New Jersey's continued development and prosperity. Continued funding for staff and associated planning costs are needed for implementation.

10. Expand the use of Transfer of Development Rights (TDR).

TDR refers to a method of protecting undeveloped land by transferring the "rights to develop" from one area to another. The goal is to preserve open space while concentrating development in areas that may, in turn, sustain transit. This land use technique, useful when trying to balance development, is presently only used in the Pinelands area of our state. Legislation is currently proposed to amend the Municipal Land Use Law to authorize adoption of municipal TDR programs.

This and other land use recommendations may be politically difficult to implement. Tremendous local, county, regional and state coordination will be needed to achieve land use policies that support TDM strategies.

11. Support New Jersey's Smart Growth Policy.

Governor McGreevey has issued Executive Order #4 (2002), which creates a Smart Growth Policy Council in the Office of the Governor. Its goal is to promote smart growth and reduce the negative effects of sprawl and low investment in older communities. The Executive Order requires all State agencies to incorporate smart growth principles and the State Development and Redevelopment Plan into their own functional plans and regulations. The Congestion Buster Task Force supports smart growth as it would focus new growth into redevelopment of older urban and suburban areas, protect existing open space, and increase transportation options and transit availability.

Integrated statewide planning, including investment in transportation and infrastructure, coordinated with local and regional planning, may reduce automobile traffic and dependency. State resources should be allocated to provide municipal assistance and training in smart growth practice. Smart growth strategies include transit-oriented development and the expansion of shuttle services between residential areas, transit stations and work sites.

The Department of Transportation's Transit Village Program and NJ TRANSIT's Transit-Friendly Development Program are designed to spur development and investment around a community's bus or rail station. Along with NJDOT, several State agencies partner with designated transit villages to advance transit-oriented development, including mixed-use development such as housing, cultural and commercial opportunities within a half-mile of the transportation facility. Designated transit villages receive priority consideration for funding and technical assistance from participating State agencies. The partnerships also help communities leverage more private-sector investment.

12. Enact legislation to require drivers involved in minor accidents to move vehicles to the side of the road.

Moving vehicles involved in minor accidents immediately to the side of the road will dramatically improve traffic flow and thereby reduce congestion. Georgia Code Annotated §40-6-276 contains model legislation. Once appropriate legislation is enacted, it may be necessary to adopt rules to set policy guidelines. In addition, funding will be needed for public education and new roadway signs.

13. Re-time traffic signals on congested State roadways to be more responsive to current traffic conditions. Encourage local and county governments to do the same.

There are currently 5000 signalized intersections on New Jersey's state highway system. About one-fifth of these intersections are estimated to be in highly congested areas, currently have no volume-based adaptive control, and have not been re-timed within the past two years. Historical data has indicated that signalized intersections with timing plans that have not been updated within two years are likely causing the public a five to ten percent increase in overall travel time delay. By implementing this recommendation, signalized intersections will be more responsive to current peak hour traffic conditions, and overall travel time delay through these intersections will be reduced. NJDOT will be primarily responsible to implement this recommendation, with county and local traffic engineers to follow suit. Implementation will require capital resources and staff.

14. Increase peak period transit capacity, expand transit availability and establish a secure source of transit funding.

Adequate and stable transit funding is critical to address our growing commuter crisis. While recognizing that this recommendation is costly, the Task Force believes that the availability of comfortable and convenient transit service is key to removing vehicles from New Jersey's roads.

We support recent steps that NJ TRANSIT took to substantially reduce standees on its trains. Revised schedules and the purchase of 29 new ALP-46 electric locomotives that can pull more cars have increased rail capacity. New rail service, such as the Montclair Connection, has added additional seats. NJ TRANSIT has secured funding from the Port Authority of New York and New Jersey to purchase 150 new bi-level rail cars which have approximately 30 percent more seating capacity than its existing single-level cars. The new cars are expected to be delivered by the end of 2005.

In addition, transit operators need funding to purchase new buses and increase the frequency of bus service, not only into New York City, but also throughout New Jersey. NJ TRANSIT should continue to establish new routes and lines where needed, if fiscally able to do so. Continuation of successful shuttle projects, establishment of new shuttle services, construction of a new rail tunnel into Manhattan and development of a seamless fare system are all projects worthy of funding.

15. Launch a sustained, targeted campaign, with Governor support, to promote adoption of commuter tax fringe benefits programs by New Jersey employers.

The federal commuter tax benefit is a proven congestion buster tool, especially in areas where public transit is available, yet many New Jersey work sites have not taken advantage of this opportunity. These programs provide a financial incentive for drivers to get out of their cars and use public transportation or ridesharing for their commutes to work. Up to $100 per month or $1,200 per year is tax exempt for each eligible employee participating in a qualified transportation fringe benefit program. Thus, payroll taxes are reduced for employers and employees can save $400 or more per year by taking the pre-tax deduction of $100 per month.

This financial incentive usually takes the form of transit passes or vouchers. Employers administer NJ TRANSIT's BusinessPass Program. A portion of the cost of a monthly rail or bus pass is deducted from an employee's pre-tax salary, thus increasing the employee's take-home pay. Monthly passes are mailed directly to the employee work site, allowing for convenient distribution. PatronPass gives businesses an opportunity to buy in bulk one-way transit tickets in advance. Having pre-paid tickets on hand eliminates cash reimbursements and travel advances.

Transit Center, Inc., a nonprofit corporation promoting transit, offers the TransitChek commuter voucher program to employers. TransitChek vouchers are available in various denominations and can be given to employees as a monthly or quarterly benefit, incentive or reward. The vouchers can be used like cash to pay for transit tickets or passes, MetroCards and eligible vanpool costs. The TransitChek program is tax-free for employees and tax-deductible for employers.

This recommendation is easy to implement but requires allocation of sufficient resources from Federal and State sources to increase targeted advertising, outreach and technical advice. Promotion of this campaign by the Governor's Office is critical to its success.

16. Maintain, implement and/or expand congestion relief pricing toll incentive programs at all tolled facilities.

Congestion pricing and other forms of road pricing are potentially effective means of improving traffic flow. Such strategies use pricing, usually during peak periods, to create incentives to change travel behavior. Many researchers strongly endorse congestion pricing as an effective strategy to reduce single occupant vehicle travel while funding alternative transportation modes. An added benefit is reduced congestion-related pollution. Pricing incentive programs are implemented by road authority regulation. Congestion pricing strategies should consider potential adverse financial impacts on low-income drivers and of drivers switching to non-tolled facilities; mitigation measures should be identified to address any adverse effects.

17. Enact state legislation to waive tolls for carpoolers, vanpoolers and transit riders during peak travel periods.

Peak period hours would have to be clearly defined by road and bridge authorities. Fiscal and legal impacts upon the authorities and enforcement issues would have to be studied.

18. Data Collection.

Transportation professionals recognize the need for basic information – such as origin-destination data and work hours – in order to provide attractive, convenient alternatives to the commuter. Key work sites in specific congested corridors could be selected or targeted for surveying and data collection through their respective Metropolitan Planning Organizations (MPOs). The collected data could be used to develop and implement a plan that includes teleworking, or a ½-day telework/½-day office work schedule; transit; shuttles; and/or enhanced vanpooling/carpooling or other TDM options. Although data collection will not be mandatory for employers, successful implementation of effective TDM strategies will require the full cooperation of employers, TMAs and other transportation professionals, with the encouragement of the Governor's Office.

19. Public Information Campaign.

Seemingly ignoring the issue, but nevertheless irritated by it, the public looks to government to reduce congestion. Individuals and businesses need to understand that controlling the growth of commuter congestion directly benefits them. Implementing this recommendation would require financial resources to conduct a comprehensive multi-year media campaign. Low cost, easy ways to communicate the seriousness of this issue to the public follow:

- Use Division of Motor Vehicle Services inserts to educate motorists about topics that will help change behavior and reduce congestion, trips and auto emissions. Distribute ridesharing applications, a list of TMA services and a summary of commuter tax benefits.
- Design, produce and install new highway signs promoting ridesharing, including the toll-free information number and Web site reference. Redesign the toll-free number menu to be more user-friendly.
- Include information on commute options and incident management in driver education programs and in driving manuals. Disseminate information through NJ Network.

20. Implement advanced traffic signal control and intelligent transportation systems using traffic responsive signals, ramp metering, and automatic incident detection to manage traffic flow.

As population continues to grow, the demand on our existing transportation system is becoming increasingly hard to meet. With significant road and highway expansion unlikely due to cost and dwindling land supply, intelligent systems such as advanced traffic signal control, ramp metering and automatic incident detection will be critical to operating our current roadway systems at maximum capacity. This initiative will require long-term commitment of substantial capital resources to implement, but it holds promise as a way to manage traffic in concert with land use and smart growth considerations.

Traffic signal control is an interconnected electronic system that synchronizes traffic signal timing within an area, with the aim of maximizing throughput by reducing stops and overall vehicle delay. Traffic signal control varies in complexity from simple systems that use historical data to set fixed-timing plans, to adaptive signal control, which optimizes timing plans for a network of signals according to real time traffic conditions. Typically, cycle length, phase splits and offset are defined for each intersection.

Poorly timed signals waste time, fuel and money. Studies have shown that signal improvements generally provide the greatest payoff for reducing roadway congestion when compared with other methods, such as road widening. Advanced traffic signal control can help ease congestion and its negative consequences without the cost and environmental impact of road expansion.

Ramp metering is the use of traffic signals at freeway on-ramps to control the rate of vehicles entering the freeway. The metering rate is set to optimize freeway flow and minimize congestion. The metering rate can be fixed, or responsive to local or system-wide conditions.

Incidents include anything that disrupts the normal flow of traffic, such as stalled cars, accidents and objects that have fallen on the roadway. Transportation Management Centers often manage incident response. These centers coordinate the dispatch of tow trucks, police or highway patrol personnel, medical help, road maintenance crews, HazMat teams or other emergency services necessary to clear the incident and restore the road to full capacity. In addition to Emergency Service Patrols as noted in recommendation 24 below, Transportation Management Centers often use traffic cameras to automatically detect and confirm that an incident has occurred. Information regarding traffic incidents can be disseminated to motorists via radio, variable message signs and other media, thereby allowing motorists to make informed travel decisions and reduce delay.

21. Pursue ways through the Office of the New Jersey Treasurer to make the federal pre-tax commuter tax deductions available under New Jersey's tax structure.

The personal income tax structure of New Jersey does not recognize the automatic applicability of federal income tax exemptions. The tax structures of New York State and Connecticut do recognize the pre-tax commuter tax benefit. Some experts feel that acceptance of the commuter tax benefit by employers has been limited in New Jersey because of the absence of the double tax exemption. It would be necessary to study the fiscal impact lost revenues would cause the State.

22. Support and encourage State government's development of transportation fringe benefit programs for its own employees. State government should set the example for New Jersey employers by supporting teleworking, alternate work schedules and other Travel Demand Management (TDM) strategies.

Public Law 2001, Chapter 162, signed July 17, 2001, allows State and local government employers to offer qualified transportation fringe benefits to their employees as an employee set-aside program. Transit costs and parking benefits up to set limits may be excluded from federal taxes. The State of New Jersey's Division of Pensions and Benefits expects to begin offering the program to its employees around January 1, 2003.

State government can be a transportation role model by actively supporting teleworking and alternative work schedules. State government is encouraged to schedule meetings at off-peak times.

23. Support Governor McGreevey's initiative to remove uninsured motorists from New Jersey's roads.

It is estimated that there are 600,000 uninsured vehicles driving on the roads in New Jersey. Removing these vehicles may have a positive impact on traffic congestion.

24. Increase the present level of service provided by NJDOT's Emergency Service Patrols (ESP) along selected interstate highways to add service to chronically congested areas and provide new service on other facilities not presently served.

This recommendation will result in less congestion by reducing vehicle hours of delay, a critical performance measure. Incidents include a variety of non-recurring events such as flat tires, abandonment, fuel outage, breakdown, and debris, and often do not require police presence. Incidents cause delay because vehicles remain in the traveling lanes or in a position where the traveling public must reduce speed or stop to avoid the cause of the incident. Increased ESP activity will help remove vehicles involved in incidents more rapidly, allowing traffic to resume a freer flow. With the number of incidents responded to by ESP in NJDOT's northern region averaging over 1000 per month, it is essential that this service be increased. Since the vast majority of incidents are not crashes, this recommendation has the potential of significantly reducing congestion. Increased staffing and equipment purchase is necessary for implementation.

In addition to the recommendations presented and analyzed in this report, the Congestion Buster Task Force has identified additional ideas that warrant further exploration. They are:

Discount automobile insurance for individuals that restrict or reduce their driving – Some insurers, such as Progressive Insurance Company, base auto insurance rates upon specific driving factors, such as mileage, time of day, and geographic location, in lieu of more customary factors, such as age, sex, and marital status. The discount program uses a global positioning system device installed by the insurer in their customers' vehicles.

Pay-at-the-pump automobile insurance – Proponents argue that this would create a better link between miles driven and the cost of automobile insurance.

Individual commuter incentives and disincentives – Incentives, financial and otherwise, to reduce single occupant trips, may need to be developed to change individual travel behavior.

STATUTORY MANDATE OF THE TASK FORCE

The Congestion Relief and Transportation Trust Fund Renewal Act (Trust Fund Renewal Act) enacted on July 20, 2000 mandated the establishment of the CBTF. Section 13 of the Act follows:

N.J.S.A. 27:1B-21.26. Congestion Buster Task Force

13. a. There is created in the Department of Transportation a task force to be known as the "Congestion Buster Task Force" to study and make recommendations concerning the reduction of traffic congestion in the State. The members of the task force shall be appointed by the commissioner in such number as the commissioner shall designate from the Department of Transportation, the New Jersey Transit Corporation, business organizations, Transportation Management Associations, the counties, and members of the public.

b. The task force shall organize as soon as may be practicable after the appointment of its members and shall select a chairperson from among the members. The members shall select a secretary, who need not be a member of the task force. The task force shall meet at the call of the chairperson. The task force shall be entitled to call to its assistance and avail itself of the services of the employees of any State department, board, bureau, commission or agency, as it may require and as may be available for its purposes, and to employ stenographic and clerical assistance and incur traveling and other miscellaneous expenses as may be necessary in order to perform its duties, within the limits of funds appropriated or otherwise made available to it for its purposes.

c. The task force shall conduct a study of highway traffic congestion in the State and develop a commuter options plan that would result in peak hour vehicle trips being "capped" at 1999 levels. In developing the plan, the task force shall review relevant information and findings from other jurisdictions, both national and international. The plan shall include, but not be limited to, resources and incentives for public transportation, ridesharing, telecommuting and other travel reduction strategies. In making its recommendations for the plan, the task force shall include funding proposals, an implementation of the plan, and a method of evaluating progress toward the realization of the goal of the plan to cap peak hour vehicle trips at 1999 levels. The task force shall also be charged with identifying the top 10 projects which can be quickly implemented to relieve congestion or improve safety.

d. The task force may meet and hold public hearings at such place or places as it shall designate and shall issue a final report containing its findings and recommendations, including any recommendations for legislation that it deems appropriate, no later than one year after the task force organizes, to the Governor, the President of the Senate and the Speaker of the General Assembly, and the members of the Senate Transportation Committee and the Assembly Transportation Committee, or the successor committees.

e. The task force shall dissolve one year following organization of the task force.

REMARKS OF THE CHAIRMAN

Congestion in our present transportation system impacts almost every citizen of the State of New Jersey. This can take the form of delays in the morning rush hour; traffic jams at recreational, entertainment or shopping events; or the lack of adequate service on public transit. The Congestion Buster Task Force (CBTF) has spent a year examining all aspects of New Jersey's congestion problem. The members have looked at the root causes of the problem, talked with public and private experts and have listened to the citizens of the State. This has been an open and public exploration of a vexing public policy issue. The recommendations in this report are the product of this ongoing dialogue. These recommendations, while representing the collective judgment of the members on what is "politically and fiscally doable," are not an exclusive or perfect answer to congestion. It is hoped that our suggestions will become a lightening rod for constructive criticism and for the generation of new ideas that are more effective and more efficient. We see this report as the start of, and not the finish of, this discussion. As we have with all of our documents, the Task Force has posted this report on the CBTF home page of the New Jersey Department of Transportation Web site at http://www.state.nj.us/transportation/commuter/cbtf/index.hmtl to encourage continued participation by the public and by members of the Task Force who may wish to provide additional input to the development of the policy agenda.

Because congestion is individually perceived as a temporal and spatial phenomenon, we asked the public to engage in this discussion by identifying "hot spots" of congestion around the state. The New Jersey Department of Transportation cross-checked these problem routes and corridors against its long-range (25-year) plan. The Task Force used this list of congestion problem spots as a tool to discuss underlying causes for congestion. We learned that there are two main types of congestion: recurring and nonrecurring. Recurring congestion occurs on a regular basis, typically in the peak commuter hours, and is caused by heavy demand trying to use a facility at the same time. Nonrecurring congestion is caused by random, but not infrequent, events that disrupt traffic flow, such as vehicle breakdowns, accidents, construction work zones, special events and weather. Nonrecurring congestion is generally credited with causing half of the total roadway system delay.

Our study has graphically reaffirmed our understanding that the seemingly independent structural components of transportation – the buses, the trains and all the automobiles – are part of a complex and dynamic transportation system that inextricably links one component to another. The framework in which this system resides is the physical shape of the landscape of New Jersey, and to a great extent New York City and eastern Pennsylvania. How we have used the land in the past and created developments for housing, business, commerce and recreation establishes given nodes in the system. How we shape the future will determine the state of the transportation system, and this will either hinder or help the flow of goods and people.

Consumers are the most important part of the transportation system. Each citizen is a customer of the New Jersey transportation system. The transportation choices travelers make impact everyone else in the system. Individuals make personal decisions concerning their trips to and from work, where they shop and where they recreate. Their collective movement generates the sporadic local system overload. Single occupancy vehicles constitute the predominant form of travel. The length of time and the hassle of the daily commute produces a level of pain that either is tolerated by drivers or generates a search for an attractive alternative. Individuals are intelligent and

independent participants in this process. They select routes and modes of travel based on a number of personal criteria. Research literature suggests that the marketing of commute alternatives, by itself, is not a very effective strategy in reducing congestion. Government, transportation providers, and employers need to be involved, as they can influence choices, provide alternatives or, in some cases, impose restrictions on travel.

Citizens, individually and collectively, do not respond well to mandates from government or employers on commuting. There is general disdain for increased taxes, fees, tolls and forced car-pooling, even when it has a higher environmental or social purpose. The recent reactions of drivers following the September 2001 incidents demonstrated this fact; few people took advantage of park-and-rides; instead, they shifted their driving times from the hours during which single occupancy vehicles were banned at NYC crossings. This is also demonstrated by the lack of public acceptance of high occupancy vehicle lanes, the general acceptance of the elasticity of gasoline prices, the political aversion to increasing gas taxes, and the fragile sustainability of employer-sponsored carpooling programs. There is a psychological attachment to the auto. For many in our auto-centered society there is a belief that a "right-to-drive" is a fundamental freedom.

More outreach needs to be done with employers within the State to encourage corporate support for trip reduction strategies and policies. For business meetings and off-site events, mileage and expenses are reduced when employees carpool. We need to take a careful look at "Parking Cash-Out," perhaps by implementing some demonstration projects. Collectively, the Task Force wants to encourage telecommuting because each workday spent at home takes one vehicle out of the peak period flow. Longitudinal studies on productivity of workers who telecommute need to be generated to help convince corporate management that this is a tool for increasing productivity of certain types of employees that they should support. Some workplace-based initiatives that could reduce congestion include: flexible work hours, alternate workweek, extended hours, different start and stop times, off-peak deliveries, carpool subsidies, onsite transit support services, TMA-sponsored transportation fairs, and local shuttle services. While these strategies can contribute to reducing congestion, they may not produce fewer trips.

Most of the Task Force's recommendations focus on governmental and institutional improvements, such as increased aid to transit, better land use planning, freight plans or financial incentives not to drive solo. Most of the carrots offered are reasonable and workable but these tweaks of the system will not have profound or perhaps even noticeable impacts on the existing morning and evening peak hour crush. We've learned that a volume reduction on a specific route or corridor will often be negatively offset by a growth in population or a shift to this easier flowing route by a driver currently traveling a longer route.

The fundamental issue discussed by the Task Force has been – “Just how ‘bad’ is congestion now?” “Bad” is clearly a relative term based on the region of the State, the travel time and personal expectations. The CBTF also discussed, “In the future, at what level of pain would strong restrictions that limit the number of automobiles on the road during peak periods become a desirable and workable public policy?” Potential governmental restrictions on individual driving, if implemented, would meet the goals of the legislation and roll back peak hour vehicle trips to 1999 levels. Just as severe congestion can strangle economic growth, restrictions that better manage congestion could potentially have a negative impact on economic growth. More importantly, because restrictions have a direct impact on the behavior of drivers and on the personal cost of driving, they do not appear to be politically doable at the present time. These restrictions could take

the form of road rationing, such as limiting the driving of specific autos to four days per workweek; peak period pricing of corridor use with a mandatory E-ZPass system for all NJ registered automobiles and trucks that could also monitor current inspection stickers and valid insurance policies; restricting student driving to high schools; or enforced parking restrictions at work sites. Evolving technology will enable these and other options to provide the mechanism for public regulation of automobile use. The point at which the collective pain of everyday congestion makes these restrictions valid political policy options is in the future.

Transportation planning needs to be integrated to maximize the positive impact of the mind-boggling amount of capital that is currently invested, and the amount that will need to be invested in the future. There needs to be a more public visible calculus for comparing the equivalency of investment dollars in all of the components of the system. We need to start thinking multi-modally on all of our outlying transportation construction projects. Every road improvement project should be viewed as a potential mass transit enhancement, and vice versa.

The recommendations in this report are a good start. We have been able to assemble a collection of congestion reduction ideas that will help. There is no easy solution to reduce all of our traffic congestion problems. Each travel or development decision made by government, employers, businesses and individual commuters can alter the existing system and help us to design a better future for all of our citizens. Real congestion improvement will come from a continuing series of correct decisions. We invite the public to provide its personal input into this ongoing discussion.

LONG TERM TRENDS

New Jersey's transportation system of moving people and goods is composed of a variety of modes of transportation (cars, buses, taxis, vanpools, rail, boats, person-powered transport and trucks). Individual citizens, for the most part, select the mode of choice based on destination, trip purpose, cost, convenience, habit, or availability of options.

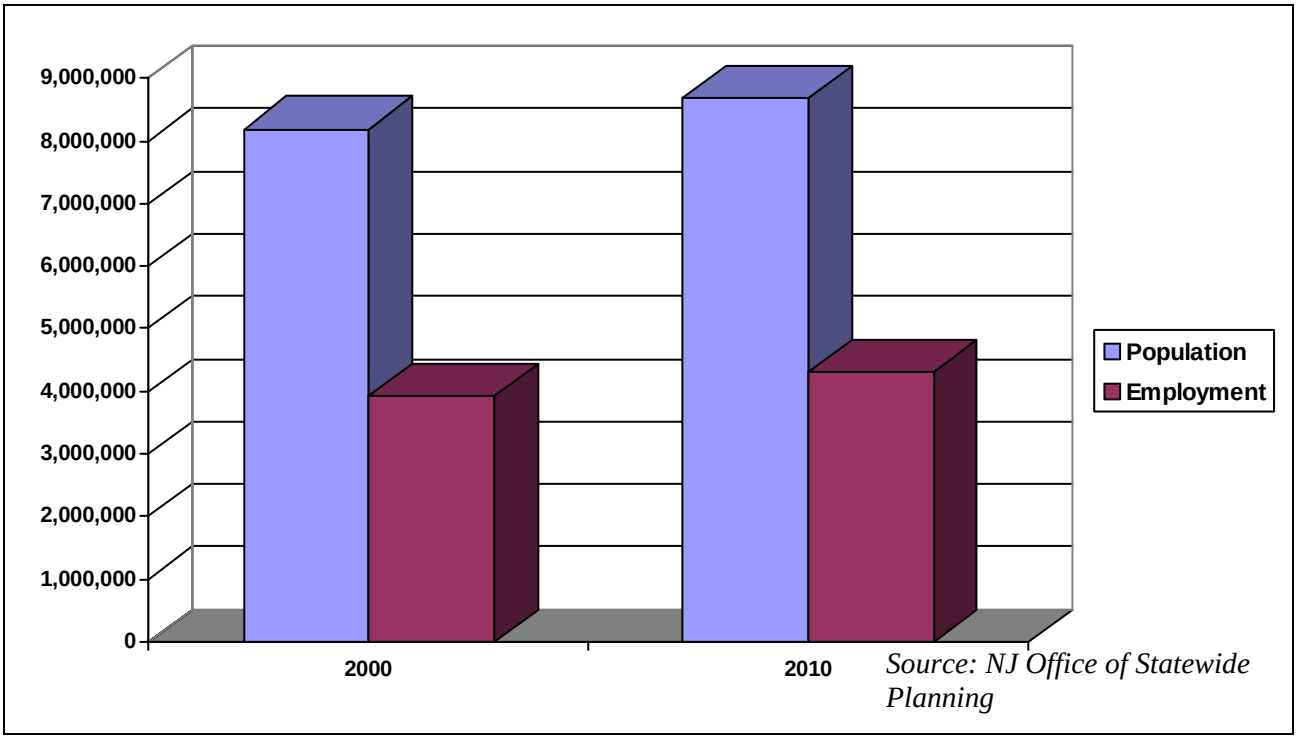
In simple terms, congestion results when travel demand approaches or exceeds the capacity of a transportation facility to provide service at performance levels acceptable to the users. Presently, various levels of congestion during peak commuting periods, generally 7 a.m. to 9 a.m. and 5 p.m. to 7 p.m., affects many regions of the State. The ease and length of time of the daily commute is an issue of growing concern for both employers and for employees. In addition, the ability to ship and receive goods in a timely manner is important for the economic viability of many businesses in the manufacturing and retail sectors of our State's economy. Population growth, economic development, and changes in social structure and land use development have combined to produce steadily increasing levels of traffic congestion, not only in New Jersey but throughout the United States and indeed throughout the industrialized world. Traffic congestion is not just a source of personal inconvenience for the individual traveler – it imposes a significant cost on the economy. A recent study by the New Jersey Institute of Technology estimates that the statewide annual cost of traffic congestion in lost time, operating cost, and wasted fuel is more than $7 billion. (*Mobility and the Costs of Congestion in New Jersey: 2001 Update*, July 2001).

The statutory mandate of the Congestion Buster Task Force is to identify policies that will reduce the number of peak period vehicle trips. We have learned that single occupancy vehicles constitute the predominant form of travel. The Task Force has determined that merely shifting drivers from automobiles to public transportation is not a feasible short-term alternative. Lack of current capacity on most of the peak period routes, except where new rail service is being implemented, will not allow a simple mode shift.

There is a strong relationship between land use and transportation demand. Travel patterns have changed dramatically in the least 10 years, as the consumption of land for residential and office use has caused people to drive further. Roadway capacity, however, has not kept up with travel demand. Between 1990 and 2000, total roadway lane miles in New Jersey increased approximately 6 percent, while vehicle miles of travel increased 14 percent. This has resulted in the average commute time increasing 18 percent, from 25.3 minutes in 1990 to 30 minutes in 2000.

Demographic trends and household characteristics play a large role in creating demand for travel. Key indicators suggest that demand for travel will increase in the future due to increases in both population and employment. Population in New Jersey is expected to grow by almost 500,000 people by the year 2010 or 1 million people over the next twenty years. Nearly 400,000 jobs will be added in the State by 2010 (800,00 new jobs are expected over the next twenty years). The chart that follows illustrates these demographic trends. Travel demand will undoubtedly grow as a result of these trends.

STATEWIDE DEMOGRAPHICS 2000 - 2010



Source: NJ Office of Statewide Planning

Other trends and observations could affect future travel in New Jersey:

- Aging Baby Boomers comprise the largest segment of New Jersey's population. In the next 20 years, a large and rapid increase in the number of seniors is likely to change the characteristics of travel demand.

- New Jersey has one of the highest per capita incomes in the nation. High incomes typically correlate to more trips, higher automobile ownership rates and longer commutes.

- There are more vehicles registered in New Jersey than licensed drivers. On average, there are two vehicles for every household in New Jersey and 1.5 vehicles for every job.

- The number of Vehicle Miles of Travel (VMT) continues to grow, but at a slower rate in recent years.

- New Jersey's $30 billion tourism industry, our second largest, generates 635,000 jobs, $2.2 billion in taxes and 164 million annual travel and tourism trips. The geographic and seasonal distribution of New Jersey tourism has traffic implications, especially as it relates to accessibility to shore communities.

- The number of import/export containers and associated trucks will expand by at least 400 percent in the coming years.

CENSUS 2000

Data from the Census 2000 provides insight into travel behavior. Between 1990 and 2000, the number and percentage of people driving alone to work increased, while the number and percentage of carpoolers decreased. Multi-car ownership continues to soar, while the use of public transportation as a share of total travel declined nationwide. This latest data comes from the Census Supplementary Survey, based on the "long form" that went to 20 million households (one in six) across the nation.

In the year 2000, nationwide, the automobile was the overwhelming travel choice of commuters going to work, with 76.3 percent of all workers driving alone. The 76.3 percent national rate was an increase in drive-alone commuters, up from 73.2 percent in 1990. In New Jersey, the percentage of workers driving alone is 72.2 percent, up from 71.6 percent of workers in 1990.

The nationwide trend between 1990 and 2000 shows an overall decrease in the use of public transportation, while in New Jersey the overall percentage of commuters using public transportation increased to 11.4 percent, up from 8.8 percent in 1990.

UNITED STATES 1990 Commuting to Work	Number of Workers	Percent Using Mode
Car, truck, or van:		
Drove alone	84,215,298	73.2%
Carpooled	15,377,634	13.4%
Public transportation	6,069,589	5.3%
Motorcycle	237,404	0.2%
Bicycle	466,856	0.4%
Walked	4,488,886	3.9%
Other means	808,582	0.7%
Worked at home	3,406,025	3.0%
Total Workers 16 years and older	**115,070,274**	**100.00%**

UNITED STATES 2000 Commuting to Work	Number of Workers	Percent Using Mode	Change in Overall Share
Car, truck, or van:			
Drove alone	97,243,457	76.3%	**4.08%**
Carpooled	14,299,090	11.2%	**-19.11%**
Public transportation	6,592,685	5.2%	**-1.97%**
Motorcycle	158,059	0.1%	**-66.36%**
Bicycle	567,042	0.4%	**8.81%**
Walked	3,417,546	2.7%	**-45.48%**
Other means	1,095,477	0.9%	**18.25%**
Worked at home	4,075,230	3.2%	**7.43%**
Total Workers 16 years and older	**127,448,586**	**100.00%**	

NOTE: The total number of workers increased by 12,378,312 between 1990 and 2000.

NEW JERSEY 1990 Commuting to Work	Number of Workers	Percent Using Mode
Car, truck, or van:		
Drove alone	2,731,027	71.63%
Carpooled	471,943	12.38%
Public transportation	336,708	8.83%
Motorcycle	2,729	0.07%
Bicycle	9,183	0.24%
Walked	156,523	4.11%
Other means	24,097	0.63%
Worked at home	80,474	2.11%
Total Workers 16 years and older	**3,812,684**	**100%**

NEW JERSEY 2000 Commuting to Work	Number of Workers	Percent Using Mode	Change in Overall Share
Car, truck, or van:			
Drove alone	2,797,820	72.19%	**1%**
Carpooled	375,378	9.69%	**-22%**
Public transportation	441,788	11.40%	**29%**
Motorcycle	2,164	0.06%	**-22%**
Bicycle	18,389	0.47%	**97%**
Walked	103,315	2.67%	**-35%**
Other means	33,973	0.88%	**39%**
Worked at home	102,658	2.65%	**25%**
Total Workers 16 years and older	**3,875,485**	**100%**	

NOTE: The total number of workers increased in New Jersey by 62,801 between 1990 and 2000.

The Census Supplementary Survey universe is limited to the household population and excludes the population living in institutions, college dormitories, and other group quarters. Data is based on a sample and is subject to sampling variability. The degree of uncertainty for an estimate is represented through the use of a confidence interval. The confidence interval computed here is a 90 percent confidence interval and can be interpreted roughly as providing 90 percent certainty that the true number falls between lower and upper bounds.

MEASURING CONGESTION IN NEW JERSEY

Congestion can be measured in a variety of ways; however, since congestion is based on one's perception of acceptable conditions, performance standards may vary by type of transportation facility, geographic location, time of day and trip purpose. All measures of congestion seek to quantify some aspect of the relationship between transportation supply and travel demand. Transportation supply or the capacity of a particular transportation facility is a constant number that can be calculated based on the characteristics of the transportation facility. For highways, transportation supply most often is expressed as the maximum number of vehicles that can pass a given point in a specific period, such as "vehicles/hour." Travel demand is measured by calculating the number of trips typically made at the household level or the volume of vehicles traveling on a specific transportation facility (highway, bus, or train) over a specific period.

A variety of congestion measures have been developed and are commonly used:

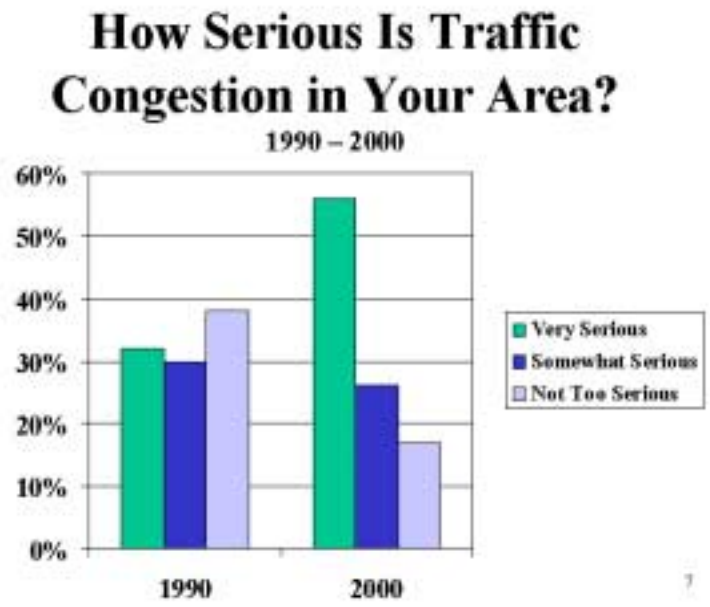
Travel delay, travel time or speed are time-based measurements commonly used to determine additional travel time in excess of the amount that would be reasonably desired by users of a transportation facility.

Volume to Capacity ratio (V/C) is the balance (ratio) between highway travel demand and highway supply. As demand approaches or exceeds supply, congestion occurs. V/C ratios of 0.75 or greater typically indicate congested travel conditions.

Level of Service (LOS) measures the quality of roadway traffic flow on a grading scale that ranges from A (free-flowing traffic) to F (bumper-to-bumper, stop-and-go traffic).

In addition to the above, recent research has resulted in new congestion indices, such as the *Travel Rate Index*, which measures extra travel time during the peak period, and the *Roadway Congestion Index*, which measures travel density for a roadway or area.

Congestion occurs when travel demand approaches or exceeds the capacity of a transportation facility to provide service at performance levels acceptable to the users. This definition applies not only to highways but also to transit, pedestrian, and bicycle facilities as well. Anyone who drives, bikes, or uses public transit is familiar with the affects of congestion. Congestion makes you late, decreases worker productivity, increases personal stress, costs you money, degrades your travel experience (crowded buses or trains), and lessens the time you could be spending at work, home or any place other than traveling. A public opinion survey conducted as part of the New Jersey Long-Range Transportation Plan Update indicates New Jersey residents feel that traffic congestion is more serious now than it was in 1990.



Source: NJDOT Poll

INVENTORY OF KNOWN CONGESTION "HOT SPOTS"

Steady growth in population coupled with economic expansion and land use developments have caused congestion in the State transportation system. In order to identify congestion corridors and locations, the CBTF initially reviewed the top 42 congestion hot spot locations previously identified by NJDOT. These congested corridors and locations are noted in the Department's May 1998 report entitled *New Jersey FIRST: "A Transportation Vision For the 21st Century"* as priority projects in improving congestion.

Furthermore, the Task Force members identified congested corridors and locations based on their own traveling experience in the State. Task Force members also reached out to their constituents and the public for ideas and suggestions of congested locations. An inventory/concise summary of known congestion hot spots in New Jersey is provided in Appendices B, C and D found on pages X-2 through X-4 of this report.

Appendix B lists the top 42 congestion hot spot locations identified by NJDOT. Some of the congested corridors identified by the CBTF are the same as those listed in Appendix B. However, the CBTF has identified additional hot spot locations listed in Appendix C (congested corridors) and Appendix D (congested intersections) organized by route, municipality and county.

These corridors and locations are not shown or ranked in any priority order. They have not been analyzed to determine the level of traffic congestion and appropriate solutions. Reducing congestion at some of these spots may involve major capacity increases requiring large financial resources, while other congestion spots can be improved by less expensive roadway operational improvements focusing on specific bottlenecks, as opposed to major construction activities.

BASELINE PEAK HOUR TRIP DISCUSSION

The CBTF is charged with "capping" peak hour vehicle trips at 1999 levels. In order to quantify 1999 peak hour vehicle trips, NJDOT used travel demand computer simulation models developed and used by New Jersey's three MPOs – the North Jersey Transportation Planning Authority, the South Jersey Transportation Planning Organization and the Delaware Valley Regional Planning Commission. The models were used to forecast how many trips will take place on transportation facilities in each peak hour in 1999 and in future year, 2010. The year 2010 was chosen because information and techncial work was available for this year. 1999 and 2010 transportation projects and demographics were coded into each MPO model. Each model was run to produce peak hour trips across the entire network.

Daily Peak Hour Vehicle Trips (in thousands)

	1999		2010	
	AM	PM	AM	PM
NJTPA	1,286	1,323	1,373	1,414
SJTPO	131	141	149	161
DVRPC	492	492	538	538
Total	1,909	1,956	2,060	2,113

Percent Growth = 7.91 percent (AM), 8.03 percent (PM)

Difference – 151,000 (AM); 157,000 (PM)

Source: NJDOT

NJDOT estimates that there were approximately 1.9 million morning peak hour trips and 1.96 million afternoon peak hour trips on the State primary roadway network in 1999. Forecasts for the year 2010 indicate that this number will grow to more than 2.0 million trips in the morning peak period and nearly 2.1 million peak period trips in the afternoon. This is an increase of approximately 151,000 a.m. peak hour trips and 157,000 p.m. peak hour trips per day. Using the assumption that removing trips in the a.m. peak hour removes those trips in the p.m. peak hour, the average number of peak hour trips is 155,000. In order to "cap" peak hour travel at 1999 levels, as called for in the Congestion Relief and Transportation Trust Fund Renewal Act, 155,000 trips would have to be removed from each daily peak hour period by the year 2010.

TASK FORCE PUBLIC MEETINGS AND WEB SITE COMMENTS

The Congestion Buster Task Force established a Web site to display news, press releases and subcommittee work; to announce events; and to gather comments from the general public. The Web site was visited nearly 4,000 times. The CBTF received seventy-two comments via their Web site. The comments dealt with a variety of subjects, including the timing of traffic signals, increasing the use of alternate workweeks, expanded bus routes in central New Jersey, elimination of tolls and raising public awareness.

The Congestion Buster Task Force held public meetings on April 23, 2002, at NJDOT headquarters, April 24, 2002, at the Cherry Hill offices of NJDOT, and April 30, 2002, at the offices of the North Jersey Transportation Planning Authority. At each public meeting, the Chairman made opening remarks, each subcommittee gave a brief report and comments were received from the public. Testimony was received from:

- Members of the public
- East Coast Greenway Alliance
- Cherry Hill Environmental Protection Advocates (written, not in transcript)
- Assemblyman Alex DeCroce
- New Jersey Chapter of the National Motorists Association
- New Jersey Alliance for Action Inc.
- Pennoni Associates Incorporated
- North Jersey Transportation Planning Authority
- CSX Transportation

The Congestion Buster Task Force Web site is located at: http://www.state.nj.us/transportation/commuter/cbtf/index.html. Transcripts of the public meetings can be found on the Web site.

CONGESTION BUSTER TASK FORCE – COMMITTEE AS A WHOLE

The Congestion Buster Task Force has met regularly since June 2001. A chronology of Task Force meetings is located at Appendix A of this report. Members of the CBTF, who represent a diverse group of stakeholders, studied the issue of traffic congestion in New Jersey. Through presentations and the solicitation of public comments, the Task Force gained insight into the magnitude of the congestion problem facing our State.

Many roadways in New Jersey presently operate at or near capacity. Even small increases in traffic volume will cause significant increases in traffic delay. Congestion levels and traffic growth vary from one region to another. In order to fully understand the magnitude of traffic conditions in the State, the Task Force reviewed and evaluated available reports and literature. In addition, it relied on many transportation organization presentations and testimonies. Several transportation organizations presented their perception of congestion and their approach to solving congestion problems. Some of the agencies that provided resources for the study include NJDOT, NJ TRANSIT, TRANSCOM, TMAs, MPOs, New Jersey Pinelands Commission and the State Planning Commission.

As a first step in defining the scope for this study, the Task Force discussed the intent of the legislation. The members discussed whether the Task Force should focus strictly on vehicle trip reduction during peak periods or include traffic delay. The CBTF concluded that it would address both reduction of vehicle trips and improvement of traffic delay.

Each Task Force member was asked to provide five items that could be pursued as potential ways to reduce vehicle trips and improve traffic delay. In essence, this approach provided a useful perspective that would otherwise have been excluded if the Task Force relied solely on objective, analytical measures of problem area identification. The Task Force members were encouraged to provide the following information for each recommendation identified:

- What is the recommendation?
- How would it reduce congestion?
- Whom does it affect?
- How much would it cost?
- Are there cost savings in other areas?
- How would the recommendation be implemented?
- Is legislation required?

This subjective identification of problem areas provided the framework for further analysis and evaluation by NJDOT technical staff. Each recommendation's impact on vehicle trips reduction and traffic delay improvement was fully assessed.

The Task Force's recommendations include projects and strategies that may be categorized as short-term, intermediate-term and long-term. The Task Force believes that most of these recommendations are politically and economically doable. This report presents recommendations and ideas ranging from supporting Governor McGreevey's recent initiative to remove uninsured vehicles from New Jersey's roads to implementing new technology to manage traffic congestion.

The Congestion Buster Task Force has learned that there is no "magic bullet" or easy solution to New Jersey's congestion problem. It will take many small incremental steps to improve conditions. Meeting the legislative mandate of "capping peak hour vehicle trips at 1999 levels" will require an unprecedented level of public and private sector cooperation, difficult choices and dramatic changes in the way New Jersey citizens currently travel. Individuals, employers, commerce, industry and government will each have a role in meeting a broad range of responsibilities. Just as we have learned that severe congestion can strangle economic growth, we have learned that everyone will benefit if the rate of congestion growth is slowed.

A major responsibility lies with individuals and the travel choices they make. Individuals must realize that it is not up to the "next guy" to act. Each one of us can make wiser travel choices. These choices could include:

- Combining trip purposes
- Planning travel during off-peak hours
- Elimination of unnecessary trips
- Investigate taking transit for more trips, and do so when convenient and available

- Carpooling when you can

Employers can do their part by adopting ridesharing and trip reduction policies. Businesses should schedule meetings and off-site activities for non-peak hours; employees should be encouraged to carpool to these events to save mileage and expenses. Workplace initiatives that could reduce congestion include flexible work hours and alternative workweeks to shift demand; carpool and vanpool subsidies; on-site transit support services, including shuttles; and TMA-sponsored events.

Commerce can shift operating hours, schedule deliveries for off-peak times, and explore freight options available through the rail and barge networks.

Government can provide sufficient funding levels for public transportation to insure that adequate transit infrastructure is built and maintained and continue to support roadway improvements and the deployment of technology that manages the flow of traffic. Government mandates could range from a requirement to remove vehicles involved in minor incidents to the side of the road, to outright imposition of travel restrictions.

The Congestion Buster Task Force realizes that long-term success rests with changing individual behavior. Research literature suggests, however, that simply marketing commute alternatives is not an effective congestion reducing strategy. Ultimately, success will depend on a variety of long-term factors including adoption of sensible land use policies and decisions, adequate funding for transit and implementation of a comprehensive program of trip reduction strategies by all players in the transportation system.

TASK FORCE SUBCOMMITTEES AND MEMBERS

In October 2001, the Task Force organized into subcommittees to study and make recommendations in the areas of traffic management, goods movement, demand management, transit & passenger rail, land use, legislative initiatives and public education. A chart showing subcommittee membership is on the following page.

Each subcommittee met independently to discuss their respective subjects in depth. Many recommendations were generated by each subcommittee, but only those felt to have a major impact on congestion have been included in the subcommittee reports that follow the membership chart. The recommendations are not ranked nor presented in any particular order. The full extent of subcommittee findings and proposals can be found on the CBTF Web site at http://www.state.nj.us/transportation/commuter/cbtf/index.html.

CBTF SUBCOMMITTEE MEMBERSHIP			
SUBCOMMITTEE	GOALS	CHAIRPERSON	MEMBERS
CONGESTION	Focus is problem identification and examining the factors that contribute to congestion. Explore roles and responsibilities of stakeholders.	Jim Sinclair	All Task Force Members
TRAFFIC MANAGEMENT	Examine subjects such as Intelligent Transportation Systems, incident management, signal timing, and congestion relief pricing and make recommendations to improve traffic flow and safety.	Ken Afferton	J.P. Miele Dotty Drinkwater Hamou Meghdir SFC Dan Morocco Bill Ragozine
TRANSIT & PASSENGER RAIL	Explore ways to improve mass transit and promote additional use. Review allocation of resources and innovative transit solutions.	James Redeker	Anita Perez Martin Robins Judith Schleicher
GOODS MOVEMENT	Recommend ways to improve the efficiency of truck operations through scheduling and re-routing. Examine the role of rail freight in reducing congestion.	Gail Toth	Ken Afferton Janine Bauer Dotty Drinkwater Joanne Jaeger Martin Robins
DEMAND MANAGEMENT	Review travel demand management strategies such as ridesharing, vanpools, alternate work schedules and telecommuting.	Sandra Brillhart	Jack Claffey Erica Ferry Barry Lem Anita Perez Bill Ragozine Jim Sinclair
LAND USE AND GROWTH MANAGEMENT	Study how land use management can reduce congestion. An example is encouragement of transit-friendly planning.	Bill Ragozine	Janine Bauer Bill Layton Mike Reeves Judith Schleicher
LEGISLATIVE	Review recommendations and determine which ones require legislative solutions. May present specific legislative language for Task Force consideration.	Michael Egenton	J.P.Miele Ken Afferton Dotty Drinkwater Joanne Jaeger Judith Schleicher Jim Sinclair
PUBLIC EDUCATION	Suggest educational and promotional programs that publicize commuter incentives and transportation mode choices.	Janine Bauer	Gerry Keenan Judith Schleicher All Task Force Members

SUBCOMMITTEE REPORTS

TRAFFIC MANAGEMENT SUBCOMMITTEE REPORT

Background: Americans drive more than 2.6 trillion miles a year on our nation's roadways. The increasing demand for travel caused by our expanding economy has resulted in system congestion. Our transportation networks are reaching the limits of their existing capacity, particularly when demand reaches a peak 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. The Traffic Management Subcommittee was created to focus on the operational aspects of the State's roadway network. Our charge 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. Congestion relief measures 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 subcommittee met to assess issues of roadway operations within New Jersey, reviewed relevant public comments received via the various public meetings and the Task Force's Web site, and formulated recommended solutions for relieving congestion. Recommendations 1, 3, 4, 5, 6 and 7 will reduce travel delay; recommendation 2 will reduce peak period trips.

Recommendation 1: *Facilitate 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*

When a traffic accident occurs, particularly on major roadways and during rush hours, the involved vehicles cannot currently be moved off the roadway until enforcement officials authorize removal, even when the incident is minor. Immediate and residual traffic congestion results. Immediately moving vehicles to the side of the road will drastically improve traffic flow, and thereby reduce congestion. Responding agencies should be granted authority to remove incapacitated vehicles from State and Interstate highways when conditions allow it. 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." This law 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. It also establishes the responsibility of drivers involved in minor accidents whose vehicles are still operable to immediately remove their vehicles from the travel lanes. Some New Jersey State Police vehicles are already equipped with "push bumpers" that can push away a variety of vehicles.

Enabling legislation will help the traveling public when minor incidents occur. Since most incidents involve vehicles that are still operable, or that are remediable by minimal undertaking, such as by pushing them off the roadway lanes, vehicle hours of delay will be reduced across the roadway network. This recommendation could be implemented in the short-term. Associated costs include approximately $500,000 for advertising to inform drivers of when to move vehicles to the roadside and $1.5 million (1000 vehicles at $1500 per vehicle) for a statewide initiative to install

push bumpers on law enforcement and public agency vehicles. Reduction in vehicle hours of delay will be a cost savings benefit to the motoring public. Assuming a minimal value of $10/hour per driver experiencing incident delay, a "duty-to-remove" law could save the public, in one urbanized county alone, nearly $1 million in delay time during a typical commuter day.

Recommendation 2: *Implement, maintain and/or expand congestion relief pricing on all tolled facilities in New Jersey*

The New Jersey Turnpike has demonstrated reduction in peak hour travel resulting from implementation of congestion relief pricing. This reduction could be achieved on other major tolled roadways as well. Budgetary impact on toll roads and authorities must be considered, but it is noteworthy that the NJ Turnpike and the Port Authority of NY and NJ have congestion relief pricing in place. By using their experience, it is possible to introduce congestion relief pricing on other toll facilities in such a way as to have no negative effect on overall expected toll revenue for an implementing agency. NJ Turnpike data suggests that its congestion relief pricing program has achieved a shift of about one half 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 were realized 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. Congestion relief pricing is most effective when it includes a significant differential in price between peak and off-peak. To encourage off-peak discounts alone is insufficient. The New Jersey Highway Authority recently eliminated off-peak discounts, noting the discount was too small, and because it was a discount, instead of a surcharge, it never achieved shifts in travel. Implementation or expansion of congestion relief pricing incentives can be achieved in the short term if E-ZPass is utilized as a mandatory prerequisite for congestion relief pricing. Since E-ZPass is already legally utilized in New Jersey, no additional legislation requirement is anticipated. E-ZPass Customer Service Centers that currently process E-ZPass transactions would need to modify their account posting systems to accommodate new pricing by peak hours, thereby incurring a software enhancement cost.

Recommendation 3: *Provide a real-time travel time information system*

A system should be developed and widely publicized which would enable callers or Web site visitors to obtain directions and real-time information for travel within New Jersey or to a neighboring major city (such as NYC or Philadelphia) using NJ TRANSIT and other ridesharing programs such as shuttle services to/from transit stations (as offered by many TMAs.) Northern New Jersey, the Trenton Area, and the Camden-Philadelphia Area would be good starting points. We recommend that this system be enhanced to establish real-time bus and shuttle schedules and a reserved parking system for park-and-ride lots. Approximately $2 million would be needed to expand the existing TRANSCOM (TRIPS 1,2,3) information system to include route and schedule information for southern New Jersey transit operations. Further costs would be incurred to modify various Web sites as well as establish a Toll-Free Telephone Voice Response Unit that is constantly updated to reflect timely information. Toll agencies, TRANSCOM, NJDOT Operations, NJ TRANSIT, and southern New Jersey transit operators would need to cooperate and provide real-time traffic data. Staged implementation in certain areas could be achieved in the short term, with subsequent expansions building on initial implementations. In addition, ongoing operating and advertising costs could reach $500,000 per year.

Recommendation 4: *Provide real-time traffic and alternate route information systems to be used by the general public and commerce to help divert demand away from congested roadways*

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 allow the public to make well-informed decisions about travel alternatives. Thus, travelers can make informed choices of mode, route, and departure time to avoid congestion, and thereby help alleviate it. NJ TRANSIT, TRANSCOM, toll agencies, transportation authorities, NJDOT, and the traveling public will all benefit from this information. TRANSMIT and TRIPS 1, 2, 3 plus route guidance systems, incident management systems and NJ TRANSIT/mass transit information systems are logical first steps toward building an extensive information system. Innovative means for travelers to make better informed congestion-related choices about modes, routes, and departure times, including both pre-trip information and in-vehicle communications must also be developed. Such information systems could be developed and implemented on a staggered schedule to affect gradual but lasting, long-term congestion relief. Promotion of the developed systems for general use would be key to achieving significant diversions from congested arteries. Similarly, by working with ports, truck sheds, shippers and receivers, provision of real-time traffic information can affect efficient freight transport scheduling and real-time schedule modifications. Combining real-time traffic and alternative routing information with real-time freight scheduling would facilitate efficient transport time utilization, and prevent problems such as trucks stalled in traffic impacting unscheduled arrivals contributing to port and truck shed congestion. This would have the benefit of reducing both freight costs and traffic congestion.

A basic Advanced Traveler Information System, which incorporates GPS routing and real-time traffic and transportation information for the northern half of New Jersey would cost an estimated $20 million plus $2-3 million/year to operate. This could be implemented in the short-term. The estimated cost of a call to the 511 system is $1 per call on an ongoing basis (+/- 50 percent confidence level, since there is a large uncertainty level regarding wireless carriers' active involvement). As an alternative, information could be broadcast through existing Highway Advisory Radio locations, radio stations, and in-vehicle devices, perhaps through consumer subscription services. 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.

Recommendation 5: *Re-time traffic lights on congested State roadways to be more responsive to the current traffic conditions*

Historical data indicates that intersections with traffic light timing plans that have not been updated within the past two years are likely to cause a five to ten percent increase in overall travel time delay to the public. By implementing this recommendation, signaled intersections will be more responsive to current traffic conditions during peak hours, and overall travel time delay through these intersections will be reduced. An estimate of the total value of the reduced delay time (assuming a $10/hour per driver cost for experienced delay) is $250,000 per year per intersection.

There are currently 5000 signalized intersections on New Jersey's State highway system. About one-fifth of these intersections are estimated to be in highly congested areas, with no volume-based adaptive control, and have not been re-timed within the past two years. These 1000 intersections would have their performance appreciably enhanced by signal re-timing. The cost of this effort would be approximately $3 million. Implementation of this recommendation would begin with

NJDOT's issuance of a consultant contract to study the involved intersections and develop revised signal timing plans. This is achievable in the short-term, with NJDOT subsequently deploying a staged implementation to install new plans on the signal controllers at affected intersections.

Recommendation 6: *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 presently*

This recommendation will reduce congestion by reducing vehicle hours of delay, a critical performance measure. Presently, incidents include a variety of non-recurring events, such as flat tires, abandonment, fuel outage, breakdown or debris. Often, incidents cause delays because vehicles remain in the traveling lanes or in a position where the traveling public must reduce speed or stop to avoid the cause of the incident. Increased ESP activity that removes the cause of such incidents more rapidly, will allow traffic to resume a freer flow. With the number of incidents responded to by ESP averaging over 1000 per month for the Northern Region of New Jersey, it is essential that this program be expanded. Since the vast majority of incidents are not crashes, nor do they require police presence, this recommendation has the potential of significantly reducing congestion and vehicle hours of delay.

Past performance indicates that each service patrol will respond to five incidents per day. Assuming a per-vehicle delay cost of $10/ hour and that incident response reduces travel delay by ten minutes, the cost savings to the public for the proposed expansion of service patrols would approach $100 million per year. Equipment costs for seven trucks will total approximately $560,000; total recurring costs for labor and maintenance approximate $560,000 annually. We recommend staged implementation as follows: Interstate 195 from Trenton to Exit 16, Great Adventure; Interstate 78 from Port Elizabeth to Route 24; Interstate 78 from Route 24 to I-287; I-287 from I-78 to I-80 (with existing service from I-80 to NY State line); I-80 from NJ Turnpike to Route 17 area at Saddle Brook (with existing service from Route 17 exit to Route 3); I-80 from Route 3 to I-287 (with existing service from I-287 to the present boundary west of I-287); and Route 24 from I-78 to I-287.

Recommendation 7: *Deploy more high-speed E-ZPass installations on toll roads*

High-speed E-ZPass enables travelers to proceed at highway speeds and pay their tolls without having to reduce speed or stop at tollbooths. Already implemented on such roadways as Delaware's Route 1, the Oklahoma Turnpike, and Canada's Highway 407, the equipment that enables high-speed, or "open-road," tolling is mounted overhead on pole-like infrastructures which traverse the roadway; a tollbooth is not required. The vehicle, equipped with a valid toll transponder, simply drives along maintaining highway speed while passing under the transponder reader. Typical deployment of open road tolling includes dividing electronic toll payers and cash toll payers into separate lanes at a safe distance before the toll plaza. Frequently, the left-hand lanes of the highway are designated as high speed lanes, while the right-hand lanes are equipped with toll booths for cash toll payers. Congestion, caused by slowing down to proceed safely through tollbooths, is eliminated in the high-speed lanes while concurrently achieving positive safety and environmental impacts.

Note: Recommendation 7 has not been analyzed for the amount of time savings per vehicle in impacted/affected areas. Recommendation 8 (ramp metering and traffic responsive signals) was analyzed, but is not among the Traffic Subcommittee's final recommendations.

TRANSIT & PASSENGER RAIL SUBCOMMITTEE REPORT

Recommendation 1: *Increase funding for transit*

Increasing transit services and making it a more attractive and practical alternative to driving will reduce congestion. Provide NJ TRANSIT with sufficient operating funds to maintain quality transit service on the core transit network without continuing to divert capital resources to this purpose. Implement a transit capital reinvestment strategy that makes the core transit network the highest capital priority.

Appropriate sources of funding for transit operating and capital needs must be found.
NJ TRANSIT's operating budget for Fiscal Year 2003 includes an increase of $84 million, bringing the total budget to $1.222 billion. NJ TRANSIT's capital program for the same period is set at $1.190 billion, of which $260 million will be spent to cover maintenance activities that traditionally were part of the operating budget. Thus, $260 million in NJ TRANSIT capital projects will be withdrawn to cover the shortfall in the operating budget. A total operating and capital gap of $3.1 billion will exist over the next five years unless NJ TRANSIT finds additional resources.

This recommendation could be implemented through an increase in gasoline tax, as well as increased contribution of federal and private funds. NJ TRANSIT would continue to manage transit resources as part of the day-to-day operation of the transit network. Possible legislation requirements include:

- Enact Transportation Enhancement District legislation to encourage private sector participation in shuttle financing.
- Reprioritize NJ TRANSIT's capital plan or establish special legislative authorization.
- Identify sufficient funding for railroad operational and capital changes.
- Congress must earmark several billion dollars for this initiative.
- A contribution from the Port Authority of NY and NJ may require bi-state legislation.

Recommendation 2: *Create a seamless transit system*

Strategies to make transit more affordable, practical, and reliable; and increase ridership include:

- Development of a universal transit fare/pass system.
- Improve connectivity between existing buses/shuttles/trains to maximize existing service, especially in suburban areas.
- Implement local shuttle systems connecting office parks to rail and buses.
- Implement local shuttle systems connecting residential neighborhoods to rail and buses.

Although costly, implementation, in phases, could start in the near-term. No legislation is required.

Recommendation 3: *Increase transit capacity in congested corridors*

This recommendation seeks to reduce the number of motorists destined for outlying work sites and midtown Manhattan by facilitating a more efficient flow of bus traffic and increasing rail car seating capacity by 30 percent. Implementation strategies include:

- Increase bus and rail rolling stock fleets by purchasing bi-level coaches and additional buses.
- Conduct a bus/roadway congestion busting study to identify/implement exclusive bus lanes on high volume routes, including conversion of multi-purpose lanes to exclusive bus use during peak periods (possibly Routes 495, 3, 9, Garden State Parkway).
- Increase capacity for buses to/from New York and Port Authority Bus Terminal.
- Increase frequency of existing service during the peak and off-peak periods.
- Construct a new rail tunnel into Penn Station, New York.

Through Governor McGreevey's initiative, NJ TRANSIT is making capacity increases. Possible increases in labor and operational costs may be offset by improved running times and more transit driver trips per shift. There are major capital costs associated with tunnel construction, facility improvements and acquisition of vehicles.

Recommendation 4: *Implement transit-friendly land use policies*

This recommendation seeks to attract automobile drivers to transit, and encourage pedestrian and bicycle trips. Implementation strategies include:

- Identify and define transit-friendly corridors.
- Provide higher density development options that can be served efficiently by transit.
- Improve pedestrian and bicycle access to transit for existing and future developments, and add more bicycle storage facilities.
- Provide transit circulation routes and passenger waiting facilities in development site plans.
- Provide rights of way for exclusive transit guideways to reduce development costs of new transit services and improve travel speed and competitiveness of transit.
- Provide preferential treatments for transit in roadway designs.

This recommendation requires modification to the State Development and Redevelopment Plan and changes to the Municipal Land Use law. Implementation would take little money, but may not be politically doable.

Recommendation 5: *Develop transit solutions to Pennsylvania-New Jersey commute*

This recommendation seeks to reduce the number of Pennsylvania motorists destined for jobs in New Jersey. Implementation strategies include:

- Appoint a task force comprised of transportation professionals, including TMA representatives, from counties bordering the two states to study commutation patterns of Pennsylvania residents working in New Jersey and design transit solutions.
- Obtain and analyze origin/destination data.
- Develop a work plan to expand bus and rail service between Pennsylvania and New Jersey.

GOODS MOVEMENT SUBCOMMITTEE REPORT

Background: The efficient movement of goods is vital to the State's continued development and prosperity. The goods movement industry is among the most significant in New Jersey with 484,000 New Jersey workers employed in the State's transportation and distribution network.

Congestion reduces transportation efficiency, causes a loss in productivity, increases time and expense to move goods, and, ultimately, increases local consumer prices. Keeping traffic moving reduces air pollution and damage to the roads, and holds down costs.

The dominant mode of goods movement in New Jersey is by truck. Goods movement in New Jersey is composed of three nearly equal categories: imports, exports and internal. Based on a recent NJDOT study conducted by the Voorhees Transportation Policy Institute, 96 million tons of freight comes into the State by air (0.1 percent), water (16.7 percent), rail (17.6 percent) and truck (65.6 percent). On average, 82 million tons of freight leaves from New Jersey origins by air (0.4 percent), water (29.1 percent), rail (7.2 percent), and truck (63.3 percent). Truck movement most dominates intra-state shipments. Of the 82 million tons of freight moving within New Jersey, railroads move 0.4percent, water carriers move 10.5percent, and trucks move 89.2 percent.

All modes of transportation are dependent on one another. However, in most cases, trucks are used to pickup and deliver freight to and from the airport or the port, to and from the rail facility, or to and from a distribution center or large multi-purpose warehouse. Trucks exclusively serve 86 percent of all New Jersey communities. Trucks deliver to New Jersey's 12,370 manufacturing companies, 50,180 retail stores and 27,130 wholesale companies and pickup and deliver 100percent of all agricultural products.

Trucks share highways and collector roads with private automobiles and buses. A substantial portion of truck traffic competes for this highway space during weekday peak travel hours. A major reason for this is that freight transportation is a service dependent on the schedules established by the customer. The average business in New Jersey operates its shipping and receiving hours between 8:30 a.m. and 4:30 p.m. – Monday through Friday. Thus, many truckers are forced to use the highways during peak hours.

If we restrict and impede the flow of goods, it will result in the trucking industry's inability to operate successfully in the State of New Jersey. This will compel shippers, receivers, distribution centers and regional warehouses to move elsewhere where transportation costs are more reasonable. If the trend continues, New Jersey will become much like New York City – trucking companies and other distribution functions will find the transportation system so difficult and unprofitable that they will stop conducting business here.

Recommendation 1: *Support the development of a comprehensive freight plan for the State*

We support the development of a comprehensive freight plan by NJDOT that includes trucks, rail freight and barge networks. The plan will analyze existing freight plans, determine how goods movements are currently conducted, forecast where freight movement is headed and determine how to ready the system to accommodate the anticipated growth of goods movement. State coordination

of local and regional efforts in producing goods movement plans is necessary to avoid overlap and redundancy.

The cost for developing the freight plan will exceed $500,000. The proposed plan will identify critical investments in the State's transportation infrastructure that will foster an intermodal approach to goods movement. Those investments, as they relate to highways, will serve to reduce congestion on affected roads by allowing the more efficient movement of goods.

Recommendation 2: *Conduct a survey to determine the feasibility of expanding hours of operation to coordinate truck movements during off-peak hours*

Currently many businesses are open between 8:30 a.m. and 4:30 p.m. The carriers must coordinate their schedules based on the needs of their customers. This results in trucks being on the road during the peak hours and competing for road space with private automobiles. We recommend that NJDOT arrange a survey of shippers, receivers, and distribution centers in New Jersey to determine the feasibility of expanding hours of operations (including Saturdays) to accommodate truck pickups and/or deliveries during off-peak periods.

If a significant number of businesses are willing to adjust their hours, we recommend that NJDOT launch an outreach program to bring all of the parties involved in goods movement together to determine if schedules could be adjusted. For example, open at 6 a.m., close at 8 p.m., and remain open to ship and receive on Saturdays.

This recommendation may cause businesses to incur some additional costs to open or close at different times; however, if the program is successful, the positive impact could reduce transportation costs and significantly reduce congestion by removing trips from peak periods. The change in hours may require adjustments to union contracts. No legislation is required.

Recommendation 3: *Provide incentive for more carriers to use NJ Turnpike*

For a variety of reasons, truck operators find disincentives for using the Turnpike. The NJ Turnpike Authority should take a number of steps to encourage truck use of its facility:

- Explore allocation of lanes in the current Truck/Bus/Car Corridor from Exit 8A to Exit 14. This includes studying the feasibility of creating a truck and bus-only corridor between specified exits and designating the hours such restricted lanes would be available.
- Continue and expand congestion pricing strategies, such as off-peak discounts with peak period surcharges.
- Support the NJ Turnpike plan to increase parking spaces for trucks at its rest areas.

This recommendation would be implemented by negotiating with the NJ Turnpike Authority. The suggested steps will improve the flow of traffic, encourage more trucks on the system, aid the movement of bus passengers, and improve safety. Currently, trucks make up 17 percent of the traffic on the Turnpike and are responsible for 35 percent of its toll income. While there would be a reduction in income for the Turnpike Authority, such an approach would ease congestion on alternative routes that are not well designed to accommodate trucks. If the program is successful in increasing the number of trucks, the Turnpike Authority may recover the initial loss in revenue.

Recommendation 4: *Support specific roadway improvement projects*

Several planned roadway projects focus on infrastructure improvements that will reduce congestion and improve safety in congested areas with high truck volumes. These improvements will not contribute to trip reduction, but they will improve efficiency of the intermodal goods movement system.

The projects include a series of road improvements known as "Portway," being advanced by NJDOT. The volume of goods moved through New Jersey ports is expected to more than triple in the next 20 years. Portway is planned to meet this tremendous demand. This series of freight improvements will strengthen access to and between the Newark-Elizabeth Air/Seaport Complex, intermodal rail facilities, trucking and warehousing/transfer facilities and the regional surface transportation system. In addition, it is anticipated that once the federal port security bill is passed, all ports will be required to restrict traffic into the ports. In order to meet these security concerns, port traffic will need to separate from other commercial traffic.

These facilities and their access routes are the front door to global and domestic commerce for the State and the greater metropolitan New York region. Portway will also target and capture freight services and related economic development along its path. NJDOT will join local communities and other State agencies to encourage brownfield remediation at adjacent development sites.

Recommendation 5: *Experiment with truck-only lanes on highly congested roadways*

England has started to experiment with truck-only lanes on highly congested roadways as a way to improve the flow of goods. We recommend that NJDOT be authorized to study the viability of creating truck-only lanes. Implementing the recommendation will take trucks out of the multi-use lanes in major highway corridors, improve safety and provide more free flow capacity for other vehicles in those lanes.

The proposed study will likely cost $300,000 to $400,000. Congestion relief for both trucks and commuters would result in time and fuel savings as well as a reduction in pollution.

Recommendation 6: *Invest more State and federal transportation funds in an expanded and efficient rail freight and barge network*

An efficient rail freight and barge network can remove containers and trucks from highways, at all times, but especially during peak hours. Such a network is especially critical to reduce the expected increase in truck traffic that will come with expanded Port of Newark and Elizabeth operations over the next 20 years. With little potential of increasing urban roadway capacity, an increase in truck volume will have a significant negative impact on traffic congestion unless other freight systems are used.

DEMAND MANAGEMENT SUBCOMMITTEE REPORT

Background: Travel Demand Management (TDM) is an approach to reducing congestion which seeks to influence travel behavior to better manage the demand on the transportation system. By managing the demand side of the equation, the need to increase supply, or add highway capacity, is reduced. TDM strategies generally fall into four main categories:

- Strategies to increase vehicle occupancy, such as carpooling and vanpooling.
- Strategies to encourage modal shifts, such as transit, bicycling and walking.
- Strategies to influence the time and/or route of travel, such as flextime.
- Strategies to eliminate trips altogether, such as telecommuting and trip chaining.

Demand management strategies generally work best when they are part of a comprehensive trip reduction program used in centers of employment. In such cases, the strategies have been shown to reduce trips by as much as 40 percent.

Transportation Management Associations (TMAs) are independent, nonprofit, public private partnerships that work closely with employers, government and commuters to provide an array of mobility options and information. New Jersey's nine TMAs play an essential role in developing and implementing demand management programs in their respective service areas. The Congestion Buster Task Force hypothesized that there might be a correlation between the level of TMA involvement and successful trip reduction programs. The Task Force supports a strong TMA program.

Historically, TDM programs have been primarily employer based, although work trips account for approximately 25 percent of congestion. Accordingly, the Demand Management Subcommittee's recommendations include strategies geared toward employers as well as individual commuters.

Recommendation 1: *Develop and implement a voluntary employer trip reduction program supplemented by an aggressive, multi-year pilot program in selected congested corridors*

This is essentially Scenario C as presented on pages X-10 and X-17. Prominent support by the Governor is essential for a voluntary program to be successful. An aggressive pilot program could supplement the existing TMA Employer Services Program, which limits TMA funding to 25 hours per employer work site. A pilot program could fund TMAs to develop, implement and monitor intensive TDM programs at interested work sites in the selected corridors. It also could include financial support for parking cash-out programs, shuttle operation, video conferencing, company cars for business traveling or carpooling, subsidies, bicycle amenities, telecommuting training, emergency rides, recognition programs, on-site assistance and other programs as appropriate.

The strategies in the voluntary trip program could be combined to increase vehicle occupancy, shift modes, change the time of travel and eliminate trips.

Note: Strategies to influence route of travel are included in the Traffic Management recommendations. Demand Management Subcommittee recommendations were modified after initial analysis; wording may not exactly match the wording presented in the analysis section of the report.

Recommendation 2: *Expand Park-and-Ride Program by requiring the Department of Transportation to expand or add at least two park-and-ride facilities per year through 2010*

Designated parking lots located at transit facilities or near major roadways can provide convenient meeting places for ridesharing and give people easier access to transit. In New Jersey, efforts to promote transit and ridesharing are hampered by insufficient capacity at many commuter park-and-ride facilities. Although Transportation Trust Fund legislation (N.J.S.A. 27:1B-21.27) sets a goal to expand or establish at least two park-and-ride facilities per year through FY 2004-05, NJDOT mandates or policies to acquire properties for park-and-ride facilities are not adequately funded. In addition, many municipalities are not receptive to park-and-ride lots in their communities. Implementation strategies include:

- Review and strengthen NJDOT's policies and procedures for park-and-ride acquisition.
- Extend and strengthen the existing provisions of the Trust Fund Renewal Act to 2010 and provide funding for implementation.
- Establish land banking of properties for park-and-ride purposes.
- Establish a Joint Park and Ride Capital Program Commission to include NJ TRANSIT, road authorities, TMA representatives and private carriers to elevate and prioritize park-and-ride projects.
- Incorporate park-and-rides into the design of NJDOT corridor improvement projects.
- Provide assistance and education to municipalities on benefits of park-and-rides and pursue multi-agency jurisdiction opportunities between State and local governments.

Recommendation 3: *Develop mechanism and procedures for NJDOT to collect data regularly from employers for transportation planning purposes*

Employee commute data is a valuable tool for planning transportation and transit improvements, yet there are no standard mechanisms in place to regularly obtain origin and destination data for employment sites. The purpose of this recommendation is to enable NJDOT to conduct periodic, regular employer surveys to obtain employee zip codes and work hours. The recommendation is for a bi-annual voluntary survey. If response is low, it should become mandatory, in which case legislation would be required.

An education and information campaign to assuage employers' suspicions and concerns, which could be done through TMAs, business trade organizations and chambers of commerce, must accompany this effort. TMAs should also be involved with data analysis in their service areas.

Recommendation 4: *Increase percentage of employees in New Jersey who telecommute by 10 percent in five years*

Approximately 14 percent of workers in New Jersey either telecommute or work at home. Statistics show that telecommuting can reduce vehicle miles traveled (VMT), particularly in peak periods. In Connecticut, telecommuting has been shown to reduce VMT by 37.2 million miles per month. This

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recommendation could become part of a voluntary trip reduction program as discussed in Recommendation 1 above. Implementation strategies include:

- Develop a statewide telework task force to identify and address opportunities and obstacles to teleworking in New Jersey including management issues, land use and zoning, technology and OSHA considerations.
- Develop and implement incentive and recognition program for employers.
- Allow telecommute services training to be fundable within the TMA program.
- Develop and implement subsidy programs for startup costs for employers in congested corridors.
- Issue an Executive Order requiring State agencies to establish policies to enable 15 percent of their employees to telecommute at least one day a week within one year and 20 percent within 5 years.
- Develop a statewide marketing and awareness campaign to promote telecommuting and TMA services.

Note: Strategies to influence route of travel are included in the Traffic Management recommendations. Demand Management Subcommittee recommendations were modified after initial analysis; wording may not exactly match the wording presented in the analysis section of the report.

LAND USE & GROWTH MANAGEMENT SUBCOMMITTEE REPORT

Background: This subcommittee believes that implementation of effective land use policy must begin at the local level. In general, and with few exceptions, New Jersey's current local planning and land use process is not designed to support TDM techniques that encourage alternatives to single-occupancy vehicle trips, such as ridesharing, transit use, biking, walking, teleworking, compressed workweek and other commute alternatives. Some land use strategies overlap with recommendations made by the Transit & Passenger Rail Subcommittee. Please refer back to them.

Recommendation 1: *Amend the New Jersey State Planning Act to mandate that municipal master planning and zoning comply with the goals, strategies, policies and planning area policy objectives of the State Development and Redevelopment Plan*

Growth management, the central principle of the State Plan, can provide compact, mixed-use development patterns that contribute to more efficient transportation service delivery, thereby reducing automobile dependency and unnecessary trips.

Savings result from not having to build new highways or other large-scale infrastructure; however, some administrative costs are usually associated with implementing a growth management strategy. In order to comply with a State Plan mandate, all municipalities would need to allocate financial resources to this effort, or perhaps, ideally, work in partnership with their respective counties. The State may have to allocate resources for municipal assistance and training on smart growth principles.

Recommendation 2: *Resurrect earlier proposed county planning enabling legislation, which would give counties authority to approve or disapprove development based upon existing infrastructure capacity*

Since much of New Jersey's new development, both residential and commercial, occurs along county roadways, these roadways most frequently seem to fall victim to congestion and require widening and/or intersection improvements to prevent gridlock. Counties should have the power to withhold development approval unless adequate public facilities exist to the support the development.

Ultimate savings result from not having to build new highways or other large-scale infrastructure; however, some administrative costs are usually associated with implementing a growth management strategy. Some cost efficiency could be realized if county planning enabling legislation was enacted as a companion to a State Plan mandate. Counties and municipalities could pool resources to work toward growth management with this legislative initiative as an effective legal framework.

In the late 1980's, amendments to the County Planning Enabling Act called Municipal-County Planning Partnerships were proposed; the amendments, however, were never adopted by the New Jersey Legislature.

Note: Land Use subcommittee recommendations were modified after initial analysis; wording may not exactly match the wording in the analysis section of the report.

Recommendation 3: *Create incentives for municipalities to integrate Travel Demand Management techniques or requirements into their zoning/planning requirements*

These techniques could include: sidewalks/bike paths; transit stops; reduced parking in response to provision of shuttles; park-and-ride lots along major travel routes; the addition of on-site services for larger office parks and commercial development; pedestrian-friendly intersections and transit-friendly development. With many more options not only being made available, but actually encouraged, the public will have more reason to try single-occupant vehicle alternatives.

Development costs will increase to pay for pavement for sidewalks or bikeways and additional intersection requirements for pedestrians. The encouragement of transit-friendly design will increase costs slightly, and the addition of shuttle services will increase costs. The increased cost of shuttles could be offset, however, by reduced parking space requirements. The developer could then, hopefully, pass on these savings.

Recommendation 4: *Expand the use of Transfer of Development Rights (TDR) in order to preserve open space while concentrating development in areas which, in turn, may sustain transit*

This land use technique, useful in balancing development, is presently only used in the Pinelands area of our state. If expanded, municipalities throughout the state implementing TDR would be required to perform studies to develop "sending" and "receiving" areas. The concept can protect areas without infrastructure and increase densities in regions with infrastructure. An area's ability to sustain transit is enhanced, residents and workers are offered a transit option, and open space is conserved.

Costs include planning and a review of potential "sending" and "receiving" areas. Cost savings include VMT reduction and coordination of infrastructure investment.

Recommendation 5: *Create financial, density, parking, clean-up or other incentives to encourage new commercial, office and industrial development to locate where it can be served by transit services (either existing or viable new services)*

Channel new development into existing communities and identified growth centers to allow for effective provision of transit services and transportation infrastructure

Mass transit is a recognized method of traffic reduction, although the degree to which it reduces congestion and VMT depends on the success of transit in capturing ridership.

Municipalities may need financial and technical support to promote this type of land use management through their local plans and zoning. Growth management or "smart growth" planning can result in savings by reducing the cost of providing services and infrastructure to a developing area.

Note: Land Use subcommittee recommendations were modified after initial analysis; wording may not exactly match the wording in the analysis section of the report.

Recommendation 6: *Allow municipalities to deny development applications where the existing off-site roadway network cannot support the needs of the proposed development, or alternatively, allow municipalities to pursue timed-growth planning or assess impact fees so that appropriate improvements with developers can be negotiated*

This recommendation is intended to have residential, commercial and industrial development not leapfrog ahead of infrastructure development, and have all infrastructure be coordinated and consensus-driven. When the necessary transportation infrastructure does not exist, the developer would have the option to construct needed infrastructure to speed the process.

Currently, municipalities are under the jurisdiction of the Municipal Land Use Law (MLUL), which does not allow them flexibility when development occurs. For instance, the law dictates maximum waiting periods. Further, since ensuring adequate infrastructure is the responsibility of government, developments can be built with developers having paid only a fee toward future improvements. Many times, transportation infrastructure may not support new development, causing gridlock conditions and the need for emergency improvements. Also, municipalities are now required to limit their traffic review to the site of the proposed development, and they may not deny applications even where added trips generated by the development would seriously impact the adjacent roadway network. A small change in the MLUL will correct this situation and lead to better planning by municipalities and developers alike.

The costs can be large, depending on improvements required. Costs could affect the municipality by delaying development and the resulting ratable. Savings can occur by having the developer pay directly for needed improvements or paying additional amounts to the municipality for the completion of the external improvements.

Note: Land Use subcommittee recommendations were modified after initial analysis; wording may not exactly match the wording in the analysis section of the report.

LEGISLATIVE SUBCOMMITTEE REPORT

The statutory goal of the Congestion Buster Task Force is to make recommendations that will reduce peak hour vehicle trips. The Legislative Subcommittee started their work by reviewing existing commuter and congestion related New Jersey law. A summary is shown below:

Citation	Summary	Status
N.J.S.A 27:26-1-4	NJ Ridesharing Act of 1981. Exempts employers from certain liabilities they may incur as a result of promoting ridsesharing programs	Enacted 1-7-1982
N.J.S.A 27:26A-1-15	Traffic Congestion and Air Pollution Control Act Defines Travel Demand Management and TMAs; provides for voluntary employer trip reduction program; contains employer tax credits	Enacted 6-30-92; amended 11-1-96
N.J.S.A 54A:6-23	Employer-provided commuter transportation benefits not considered gross income.	Enacted 1993; amended 7-17-2001
N.J.A.C. 16:50 (Rule)	Smart Moves Program is a Statewide initiative to develop, implement and monitor travel options and commute alternatives through a variety of strategies and programs. Using employer tax credits and grants, the program encourages New Jersey employers to develop and implement voluntary employer trip reduction programs.	Adopted 10-6-1997
N.J.S.A 39:4-56.5	Concerns abandoned vehicles	Enacted 1-18- 2000
N.J.S.A. 27:1B-21.17	Congestion Relief & Trust Fund Renewal Act requires report to legislature on reduction of single occupancy trips	Enacted 7-20-2000
N.J.S.A 27:1B-21.18	Congestion Relief & Trust Fund Renewal Act requires report on telecommuting	Enacted 7-20-2000
N.J.S.A 27:1B-21.21	Requires installation of LED lighting in traffic signals on State highway system to save energy and to provide congestion relief. The diodes have a 10-year life cycle as compared to the one-year replacement cycle for regular bulbs.	Enacted 7-20-2000
N.J.S.A 27:1B-22	One goal of NJDOT's Capital Investment Strategy shall be to construct an additional 1000 lane miles of bicycle paths to reduce traffic congestion and for recreational uses.	Enacted 7-20-2000
N.J.S.A. 27:1B-21.26	Creates Congestion Buster Task Force and calls for preparation of a commuter options plan	Enacted 7-20-2000
N.J.S.A. 27:1B-21.27	Sets goal of establishing or expanding at least two park-and-ride facilities in each successive fiscal year through 2004-2005. Requires report to legislature	Enacted 7-20-2000
N.J.S.A 52:14-15.1B	Commuter tax legislation that permits a State employees' commuter transportation benefit salary reduction program	Enacted 7-17-2001

The subcommittee conducted a multi-state inquiry to create an inventory of commuter incentives in use throughout the country. This inventory, along with information about promising international programs, was distributed to Task Force members as part of their learning process.

The Legislative Subcommittee then researched and reviewed commuter and congestion related legislation of several states. The states chosen are similar to New Jersey or are forerunners in the field. The table that follows outlines this research.

STATE	CITATION	SUBJECT MATTER
Arizona	*Ariz. Rev. Stat. Ann., § 49, C.3, Article 8*	Travel Reduction Program Mandatory program is still in effect. Telecommuting by State Employees 14 percent of state workers currently engage in telecommuting.
California	*Cal. Stat., §C.91-AB 2928, amended by C.656-SB 1662*	Traffic Congestion Relief Program Establishes a relief fund to finance congestion relief improvements, dedicates gasoline tax to transportation purposes and creates a Transportation Investment Fund seeking new and innovative ways to fund critical projects. A project listing is available on the Internet.
	Health & Safety Code, § 43845; Rule 1504, adopted 5/13/94	Parking Cash-Out Requires employers of 50 or more in certain areas, to offer parking cash-out programs.
	Government Code, § 65088-65089.10	Congestion Management Program
	Streets & Highway Code, § 885-886	Bicycle Facilities Coordinator Legislation created this coordinator position.
	Streets & Highway Code, § 890-894	Bicycle Transportation System Establishes a bicycle transportation system to develop a plan with functional commuting needs of employee, student, businessperson and shopper.
	Public Utilities Code, § 130290	Smart Freeway Demonstration Project Includes traffic monitoring devices, signal control systems, traffic information systems, improved emergency response systems, tow services.
	Streets & Highway Code, § 2560	Freeway Service Patrol Act Permanent implementation of freeway service patrol system, involving a cooperative effort between state and local agencies.
	Public Resources Code, § 25480-86	Ridesharing Program Development
	Government Code, § 14170-14181	Guaranteed Return Trip Demonstration Project
		Telecommuting by State Employees No legislation on telecommuting; formal policy developed in 2000.

STATE	CITATION	SUBJECT MATTER
Connecticut	*2001 Conn. Acts, § 6985*	Transportation Strategy Board An act signed 7/2/01 established this board and appropriated $50 million for specific projects to improve, among other things, the mobility of people and goods. Telecommuting by State Employees On-going pilot program; legislation was enacted in 1996 to grant temporary telecommuting.
Delaware	*67 Del. Laws, c. 160 § 1*	Commuter Tax Legislation The Travelink Traffic Mitigation Act, recently enacted in Delaware, provides a tax incentive to employers who establish an approved travelink program.
	68 Del. Laws, c. 426 § 2	Commuter Tax Legislation This section of law includes state employee commuter plans.
	65 Del. Laws, c. 87 § 25	Parking for State Employees State employees are liable for the full cost of commuting to and from work, including the cost of parking. The State of Delaware will not participate in the payment of any commuting cost, including parking costs. (This statute does not apply to any commuter benefit given in conjunction with commuter tax incentives.)
Florida	*1998 Fla. Laws, c. 98-31*	Telecommuting by State Employees Legislation established a state employee telecommuting program in 1998. There are over 500 current participants; participation is expected to increase.
	1999 Fla. Laws, c. 99-385	Commuter Assistance Program Procedures established October 1999.
	1999 Fla. Laws, c. 99-385	Transit Corridor Program Procedures established March 1999 include the Congestion Management System Mobility process.
	2000 Fla. Laws, c. 2000-257	Mobility 2000: Building Roads for the 21st Century State plan announced in January 2000 aims to ease congestion in urban and tourism areas. Employee Transportation Management Program Commuter policy for Florida DOT employees announced November 2000.

STATE	CITATION	SUBJECT MATTER
Kentucky		Telecommuting by State Employees Administrative regulations promulgated in August 1999 that established the requirements for telecommuting. No mandates are included.
Maryland	*Md. Code Ann.,§ 2-901*	Commuter Tax Legislation This section of law, enacted in 1999, allows business entities to claim a tax credit in an amount equal to 50 percent of the cost of providing commuter benefits to their employees. Entities include insurers (premium tax) and financial institutions (franchise tax). Telecommuting by State Employees Maryland mandated that state agencies allow at least 10 percent of eligible employees to telework at least four days per month. The goal, established in 1999, is met.
Massachusetts		Telecommuting by State Employees A package of "family friendly" benefits became operational in spring of 2000; pilot program is in place, although no formal legislation.
Minnesota		Telecommuting by State Employees No law or executive order; pilot program is in place.
New York		Tax-Free Qualified Commuter Benefits NYDOT's Web page explains and encourages participation in these benefits. Federal legislation known as TEA-21 enacted June 1998, removed restrictions for many fringe benefits such as transit and vanpools.
North Carolina		Telecommuting by State Employees These rules adopted in August 2000 set a goal of reducing vehicle miles traveled by state employees by 20 percent through telecommuting. Implementation was put on hold due to tight fiscal climate.
Ohio		Telecommuting by State Employees Statewide, centralized policy drafted; awaiting approval by governor.
Utah		Telecommuting by State Employees Utah has adopted administrative rules on telecommuting by state employees.

STATE	CITATION	SUBJECT MATTER
Virginia	*Va. Code Ann., § 2.2-203.1 and 2.2-2817.1*	Telecommuting by State Employees Effective 10/1/2001, each state agency is required to establish a telecommuting policy for employees, in cooperation with the Secretary of Technology. It requires an annual report to the Virginia legislature.
	Va. Code Ann., § 15.2-1512.3	Telecommuting by Local Government Employees This legislation authorizes and encourages local governments to implement a telecommuting policy for eligible employees.
	Va. Code Ann., § 33.1-46.2	HOV Lanes Commonwealth Transportation Board is authorized to designate high-occupancy lanes.
	Va. Code Ann., § 33.1-252	Free Use of toll bridges Vehicles transporting two or more persons, may be permitted toll-free use of certain bridges during rush hours.
Washington	*Executive Order 01-03*	Telecommuting by State Employees June 2001 Executive order requires state agencies to adopt written telework policies. The goal is to have an average of at least 9 percent of state employees telecommuting by 2006. Commute Trip Reduction Program Employers located in nine Washington counties having more than 100 employees are required to participate in the program. WSDOT supports the program with direct and indirect employer assistance. A tax credit available from 1994-1999 acted as an incentive for non-obligatory participation. WSDOT reports quarterly on the status of the program.

As it became apparent to the members of the Task Force that many factors contribute to congestion, the subcommittee researched state law and practice concerning incident management. A top recommendation of the Task Force is legislation to require drivers involved in minor accidents to move vehicles to the side of the road. Members feel this could have a significant impact on travel delay. Exemplary legislation addressing this issue is Georgia Code §40-6-276 entitled "Duty to Remove Vehicle from Roadway or Expressway or Multilane Highway: Removal of Incapacitated Vehicle from State Highway." This statute 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 Legislative Subcommittee met to review and analyze the major Task Force recommendations. The subcommittee discussed how to best proceed to accomplish the recommendation, whether by legislation, executive order, regulation or administrative order.

PUBLIC EDUCATION SUBCOMMITTEE REPORT

Background: An aggressive public information campaign is essential to communicating the seriousness of the traffic congestion problem to the public. The public would like to ignore this problem and hope that the "government" can make it go away. Individuals and business need to understand that controlling the growth of commuter congestion directly benefits them.

Recommendation 1: *Develop and Implement Multi-Year, Multi-Media Public Information Campaign*

Congestion is growing at an alarming rate and will have a chilling effect on our economy and quality of life if not addressed. The public needs to understand the problem and the various options that can mitigate congestion's negative effects. The campaign should be multi-year and multi-faceted. A statistically valid survey of commuters should be included in the campaign to help understand the challenges and assist in the development of effective TDM strategies.

Recommendation 2: *Use Division of Motor Vehicle Services inserts to educate motorists about a variety of topics that will help change behavior and reduce congestion, trips and auto emissions*

Presently, inserts are put in the envelopes mailed to customers who transact business with Motor Vehicle Services via mail for license renewals, registrations, insurance matters and other business. The inserts all seem to be public service announcements, charitable contribution solicitations or advertisements for "vanity " license plates. Since our prime target audience in reducing congestion is the motoring public, the use of inserts seems appropriate.

Inserts could include rideshare applications, trip saving tips, incident management tips and pollution-reducing strategies. They could promote commuter tax benefits, shuttle services, bicycle and pedestrian programs and park-and-ride opportunities. The inserts could provide access to transportation options through the toll-free rideshare number and Web site.

Recommendation 3: *Design, produce and install new highway signs promoting ridesharing and the toll free number and Web site. Re-do toll free number menu to be more user friendly. Utilize smart highway alert programs, such as MAGIC, when not used for emergency situations*

The current rideshare signs are over ten years old; revitalization and upgrading is warranted.

Recommendation 4: *Use driver's education curriculum, manual and test to educate motorists about the implications of single network travel, commuter incentives and transportation mode choices. Offer driver refresher courses that provide the same information*

Every user of the transportation network in New Jersey should understand their travel choices and the consequences of those decisions. New drivers should understand, and older drivers be should reminded of, the greater impact driving alone places on the transportation network, the benefits of timing trips, and the environmental and economic costs of congestion. Questions on written driver's tests will reinforce the importance of these lessons.

TECHNICAL ASSESSMENT OF SUBCOMMITTEE RECOMMENDATIONS

The technical analysis aspect of the Congestion Busters Task Force was primarily a support effort to quantify the various recommendations generated by the subcommittees. A NJDOT consultant performed the technical analytical work. The analysis was conducted at only sketch planning level due to the level of details provided by the subcommittees and the very tight timeframe for providing the analysis.

The consultant worked with representatives of the subcommittees to define assumptions and the intent of their recommendations. Parallel or complimentary New Jersey-based evaluations were used to perform most of the analysis. Where New Jersey-specific experience was not available, national research and experience was used to develop some level of quantification.

In the first round analysis effort, the original concept of quantifying all results was not always possible. In some instances, qualitative results were provided where appropriate. A second round of analysis was conducted, after ascertaining additional detail from the subcommittees. All of the recommendations, other than those that were related to studies, were given a further degree of quantification.

With the goal of capping peak hour vehicle trips at the 1999 level, estimated to be approximately 155,000 daily trips per each peak hour, the results of the technical analysis indicates that there is no "magic bullet" to reduce congestion. Voluntary travel demand management, increased transit use and traffic management strategies will only get us halfway to the goal. The addition of financial incentives and disincentives would provide some additional reduction in vehicle trips, but the goal would still not be reached. Land use strategies are "long term" at best and would require strong incentives or compelling requirements to provide significant impacts. The only way to reach the legislated goal would be to institute "mandatory" strategies, but those are likely to be very difficult to implement.

Some subcommittee recommendations were "packaged" prior to analysis and additional concept packages were developed. A summary of the analysis appears at Appendix E of this report.

The charts that follow show recommendations and strategies that could have a significant impact on reducing peak hour trips or reducing delay.

STRATEGIES THAT COULD REDUCE VEHICLE TRIPS IN THE PEAK HOUR

Number of Peak Hour Trips Eliminated

	Now to 2010	Beyond 2010	Notes
Traffic Management			
Expanding & increasing off-peak incentives to all toll facilities	6,462	6,785	
Transit			
Increase funding for rail and bus park and ride spaces	8,360	9,625	
Increase funding for rail capacity during peak hour	9,996	11,495	
Create a seamless transit system	2,787	3,154	Includes improved station environment; improved transfers and addition of shuttle services
Increase capacity for buses to & from NYC	no short term impacts	2,500	
Construct new rail tunnel	no short term impacts	5,000	
Goods Movement			
Shift truck delivery operations out of peak hour	7,888	8,226	
Travel Demand Management *(additional concepts analyzed - not from TDM Subcommittee recommendations)*			
Voluntary Telecommuting	1,791	1,881	
Mandatory Telecommuting	8,954	9,407	
Voluntary TDM – marketing only	597	627	
Voluntary TDM	6,566	6,899	Includes marketing, compressed workweeks, alternative workweek, carpooling & vanpooling
Voluntary TDM - expanded	10,148	10,662	Includes marketing, compressed workweeks, alternative workweek, carpooling & vanpooling, plus increased incentives/disincentives
Mandatory TDM	108,638	113,514	Employers required to implement a package of commute options for employees
Land Use *(packaged concepts analyzed - not specific Land Use Subcommittee recommendations)*			
Transit oriented development	no short term impacts	1,400 to 20,000	Focus on transit nodes/stations; mixed-use centers served by high quality transit
Brownfield development	no short term impacts	38,000 to 400,000	Focused on suitable brownfield locations; siting new high density, mixed-used development
General infill vs. greenfield	no short term impacts	200 to 200,000	Higher density, mixed-use centers, not limited to transit or brownfield sites; strong incentives or compelling requirements

Numbers reflect estimated potential for reduction of peak hour vehicle trips based on sketch planning analysis.

STRATEGIES THAT COULD REDUCE DELAY IN THE PEAK HOUR

	Time savings per vehicle in impacted/affected area	
Traffic Management		
Emergency service patrols; automatic incident detection	6 to 8 minutes	
Re-timing of 1000 traffic signals	4 to 8 minutes	
Implementation of traffic responsive signals; signal coordination and ramp metering	3 to 10 minutes	
Goods Movement		
Restrict truck lanes on NJ Turnpike to trucks and buses only in peak hour	7 minutes	Improvement in time savings for trucks/buses would also result in negative impact on vehicles in car lanes

Average commute time is 30 - 33 minutes; time savings are for vehicles in area impacted by strategy or improvement; not statewide

OTHER STRATEGIES THAT COULD REDUCE VEHICLE TRIPS IN THE PEAK HOUR

	Now to 2010	Beyond 2010	Notes
Restrict high school students from driving to campus	34,444	34,444	

APPENDIX A

CHRONOLOGY OF TASK FORCE MEETINGS

DATE	LOCATION	SUBJECT
June 5, 2001	NJDOT Headquarters	Kick-off meeting
July 11, 2001	NJDOT Headquarters	I-80 Task Force; commuter incentives
August 7, 2001	NJDOT Headquarters	Internet site; baseline methodology
October 11, 2001	NJ TRANSIT, Newark	NJ Long-Range Transportation Plan
November 13, 2001	DRPA, Camden	Transportation system effects after 9/11 events; Central New Jersey Forum
December 11, 2001	NJDOT Headquarters	Measuring congestion; subcommittees
January 22, 2002	NJDOT Headquarters	Demand Management strategies
February 19, 2002	NJDOT Headquarters	Land Use & Growth Management
March 19, 2002	NJDOT Headquarters	Subcommittee Reports
April 23, 2002	NJDOT Headquarters	Public Meeting
April 24, 2002	NJDOT, Cherry Hill	Public Meeting
April 30, 2002	NJTPA, Newark	Public Meeting
May 21, 2002	NJDOT Headquarters	Analysis of Recommendations
June 19, 2002	NJDOT Training Center	Analysis Update; Roles & Responsibilities
July 23, 2002	NJDOT Headquarters	Review final report

Each meeting had good attendance and often included informative presentations. Each meeting lasted approximately two hours. In addition to the regular meetings, the Task Force held several brainstorming sessions, either in person or through e-mail communication. The topics discussed at those sessions included legislative initiatives, park-and-ride lots, carpooling and assessment of recommendations.

APPENDIX B

CONGESTION HOT SPOTS IDENTIFIED BY NJDOT (May 1998)			
ROUTE	**BEGIN MILEPOST**	**END MILEPOST**	**COUNTY**
1	28.25	35.97	Middlesex
3	0.00	10.84	Passaic, Bergen, Hudson
4	2.15	10.89	Bergen
7	3.67	5.29	Bergen
9	94.47	121.63	Ocean, Monmouth
1 and 9	62.13	62.80	Bergen
10	19.7	22.7	Essex
17	4.40	23.67	Bergen
18	34.35	40.6	Middlesex
21	0.00	4.10	Essex
23	1.48	16.54	Essex, Passaic, Morris
27	0.00	0.94	Mercer
27	7.10	24.33	Middlesex
27	32.77	34.35	Union
29	1.90	3.20	Mercer
30	16.25	16.98	Camden
31	21.95	25.60	Hunterdon
33	14.15	14.85	Mercer
35	33.00	34.00	Monmouth
35	16.00	24.61	Monmouth
36	4.11	5.72	Monmouth
40	45.18	59.10	Atlantic
41	0.00	10.82	Gloucester, Camden
42	1.48	14.28	Gloucester, Camden
46	52.40	70.98	Essex, Passaic, Bergen
47	17.50	34.80	Cape May, Cumberland
47	40.02	43.58	Cumberland
49	24.89	26.25	Cumberland
52	0.00	2.74	Cape May, Atlantic
55	60.00	60.53	Gloucester
70	0.00	13.90	Camden, Burlington
70	55.60	59.84	Ocean, Monmouth
73	15.00	34.60	Camden, Burlington
76	0.00	3.04	Camden
77	0.00	2.12	Cumberland
88	0.00	10.02	Ocean
93	0.00	3.52	Bergen
109	0.00	2.40	Cape May
166	0.00	2.23	Ocean
168	3.60	7.38	Camden
182	0.00	0.98	Warren
206	62.90	70.80	Somerset
280	3.28	17.85	Essex, Hudson
287	0.00	10.38	Middlesex
295	26.41	28.00	Gloucester, Camden
322	16.70	18.25	Gloucester
347	0.00	8.59	Cape May, Cumberland
571	34.52	36.90	Mercer
G.S. Parkway	0.00	11.80	Cape May

APPENDIX C

CONGESTED CORRIDORS IDENTIFIED BY CONGESTION BUSTER TASK FORCE ON STATE AND LOCAL ROADS			
ROUTE	**MUNICIPALITY**	**COUNTY**	**REMARKS**
9	Middle Township	Cape May	Seasonal recreation travel congestion
9	Northfield City, Pleasantville City	Atlantic	Urban congestion at County 563 and County 646
22	Bridgewater Township to Union Township	Somerset, Union	
22	Lebanon Township, Phillipsburg Town	Hunterdon, Warren	At the Lebanon Curve and near Phillipsburg
28		Somerset, Union	
40	Woodstown Borough, Pittsgrove Township	Salem	Truck traffic and general congestion in Woodstown
78		Hunterdon, Somerset	Bottlenecks
80		Morris County	Pennsylvania through Morris County
130	Collingswood Borough	Camden	Collingswood Circle, Route 73 to Route 30
195	Millstone Township	Monmouth	Route 195 as drivers attempt to exit for Six Flags Great Adventure
202		Hunterdon, Somerset	Between Flemington and Somerville
206	Princeton Township and Borough	Mercer	
287		Middlesex, Somerset, Morris	
Carlton Avenue	Piscataway Township	Middlesex	
Edison Road	Metuchen Borough	Middlesex	
Ethel Road	Edison Township	Middlesex	
Garden State Parkway		Essex	From Route 78 to exit 145, during evening rush hour
Garden State Parkway		Counties adjacent to the shore	Shore traffic congestion
Harrison Street	Princeton Borough	Mercer	From Route 1 to downtown Princeton
NJ Turnpike		Salem, Mercer, Middlesex, Union, Essex	Exits 1, 7A, 11, 13, 13A, and 14C
South Washington Avenue	Piscataway Township	Middlesex	
Stelton Road	Piscataway Township	Middlesex	

APPENDIX D

CONGESTED INTERSECTIONS IDENTIFIED BY CONGESTION BUSTER TASK FORCE ON STATE AND LOCAL ROADS		
INTERSECTION LOCATIONS	**MUNICIPALITY**	**COUNTY**
Broadway and Old Hook Road	Westwood	Bergen
County Route 535 and Village Road	West Windsor	Mercer
Easton Avenue, approaching I-287	Franklin	Somerset
Fletcher Avenue and Route 4/95/46 exit ramps	Fort Lee	Bergen
McCarter Highway and Broad Street	Newark	Essex
Oradell and Forest Avenues	Oradell, Paramus	Bergen
Park Avenue; Columbia Turnpike; Route 24	Morris Township, Florham Park	Morris
River Edge and Kinderkamack Roads	River Edge	Bergen
Route 1 and 9 merge	Woodbridge	Middlesex
Routes 10 and 202	Morris Plains	Morris
Route 1 at the following intersections: Bakers Basin, Carnegie Center Drive, Nassau Park Boulevard, Washington Road	Lawrence, West Windsor	Mercer
Route 27, 206 and Mercer Street	Princeton	Mercer
Route 295 at Route 1 exit ramp	Lawrence	Mercer
Routes 40 and 322	Hamilton	Atlantic
Routes 46 and 3	Clifton	Passaic
Route 78 exit to Garden State Parkway South off I-78	Hillside Township	Union
Routes 80 and 202	Parsippany	Morris
Summit Avenue and Spring Valley Road	Montvale	Bergen
The Raritan River Bridges		Middlesex
West/East Saddle River Road and East Allendale Avenue	Saddle River	Bergen

APPENDIX E

SUMMARY OF THE TECHNICAL ANALYSIS OF THE RECOMMENDATIONS PROPOSED BY THE CBTF SUBCOMMITTEES

TRAFFIC SUBCOMMITTEE RECOMMENDATIONS

Recommendations 1 (*Accident clearance*), **6** *(Emergency Service Patrols*) and **Part of 8** *(Automatic incident detection)*

Recommendations 1, 6 and 8 were combined because much overlap exists among them. All deal with quick clearance of traffic incidents so roadways are not blocked for a long time. This way, the delay can be minimized to those unaffected by it.

These recommendations were quantified using the FHWA's Screening for ITS (SCRITS) tool. SCRITS is a spreadsheet analysis tool for estimating the user benefits of Intelligent Transportation Systems (ITS). It is a sketch-level or screening-level analysis tool providing initial indications of the possible benefits of various ITS applications and is not intended for detailed analysis.

Recommendation 2 (*Maintain, implement, and/or expand congestion relief pricing toll incentives programs on all tolled facilities)*

This recommendation is to implement, maintain, and/or expand congestion relief pricing toll incentives programs on all tolled facilities. The NJ Turnpike has already demonstrated reduction in peak hour travel after a congestion relief pricing program was implemented on it. The other major tolled roadways can also show similar reduction in peak hour travel if a congestion relief pricing program is implemented.

The impacts of this recommendation were measured using actual NJ Turnpike toll payers data and by comparing the impact of the implementation of the E-ZPass program on NJ Turnpike congestion levels.

Recommendations 3 *(Traveler information)* and **4** *(Alternative dynamic routing and information)*

Recommendations 3 and 4 were combined because of the possibility that the information provided to a driver would be the same, and these systems/services are commonly integrated. The primary difference between recommendations 3 and 4 is the technology being used to transfer the information.

The impacts were quantified using an assumption about the number of calls in the peak period and the number of callers willing to shift from congested to less congested routes.

Recommendation 5 *(Re-timing of traffic signals)*

This recommendation proposes re-timing of 1000 traffic lights on congested State highways so that they can 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 percent to 10 percent increase in overall travel time delay. SCRITS spreadsheet and procedures were used as an analysis tool for the quantification of the impact of this measure on congestion.

Recommendation 8 *(Ramp metering and traffic responsive signals)*

This recommends implementation of traffic responsive signals and ramp metering to manage traffic flow and implementation of automatic incident detection to decrease the impact of a major cause of congestion. Expansion of the derivative uses of the E-ZPass infrastructure platform to include traffic volume monitoring for use in providing timely, efficient, and accurate information to the traveler is also included. The SCRITS signal procedure spreadsheet was used as an analysis tool for the quantification of the impact of this measure on congestion.

TRANSIT SUBCOMMITTEE RECOMMENDATIONS

Recommendation 1 *(Increased transit funding)*

This recommends providing NJ TRANSIT with sufficient operating funds to maintain quality transit service on the core transit network without continuing to divert capital resources to this purpose. Further, it calls for implementing a capital reinvestment strategy for NJ TRANSIT that makes the core transit network the highest capital priority. This recommendation will increase transit services and will make transit a more attractive and practical alternative to driving.

Quantification of these recommended items, individually and in combination, is difficult. The approach examined each part of the recommendation individually to identify its potential impact on congestion. This sketch planning analysis incorporated assumptions provided by the subcommittee and known attributes of the transportation system. A full network-based analysis of recommendations and their potential synergies and dis-synergies required a timeframe exceeding that available for this effort.

Recommendation 2 (*Create a seamless transit system)*

This recommendation calls for the development of a universal transit fare or transit pass system that improves the connectivity between existing buses/shuttles/trains to maximize existing service, especially in suburban areas. It also calls for the implementation of local shuttle systems connecting office parks to rail and buses and implementation of local shuttle systems connecting residential neighborhoods to rail and buses.

This recommendation could make transit more affordable, practical, and reliable, thereby, increasing ridership. It could also make the feeder service more convenient and affordable than driving. This recommendation was analyzed using the NJAQ analysis tool and the transit score methodologies.

Recommendation 3 *(Increase transit capacity in congested corridors)*

This recommendation includes a number of capacity-increasing strategies, such as: purchase additional buses and bi-level rail coaches; conduct a bus/roadway congestion busting study to identify and implement exclusive bus lanes on high volume routes; possible conversion of multi-purpose lanes to exclusive peak period bus use; increased bus capacity to and from the Port Authority Bus Terminal and other parts of Manhattan; increased frequency of services during the peak and off-peak periods; and construction of a new rail tunnel into Penn Station, NY.

This recommendation may reduce congestion by facilitating a more efficient flow of bus traffic and by increasing seating capacity on each rail car. It may reduce the number of motorists destined for outlying job sites and midtown Manhattan. It was not possible to quantify the impacts of every improvement included in this recommendation due to the limited timeframe for analysis.

Recommendation 4 (*Implement transit-friendly land use policies)*

This recommendation calls for the identification and definition of transit-friendly corridors, provision of higher density development options that can be served efficiently by transit, and improvement of pedestrian access to transit for existing and future developments. It also recommends that site development plans include transit circulation routes and passenger waiting facilities. Rights of way for exclusive transit guideways to reduce development costs and improve travel speed and transit competitiveness and preferential roadway design treatment for transit should be considered.

This recommendation can decrease congestion, as auto drivers will be attracted to transit, and substitute pedestrian and bicycle trips for auto trips. Land Use Subcommittee recommendation 7 analyzes transit-friendly land use policies.

Recommendation 5 *(Develop transit solutions to Pennsylvania – New Jersey commute)*

This recommendation calls for the appointment of a PA-NJ task force to obtain and analyze origin-destination data, study commutation patterns of Pennsylvania residents working in New Jersey and develop recommendations for expanded bus and rail service between the two states. The subcommittee believes that this will reduce the number of Pennsylvania motorists destined for jobs in New Jersey. The 1990 Census Transportation Planning Package for NJ, "Journey to Work" database was reviewed to see the extent of the Pennsylvania – New Jersey commute.

GOODS MOVEMENT SUBCOMMITTEE RECOMMENDATIONS

Recommendation 1 *(Support the development of a comprehensive freight plan for the State)*

This recommendation calls for support of the Department of Transportation's comprehensive freight plan. The plan will determine how goods movements are currently conducted, forecast future needs, and determine how to get the system to accommodate the anticipated growth of goods movement.

The freight plan will also analyze existing freight plans and planning activities that have an impact on the transportation infrastructure. Many local and regional organizations are producing plans relative to goods movement. State coordination of these projects is needed to avoid overlap and redundancy, as well as determine how these plans affect the State's overall goal of managing the transportation infrastructure and the flow of goods.

However, the implementation of this recommendation is likely to hinge on detailed aspects and adherence by freight carriers. It is not possible to quantify the impacts of this recommendation due to an insufficient timeframe and lack of current data for full analysis.

Recommendation 2 *(Expanded hours for truck operations)*

The purpose of this recommendation is to have truck traffic that currently operates in the weekday 8 a.m. to 5 p.m. period use off-peak and Saturday time periods to deliver goods. The deployment of this recommendation should be outlined in a document, such as a Comprehensive Freight Plan outlined in recommendation 1 above. A comprehensive inventory of current trucking practices should be included in the outline. The subcommittee recommends that a survey be conducted to identify all issues related to expanding hours for truck operations.

This recommendation would reduce overall congestion and delay during the peak hours of the day. Goods movement is very time sensitive and using less congested time periods will decrease delivery time. The same would be true for perishable and time sensitive goods that could be delivered early or late in the day. The quantification of the impacts was done using Vehicle Miles Traveled (VMT) data for the State.

Recommendation 3A *(Encourage more trucks to use New Jersey Turnpike)*

The cost of using the New Jersey Turnpike (NJTP) encourages regional truck traffic to use alternate routes. An analysis of alternate routes including I-295, Route 130, Route 1, Route 9 and the Garden State Parkway (to the extent such vehicles are permitted to use GSP) provides an estimate of trucks that could use the NJTP.

The subcommittee thinks a monetary incentive would encourage more NJTP truck users. A reassessment of the current E-ZPass discount program should be addressed to encourage more truckers to use the NJTP. Intangible truck service options should also be assessed such as location of truck stop amenities, truck parking and how truck-only lanes might operate on highly congested roadways. The impacts were estimated using the daily truck volumes on NJTP and other competing routes.

Recommendation 3B *(Restriction of autos in truck lanes on NJTP)*

The NJTP is split into auto-only and auto/truck lanes between Exits 8A and 14. An analysis of converting the auto/truck lanes to truck-only lanes was performed to determine the effect on vehicle delay and travel speed in the truck-only lanes. Note that the shifting of vehicles between the auto-only and auto/truck lanes does not result in a change in vehicle trips (VT) or vehicle miles traveled.

This recommendation would eliminate the weaving issues in the current HOV auto/truck lanes and increase safety with the separation of auto and trucks. Currently the auto-only lanes carry approximately 65 percent of the auto traffic (as measured by VMT) and the auto/truck lanes carry 35 percent. The elimination of autos in truck-only lanes would improve truck land operations and mitigate weaving problems. Conversely, moving additional autos to the auto-only lanes would increase congestion on the auto-only lanes and decrease the operating speeds. The impact of this recommendation was quantified using NJTP traffic volume data.

Recommendation 4 *(Regional traffic model-based assessment of roadway improvements)*

This recommendation provides a list of roadway improvement projects that will reduce congestion and improve safety in congested areas with high truck volumes thereby improving the efficiency of the intermodal goods movement system. All of the roadway projects focus on infrastructure improvements that would reduce congestion or improve safety.

Regional traffic models were used to determine the effects of highway network improvements. Highway network improvements were coded into NJDOT's Northern New Jersey 2025 Traffic Model and the resulting vehicle trip, VMT and emissions calculations were estimated. These projects were found to have a low impact on congestion.

DEMAND MANAGEMENT SUBCOMMITTEE RECOMMENDATIONS

Twelve recommendations were analyzed. The first six recommendations were the recommendations originally put forth by the CBTF Demand Management Subcommittee. For the most part, these six did not lend themselves to quantitative analysis using existing sketch planning tools and methods (FHWA Travel Demand Management Model, EPA Commuter Model). Attempts at quantifying their impacts drew heavily on recently published research efforts estimating the impacts of various TDM measures. The final Demand Management Subcommittee recommendations listed in the main portion of this report were not individually analyzed. The subcommittee modified several recommendations to reflect additional strategies and concepts after initial analysis and technical support work was provided to the CBTF.

Recommendation 1 *(Develop and implement incentive programs for individuals who use commute alternatives or otherwise reduce their driving) (developed by subcommittee)*

This recommendation offers financial incentives to individuals to reduce their annual VMT, or to commute by transit or carpool at least one day per week. Individuals can show a reduction in driving via an annual odometer reading. They can receive financial benefits like discounted automobile insurance premiums, year-end rebates, tax credits, transit vouchers, license or registration fee reductions or similar financial incentives.

Recommendation 2 *(Expand and facilitate access to rideshare programs and services and commuter benefits programs) (developed by subcommittee)*

Ridesharing refers to both carpooling and vanpooling. *Carpooling* uses participants' own automobiles. *Vanpooling* uses vans usually owned by an organization or employer that are made available specifically for commuting. This recommendation tries to make it possible for an individual employee to enroll in rideshare and commuter programs independent of any programs offered by their employer. This can be achieved by distributing rideshare applications through the Division of Motor Vehicles Services and by initiating public-private partnership advertising campaigns. Some administrative concerns, that preclude many employers from participating, should be addressed and resolved.

The impacts were measured through a review of recent research, such as "Effective TDM at Worksites in the Netherlands and the U.S." by E. Schreffler. These studies suggest that financial incentives and disincentives are needed for these programs to be successful.

Recommendation 3 *(Expand existing Park-and- Ride program) (developed by subcommittee)*

Park-and-Ride consists of parking facilities at transit stations, bus stops and highway on-ramps, particularly at the urban-area periphery, to increase transit and rideshare use. They reduce congestion by facilitating ridesharing and providing easier access to transit. This recommendation calls for NJDOT to extend and strengthen its existing Park-and-Ride program through increased acquisition of land and funding. It was possible to quantify this recommendation using data from the current program, which plans to add two park-and-ride lots per year through the 2004-2005 fiscal year. It was assumed that the existing program would be doubled in size.

Recommendation 4 (*Promote, modify, clarify and extend existing TDM legislation, which provides for voluntary employer trip reduction programs and contains employer tax credits)* *(developed by subcommittee)*

An "Employer Trip Reduction Program" is a program that encourages employers to take steps to reduce the number of their employees commuting by single occupant vehicle. This recommendation includes the collection of data to identify employers' needs and concerns and the development of marketing/advertising campaigns to increase awareness of tax credits and the benefits of commute option programs. Telecommuting, bike/pedestrian enhancements and alternate work arrangements are emphasized as important elements of trip reduction programs.

The quantification of impacts can only be achieved through a comparative analysis with similar data collection and marketing/outreach efforts completed elsewhere. The estimation of impacts is based on a review of the literature.

Recommendation 5 (*Collect data from employers for transportation planning)* *(developed by subcommittee)*

Employee travel data is a valuable tool for planning transportation and transit improvements, yet there are no standard mechanisms in place for obtaining regular origin and destination data from employment sites. A regular (annual or bi-annual), easy to administer, and non-intrusive employer survey can be conducted to collect this data. Current and accurate data will help tailor travel demand management programs to meet the needs of employees.

It is not possible to quantify the impact of this measure on reducing congestion. Although several studies have been conducted estimating the benefits of various TDM strategies, no studies have looked at the impacts of "more data." More data will have an impact, but it will probably be confined to assisting the planning process, leading to refinements to existing measures, or the development of new measures that are better tailored to the target groups. These future modifications may have some congestion benefits.

Recommendation 6 (*Statewide Travel Demand Program*) *(developed by subcommittee)*

This recommendation targets New Jersey State employees, and proposes the development of several TDM benefits aimed directly at them. It also calls for the revamping of NJDOT's Smart Moves For Business (SMFB) program based upon the findings of a task force asked to identify incentives that will positively influence their organizations and employees. The task force members would represent a variety of large businesses from various disciplines throughout the State. Along with reducing statewide traffic congestion, a SMFB program offers employees commuting choices such as carpooling, telecommuting and flex hours. In return, participating employers can get tax credits, funding grants and assistance setting up their SMFB program.

The Department of Transportation's consultant developed recommendations 7 through 12 in a different way than the first six. They were developed in such a way to be easily analyzed by existing tools and methods – specifically the FHWA TDM model. This model is a software program that analyzes the vehicle trip reduction effects of a wide range of travel demand management strategies. The FHWA TDM model has been widely applied throughout the U.S. to analyze TDM programs.

Recommendation 7 *(Voluntary telecommuting)*

Telecommuting refers to employees who work from home or another location (such as a neighborhood telework office) in order to reduce commute travel. This recommendation proposes a statewide voluntary telecommuting program, under which employers may voluntarily offer telecommuting to their employees on the basis of one day every two weeks. Voluntary means that companies are under no legal requirement to offer this benefit to their employees and employees are not required to participate. The literature suggests that telecommuters still make trips on their telecommute day (e.g., child transportation, personal errands).

Recommendation 8 (*Mandatory telecommuting)*

This recommendation is essentially the same as recommendation 7; only it is a mandatory program. Employers are required to offer telecommuting to their "office" employees one day every two weeks. Employees are free to accept or decline participation in the program.

Recommendation 9 *(Voluntary TDM Package A – marketing focus)*

This recommendation offers an increased statewide TDM-oriented marketing campaign. This package is likely to be carried out in combination with related programs, such as the SMFB program, TransitChek and qualified federal and state tax incentives for certain commuter assistance efforts. The major benefit is an increased level of awareness regarding existing TDM programs. However, the literature suggests that marketing, by itself, is not an effective strategy in reducing congestion.

Recommendation 10 (*Voluntary TDM Package B – voluntary package of commute options)*

This recommendation offers a package of voluntary measures that employers statewide can conduct and offer to their employees. The package consists of compressed workweek, alternative work hours, car/vanpooling, transit use and increased marketing efforts. Alternative workweek, car/vanpool and transit options remove both vehicles and people from the peak hour.

Recommendation 11 (*Voluntary TDM Package C – commute options + financial incentives)*

This recommendation builds on recommendation 10 by adding financial incentives. The package consists of financial incentives to employees who use high occupancy vehicles and financial disincentives for SOV use (each, $2.00 per day per vehicle, in 1990 dollars). Compressed workweeks, alternative work hours, car/vanpooling, transit use and increased marketing efforts remain part of the package.

Recommendation 12 (*Mandatory TDM package – commute options + financial incentives)*

This recommendation is the same as recommendation 11, only it is mandatory for employers.

LAND USE SUBCOMMITTEE RECOMMENDATIONS

There are a total of nine land use recommendations. The Land Use Subcommittee developed the first six recommendations. It was difficult to quantify the impacts of these recommendations because existing analysis tools, such as regional travel demand models, are not sensitive to the recommended types of land use changes, and are not modeled accordingly. Therefore, the consultant used an alternative approach to estimate the effects of these recommendations on reducing traffic congestion. A literature review was conducted, searching for previously published technical documents analyzing land use measures that closely approximated the recommendations put forth by the Land Use Subcommittee. The intent was to identify a study analyzing a similar measure, and apply the percentage reductions in vehicle trips and vehicle miles traveled from that comparable study to New Jersey.

Recommendation 1 *(Amend New Jersey State Planning Act – Mandate that master planning and zoning comply with State Development and Redevelopment Plan) (developed by subcommittee)*

This recommendation calls for the amendment of the "New Jersey State Planning Act" to mandate that municipal master planning and zoning comply with the goals, strategies, policies and planning area policy objectives of the State Development and Redevelopment Plan (SDRP). The SDRP outlines compact, mixed-use development patterns that contribute to more efficient transportation service delivery and thereby reduce unnecessary vehicle trips and automobile dependency. This recommendation encourages compact, mixed-use developments, which may reduce congestion. Potential impacts are dependent on numerous factors, including the nature of the requirements, the timing of implementation, the speed of development activity, potential exceptions etc. Estimation of impacts is based on a review of the literature and alternatives analysis conducted by NJDOT using the NJTPA travel demand model.

Recommendation 2 *(Give counties authority to approve/disapprove development based upon existing infrastructure capacity) (developed by subcommittee)*

This recommendation proposes renewal of earlier proposed county planning enabling legislation, which would give counties the authority to approve/disapprove development based upon existing infrastructure capacity. This recommendation would give counties the power to withhold development approval unless adequate public facilities

exist to support the development. There are no studies identified to date that focus on the traffic congestion impacts of timed-growth policies.

Recommendation 3 *(Integrate TDM in local zoning/planning requirements) (developed by subcommittee)*

This recommendation would grant local municipalities some type of incentive to integrate one or more TDM techniques into their zoning/planning requirements. The techniques include: sidewalks/bike paths, transit stops, reduced parking in response to the provision of shuttles, park-and-ride lots along major travel routes, the addition of on-site services at larger office parks and commercial development, pedestrian-friendly intersections and transit-friendly development. The literature suggests that some of these strategies (parking management, transit-oriented development) have potential impacts on the choice of mode, while other strategies (networking of streets, urban design) have not been proven to reduce vehicle trips, particularly work trips.

Recommendation 4 *(Expand use of Transfer of Development Rights or TDR) (developed by subcommittee)*

TDR refers to a method of protecting land by transferring, or exchanging, the rights to develop the land you want to preserve to some other parcel of land. What is actually occurring is a consensus to place conservation easements on property in agricultural areas while allowing for an increase in development densities in other, already developed areas. This recommendation calls for the expansion of the use of TDR in order to preserve open space while concentrating development in areas, which, in turn, may sustain transit.

By increasing development densities in areas that can be served by transit, the feasibility and utilization of transit increases and vehicle use decreases. However, these benefits depend on an integrated set of policies in addition to TDR. It also requires coordination of transportation planning to provide transit in the areas identified for higher density development.

Recommendation 5 *(Incentives for development and redevelopment patterns supportive of transit use) (developed by subcommittee)*

This recommendation encourages new commercial and industrial development to locate where transit services are available. It also encourages channeling new development into existing communities and identifying growth centers to allow for effective provision of transit services and transportation infrastructure.

This policy would encourage land use planning that would enhance the potential for transit utilization. By focusing development within existing communities, the use of transit (and other non-SOV modes) increases, thereby reducing congestion. However, the pursuit of this policy would depend on local initiatives as well as a high degree of cooperation between land use and transportation planning.

Recommendation 6 *(Allow municipalities to pursue timed-growth planning) (developed by subcommittee)*

This recommendation advocates passing legislation that would allow municipalities to pursue timed-growth planning, so that residential, commercial and industrial development does not leapfrog ahead of existing infrastructure. Currently, municipalities usually do not have the authority to dictate the timing of development once a developer submits an application. Since infrastructure is the responsibility of the government, it may not develop at the same rate as new residential or commercial development. This may lead to a gap in supply and demand for infrastructure, especially roads, which further leads to congestion.

This recommendation may have predominantly local impacts. Such local impacts may be important, but when summed, may or may not indicate statewide significance. It is not possible to quantify the impacts of this recommendation due to insufficient data and assumptions and limited timeframe for analysis.

The next three land use recommendations were developed differently than the first six. The first six recommendations were developed, and then an effort was made to quantify them by reviewing relevant existing studies. Recommendations 7, 8 and 9 come directly from existing research literature that determined what the recommendation should be. Recommendations 8 and 9 narrow earlier recommendations 3 and 5 by specifying where development will occur. The literature was organized into categories. For example, those studies dealing with the estimation of the impacts of transit-oriented development were grouped together into one category.

Recommendation 7 *(Transit-Oriented Development)*

Transit-oriented development (TOD) refers to pedestrian-friendly land development built at, or within easy walking distance of major transit stations. TOD generally includes a compact higher density mix of different land uses that are oriented to public walkways. Automobile parking is often minimized (via limitations on number of spaces and/or pricing strategies) to promote pedestrian activity. Financial incentives can be offered to the developers and the public for a better development pattern and higher utilization of transit facilities.

Recommendation 8 *(Brownfield vs. greenfield development)*

Brownfields are abandoned or underutilized properties that frequently involve environmental contamination. The Environmental Protection Agency and others have studied the assumption that developing a brownfield location will result in less growth in vehicle trips (and emissions, and other detrimental impacts) relative to locating development at a greenfield site. New Jersey has a significant number of brownfield sites that could be potentially developed.

The literature provides several studies that compare brownfield development (including higher densities, a mix of uses, and location near transit) with comparable amounts of development placed in greenfield locations.

Recommendation 9 (*Alternative land use strategies: overall infill vs. greenfield development)*

While recommendation #8 tends to focus on the impacts of individual sites, this recommendation looks at the effects of a similar strategy implemented over a broader area. Infill development, by definition, takes place within an area that is already developed or had been previously developed and subsequently abandoned. As such, it includes elements of the TOD (recommendation 7) and brownfield (recommendation 8) approaches, but is not limited to them. Reported reduction in congestion may be anticipated to be higher, potentially much more so, if aspects such as financial incentives or urban growth boundary are included.

The literature provides similar studies, which compare the impact of infill development versus greenfield development. It showed appreciable impact on the level of congestion. New Jersey has a significant number of underutilized or low-density sites, whose value may be enhanced through this approach.

OTHER RECOMMENDATION

Recommendation 1 *(Restrict high school students from driving to their school campus)*

This recommendation calls for restricting high school students from driving to school. There are approximately 70,000 high school seniors statewide and probably an equal number of high school juniors. Many of them currently drive to and from school. There is the potential to eliminate a significant number of vehicle trips from the peak hour as this recommendation focuses on a relatively large (the entire state), single source of vehicle trips. Many students (but not necessarily all) have alternative means (school bus, walking and bicycle) to get to and from school. This recommendation will affect local, collector and arterial roadways connecting residential areas to schools more than interstates and freeways. It is also probable that only an a.m. peak hour benefit will occur as students usually return from school before the evening peak period begins.

The impacts were quantified using the data on number of students (seniors and juniors) statewide and trip rate data from the Institute of Transportation Engineers (ITE) handbook.

Following are expanded charts, reflecting the results of the analysis done for all of the recommendations cited above.

TECHNICAL ANALYSIS
RESULTS AND SUMMARIES OF ALL RECOMMENDATIONS

TRAFFIC MANAGEMENT SUBCOMMITTEE RECOMMENDATIONS	Now to 2010		Beyond 2010		Notes
	Delay (Time Savings)	Peak Hour Trips	Delay (Time Savings)	Peak Hour Trips	
#1. Legislation to require drivers involved in minor traffic accidents to move vehicles to the side of the road		n/a		n/a	
(#6) Emergency Service Patrols					
(#8) Automatic Incident Detection					
70 percent coverage	6 min per veh		6 min per veh		
90 percent coverage	8 min per veh		9 min per veh		
#2. Maintain, implement, and/or expand congestion relief pricing toll incentives programs on all tolled facilities	n/a		n/a		
Initial increase in peak hour tolls	n/a	5,871	n/a	6,413	
Double initial increase	n/a	6,462	n/a	6,785	
#4. Usage of traveler information number (#511)					
(#3) Internet real time traffic info					
#5. Re-timing of traffic signals (1000 signals)		n/a		n/a	Recommendation #5, 1000 signals re-timed
5 percent increase in average speed	4 min per veh		5 min per veh		
10 percent increase in average speed	8 min per veh		8 min per veh		
#8. Implementation of traffic responsive signals, signal coordination and ramp metering					Recommendation #8, 1000 signals re-timed, and 500 signals coordinated
Signal Coordination		n/a		n/a	
10 percent increase in average speed	4 min per veh		4 min per veh		
40 percent increase in average speed	12 min per vehicle		13 min per vehicle		
Ramp Metering		n/a		n/a	
Ramp Metering on 25 percent of freeways	7 min per veh		7 min per veh		
Ramp Metering on 40 percent of freeways	11 min per vehicle		11 min per vehicle		

TRANSIT SUBCOMMITTEE RECOMMENDATIONS	Now to 2010		Beyond 2010		Notes
	Delay (Time Savings)	Peak Hour Trips	Delay (Time Savings)	Peak Hour Trips	
#1. Increased Transit Funding					Half of increase to alleviate crowding, half available to new riders.
Increase rail and bus park-and-ride spaces	n/a	8,360	n/a	9,625	
Increase rail capacity during peak hour	n/a	9,996	n/a	11,495	
#2. Create a Seamless Transit System					No new fare discount included in universal fare system.
Improve vehicle/station environment and the overall rider experience (fare pass, focus on customer service)	n/a	702	n/a	807	
Improved transfers between transit modes and systems	n/a	575	n/a	61	
Addition of shuttle services to mainline transit	n/a	1,510	n/a	1,737	
#3. Increase Transit Capacity in Congested Corridors					
Increase bus and rolling stock fleets by purchasing bi-level coaches and additional buses	n/a	500	n/a	500	This will reduce on-board congestion, and potentially increase service frequencies in some (undefined at this time) corridors.
Conduct a bus/roadway congestion busting study to identify and implement exclusive bus lanes including conversion of general purpose lanes to exclusive bus use during peak (e.g., high volume routes or corridors such as Routes 495, 3, 9, GSP)	n/a	n/a	n/a	n/a	Study itself will not have a direct impact on VT or VMT, but data could lead to additional recommendations that may have positive VT and VMT impact. Difficult to anticipate future recommendations and when / if they are implemented.
High speed transit along NJ Route 3 and 9 corridors	unknown	500	unknown	575	Minimum of several years to design & implement.
Increase capacity for buses to and from New York and Port Authority bus terminal	n/a	0	n/a	2,500	
Construct new rail tunnel into NY between Meadowlands and Penn Station, NY	n/a	0	n/a	5,000	
Increase frequency of existing service during the peak and off-peak	n/a	575	n/a	661	
#5. Develop Transit Solutions to Pennsylvania – New Jersey Commute	n/a	575	n/a	661	

GOODS MOVEMENT SUBCOMMITTEE RECOMMENDATIONS	Now to 2010		Beyond 2010		Notes
	Delay (Time Savings)	Peak Hour Trips	Delay (Time Savings)	Peak Hour Trips	
#1. Development of Comprehensive Statewide Freight Plan		low		low	Will not have any direct impact on VT or VMT.
#2. Expanded Hours for Truck Operations	n/a	7,888	n/a	8,226	Delay not applicable, goods movement analysis related to trip reduction only. Key assumption is moving 50 percent of peak travel to off-peak.
#3A. More Trucks to use New Jersey Turnpike (NJTP)	n/a	3,213	n/a	3,350	Delay not applicable, goods movement analysis related to trip reduction only. Key assumption is moving 60 percent of trucks from competing routes to NJTP.
#3B. Restriction of Autos in Truck Lanes on NJTP	7.7 min / truck (11.5 min / car)	0	7.7 min / truck (11.5 min / car)	0	Time savings are for all vehicles using truck/bus-only lanes on NJTP. VMT and trips is 0 because trips are shifted between the autos-only and truck-only lanes. Time savings per truck is constant. There will be a negative impact on autos, i.e., an increase in delay.
#4. Regional Traffic Model-Based Assessment of Roadway Improvements	n/a	n/a	n/a	low	Analysis based on regional travel demand models. Assumes improvements are not operational until after 2010.

DEMAND MANAGEMENT SUBCOMMITTEE RECOMMENDATIONS	Now to 2010		Beyond 2010		Notes
	Delay (Time Savings)	Peak Hour Trips	Delay (Time Savings)	Peak Hour Trips	
#1. Develop and implement incentives program for individuals who use commute alternatives or otherwise reduce driving	n/a	low	n/a	low	Legislative / regulatory initiative required. Funding amount(s) and mechanism(s) unknown. Reducing annual mileage may not translate to reduced VT, VMT in peak hour. Verification issues.
#2. Expand and facilitate access to rideshare programs and services and commuter benefits programs	n/a	low	n/a	low	Primarily marketing and promotion.
#3. Expand Park-and-Ride Program	n/a	1,584	n/a	1,760	Possible overlap with Transit recommendations
#4. Promote, modify, clarify and extend existing TDM legislation, which provides for voluntary employer trip reduction program and contains employer tax credits					Primarily marketing and promotion.
Telecommuting	n/a	low	n/a	low	
Compressed workweek	n/a	low	n/a	low	
Bike/pedestrian programs	n/a	low	n/a	low	
Parking cash-out pilot program	n/a	low	n/a	low	
#5. Collect data from employers for transportation planning	n/a	low	n/a	low	Data would facilitate planning, but this recommendation has no direct impact on VT and VMT. However, the data could be analyzed and used to produce a second set of recommendations; this second set would probably have some impact.
#6. Statewide Travel Demand Program (Traffic Subcommittee recommendation #7)	n/a	low	n/a	low	

Note: The level of impact for strategies that produce vehicle trip savings are defined as follows:
Low impact = 0 – 500 vehicle trips removed statewide from the peak hour
Medium impact = 500 – 5,000 vehicle trips removed statewide from the peak hour
High impact = greater than 5,000 vehicle trips removed statewide from the peak hour

ADDITIONAL DEMAND MANAGEMENT ANALYSIS (developed by consultant)	Now to 2010		Beyond 2010		Notes
	Delay (Time Savings)	Peak Hour Trips	Delay (Time Savings)	Peak Hour Trips	
#7. Voluntary telecommuting	n/a	1,791	n/a	1,881	Offered to "office workers" on the basis of 1 day every 2 weeks.
#8. Mandatory telecommuting	n/a	8,954	n/a	9,407	Employers "required" to offer to "office workers" on the basis of 1 day every 2 weeks.
#9. Voluntary TDM package A (marketing only)	n/a	597	n/a	627	Assumes existing tax credits available and increased level of general TDM-oriented marketing.
#10. Voluntary TDM package B (marketing, compressed workweek, alternative workweek, carpooling, vanpooling)	n/a	6,566	n/a	6,899	Specific measures for employers to offer to employees; provided statewide; greater mix of specific, realistic travel options.
#11. Voluntary TDM package C (marketing, compressed workweek, alternative workweek, carpooling, vanpooling, financial incentives)	n/a	10,148	n/a	10,662	Specific measures for employers to offer to employees; provided statewide; greater mix of specific, realistic travel options; includes $2 **IN**centive per day for HOV users and $2 per day **DIS**incentives for SOV.
#12. Mandatory TDM package (marketing, compressed workweek, alternative workweek, carpooling, vanpooling, financial incentives)	n/a	108,638	n/a	113,514	Employers would be **required** to implement a package of measures for employees; includes $2 **IN**centive per day for HOV users and $2 per day **DIS**incentives for SOV.

LAND USE SUBCOMMITTEE RECOMMENDATIONS (The land use strategies recommended appear to involve legislative an/or regulatory changes that affect future development. By definition, these would result in incremental changes annually that may sum to significant impacts over a long timeframe.)	Now to 2010		Beyond 2010		Notes
	Delay (Time Savings)	Peak Hour Trips	Delay (Time Savings)	Peak Hour Trips	
#1. Amend NJ State Planning Act, mandate that master planning and zoning comply with SDRP	n/a	low[1]	not measurable	medium[1]	Not quantifiable due to insufficient data, assumptions and timeframe for analysis. Presumes implementation in the near term (by 2005) to allow the maximum impact on pending and future development activities. It is presumed that existing development and development which has received government approvals prior to 2005 are not affected retroactively. Items may have predominantly local impacts. Such local impacts may be important, but when summed may or may not indicate statewide significance.
#2. Give counties authority to approve/disapprove development based upon existing infrastructure capacity	n/a	Low[1]	Not measurable	medium[1]	Not quantifiable due to insufficient data, assumptions and timeframe for analysis. Presumes voluntary county actions in the near term (by 2005) to allow the maximum impact on pending and future development. It is presumed that existing development and development which has received government approvals prior to 2005 are not affected retroactively. Items may have predominantly local impacts. Such local impacts may be important, but when summed may not indicate level of significance at a statewide level.

Note: 1 – Likely to be primarily localized benefits which sum to a low level of statewide impact, but may yield low, medium or high local benefits

LAND USE SUBCOMMITTEE RECOMMENDATIONS (continued)	Now to 2010		Beyond 2010		Notes
	Delay (Time Savings)	Peak Hour Trips	Delay (Time Savings)	Peak Hour Trips	
#3. Integrate TDM into local zoning / planning requirements	n/a	medium[2]	not measurable	medium[2]	Not quantifiable due to insufficient data, assumptions and timeframe for analysis. Assessment presumes implementation in the near term (by 2005) to allow the maximum impact on pending and future development activities. It is presumed that existing development and development which has received government approvals prior to 2005 are not affected retroactively (but this is possible). Items may have predominantly local impacts. Such local impacts may be important, but when summed may or may not indicate level of significance at a statewide level.
#4. Expand use of Transfer of Development Rights (TDR)	n/a	low[1]	Not measurable	medium[1]	Not quantifiable due to insufficient data, assumptions and timeframe for analysis. Presumes implementation in the near term (by 2005) to allow the maximum impact on pending and future development activities. It is presumed that existing development and development which has received government approvals prior to 2005 are not affected retroactively. Items may have predominantly local impacts. Such local impacts may be important, but when summed may not indicate level of significance at a statewide level.

Note: 1 – Likely to be primarily localized benefits which sum to a low level of statewide impact, but may yield low, medium or high local benefits
2 – Likely to be primarily localized benefits which sum to a low level of statewide impact, but may yield low, medium or high local benefits AND highly dependent on type and degree of TDM measures required

LAND USE SUBCOMMITTEE RECOMMENDATIONS (continued)	Now to 2010		Beyond 2010		Notes
	Delay (Time Savings)	Peak Hour Trips	Delay (Time Savings)	Peak Hour Trips	
#5. Incentives for development and redevelopment patterns that would support transit use	n/a	low[1]	not measurable	medium[1]	Not quantifiable due to insufficient data, assumptions and timeframe for analysis. Presumes implementation in the near term (by 2005) to allow the maximum impact on pending and future development activities. It is presumed that existing development and development which has received government approvals prior to 2005 is not affected retroactively. Items may have predominantly local impacts. Such local impacts may be important, but when summed may or may not indicate statewide significance.
#6. Allow municipalities to pursue timed-growth planning	n/a	low[1]	Not measurable	medium[1]	Not quantifiable due to insufficient data, assumptions and timeframe for analysis. Presumes implementation in the near term (by 2005) to allow the maximum impact on pending and future development activities. It is presumed that existing development and development which has received government approvals prior to 2005 is not affected retroactively. Items may have predominantly local impacts. Such local impacts may be important, but when summed may or may not indicate statewide significance.

Note: 1 – Likely to be primarily localized benefits which sum to a low level of statewide impact, but may yield low, medium or high local benefits

"PACKAGED" LAND USE ANALYSIS (developed by consultant)	Now to 2010		Beyond 2010		Notes
	Delay (Time Savings)	Peak Hour Trips	Delay (Time Savings)	Peak Hour Trips	
#7. Transit Oriented Development (includes mixed-use centers served by high quality transit; market strategies such as parking and congestion relief pricing; transit incentives; economic incentives; infrastructure fees and tax policies)	n/a	0 – low[1]	n/a		Focused on transit nodes/stations. No urban development boundary. (Sources: Making the Connections, a Summary of the LUTRAQ Project, Volume 7, 1997. Transportation Choice 2025, New Jersey Long-Range Transportation Plan Update, 2001.
Lower Impact				1,478	The Effects of Urban Form on Travel and Emissions: A Review and Synthesis of the Literature, 1998.)
Upper Impact				20,945	
#8. Brownfield Development (includes siting new high density, mixed-use development in abandoned or underutilized urban location, near transit versus locating the proposed development in exurban location, and a site-specific implementation)	n/a	0 – low[1]	n/a		Focused on suitable brownfield locations. No urban development boundary. Potential of some sites may be limited. (Source: Quantitative Assessment of the Maryland Smart Growth Initiative, 2001. Transportation and Environmental Analysis of the Atlantic Steel Development Proposal, 1999.
Lower Impact				38,810	Comparing Methodologies to Assess Transportation and Air Quality Impacts of Brownfield and Infill Development, EPA, 2001.
Upper Impact				443,540	Transportation and Environmental Impact of Infill versus Greenfield Development, EPA, 1999.)
#9. General Infill vs. Greenfield Approach (includes higher density, mixed-use centers designed to fit within existing suburban setting; with transit or pedestrian improvements; more of a region-wide, or municipality-wide implementation)	n/a	0 – low[1]	n/a		Not limited to transit or brownfield sites. Strong incentives or compelling requirement likely necessary. (Sources: The Impact of Various Land Use Strategies on Suburban Mobility, Middlesex Somerset Mercer Regional Council, 1992 Transportation Choice 2025, New Jersey Long-Range Plan Update, 2001.
Lower Impact				185	
Upper Impact				221,770	The Effects of Urban Form on Travel and Emissions: A Review and Synthesis of the Literature, 1998.)

Note: 1 - These measures may have impact in the near term, particularly at the local level.

OTHER RECOMMENDATION					
#1. Restrict high school students from driving to campus	n/a	34,444	n/a	34,444	Probably requires legislation.

WEB-BASED APPENDIX

Additional materials are located on the Congestion Buster Task Force Web site. The Web site address is http://www.state.nj.us/transportation/commuter/cbtf/index.hmtl.

A list of the materials follows:

- Informational handout from CBTF Public Meetings
- Public Meeting Transcripts
- Addendum of Additional Public Comments
- Glossary of Terms and Acronyms
- Internet Links

- NOTES -