

NEW YORK METROPOLITAN TRANSPORTATION COUNCIL

2005-2030 Regional Transportation Plan

August 4, 2005



New York Metropolitan Transportation Council

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Chapter 1: Introduction

This Regional Transportation Plan is intended to define the region's long-term transportation needs and to lay out a long-range planning framework for improving the region's sprawling transportation system. In doing so, the Plan is intended to fulfill Federal transportation planning requirements for the New York Metropolitan Transportation Council, thus ensuring the region's eligibility for Federal transportation funding.

The efficient transportation of people and freight is vital to the economic and social well-being of the New York Metropolitan region, which is endowed with a vast transportation network inherited from previous generations. This vital need is complicated by the size and diversity of the region, including population and population density, ethnicity, income, employment concentrations, industrial classifications, government, transportation service providers, cultural and entertainment attractions. Although the region generally has the infrastructure and transportation providers to handle the complex travel patterns generated by this diversity, high levels of congestion and delay are also generated.

1.1 What is the New York Metropolitan Transportation Council?

The New York Metropolitan Transportation Council (NYMTC) is a regional council of governments which serves as the Metropolitan Planning Organization (MPO) designated by the Governor of the State of New York and certified by the Federal government for New York City, Long Island and the lower Hudson Valley. NYMTC provides its region with a collaborative planning forum to address transportation-related issues from a regional perspective and to plan for and make decisions on the use of Federal transportation funds. The Federal government requires MPOs in each urbanized region of the country in order to maintain a continuing, cooperative and comprehensive transportation planning process that considers all modes in a coordinated manner through the three mandated planning products:

- A long-range (minimum 20 year planning horizon) Regional Transportation Plan (RTP)
- A short-range (3-to-5 year program) Transportation Improvement Program (TIP)
- An annual (one year) Unified Planning Work Program (UPWP)

NYMTC's voting membership includes Nassau and Suffolk counties on Long Island, and Putnam, Rockland and Westchester counties in the Hudson Valley, with New York City represented through its Departments of Transportation and City Planning. In addition, the New York State Department of Transportation and the Metropolitan Transportation Authority are voting members.

Advisory members include the Port Authority of New York and New Jersey, New Jersey Transit, the North Jersey Transportation Planning Authority, the New York State Department of Environmental Conservation, the Federal Highway Administration, the Federal Transit Administration and the United States Environmental Protection Agency.

NYMTC is comprised of the Council itself, which is made up of the chief elected or appointed officials of the member agencies and the Program, Finance and Administration Committee (PFAC) which oversees the day-to-day operations. The Council meets on an annual basis, or as needed, while the PFAC meets about six times per year or more frequently if necessary. In recognition of the great diversity of its region, NYMTC also maintains three transportation coordinating committees – one each for New York City, Long Island and the lower Hudson Valley – which function as localized planning forums.

1.2 NYMTC's Region

NYMTC's region is comprised of New York City and five suburban counties in Long Island and the lower Hudson Valley. It encompasses an area of 2,440 square miles and a 2000 population of roughly 12.2 million, approximately 64 percent of New York State's population. The region has one of the most extensive transportation networks in the world with 477 route miles of commuter rail, 225 route miles of rail rapid transit, 22,806 centerline miles of roads, streets and highways, as well as several commercial airports and maritime facilities for both passengers and freight.

This network has given the region a distinct competitive edge as a major national and international commercial center. On an average weekday, the region's transportation network carries 550,000 people on commuter rail; 3.1 million on buses; 4.6 million on rail rapid transit; 128,500 on ferries; 150,000 on airlines; and millions more on the region's roads. In addition, 826,000 people move between New York and New Jersey by rail and bus, and thousands more via roads, bridges and tunnels.

Figure 1
The NYMTC Region



1.3 The Regional Transportation Plan

As an MPO, NYMTC is required by Federal regulations to develop a long-range Regional Transportation Plan and update that Plan every three years. The first Regional Transportation Plan, titled Critical Issues; Critical Choices, was adopted by NYMTC in 1994. That Plan was updated in 1999 by Mobility for the Millennium. This Plan is the second update of the original document.

Each successive update responds to trends and projected changes in the region's demographics, economy and transportation needs thus providing a relevant, informative and dynamic long-range guide for transportation planning and decision-making. This Plan puts forth the guiding principles under which the region's transportation decision-makers can base future transportation investment decisions. The Plan is updated, evaluated and reviewed regularly and, where appropriate, vision and goals are refined and trends, assumptions and forecasts are adjusted.

The long-range planning process which develops each update provides a forum for public dialogue on regional transportation issues. It emphasizes the importance of addressing transportation issues through future investments and encourages development of a regional consensus when making investment decisions.

Because the Plan is regional in scope, it is implemented in a multi-jurisdictional arena. While providing overall policy guidance, it is not a static document, but a flexible tool that can assess and respond to changes in trends, conditions and needs. Significant changes in regulatory programs or regional policies can require shifts in the scope of the Plan. Regular updates assure that those shifts are accommodated.

As required by Federal regulation, seven planning factors are considered in this update of the Plan, and are reflected in its vision, guiding principles and goals:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;
- Increase the safety and security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility options available to people and for freight;
- Protect and enhance the environment, promote energy conservation and improve the quality of life;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system.

Considering these requirements, and focusing on the development of a long-range, regional vision for balancing needs and priorities through partnerships for its transportation investments, the Plan is organized around five guiding principles:

- Sustaining the transportation system;
- Meeting the needs of our customers;
- Harmonizing the system with its surroundings;
- Creating a state-of-the-art transportation system; and
- Meeting the challenges of growth.

This Plan was developed through a cooperative effort involving NYMTC voting and non-voting members, county and local agencies, special interest groups and the general public. A committee of NYMTC members guided the entire development process.

The Plan is intended to provide a framework within which to implement transportation improvements through its focus on:

- Identifying current and future needs;
- Determining financial needs;
- Establishing a regional framework for future improvement and investments;
- Defining investment possibilities;
- Measuring the region's performance; and
- Identifying future planning work..

The Plan is also used to qualify improvement projects for federal funding via the short-range Transportation Improvement Program while setting the stage for additional planning work and research through the Unified Planning Work Program.

1.4 Overarching Issues and Trends Considered in the Plan

The vision, guiding principles and goals of the Plan are defined within the context of several overarching issues and trends which will likely influence transportation planning and policy-making in the long-term. These overarching issues, which can be categorized into the areas of environmental quality, energy and economic vitality, are outlined below.

Environmental Quality

Since the passage of the National Environmental Policy Act and the Clean Air Act Amendments of 1990, environmental quality considerations have played an ever-increasing role in the development of the transportation system. The importance of environmental quality considerations in the long-term planning for the transportation system should not be understated, since the impact of the system on air quality and quality of life is significant. NYMTC has developed an analytical process that accounts for

the air quality benefits of its plans, programs and projects. There are key considerations in this process, including:

Federal Air Quality Standards – Under the Clean Air Act, the transportation sector must contribute to the reduction of air pollutant emissions, so that the region may attain and maintain national ambient air quality standards.

New York State Greenhouse Gas Reduction –In recognition of the role of transportation in reducing greenhouse gases in possible climate change scenarios, New York State’s Energy Plan highlights the levels of greenhouse gas emissions in the region and the steps that must be taken to reduce them.

Localized Impacts and Public Health – Vehicles and trucks also contribute to localized air quality and noise impacts in communities surrounding transportation facilities, raising a number of public health and quality of life issues. Safety issues associated with vehicles are also a factor.

Energy

The passage of the National Energy Policy Act of 1992 brought energy and fuel use considerations into the transportation planning and policy-making arena. Energy is becoming a key consideration in the long-term planning process in a number of ways, including:

Global Production of Fossil Fuels – Many current forecasts of global oil production predict a peaking of the production of fossil fuels globally, possibly within the horizon of this Plan. NYMTC is aware that this consideration could have an impact on its plans and programs.

National Energy Policy – The National Energy Policy Act of 1992 accelerated the use of alternative fuels in the transportation sector. It seeks to reduce the reliance on foreign oil and increase energy security through the development of domestically produced alternative fuels.

New York State Energy Plan – New York State’s Energy Plan recognizes the contribution of the transportation sector to overall energy consumption and encourages increased efficiency and reduced dependence on fossil fuels.

Economic Vitality

During the next several decades, the long-term economic vitality of the region will be a key consideration for transportation planning, policy-making and regional investment decision-making. Issues of economic vitality are significantly interwoven with the performance of the transportation system. In addition, transportation investments can and do impact economic activity in a number of ways. Economic considerations will be most critical to long-term transportation planning in the following areas:

Regional Growth and Patterns of Sprawl – Continued regional growth over the period covered in this Plan update will place additional pressures on the transportation system to move greater numbers of people in different ways, particularly if future development continues to sprawl into a larger area.

Technological Changes – Continued technological change over the life of this Plan will impact both development patterns and the very nature of economic activity in ways that may alter transportation patterns and modalities. For example, technological change will continue to alter the manner in which goods move into and through the region, and changes in vehicle technology will play an environmental role impacting emissions.

Security and Disaster Recovery – The terrorist attacks of September 11, 2001 temporarily impacted the region's economy. Economic recovery from these impacts, including the accommodation of security considerations which have become more critical in the aftermath, is progressing.

Chapter 2: Defining the Future

In order to plan for the future, we must assess present-day regional conditions as well as forecast upcoming trends and anticipate change in the region. In this chapter we define both the overarching principles and shared goals guiding the Plan as well as the practical considerations for applying those principles through the Plan's horizon year. The Plan's vision for the future is derived from the individual missions and visions of NYMTC's member agencies.

2.1 Our Vision: Balancing Resources, Needs and Priorities through Partnerships

Within the context of the overarching issues and trends discussed in Chapter 1, NYMTC's vision for the region's transportation future recognizes the critical role that the efficient and economical movement of people and goods plays in the region's overall vitality. The region's challenge is to maximize the return on its public investment in transportation and increase the value of the transportation system by managing resources in order to balance the system's needs with the priorities of the region's communities, businesses and government agencies. ***Thus, the vision of this Regional Transportation Plan is to define and achieve the balance of transportation resources, needs and priorities through a partnership of the region's governments, businesses, stakeholders and residents.*** The vision provides a platform upon which the region's transportation resources can be mutually managed, thus returning the greatest value possible for the public's investment in terms of mobility, safety, environmental health, economic vitality, traveler satisfaction and quality of life.

2.1.1 Guiding Principles and Shared Goals

NYMTC's vision is expressed in this Plan through a framework of guiding principles and shared goals, which are described below. The Plan principles and goals are derived from the mission and vision statements of NYMTC's member agencies and from the overarching shared regional goals of NYMTC's Principals, the elected and appointed officials who comprise the Council. NYMTC's Principals have identified the following shared regional goals, to be used as a framework for discussions of potential future transportation planning, programs and improvements at the regional level:

- Improve the regional economy,
- Enhance the regional environment,
- Improve regional quality of life,
- Provide convenient, flexible transportation access within the region, and
- Build the case for obtaining resources to implement regional investments.

Principle 1: Sustaining the Transportation System

Effective application of existing financial resources, combined with efforts to sustain and enhance existing fund sources, will serve to keep the system's physical facilities in a state of good repair while maintaining and enhancing the delivery of services.

Shared Goals:

- 1.1) Make optimal use of existing and future financial resources from all levels of government.
- 1.2) Identify sources of funding in partnership with all levels of government as well as the private and non-profit sectors.
- 1.3) Maintain a balanced program of preventive maintenance and rehabilitation to minimize user cost and maximize long-term serviceability for facilities and equipment.
- 1.4) Improve efficiency and effectiveness in the delivery of services.

Principle 2: Meeting the Needs of Our Customers

Our customers include individuals and businesses; shippers and receivers. Their transportation needs are best met through a balanced mix of safe, convenient travel modes.

Shared Goals:

- 2.1) Increase the accessibility and mobility of people and goods by providing the proper mix of travel options.
- 2.2) Improve the reliability and convenience of the transportation system by improving service coverage and ease of use, acceptable travel times and reasonable costs.
- 2.3) Make improving safety a key consideration in the operation, maintenance and improvement of the transportation system.

Principle 3: Harmonizing the System with Its Surroundings

Improving a transportation system to meet customer needs impacts the system's surroundings. The system positively impacts its surroundings when it provides mobility and access to benefit

those who live, work and play in the region without adverse environmental impacts, community disruptions, unequal levels of mobility and inefficient consumption of resources.

Shared Goals:

- 3.1) Increase awareness of the linkages between transportation planning and land-use planning to limit patterns of sprawl.
- 3.2) Involve and encourage local communities in planning for transportation improvements.
- 3.3) Enhance quality of life by providing for environmentally-responsible and energy-efficient movement of people, goods and vehicles.
- 3.4) Improve the mobility and access of communities to the greatest extent possible.
- 3.5) Improve the coordination of local and region-wide planning among all stakeholders.

Principle 4: Creating a State-of-the-Art Transportation System

We seek to continually update our transportation policies so as to improve our facilities, the delivery of our services and the application of available technology to our transportation system.

Shared Goals:

- 4.1) Employ best practices in the planning, design, deployment and operation of transportation services and facilities.
- 4.2) Apply state-of-the-art technology to the development, operation and maintenance of the transportation system.

Principle 5: Meeting the Challenges of Growth

The region's population and economy are forecasted to significantly grow over the period of the Plan. The forecasts provided for this Plan bear out that assumption. This growth will likely impose additional pressures on the transportation system, as increasing usage of the system surpasses capacity on its existing components.

Shared Goals:

- 5.1) Assure that the overall transportation system can accommodate existing and anticipated demand for movement of people and goods.
- 5.2) Make investments to maximize system capacity and sustain anticipated development consistent with local and state policies.

2.1.2 Performance Measures

NYMTC's members have initiated an effort to identify ways to evaluate how well the Plan is fulfilling the principles described above. A number of measures, including measures already in use by the Council's members, are being considered. These measures will be outcome-based, regional in scope, measurable, and easily understood by decision-makers and stakeholders. It is anticipated that, in conjunction with the performance measures already in use by the Council's members, these measures will provide feedback on how well the Plan's guiding principles and goals are being advanced and allow appropriate adjustments to be made..

The performance measures are being considered based on the following criteria: (a) the relevance of the measure to the goal (b) measures which could be initially gleaned from currently available data (c) relevance to users of the transportation system (d) application to all modes of transportation and (e) that these measures can be easily modified in the future.

The performance measures will continue to be refined and enhanced with each update of the Regional Transportation Plan.

2.2 Current Conditions & Future Forecasts

Within the framework of the Plan's vision, guiding principles and goals, assessments of current conditions and forecasts of future conditions are critical to the selection of future investment options. This section outlines assessments and forecasts for each of the Plan's guiding principles.

2.2.1 Principle 1 - Sustaining the Transportation System

The region's existing infrastructure is a massive and aging system of rail lines, roadways, bridges, terminals and other support structures, as well as transit rolling stock in the form of buses, rail cars and locomotives. Because of the system's size and age, maintenance needs alone are forecast to consume at least eighty percent of the Federal transportation funding received by the region during the period of the Plan.

A brief outline of the region's infrastructure needs and the long-range costs anticipated to keep the system in a state of good repair (the definition for the state of good repair can be found in the glossary) is presented below. The information is divided by area, facility type and jurisdiction. The needs described are for the “state of good repair” of existing infrastructure only; no new infrastructure is assumed in this forecast. A number of methods were used assessing the region’s needs including the use of NYSDOT’s Pavement Needs Assessment Model (PNAM) and Bridge Needs Assessment Model (BNAM), members’ Capital Plans and Programs, and the Transportation Improvement Program (TIP). All costs presented are those anticipated for expenses over the period of the Plan, and are in current dollars.

New York City

The long-range infrastructure needs for New York City total approximately \$96.1 billion over the period of the Plan. This total includes approximately \$13.0 billion for roadways, \$30.4 billion for bridges and \$52.7 billion for transit, as detailed below.

Roadways: There are nearly 13,300 lane-miles of streets and highways in New York City. This roadway network consists of more than 1,000 lane-miles of limited access roads, and approximately 12,000 lane-miles of local streets. The New York State Department of Transportation owns and maintains a majority of the limited access and primary roadways. State-owned roadways in New York City will require \$4.0 billion over the period of the Plan to keep them in a state of good repair. For roadways owned and maintained by the City of New York, including associated miscellaneous elements of the City's street and roadway infrastructure, an estimated \$9.0 billion is required to keep the entire system in a state of good repair over the period of the Plan. ***The total forecasted infrastructure cost of New York City roadways over the period of the Plan is approximately \$13.0 billion.***

Bridges: One of New York City's primary transportation infrastructure concerns is its bridges because New York is a bridge-dependent city. Non-tolled city and state-owned bridges do not have a dedicated revenue stream for regular maintenance and repair work. These structures need and are receiving critical attention over an extended period of time. Bridge rehabilitation has become a major focus of the City's capital improvement program. The cost of rehabilitating the four East River Bridges alone is expected to exceed \$2.5 billion.

The estimated long-range maintenance cost for bridges on State-owned facilities is \$12.4 billion, and the cost for bridges on local streets is \$10.6 billion over the time frame of the Plan. Infrastructure cost for bridge authorities within New York City (excluding the bi-state Port Authority) is estimated at \$7.4 billion. ***Infrastructure needs for all bridges in New York City are estimated at \$30.4 billion over the period of the Plan.***

Transit: The largest portion of New York City's transit infrastructure is operated by the Metropolitan Transportation Authority (MTA). MTA has already achieved or will soon achieve a state of good repair in many asset categories, but significant investments are still required to achieve a state of good repair in several categories, including stations, line structures, yards and shops. MTA also operates and maintains a fleet of over 3,000 buses. An estimated \$51.3 billion

will be required to achieve and to keep the existing MTA/New York City Transit system in a state of good repair over the period of the Plan. The City's transit network also includes NYCDOT-franchised express bus services. Although these privately operated bus services are in the midst of being transferred to the MTA, the 82 local and express routes consisting of over 1,300 buses are estimated to incur \$650 million in maintenance costs and \$420 million in operations costs over the period of the Plan. The City also owns and operates seven ferryboats and eight ferry landings and terminals. \$280 million will be required to keep the New York City ferry system in good condition over the period of the Plan. ***The total estimated cost of New York City transit infrastructure needs is \$52.7 billion over the period of the Plan.***

Long Island

The total forecasted cost for maintaining Long Island's infrastructure is approximately \$14.4 billion over the period of the Plan. This total need is comprised of: \$2.0 billion for roadways, \$2.6 billion for bridges and \$9.2 billion for transit.

Roadways: There are over 26,000 lane miles of roadways on Long Island. Almost 60 percent of the lane miles are in Suffolk County. State-owned and maintained highways in Nassau and Suffolk Counties will require \$610 million and \$825 million, respectively, over the period of the Plan to keep them in a state of good repair. Similarly, for county and local highways, the long-range costs are \$435 million for Nassau County and \$116 million for Suffolk County. To maintain highways owned by various authorities in Nassau and Suffolk Counties in a state of good repair will require an additional \$25 million. ***The total cost of maintaining Long Island roadway infrastructure needs is \$2.0 billion over the period of the Plan.***

Bridges: There are over 600 bridges in Nassau and Suffolk Counties. Expenditures of \$1.2 billion in Nassau County and \$1.4 billion in Suffolk County are forecasted to maintain the bridges over the period of the Plan. This estimate includes Long Island bridges owned by authorities. ***The total long-range infrastructure cost of maintaining Long Island bridges is \$2.6 billion.***

Transit: The MTA Long Island Rail Road (MTA LIRR) is the largest commuter railroad in this country. The MTA LIRR has been involved in an extensive rehabilitation program to improve bridges, rolling stock, stations and signals, as well as communications and maintenance facilities. Although the MTA LIRR expects to be more heavily involved in new capacity projects in the future, it also anticipates requiring funds to maintain and continue a program of regular maintenance. The MTA LIRR serves Nassau and Suffolk Counties, as well as Brooklyn, Queens and Manhattan. MTA LIRR's long-range infrastructure needs include \$8.39 billion to obtain a state of good repair and for normal replacement of vehicles and equipment.

The bulk of bus service within Nassau County is provided by MTA Long Island Bus. The MTA Long Island Bus' state of good repair and normal replacement needs are estimated to total \$490 million over the period of the Plan. In recent years, MTA Long Island Bus' primary focus has been to bring its fleet into a state of good repair, and replace older buses. MTA Long Island Bus maintains its equipment in good condition by carrying out preventive maintenance programs,

implementing a six-year bus overhaul cycle, continuing to improve passenger terminal facilities and replacing older buses. Within Suffolk County, the primary bus service provider is Suffolk County Transit. Capital expenditures for Suffolk County Transit consist primarily of bus and bus and bus-related projects, including shelter construction, and are concentrated in timely bus replacements, refurbishment and enhancement of equipment and periodic fleet expansion to accommodate anticipated service enhancements. There are also two smaller operators on Long Island: the City of Long Beach in Nassau County, and the Town of Huntington in Suffolk County. Suffolk County Transit and the two smaller operators require an estimated \$290 million for long-range maintenance costs. ***The total forecasted cost of Long Island’s transit infrastructure needs is approximately \$9.2 billion over the period of the Plan.***

Lower Hudson Valley

The total long-range cost of infrastructure needs for the lower Hudson Valley is \$16.8 billion. This subregion includes Westchester, Rockland and Putnam counties. The total includes approximately \$3.9 billion for roadways, \$3.8 billion for bridges and \$9.1 billion for transit.

Roadway: There are close to 10,000 lane miles of roadways in the lower Hudson Valley. The percentage distribution of lane miles by county is as follows: Westchester County--67 percent, Rockland County--24 percent, and Putnam County--8 percent. Over the period of the Plan, state-owned highways will require nearly \$3.15 billion; similarly, for county- and local-owned highways, the cost will be \$750 million. ***Total roadway maintenance needs in the lower Hudson Valley are \$3.9 billion over the period of the Plan.***

Bridges: There are nearly 600 state-owned bridges and over 300 non-state bridges in the Lower Hudson Valley. The construction program for state-owned bridges emphasizes preventive maintenance and attaining a state of good repair. Over the next 25 years, these state-owned bridges will require \$1.20 billion. Total bridge needs in Westchester County are approximately \$1.22 billion over the next 25 years; Rockland County approximately \$1.23 billion; and Putnam County \$115 million.. ***The total construction cost of infrastructure needs for Lower Hudson Valley bridges is nearly \$3.8 billion over the period of the Plan.***

Transit: The MTA Metro-North Railroad is the third largest commuter railroad in the United States. Its service territory covers two of New York City's five boroughs, five suburban counties in New York State and two counties in Connecticut. Through a contract with New Jersey Transit, Metro-North operates West of Hudson service on the Port Jervis and Pascack Valley Lines. The Metro-North infrastructure needs are forecasted at \$8.30 billion over the period of the Plan to keep the infrastructure in a state of good repair and for normal replacement.

Westchester County provides transit service via the Bee-Line System. Bee-Line services are provided on approximately 65 fixed routes, including traditional local transit routes, commuter feeder routes to and from MTA Metro-North Railroad stations, reverse commute routes to and from suburban corporate centers, and long distance express routes. Service is primarily within the County, although several routes continue south of the County to New York City subway stations in the Bronx and one express bus route carries passengers between White Plains and

Manhattan. Westchester County's Bee Line transit costs are estimated to be \$584 million over the period of the Plan. The County will maintain its normal bus replacement program, install bus stop signs and shelters and purchase supervisory vehicles.

Rockland County operates the Transport of Rockland (TOR) fixed-route transit system with 12 local routes in the County. The County also operates the TAPPAN ZEEexpress (TZx) commuter bus service to White Plains with additional connections to New York City via MTA's Metro-North Railroad station in Tarrytown. Four private companies provide bus service from Rockland to New York City with stops at the Port Authority Bus Terminal, George Washington Bridge Station, Lower Manhattan and Brooklyn. Municipal operators Clarkstown Mini-Trans with five routes and Spring Valley Jitney with two routes provide other local bus service. The County will continue the normal vehicle replacement program and the expansion of its bus fleet, bus shelters and bus stops. The cost of Rockland County's transit needs over the next 25 years is estimated to be \$200 million.

Putnam County estimates its long-range transit needs at \$9 million. The County will maintain normal replacement of its fleet and install bus stop signs and shelters. It also anticipates expanding its bus fleet. ***The cost of Lower Hudson Valley transit infrastructure is \$9.2 billion over the period of the Plan.***

Table 1
Infrastructure Needs for State of Good Repair

Infrastructure Needs for SGR & Normal Replacement

NYMTC Region Infrastructure Needs for SGR and Normal Replacement through 2030 (Billions Current \$)				
	New York City	Long Island	Lower Hudson Valley	Total
Highways	\$13.0	\$2.0	\$3.9	\$18.9
Bridges	\$30.4	\$2.6	\$3.8	\$36.8
Transit	\$52.7	\$9.8	\$9.1	\$71.6
Total	\$96.1	\$14.4	\$16.8	\$127.3

2.2.2 Principle 2 - Meeting the Needs of Our Customers

Collectively, NYMTC's member agencies are responsible for building, operating and maintaining the region's vast system of roadways and transit services. The region's residents and businesses, and those who travel to the region from outside for employment or recreation,

depend on this system of facilities and services in order to move themselves, their workers and the goods that they produce and consume. They are the direct customers of the agencies that bring this transportation system to life every day.

2.2.2 (i) Mobility

Feedback gathered during the development of this Plan clearly identified mobility as the most basic need of the transportation system's customers. Mobility can be defined as those customers' collective ability to move themselves or their goods between origins and destinations. In addressing mobility, it is necessary to consider managing demand for the transportation system so that it does not exceed the supply of transportation services and infrastructure and decrease overall mobility. On the freight side, mobility and access require an infrastructure which allows for the smooth transfer of goods to final destinations.

(a) Travel Characteristics of the Region

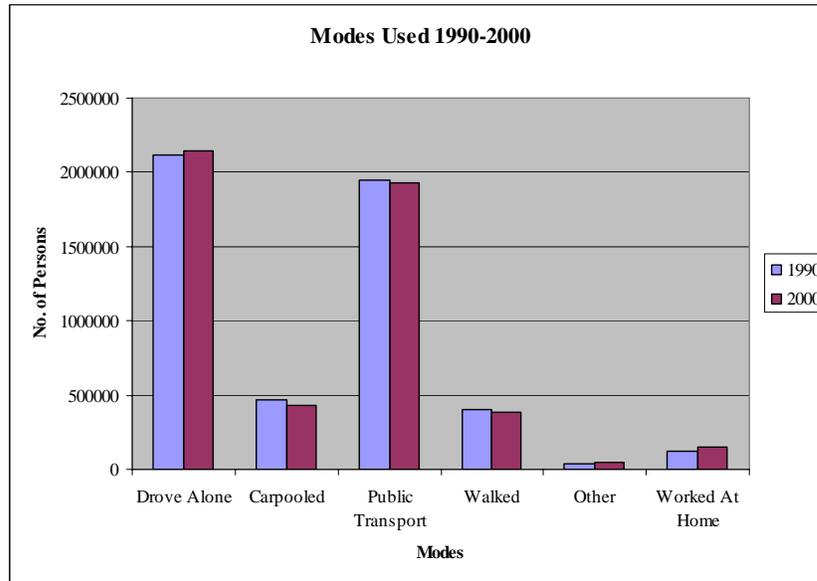
The overall characteristics for work trips in the NYMTC region (in terms of modes used) have remained more or less the same between 1990 and 2000. The use of single occupancy vehicles and public transportation continued to be dominant as shown in Figures 2 and 4 which present modal choice comparisons between 1990 and 2000 for NYMTC's 10-county region.

The number of persons who commuted to work declined by 0.85 percent from 1990 to 2000, while the percentage of those who worked at home increased by 17.6 percent. The use of single occupancy vehicles (SOV) for work trips increased by 1.3 percent (compared to a large increase of 32 percent from 1980 to 1990); ridesharing declined by 8.0 percent; public transportation usage declined by 1%; and walking trips declined by 5.8 percent.

In New York City, where transit has a larger modal share of use than any other transportation mode, and where there are relatively high numbers of households that do not own vehicles, private vehicle usage for the journey-to-work increased by 3.7 percent from 1990 to 2000. For Long Island SOV trips increased by 0.2% and in the Lower Hudson Valley these trips declined by 1%.

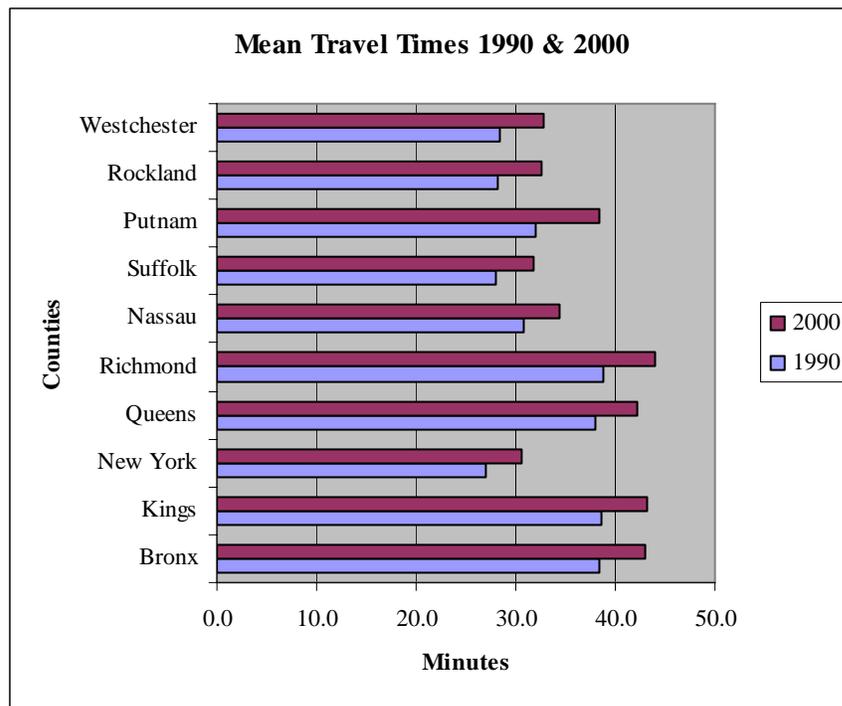
Mean travel times increased across the region between 1990 and 2000, by 11% in New York City, 11% in Long Island and 15% in the Lower Hudson Valley. Figure 3 shows the mean travel times for the NYMTC counties.

Figure 2 – Modal Choice



Source: 1990 and 2000 Census Data

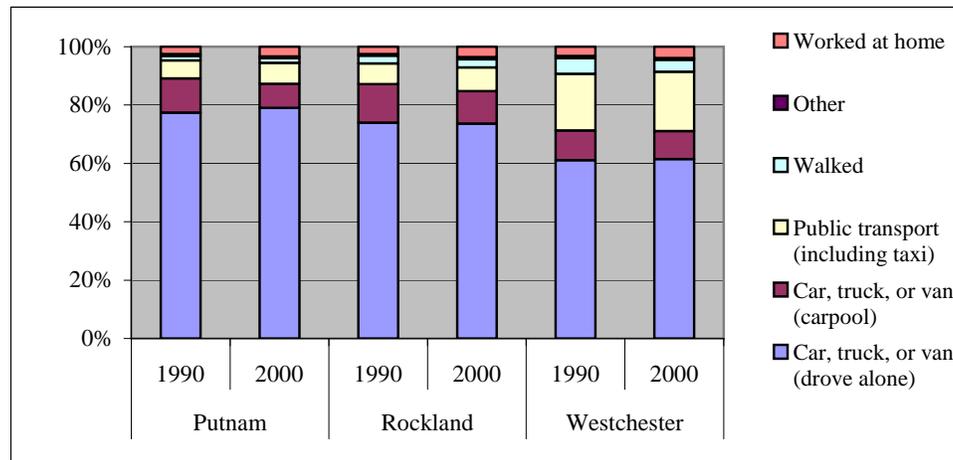
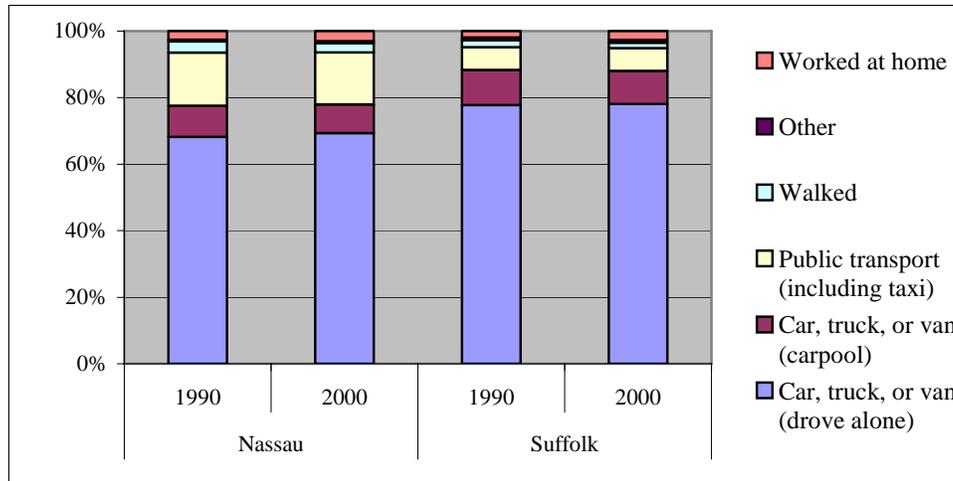
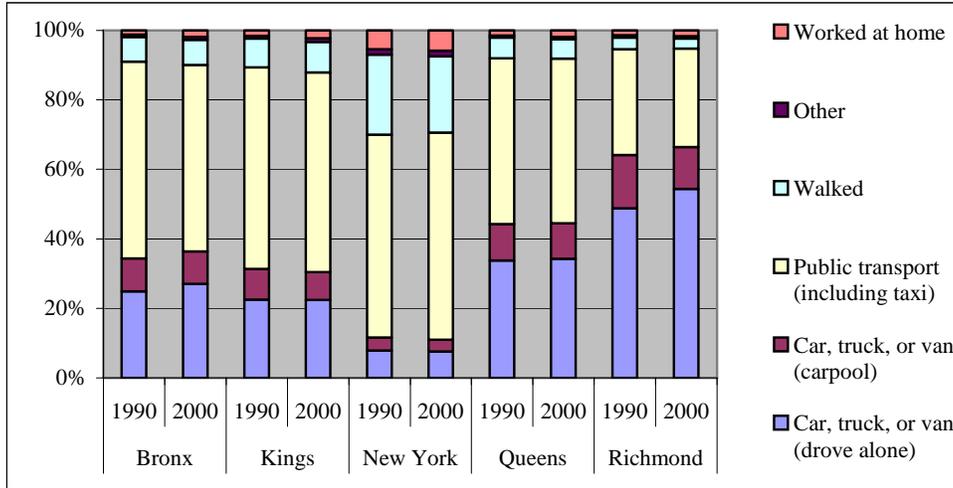
Figure 3 – Mean Travel Times to Work



Source: 1990 and 2000 Census Data

Figure 4 – Mode Distribution by County

Mode Distribution by County



Journey to Work Trends

Figures 4 (A)-(C) show journey to work trends by origins and destinations for the NYMTC region, based on Census information. There has been no substantial change between 1990 and 2000 in the commutation patterns of workers where intra-county/borough work trips comprise the largest portion of trip patterns in the region.

Figure 4 (A) – Journey to Work Trends - NYC

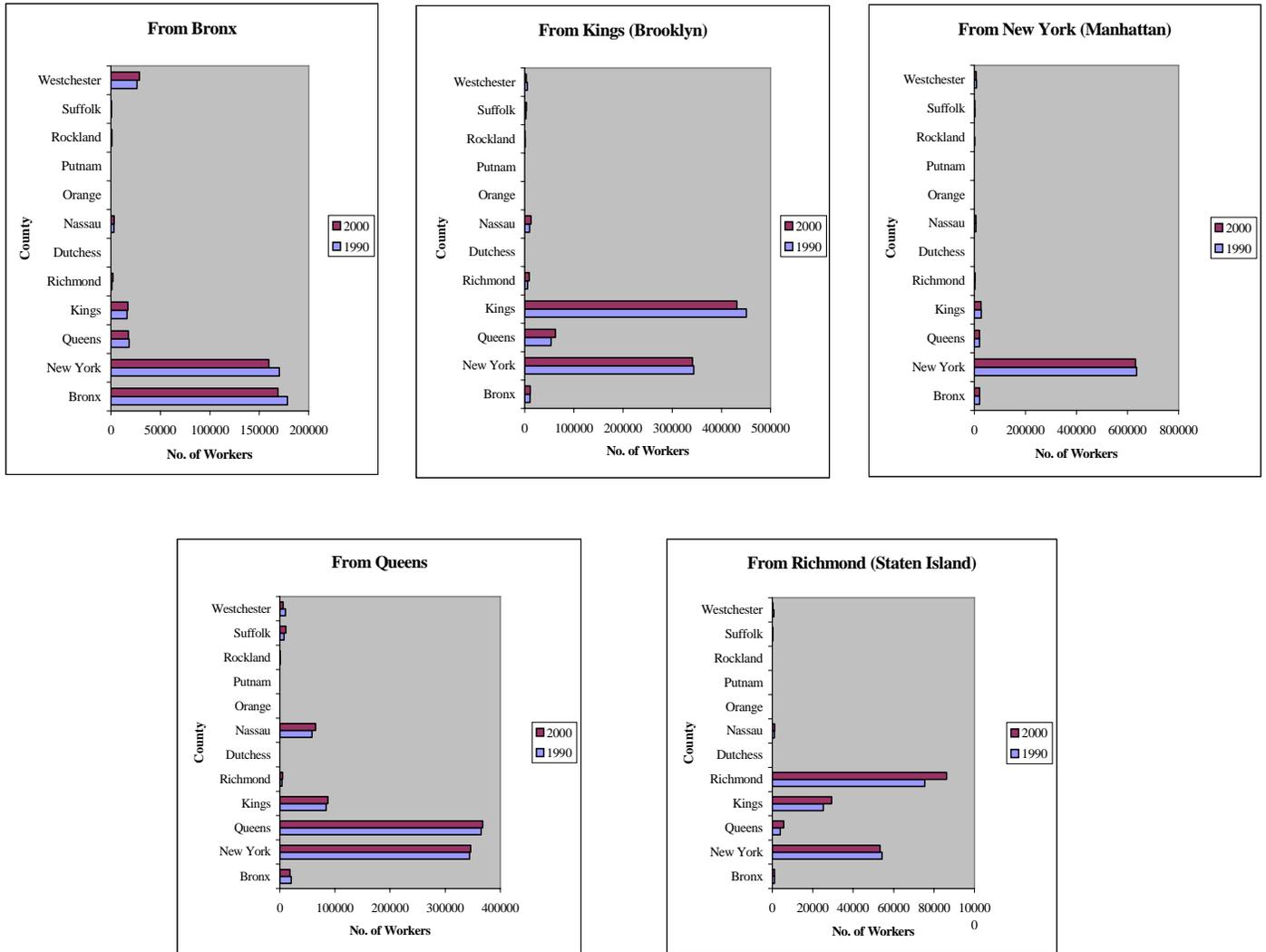


Figure 4 (B) **Journey to Work Trends – Long Island**

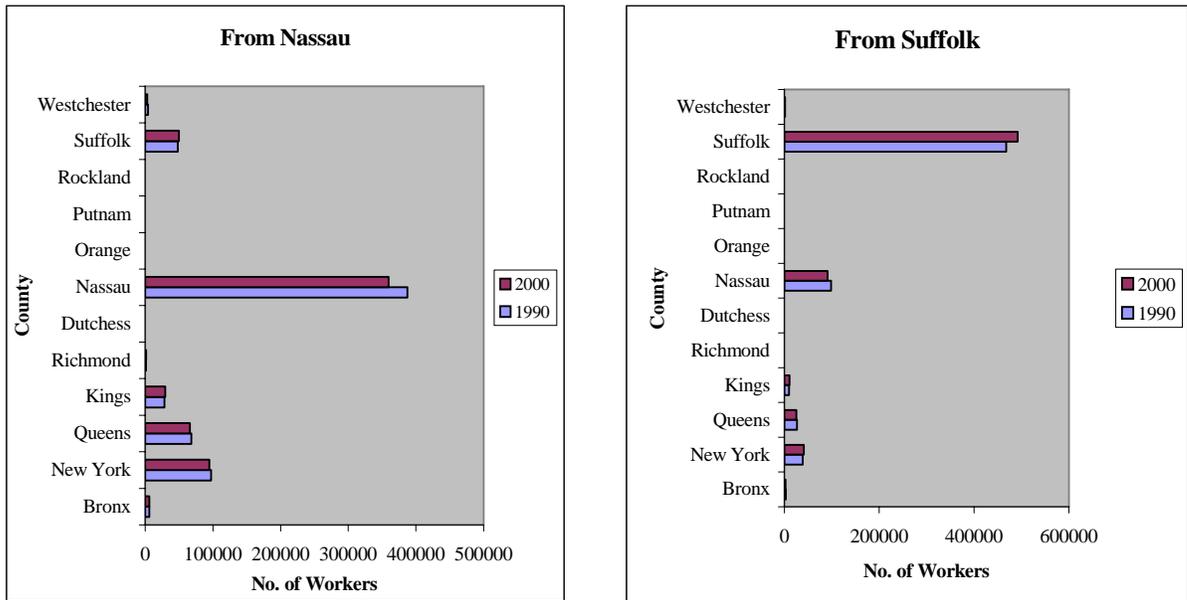
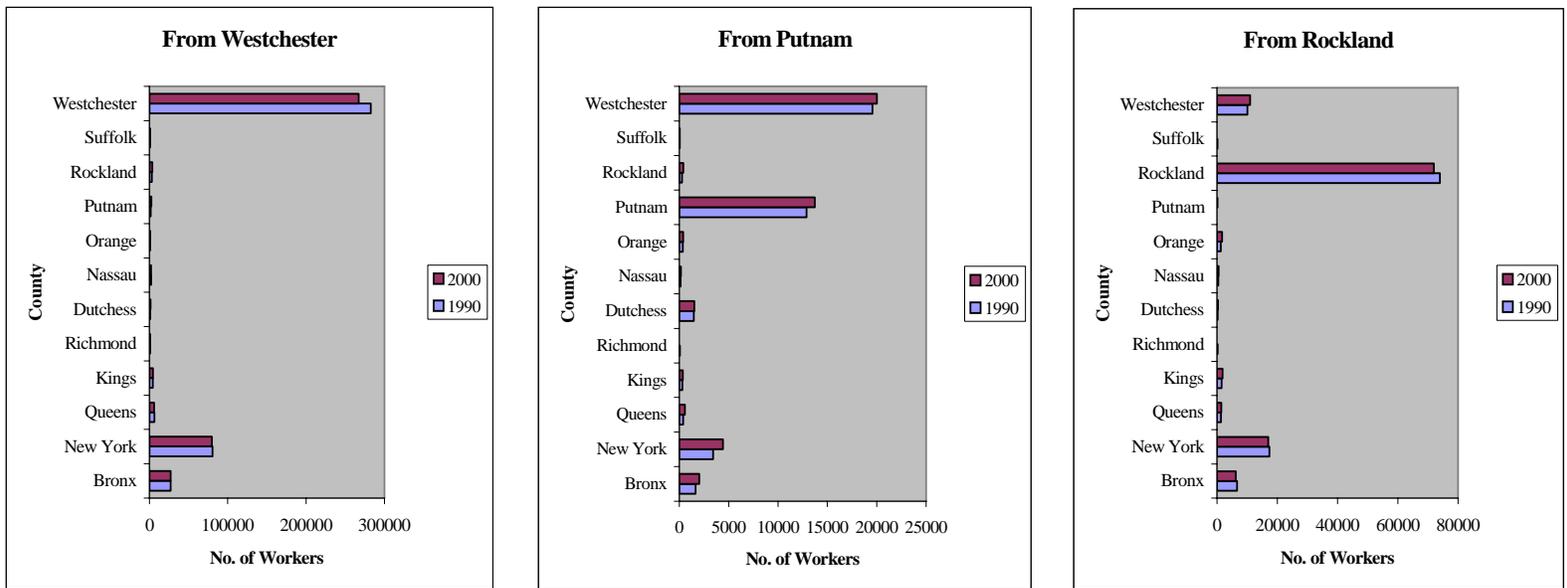


Figure 4 (C) **Journey to Work Trends – Lower Hudson Valley**



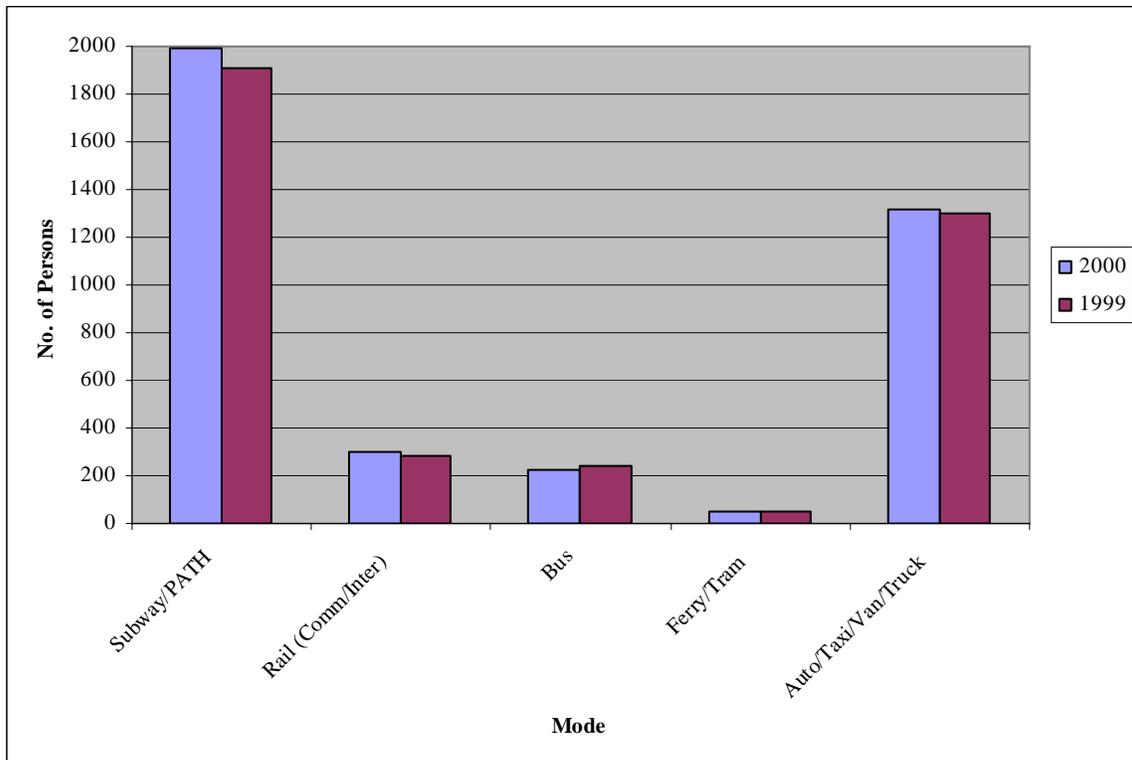
Hub (Manhattan Central Business District) Bound Travel

Travel patterns to the Manhattan Central Business District are highlighted here because of the unique and important role of this Hub to the economy of both the region and New York State.

Geographically, the Hub is that portion of Manhattan bordered by 60th Street on the north and Battery Park on the south; an area of approximately 8.5 square miles and home to 2.5 percent of the NYMTC region’s residents. On a typical fall business day in 2000 approximately 3.8 million persons entered and 3.7 million left the Manhattan Central Business District (CBD) representing a total increase of 278,000 persons (2.5 percent) from 1999. Approximately 39.5 percent of the persons who entered the CBD did so during the 7 a.m. to 10 a.m. period.

Trips to the Hub made by all modes of public transportation increased by 3.5 percent over 1999. Among those modes, subway and PATH ridership increased by 84,000 passengers or 4.4 percent. Similarly, suburban and intercity rail services, which carried 17,000 more persons in 2000 than in 1999, have also experienced steady ridership increases since 1991. There was a slight decrease in 1999, but in 2000 the amount of railroad passengers reached 300,000 or 7.1 percent of all passengers entering the Hub. There were about 4.1 percent fewer trips via all buses in 2000 than in 1999. Approximately 80 percent of all bus passengers traveled into the Hub by express buses, while more than half of all bus passengers commuted from New Jersey.

Figure 5 – People (‘000s) Entering Hub on Typical Business Day



(b) Mobility Alternatives

The New York metropolitan region is one of the largest metropolitan areas in the world and part of the transit-rich eastern seaboard corridor from Boston to Washington. The Metropolitan Transportation Authority, Port Authority of NY&NJ, Amtrak, suburban transit operators and other transportation providers offer an extensive array of bus, subway, commuter rail, ferry and long distance rail transportation options.

i. Transportation Demand Management (TDM)

Transportation Demand Management (TDM) programs operating in conjunction with this enormous network of services, help to improve mobility options for the region's travelers. TDM is a portfolio of techniques whose purpose is to manage demand for vehicular travel. In recent years, TDM activities in the region have increased in prominence as a result of air quality requirements and heightened awareness on the part of the business community and traveling public that mobility options are critical to the economic vitality and quality of life of the region.

Regional TDM initiatives are being implemented cooperatively by New York State Department of Transportation through agreements with its TDM Organizations: CommuterLink (New York City), LITM (Long Island), MetroPool, Westchester SMART Commute Group and Rockland SMART Commute Group (Lower Hudson Valley) in coordination with other NYMTC members. Through the synergy of the TDM organizations, the State, Counties and NYC working together as a regional team, an enhanced Commuter Choice Program is being deployed to support the shift of Single Occupant Vehicle (SOV) users to alternative transportation modes: such as transit, van pools and teleworking programs, and to reduce levels of emissions that adversely impact the environment and the quality of life for the general public. Projects targeted for regional implementation include Commuter Choice / Commuter Tax, Ozone Action Programs and Anti-Idling Awareness Programs, and Telecommuting/Teleworking Program

ii. Non-Motorized Transportation

Non-motorized transportation is part of every trip taken in the region; usually the leg of the trip that connects either two modes or the primary travel mode to the destination of the trip. Non-motorized modes, which primarily include walking and bicycling, work best when they have dedicated facilities separated from those used by motorized transport. The facilities that support non-motorized transport must be viewed as crucial to the overall transportation system.

iii. Transportation System Management (TSM)

In addition to TDM, Transportation System Management (TSM) strategies are designed to enhance the existing capacity of the transportation system by improving modal throughput and reducing both recurring and non-recurring delays. TSM strategies and projects are designed to improve the efficiency and effectiveness of the existing transportation network, and include a variety of Intelligent Transportation System options which are discussed elsewhere in this Plan.

(c) Bus Rapid Transit

Enhanced bus operations have been in existence in various forms across the NYMTC region. In some areas, members are pursuing fully integrated systems with facilities, services and amenities designed to improve the speed, reliability, efficiency, and marketability of bus transit service at low to moderate cost.

In New York City enhanced bus operations currently exist as a mixture of express buses, contra-flow bus lanes on three freeways, an extensive curbside bus lane network in each of the five boroughs, and limited-stop bus service on approximately 30 bus routes in the 5 boroughs of the City. MTA New York City Transit, New York City DOT and the New York State DOT recently embarked on a Bus Rapid Transit (BRT) study to identify bus corridors within New York City most suitable for BRT development and identification of unique packages of physical and operational treatments ideally suited for each corridor. The two-phased study is expected to last 21 months.

In the Long Island region BRT is a major component of the Long Island Transportation Plan to address congestion (LITP). See Section 3.1.4 for a description of the options. Since 1995, Suffolk County Transit has operated the Suffolk Clipper express bus service for commuters, which is funded by NYSDOT. The Suffolk Clipper travels along twenty-one miles of the HOV lane system of the Long Island Expressway between the Exit 63 Park & Ride lot and the Route 110 corridor.

In the lower Hudson Valley, BRT will be considered as one of the Build Alternatives for the Thruway corridor, as part of the TZB/I-287 project. Currently, Rockland and other West-of-Hudson buses can use the Express Bus Lane (XBL) at the Lincoln Tunnel to access Port Authority Bus Terminal (PABT). The XBL at the Lincoln Tunnel can save commuters up to 15 minutes heading into the PABT. The Port Authority is assessing the potential to augment capacity for preferential bus treatment in AM peak periods on the inbound approach to the Lincoln Tunnel, as part of a broader capacity management strategy for this congested corridor. Rockland County has begun a Route 59 Transit Operations Study that will examine ways to improve the flow of buses and improve safety of transit users on the Route 59 corridor.

2.2.2 (ii) Safety & Security

Meeting customer needs includes providing a safe and secure transportation system. Improving roadway and transit safety and security will have positive impacts on the region's transportation system, economy and on society as a whole. The National Highway Traffic Safety Administration estimated that in 2000 the economic cost of motor vehicle crashes to New York State was \$19.49 billion, a per capita cost of \$1,027. The nationwide average per capita cost was estimated at \$819.

(a) Roadway Safety

Traffic safety needs are usually measured by accident statistics collected and analyzed at the state and local levels. Improved traffic safety not only results in fewer crashes, injuries and fatalities, but it also helps reduce congestion and increase available roadway capacity.

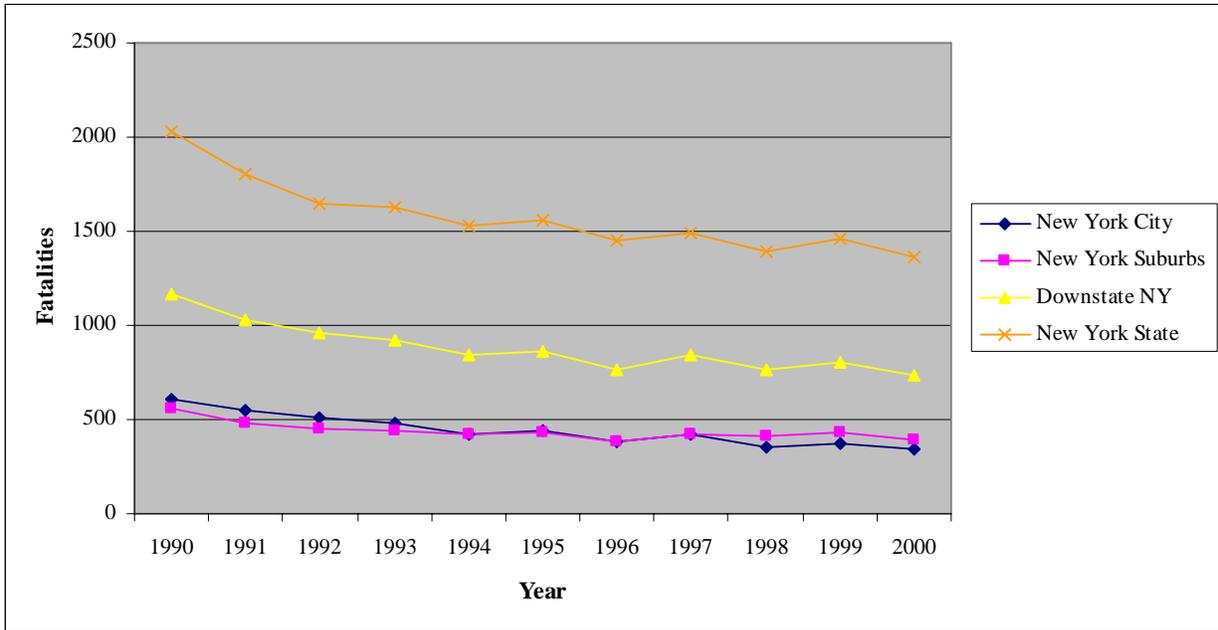
Table 2 shows motor vehicle crashes and fatality rates (per 100,000 persons) for the NYMTC region for the period 1998 – 2000. Figure 6 provides the fatalities trend for the last decade.

Table 2: Crashes/Fatalities Summary

	Motor Vehicle Crashes			Fatalities		
	1998	1999	2000	1998	1999	2000
Bronx	1114.1	1503.2	1497.2	4.1	4.9	3.7
Kings	1327.4	1577.5	1547.5	5.1	5.0	4.3
New York	1175.3	1479.3	1600.9	3.8	4.3	4.6
Queens	1418.5	1734.3	1640.7	5.6	5.9	4.5
Richmond	1307.0	1398.8	1410.3	5.4	3.6	5.4
New York City	1284.7	1577.3	1567.7	4.8	5.0	4.3
Nassau	2544.2	2698.1	2826.1	7.8	9.4	7.0
Suffolk	2162.8	2269.5	2455.6	11.8	11.1	10.6
Putnam	2073.9	2257.4	2766.7	12.9	15.8	10.4
Rockland	1878.9	2251.9	2532.5	9.3	7.7	6.3
Westchester	1810.9	1927.2	2074.0	5.8	5.6	6.1
New York Suburbs	2185.9	2330.7	2503.4	8.9	9.2	8.1
NYMTC Region	1598.1	1839.9	1882.5	6.3	6.5	5.6
New York State	1688.7	1961.8	2067.0	7.7	8.0	7.2

Source: NYMTC Transportation Safety Report 2000

Figure 6: Annual Motor Vehicle Fatalities 1990-2000



Source: NYMTC Transportation Safety Report 2000

There are a number of ongoing efforts at the state and local levels to reduce the frequency and severity of roadway accidents and increasing the overall safety and efficiency of the transportation system. For example, New York State DOT has instituted an annual program which identifies high accident locations and institutes remedial design improvements across the region. NYSDOT is currently developing a Safety Information Management System which will provide accident record information on State and local highways and streets and is pursuing a program to produce comprehensive statistical and GIS-based reports on pedestrian and bicycle crash data. Many of these initiatives are highlighted in Chapter 4.

b) Transit Safety and Security

The safety and security of transit riders, employees and the system itself are important components of the Plan and fundamental concerns for the region’s transit providers. Individual transit operators determine the security measures appropriate for their services and establish specific policies and programs to ensure the safety of their users and employees.

(c) Emergency Response

The aftermath of the September 11, 2001, terrorist attacks on the World Trade Center in Lower Manhattan emphasized the responsibilities of the region as a whole to keep communities and the transportation system safe and moving during emergencies. One of the critical elements in doing this is emergency response planning. Although NYMTC has no specific responsibility for

emergency planning, the Council adopted a resolution in March 2003 which recognizes the importance of security and emergency response measures to the region’s transportation network and the importance of the transportation network, to the successful implementation of security and emergency response measures of its members.

In the NYMTC region, emergency response planning and coordination is occurring at all levels of government – city, county, state and federal. There is continuing parallel development of emergency planning efforts by NYMTC members, with many of them actively pursuing cooperation and coordination of activities with other NYMTC sub-regions. The specifics of security/emergency response plans are not coordinated through NYMTC, as there are other forums where this coordination takes place.

2.2.2 (iii) Elderly & Disabled

Elderly and Disabled

According to the US Census Bureau, in 2000 thirty-five (35) million Americans (or 12.4% of the total population) were over the age of 65. It is projected that by 2030 the number of older Americans will more than double and almost all of those seniors will have been licensed drivers for most of their lives, including those too disabled to walk far or use conventional public transportation. For New York State, the population 65 years and older was 12.9% of the state’s total population, similar to the national percentage but representing an increase of 3.6% from 1990. As shown in Table 3 below, for the NYMTC region the overall increase for this cohort from 1990 to 2000 was 2.8% with variations ranging from a decrease of 1% in Brooklyn to an increase of 26% in Rockland County.

Table 3: NYMTC Region Elderly Population

	65+ Age Group			
	1990	2000	2000 vs 1990	
			Actual	%
Bronx	140,220	133,948	-6,272	-4.5%
Brooklyn	285,057	282,658	-2,399	-0.8%
Manhattan	197,384	186,776	-10,608	-5.4%
Queens	288,343	283,042	-5,301	-1.8%
Staten Island	42,313	51,433	9,120	21.6%
Putnam	7,575	9,147	1,572	20.8%
Rockland	26,871	33,853	6,982	26.0%
Westchester	126,026	128,964	2,938	2.3%
Nassau	182,899	200,841	17,942	9.8%
Suffolk	141,717	167,558	25,841	18.2%
NYMTC Region	1,438,405	1,478,220	39,815	2.8%
New York State	2,363,722	2,448,352	84,630	3.6%
US	312,418,31	349,917,53	3,749,922	12.0%

Source: 1990 & 2000 Census

Census 2000 counted 49.7 million people with some type of chronic condition or disability, representing 19.3% of the total civilian non-institutionalized population. It has been suggested that with the population aging and the likelihood of having a disability increasing with age, the growth in the number of people with disabilities can be expected to accelerate in the coming decades. Table 4 below shows disability rates in the region compared with the state and the nation.

Table 4: NYMTC Region Disabled Population

	1990		2000		Disabled as % of Non-Inst. Pop.
	Total Non-Inst. Pop.	Total disabled	Total Non-Inst. Pop.	Total disabled	
Bronx	1,203,789	430995	1,196,689	340,121	28.4%
Brooklyn	2,300,664	622644	2,268,988	603,816	26.6%
Manhattan	1,487,536	425193	1,450,190	303,208	20.9%
Queens	1,951,598		2,073,867	490,592	23.7%
Staten Island	378,977		409,022	77,275	18.9%
New York City	7,322,564		7,398,756	1,815,012	24.5%
Putnam	83,941		88,697	12,859	14.5%
Rockland	265,475		261,757	42,751	16.3%
Westchester	874,866		846,105	147,066	17.4%
Lower Hudson Valley	1,224,282		1,196,559	202,676	16.9%
Nassau	1,287,348	216998	1,238,716	196,086	15.8%
Suffolk	1,321,864		1,307,466	214,085	16.4%
Long Island	2,609,212		2,546,182	410,171	16.1%
NYMTC Region	11,156,058		11,141,497	2,427,859	21.8%
New York State	17,990,455		17,464,264	3,597,638	20.6%
U.S.	248,709,873		257,167,527	49,633,333	19.3%

* 2000 Census

As the numbers of older and disabled persons continue increasing, preserving and enhancing the mobility and safety of the groups will become major issues for the region.

There are a number of initiatives that have been or are being undertaken by NYMTC members to address these issues and these are described below. These are over and above the provisions made for the elderly and disabled in roadway projects.

Meeting the Needs of Special Population

In the lower Hudson Valley, the three counties provide dedicated paratransit services (T.R.I.P.S in Rockland, Bee-Line Paratransit in Westchester, and PART Service in Putnam) for the elderly and disabled, and most of the buses in the transit fleets are wheelchair-accessible.

In Rockland County, the County Office for the Aging and the Planning Department conduct ongoing outreach to seniors that includes education on the use of bus routes, fare structures (discount for those 60 yrs. and older) and reading bus schedules as well as introduction to the T.R.I.P.S. (Transportation Resources Intra-County for Physically Handicapped and Senior Citizens) service. The Public Transportation and Planning staff are advised by the T.R.I.P.S. Board on policy and advocacy issues affecting the senior and disabled communities. The T.R.I.P.S. Board comprises senior and disabled citizens and advocates to ensure that the transportation needs of senior and disabled residents are being met. The monthly Board meetings gather feedback on ways to improve current and future transit services to better meet the needs of these populations. The staff also interacts on a regular basis with various County agencies that serve the needs of the elderly and disabled. Rockland County recently completed the purchase of 10 new buses to bring the total T.R.I.P.S. fleet to 22 buses. Rockland County will begin implementing an Intelligent Transportation System (ITS) for T.R.I.P.S. that will include Mobile Data Terminals, Automatic Vehicle Locator (AVL) tracking receivers and software for a computerized reservation, scheduling and dispatching system. The goal of these projects matches the Department's mission to strive to provide reliable transportation to the senior and disabled residents of Rockland County.

In Westchester County, Bee-Line Paratransit service is provided for people who are unable to use the fixed-route Bee-Line service. Operation of the paratransit system is the responsibility of the Westchester County Office for the Disabled. Advice and guidance about paratransit issues is provided by the Transportation Subcommittee of the Westchester Council for the Disabled. The subcommittee, composed of consumers, advocates and agency representatives, meets regularly to discuss transportation issues which affect the disabled community. Assistance in providing transportation services and information to senior citizens is provided through the Older Driver Assistance Program. In addition, many municipalities within the county provide local transportation services for seniors to carry them to shopping centers, medical appointments and community activities.

Across the region, the MTA has been making steady progress towards a transit system that is fully accessible to the elderly and disabled. The MTA network currently has more than 75 fully accessible subway and commuter rail stations which have features that improve accessibility for customers with visual, hearing and mobility impairments. There are also more than 120 additional stations that have elevators and/or ramps to provide wheelchair access. One of the main components of the MTA's program in New York City is the Access-A-Ride paratransit service which serves the five boroughs. In New York City (and on Long Island) the MTA has instituted a reduced-fare program for the elderly and disabled. The agency also provides travel training for customers with disabilities, and for the visually impaired there are tactile-Braille subway maps available at various stations. All fully accessible and newly renovated stations also have tactile-Braille signage.

The New York City Department of Transportation recently embarked on programs to install pedestrian ramps in all locations in the City where pedestrian walkways cross curbs and to install oversized street name signs on several heavily traveled corridors.

On Long Island, in addition to various initiatives undertaken by the counties, the MTA provides paratransit service (called Able-Ride) through Long Island Bus which serves Nassau County. Service is coordinated with Suffolk County to provide direct service to points approximately two miles east of the Nassau/Suffolk border. In Nassau County the Senior Citizens Leisure Passport entitles citizens age 60 and over to pay half-fare on all county-operated buses.

Operating since 1994, Suffolk County Accessible Transportation (SCAT) provides service by reservation to individuals with permanent or temporary disabilities that prevent them from using regular Suffolk County Transit (SCT) service. Eligibility to use SCAT is determined based on ADA guidelines. SCAT provides curb-to-curb transportation and will pick up and drop off between any two points in Suffolk County within 3/4 mile of a Suffolk County Transit or Huntington Area Rapid Transit (HART) bus route. SCAT also coordinates with Nassau County's ABLE system for those riders wishing to travel to destinations in Nassau County. A subscription service is also available. A subscription trip is one in which the rider takes the same trip, at the same time, at least two days a week. Subscriptions can be made for work or school (college) only. The City of Long Beach and the Town of Huntington's HART bus systems are also fully wheel chair equipped and both operate a paratransit service for the elderly and disabled with discounted fares for seniors on their respective fixed-route systems.

2.2.3 Principle 3 - Harmonizing the System with Its Surroundings

The transportation system exists within the context of its surroundings; the communities, institutions, commercial developments, open spaces and other land uses which it serves and links together. The transportation system is the lifeblood of these various land uses; it provides access to them and mobility for users to move between the developments and uses which are the origins and destinations of their trips.

In addition to these primary impacts which determine the viability of surrounding land uses, the transportation system also impacts its surroundings through its physical presence as a series of facilities and through the number and nature of the vehicles and people using those facilities. This secondary impact is also critical to the viability of surrounding users, since the size and composition of the transportation system's facilities and the manner in which people use those facilities each day determines how the system's externalities – congestion, noise, vehicular emissions, physical presence and safety – improve or degrade the surrounding land uses.

2.2.3 (i) Development

a) Integrating Land Use and Transportation Planning

The integration of land use and transportation planning is critical to the improvement of mobility and quality of life in the region and to ensuring that future demand for transportation services matches the system’s capabilities. In New York State, local municipalities have primary responsibility for land use regulations and decision-making. While land use decisions are made at the local level, many transportation investment decisions are made at a more regional level. Localities must be encouraged to take appropriate land use and zoning actions consistent with integrated land use and transportation plans.

NYMTC’s approach to land use and transportation planning integration should be proactive, providing resources in a manner that balances the need to have development consistent with the regional transportation system and the need to maintain livable communities. The approach must also encourage (1) siting of development serving regional markets in such a manner that other similar development is not adversely impacted; (2) safe access to commercial and residential development by non-motorized transportation; and (3) in-fill and brownfield development where transportation capacity is available.

In New York City, the Lower Hudson Valley, and Long Island a number of efforts in the form of sustainable development studies have begun to address land use and transportation issues. These studies have brought a number of issues to the table, including promotion of mixed-use development; working with local communities to update their master plans to include accommodations for transit and transit-oriented development; promotion of walkable communities; improvement of pedestrian and bicycle access; waterfront redevelopment; and zoning. The Plan identifies a number of sustainable development and community emphasis areas across the region where new studies of this type could be beneficial (see maps in Appendix B)

b) Sustainable Development

From a transportation perspective, sustainable development is that which will not outpace the transportation system’s ability to serve communities in safe and environmentally friendly ways. It considers rigorous adherence, not only to transportation engineering and design standards, but also to social (e.g. equity, human health, cultural and historic values and public involvement), economic (e.g. business activity, employment and productivity) and environmental standards (e.g. pollution prevention, climate protection and habitat preservation).

Recognizing this, NYMTC partnered with local governments and funded four pilot corridor-level sustainable development studies: two in the lower Hudson Valley – Route 303 and Route 202/35/6 Bear Mountain Parkway; one in Brooklyn in the Coney Island/Gravesend area; and one on Long Island - involving the five Eastern Long Island towns of East Hampton, Riverhead, Shelter Island, Southampton & Southold.

2.2.3 (ii) *Environmental Issues*

(a) Air Quality

Air quality is a primary concern for NYMTC since its region is in a severe ozone non-attainment area, with the exception of Putnam County, which is a moderate ozone non-attainment area. In addition, New York City, Westchester, and Nassau counties are in a Carbon Monoxide Maintenance Area. Under the Clean Air Act, NYMTC must demonstrate the conformity of its plans and programs with emissions reduction milestones set forth in the New York State Implementation Plan for Air Quality. Due to the significant changes in travel patterns resulting from the attacks of September 11, 2001, the New York Metropolitan region was granted a Federal waiver from the Clean Air Act conformity provisions through September 30, 2005.

NYMTC will continue efforts to identify and implement transportation strategies that will yield substantial emission benefits and improve the region's air quality. These programs include Regional Commuter Choice to encourage use of alternative modes of travel; a Clean Fuels Consortium to promote the use of cleaner fuels and retrofit technology for on-road service fleets and construction and maintenance equipment; Ozone Action Days to promote the use of travel alternatives during peak ozone seasons; and traffic signal modernization. Other emissions reduction measures are also under consideration. NYMTC and its member agencies are identifying challenges to implementing these strategies and are committed to devising solutions to help the region achieve its air quality goals and the targets set by the Clean Air Act.

(b) Community Impacts

It is important for transportation agencies and users to understand the potential impacts of proposed transportation improvements and proposals on surrounding communities, residents and businesses throughout the transportation planning process. NYMTC members work to ensure that affected communities understand and participate in transportation planning and decision-making. At the state level, the Governor's Quality Communities Agency Task Force recommends the inclusion of Quality Community Principles into the daily operations of members who operate and maintain the region's transportation system and the existing transportation long-range planning process.

(c) Context Sensitive Solutions

NYMTC members must strive to recognize community goals and desires when designing, building and maintaining projects and programs which are sustainable, and improve environmental, scenic, aesthetic, historic and natural resources. Therefore, there is a growing emphasis on Context Sensitive Solutions and the members share the general precepts that projects should:

- Be in harmony with the community and preserve the environmental, scenic, cultural and natural resources of the area;

- Satisfy both transportation and community needs as agreed to by a full range of stakeholders, i.e. local governments, community groups, facility users and agencies;
- Incorporate early, effective and continuous public involvement;
- Identify and address community issues using an ongoing, structured format as appropriate for information exchange, and active partnership with municipal or other state/local agencies;
- Incorporate innovative and safe technical solutions that add value for the user and community; and
- Show measurable success in improving the community’s environmental, scenic, aesthetic, historic and natural resources, above and beyond mitigation requirements.

Projects incorporating Context Sensitive Solutions improve transportation systems while addressing communities’ visions and interests. Technical assistance is provided to localities which seek to add or update the transportation element of their local comprehensive plans through the Context Sensitive Solutions process.

2.2.3 (iii) The Planning Process

In its role as a designated Metropolitan Planning Organization, NYMTC is required by Federal mandate to produce three primary products: the Regional Transportation Plan, the Unified Planning Work Program, and the Transportation Improvement Program. Together, these products are the regional framework through which Federal transportation investments and other transportation improvements are conceived and brought into reality via a process that is continuing, cooperative and comprehensive, while considering all modes in a coordinated manner.

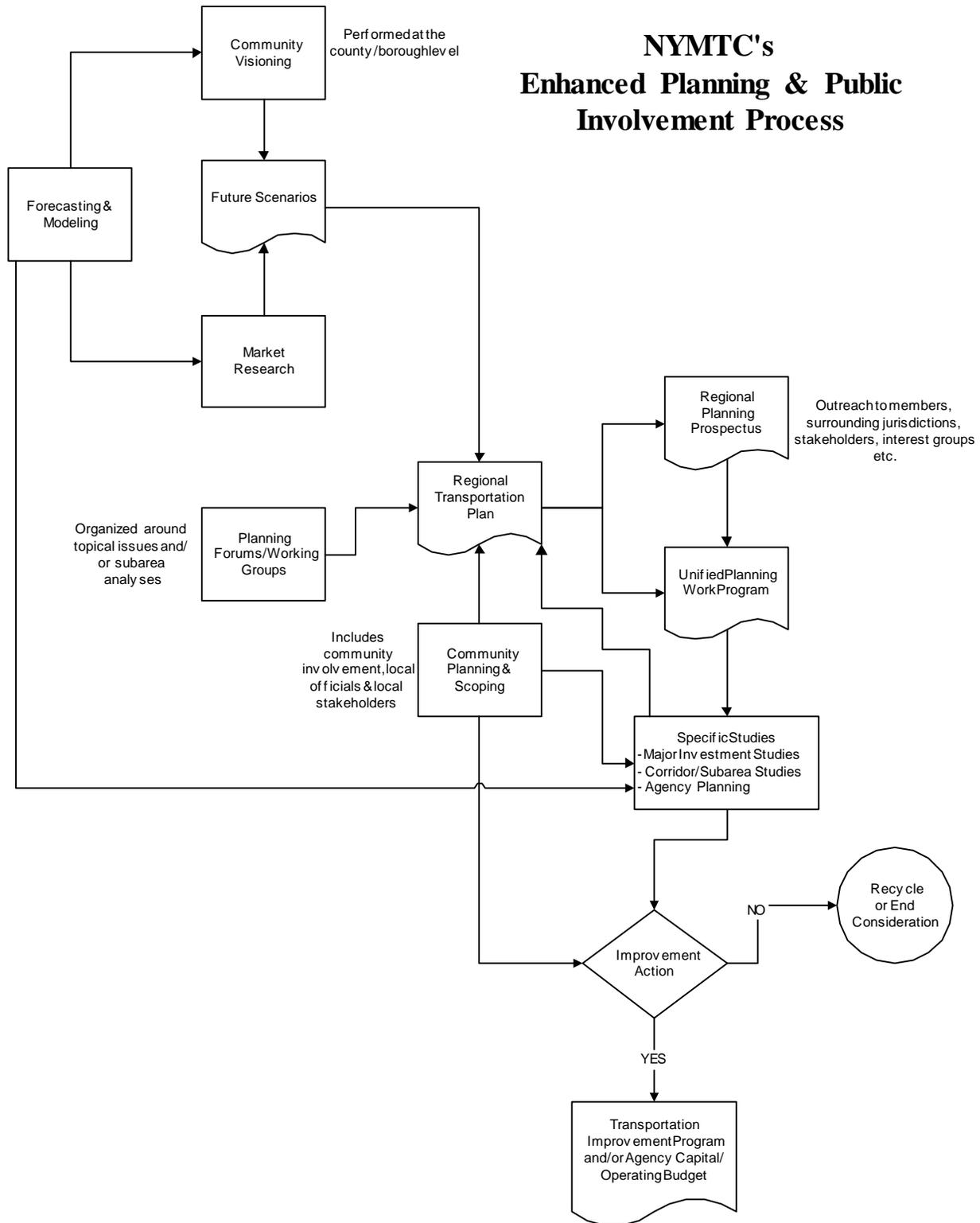
NYMTC’s planning process is intended to improve and develop methods which will result in a more regional approach to transportation planning and investment decisions both by its members and throughout the larger tri-state region. This approach is intended to improve the quality and effectiveness of transportation planning and decision-making among members and jurisdictions, so that regional issues that are raised through the Plan’s guiding principles and goals can be meaningfully addressed when programs and projects are developed and approved.

Notwithstanding Federal requirements, NYMTC recognizes that public and community involvement in the transportation planning process results in better plans, solutions and improvement actions. NYMTC’s enhanced public involvement process results in better decision-making. Public involvement channels are maintained at the level of individual studies and projects through mechanisms provided by the member agencies, the three Transportation Coordination Committees and NYMTC as a whole. Public involvement techniques used include focus groups, public meetings, public planning forums, planning working groups, town hall meetings and surveys. NYMTC also garners public feedback through its website.

This Plan update was the product of a three-phased public involvement process which included public meetings and focus groups applied throughout its development. The revised principles and goals, needs and investment proposals were directly influenced by the public involvement

process. Responses to public comments received during public review process are included in the Plan as an appendix.

Figure 7 – NYMTC Planning & Public Involvement Process



2.2.4 Principle 4 – Creating a State-of-the-Art Transportation System

The region's transportation system can be improved and its services optimized by employing emerging technologies and best practices. This requires anticipating developments in both technology and practice, researching their applicability to our region and selecting investments and policies which make best use of appropriate technology and practice in improving transportation equipment, facilities and service delivery.

2.2.4 (i) Best Practices

Innovative techniques and policies can enhance the performance of the region's transportation system by improving the effectiveness of public information and communication, customer service and comfort, intermodal coordination, service delivery, safety and security, system maintenance and demand and system management. Taken together, best practices can continually upgrade the region's ability to make optimal use of the transportation system's capacity to move people and goods around the region within the limits of available resources.

A number of innovative policies and practices are in place or under development in the region. Examples include demand management programs of various types, services such as shuttles and scheduled vanpools, fares and toll policies involving deep discounting, maintenance practices, public information improvements such as regional travel clearinghouses, systems management through traffic management centers, variable-priced commercial parking programs and student and elderly safety programs. In the future, best practices are likely to include a focus on greater interaction between the modal components of the transportation system in terms of public information, customer service, communication, fare and toll policies and both demand and service management. In addition, use of best practices will likely result in greater integration of data collection and performance monitoring of the components of the transportation system in order to improve service delivery, safety and security.

2.2.4 (ii) Emerging Technologies

The testing and use of emerging technologies is already transforming the transportation system. The premier examples to date include deployment of Intelligent Transportation Systems for communication and public information, as well as electronic toll and fare collection systems. Emerging technology is also in evidence in new types of equipment and facilities. Design improvements in vehicles and station facilities, as well as supporting infrastructure such as pavement, rail lines, pedestrian spaces, bikeways, stations and parking facilities are improving customer service and comfort, safety and security, aesthetics, mitigation of impacts on surrounding communities and integration of service delivery.

In the future, emerging technologies will likely contribute heavily to improvements in air quality and energy efficiency. These emerging technologies may include or provide more comfortable transit services, vehicles that run on cleaner, more efficient fuels and pavements and construction materials to help mitigate the heat island effect which contributes to ozone formation. Information technologies will also likely contribute to greater levels of integration for performance monitoring, safety and security, and systems demand management, resulting in increasing optimization of system-wide capacity and reduction of congestion levels. Design technologies will also contribute to increased system safety and performance.

2.2.5 Principle 5 - Meeting the Challenges of Growth

The region continues to grow, both spatially and in terms of the number of people who live and work within its borders, placing greater demands on an extensive but overburdened transportation system. However, the challenge of growth is not limited to simply the increasing volumes of people and goods using the system. The challenge is also related to how people and goods need to use the system; where they need to travel to and from--and the region continues to decentralize and sprawl outward.

2.2.5 (i) Future Conditions

a) Socio-Economic and Demographic Forecasts and Trends

The Regional Transportation Plan rests upon demographic and socio-economic forecasts developed through a consensus of NYMTC's member agencies. In addition to being a major component of the Plan, these forecasts are used for all Major Investment Studies, capital project planning, subregional studies and other planning activities which carry forward from the Plan throughout the planning process. The forecasts methodologies and the resulting regional trends and projections to 2030 are described in Appendix C.

b. Travel Demand

Travel demand analysis was done using NYMTC's Best Practice Model (BPM), which is an activity based travel demand model which uses the most advanced research and technology available in the country. The BPM area covers 28 counties and is divided into 3,500 transportation analysis zones. The model analyzes travel patterns by four different time period, eight trip purposes on 6 highway and 4 transit modes. The highways of the region are represented in Geographical Information System (GIS) with more than 53,000 segments. All the available transit modes of the New York metropolitan region ranging from commuter rail to ferries are also coded in GIS.

The New York Best Practice Model (NYBPM) that was originally developed and calibrated for 1996 was updated to 2002. The year 2002 was chosen as the base year for analysis because of the availability of updated input data for BPM. These new input data include: Socio Economic Data (SED)- Household, population and employment data at the BPM zonal level and future year forecasts extended to 2030; 2000 Census data; updated 24-hour traffic counts at 2,300 screenline locations; and updated transit ridership

Besides updating the input data, both transit and highway networks were updated to reflect the most current and accurate conditions at these facilities. The SED was also adjusted to reflect post 9/11 employment and population data. The model was run and validated against the screenline traffic counts and transit ridership from 2002.

For traffic analysis of 2005, the build scenario was selected since it is more reflective of present traffic conditions. All transportation projects which will be completed prior to 2005 are included in the 2005 build scenario. For traffic analysis of 2030, projected SED forecast is used and all transportation projects which are scheduled to be completed before 2030 are coded into highway and transit networks to be more reflective of a realistic condition.

Volume to Capacity Ratios

The Volume to Capacity (V/C) ratio is an important measure of roadway congestion. It represents the maximum number of vehicles that can pass over a given section of a roadway during a given time period. The V/C ratio is usually tied to another indicator of congestion - Level of Service (LOS) which is divided into 6 categories, “A” through “F”, with “A” generally representing the most ideal condition. As the V/C ratio rises, the Level of Service decreases. Maps showing the V/C ratios for various roadway segments in the NYMTC region are contained in Appendix B. Regional congestion is fully addressed in the Council’s CMS Procedures and Status Report.

Future Vehicle Miles of Travel

Vehicle Miles of Travel (VMT) represents a gross measure of the total demand placed on the roadway system during peak travel times. The Best Practice Model shows that for 2030 New York City average weekday VMT may increase by 4.2 percent; Long Island 11.5 percent; and the lower Hudson Valley 12.5. Population growths for these areas are projected at 13 percent, 13.5 percent and 11 percent respectively.

Total Transit Person Trips

Total transit trips (for the no-build scenario) are forecasted increase by 27% for New York City, 23% for Long Island and 25% for the lower Hudson Valley between 2002 (base year) and 2030. Comparatively employment is forecasted to increase by 26%, 24% and 23% respectively.

Chapter 3: Regional Options for the Future

Having considered current conditions and future forecasts related to its five guiding principles and their related common goals, the Plan now turns to future transportation investment options at the regional level. This chapter presents these options in the context of several critical components of the overall transportation system.

3.1 Regional Investment Proposals

a) Investment Options

Regional Investment Proposals (including Major Investment Studies) are grouped by regional sectors or “gateways,” that provide an overarching framework to the investment options and possibilities that are available to the region. The gateways (Figure 1) are identified as: Northern, New England Northern, Cross-Regional, Long Island, Southern Cross-Regional, and Other Regional – New York Harbor, Airports and Regional Core. Figure 2 shows the Major Investment Studies currently underway in the NYMTC region.

Regional Investment Proposals (RIP) are large-scale studies, concepts, and projects with regional impact on the movement of people and goods, and which support the vision, guiding principles and goals of the Plan. Some of the proposals originate within the long-range planning processes of NYMTC, its members and other agencies, while others begin as policy proposals made by elected officials or through private investment decisions. They represent an enormous opportunity for major transportation investments and improvements in the NYMTC and larger tri-state region.

A listing of regional investment proposals follows. Some proposals appear in more than one gateway due to the various markets and roles they serve in the regional transportation system.

3.1.1 Northern Gateway

The Northern Gateway is the regional sector through which people and goods move into and out of the NYMTC region from the Hudson Valley and northern New Jersey. It is characterized by the need to move people and goods both east and west of the Hudson River and, significantly, across the river to access New York City and suburban centers such as White Plains and the surrounding I-287 corridor. The Gateway comprises a mix of interstate highways, commuter and freight rail services, bus services and waterborne modes.

Investment proposals:

- i. Tappan Zee Bridge/I287 Corridor**
- ii. West Shore Rail**
- iii. Access to the Region’s Core**
- iv. Penn Station Access**
- v. Hudson River Ferries**
- vi. Hudson Line/River Line Freight**
- vii. Albany Freight Barge**

i) Tappan Zee Bridge/I287 Corridor

An Alternatives Analysis/Draft Environmental Impact Statement (AA/DEIS) is currently in progress for this corridor which includes the Tappan Zee Bridge and extends for 30 miles from the I-287/I-87 interchange in Suffern, New York to the I-287/I-95 interchange in Port Chester, New York. The Notice of Intent for the Tappan Zee Bridge EIS was filed December 23, 2002 in the Federal Register, and public and agency scoping meetings were conducted in January 2003. The study is evaluating alternative proposals to address the transportation needs in the corridor while taking into account the structural needs of the Tappan Zee Bridge, as well as other existing New York State Thruway infrastructure. The transit alternatives under review in the AA include commuter rail, light rail, and bus rapid transit. Bridge replacement, tunnel crossing alternatives, and circumferential and radial travel markets are also being evaluated. The AA phase is targeted for completion in 2005, to be followed by a complete NEPA review of the proposed alternatives. It is anticipated that up to four build alternatives will be evaluated in the EIS phase, with an FEIS targeted for completion in 2008.

ii) West Shore Rail

The West Shore MIS/EIS is considering the restoration of passenger rail service on lines that had passenger service until the late 1950s or mid-1960s. The three lines that are under study are currently used to provide freight service. They are the West Shore and Northern Branch, which are owned by CSX and the NYS&W (New York Susquehanna & Western). The MIS phase of the project recommended the advancement of new start rail projects on each of the three routes. NJ TRANSIT is preparing a separate MIS/DEIS document, in conformance with current federal guidelines, for each of the three routes. The MIS considered commuter rail, light rail as an extension of the Hudson-Bergen Light Rail Transit System (HBLRTS), and an Automated Guideway Transit (AGT)/monorail. The MIS includes the ‘no build’ and TSM alternatives to the project.

The MIS analyzed the feasibility of restoring passenger rail service on three rail lines: the West Shore Line, the Northern Branch, and the Bergen – Passaic Line on the NYS&W. The physical definitions of each alternative were defined and subjected to evaluation and environmental screening criteria. From this screening process, a draft recommendation has been proposed which will be subjected to further analysis and development in the preparation of the MIS/DEIS document.

The MIS/EIS tasks included demand forecasting, station site evaluation, operational and physical facilities planning, conceptual design of project elements, public participation and environmental assessment for the LPA. The MIS has determined the outer limits of each of the rail lines under consideration, which will be in Rockland County in New York State, (West Shore), Bergen County,

New Jersey (Northern Branch) and Bergen or Passaic County, New Jersey (NYS&W). The MIS also identified potential stations, parking and train storage locations. The MIS/DEIS will also investigate track and grade crossing designs to address CSX and NYS&W and community issues. Property surveys will also be conducted. The MIS has also addressed the role of these factors in evaluating alternatives.

iii) Access to the Region's Core (ARC)

NJ TRANSIT is planning a major expansion of trans-Hudson rail capacity – a pursuit not undertaken since the early 20th Century. The project, known as Access to the Region's Core, is currently in the Draft Environmental Impact Statement (DEIS) phase and is being conducted in partnership with the Port Authority of New York & New Jersey and in compliance with the Federal Transit Administration.

The ARC project is NJ TRANSIT's highest capital investment initiative and will approximately double Trans-Hudson rail capacity with the construction of the following:

- 1) A new Trans-Hudson Express Tunnel,
- 2) A new 8 track Station under 34th Street in midtown Manhattan, and
- 3) Significant improvements to the Northeast Corridor Line.

The project will also create new track connections that will allow direct rail access to midtown Manhattan for Raritan Valley Line commuters as well as commuters from Bergen, Orange and Rockland counties. The ARC project also contains early action improvements, which could be implemented more quickly than the larger project components. The early action improvements would provide badly needed capacity enhancements in Penn Station while the larger project is being designed and built.

Project Schedule:

Draft EIS complete – Summer 2005
Final EIS complete – Summer 2006
Initiate Preliminary Engineering – 2005
Begin construction on early action improvements – late 2006
Complete early action improvements – 2010
Complete entire project – late 2014

iv) Penn Station Access

The MTA/Metro-North Railroad Draft Environmental Impact Statement (DEIS) is evaluating alternatives for improving access to New York's Penn Station from Metro-North's East of Hudson service territories. Currently, 125th Street in East Harlem and Grand Central Terminal in East Midtown are the only destinations in Manhattan that are accessible from the East of Hudson region. The options under consideration would provide a direct connection to Penn Station from Metro-North's New Haven and Hudson lines. The major objectives of this effort include maximizing the use of existing infrastructure, reducing automobile based pollution and improving regional transportation flexibility.

Short-listed alternatives currently under analysis include: Alternative 1 - Hudson Line service to Penn Station via the Empire line with new intermediate stations proximate to West Harlem and the Upper West Side in Manhattan; Alternative 1A - which is Alternative 1 without peak period service or new stations; Alternative 2 - New Haven Line service to Penn Station via Amtrak's Hell Gate Line, in the Bronx and Queens, with new intermediate stations proximate to Co-Op City, Parkchester and Hunts Point in the Bronx; and Alternative 2A - which is Alternative 2 without peak period service or new stations.

The DEIS is targeted for completion in the Summer of 2005, and the FEIS is anticipated to be completed by the end of 2005. Design for all contracts is targeted for completion in 2007. Rolling stock purchase and infrastructure construction phases are targeted for completion by the end of 2009.

v) Hudson River Ferries

A Hudson River Ferry Study for the lower Hudson River has been completed. It explored potential ferry docking sites looking at both landside and river navigation access from Yonkers north to Haverstraw. Sites on the west shore south of Haverstraw have difficult landside concerns that may preclude their use for commuter services.

Rockland County and the City of Yonkers have been exploring Haverstraw/Yonkers/Manhattan ferry service. Service would be to the west side of Manhattan in midtown and to lower Manhattan. These areas are targeted because they complement Metro-North service to Grand Central Terminal which provides good access to the east side of Manhattan.

vi) Hudson Line/River Line Freight

Freight movement over Metro-North's Hudson Line on the east side of the Hudson River is restricted by frequent commuter service and physical clearance issues. Clearances need to be addressed for trailer-on-flatcar service to utilize the line. Long term it is hoped to move beyond trailer-on-flatcar clearance to double stack clearance. This may be difficult as many bridges and railroad station structures would need to be raised and there are significant physical and community impact concerns with obtaining higher clearances.

The River Line (West Shore Line) runs from Newark, NJ, to Selkirk, NY, on the west side of the Hudson River and moves about 40 MGT (Millions of Gross Ton miles per year), compared with the Hudson Line which moves 1.5 MGT. It is the major northern rail freight corridor into the New York /New Jersey metro area. The River Line has double stack clearances but is generally a one-track line with passing sidings. The CSX acquisition of Conrail in 1998 has resulted in a dramatic increase in the number of freight trains that operate on this line. Major concerns in Rockland resulting from the increased number of trains are the traffic disruptions to communities, delay in response time of emergency services due to blocked crossings, frequency of increased train horn noise and other quality of life issues.

The River Line is reaching its capacity and will require the addition of longer passing sidings or more extensive double tracking. This will be difficult from a physical clearance standpoint and from a community relation's standpoint. Projects to improve safety at crossings and provide grade-separated crossings are being studied. Rockland County is studying the use of SSM

(Supplemental Safety Measures) to improve safety at crossings and create Quiet Zones for the entire section of CSX track in Rockland County.

vii) Albany Freight Barge

Barge service between the Port of New York and New Jersey and the Port of Albany commenced in April 2003. This service calls for picking up containers destined for the Port of Albany from any terminal in the Port of New York and New Jersey. Funding for this service includes \$3.3 million in Congestion Mitigation/Air Quality (CMAQ) funds for a two-year period, April 2003 through April 2005. CMAQ funds for this project are administered through the New York State Department of Transportation.

Plans for additional barge service to New England destinations are in the works, including barge service between the Port of New York and New Jersey and ports in Bridgeport, Connecticut as well as Providence, Rhode Island. The estimated start-up for these new services is a year to eighteen months. Service to Camden, New Jersey, is in the planning stage, however, it has not yet been determined if this service will be barge or rail.

3.1.2 New England Gateway

The New England Gateway accommodates travelers and goods moving between Connecticut and other points in New England, and the NYMTC region. The Gateway comprises a mix of interstate highways, local arterial roadways, commuter rail services, bus services and waterborne modes.

Investment Proposals:

- i. I-95 Congestion Management Plan**
- ii. Tappan Zee Bridge/I287 Corridor**
- iii. Penn Station Access**
- iv. Long Island Sound Ferries**
- v. I-84/Newburgh-Beacon Bridge**

i) I-95 Congestion Management Plan

Initiated in spring 2001, SWRPA released its Congestion Mitigation Systems “Vision 2020” Plan in February 2003. It focuses on reducing traffic congestion and improving mobility and access for commuters, shippers and others traveling through Connecticut's southwest corridor, and recommends providing safe, convenient, reliable and cost-competitive travel options.

The Vision 2020 Plan is a comprehensive strategy to guide future development of southwestern Connecticut's transportation system. Recommended actions are programmed over a 20-year period and include expanded transportation demand management programs including those that provide fiscal incentives to shape traveler behavior; capital improvements to rail stations and intermodal hubs including expanded parking, availability of convenience services and enhanced bicycle and pedestrian facilities; expanded use of intelligent transportation systems for roadway,

transit and way-finding purposes; further development of goods movement options such as barge and rail; and better integration of land use and transportation planning.

Vision 2020 acknowledged the need to strengthen travel connections between southwestern Connecticut and the New York metropolitan area. Improved access to metropolitan area airports, creation of a lower Hudson River rail crossing, expanded interstate commuter rail service and interstate ferry service are identified as options warranting future study and/or consideration.

ii) Tappan Zee Bridge/I287 Corridor - see description under 3.1.1.

iii) Penn Station Access - see description under 3.1.1.

iv) Long Island Sound Ferries – see description under 3.1.4

v) I-84/Newburgh-Beacon Bridge

A Major Investment Study is proposed to be undertaken for Interstate 84 from I-684 to the Connecticut State line. The Study will look at the feasibility, cost, impacts and schedule of reconstruction. Currently underway is the reconstruction of the I-87 (Thruway)/I-84 interchange. This will provide travelers with a direct connection between the two interstates without having to travel on the local road system. The Newburgh-Beacon Bridge currently handles 3.4 million trucks per year. The Newburgh-Beacon Bridge has the second highest number of Hudson River truck crossings after the George Washington Bridge.

3.1.3 Northern Cross-Regional Gateway

The Northern Cross-Regional Gateway includes a number of interstate highways and arterial roadways which accommodate east-west movement of people and goods across a broad area of the region in northern Manhattan, the Bronx, and Westchester, Rockland, Putnam, Orange and Dutchess counties to the north. The Gateway also accommodates interstate east-west movements to/from northern New Jersey and southwestern Connecticut.

Investment Proposals:

- i. Major Deegan Expressway/Cross Bronx Expressway**
- ii. Tappan Zee Bridge/I287 Corridor**
- iii. I-84/Newburgh-Beacon Bridge**

i) Major Deegan Expressway/Cross Bronx Expressway

A Major Investment Study was recently completed for the Bronx and northern Manhattan, focusing primarily on the Cross Bronx Expressway and the Major Deegan Expressway. The study is assessing travel conditions and problems along these corridors and plans are being developed to implement programs, projects and strategies to help optimize the movement of

people and goods. Solutions will address concerns with traffic operations and safety, transit services, goods movement and bicycle and pedestrian mobility in these congested highway corridors. Special consideration will be given to the Highbridge Interchange, which provides a connection between the Cross Bronx and Major Deegan expressways. The study has focused on improvements at the Highbridge Interchange, service road opportunities, and access to the George Washington Bridge.

- ii) Tappan Zee Bridge/I287 Corridor – see description under 3.1.1.
- iii) I-84/Newburgh-Beacon Bridge – see description under 3.1.2.

3.1.4 Long Island Gateway

The Long Island Gateway comprises I-495 (the L.I.E.), parkways, arterial roadways, bus transit, commuter rail and waterborne services. It is largely characterized by the movement of people and goods within Nassau and Suffolk Counties and to and from New York City.

Investment Proposals:

- i. Route 347 Corridor Improvement**
- ii. Long Island Truck-Rail Inter-Modal (LITRIM) Terminal**
- iii. Suffolk County Road 97 (Nicolls Road) Improvement**
- iv. MTA LIRR East Side Access**
- v. MTA Long Island Rail Road Main Line Third Track**
- vi. Nassau Hub MIS**
- vii. Long Island Transportation Plan to Manage Congestion (LITP)**
- viii. Sustainable East End Development Strategies (SEEDS)**
- ix. Long Island Sound Ferries**
- x. Cross Harbor Freight Movement**
- xi. Lower Manhattan – Jamaica/JFK Airport Transportation Alternatives**

i) NY State Route 347 Corridor Improvement

This project is part of the fiscally constrained portion of this Plan. The New York State Department of Transportation, in cooperation with the Federal Highway Administration, is preparing an Environmental Impact Statement on a proposal to reconstruct NY347 in the Towns of Smithtown, Islip and Brookhaven. The proposed improvement involves the reconstruction of NY347 for a distance of approximately 15 miles and proposes additional travel lanes and grade separations at three major intersections. The goals of the improvement proposals are to improve roadway safety and provide for the existing and projected traffic demand along the Route 347 Corridor.

ii) Long Island Truck Rail Intermodal (LITRM)

Freight movement on Long Island is handled almost exclusively by truck. Currently, only about one percent of freight by tonnage on Long Island is handled by rail, while nationally the figure is about 15 percent. There is public support for more freight to be moved by rail on Long Island. Selection of the Pilgrim site in central Suffolk County for an intermodal rail-truck freight facility was based on prior regional analyses of potential sites. This project is part of the fiscally constrained portion of this Plan.

iii) Nicolls Road (Suffolk County Road 97)

Nicolls Road (CR 97), is a principal north-south arterial in Suffolk County that forms a vital link in the region's transportation. It intersects major east-west corridors: Long Island Expressway (I-495), Sunrise Highway (NY 27), Nesconset Highway (NY 347), Middle Country Road (NY 25), North Country Road (NY 25A), and Montauk Highway (CR 80). CR 97 provides direct access to major trip generators such as SUNY Stony Brook, Stony Brook University Hospital and Suffolk Community College; and indirect access to large areas of commercial and residential development. Traffic volumes have been growing faster on this facility than on many other regional roadways, and currently during peak weekday periods, it is operating at or over capacity at many locations.

This Major Investment Study will examine a 13-mile section of the CR 97 corridor between NY 25A in Stony Brook and NY 27 in East Holbrook to develop transportation improvement alternatives that address these congestion issues.

iv) MTA LIRR East Side Access

LIRR East Side Access (ESA) will provide increased capacity for the commuter rail lines of the MTA/Long Island Rail Road, provide direct access between suburban Long Island and Queens and construct a new passenger terminal under Grand Central Terminal on Midtown Manhattan's East Side.

This project is part of the fiscally constrained portion of this Plan. The Final Environmental Impact Statement was completed in March 2001 and the Federal Transit Administration (FTA) issued a Record of Decision in May 2001. Through FY 2005, Congress has appropriated \$254.5 million in Section 5309 New Starts funds for the project. The project is in Final Design and construction of several key support elements has begun.

v) MTA Long Island Rail Road; Main Line Corridor Improvements

This project will enhance operating flexibility, provide the infrastructure to increase intra-island and reverse commute service, and improve rail transportation for existing and future riders. An Environmental Impact Statement (EIS) for the segment of the main line third track and associated grade crossing eliminations and station improvements between Queens Village and Hicksville was initiated in mid 2004.

vi) Nassau Hub

The area defined as the Nassau Hub in central Nassau County represents a significant economic engine for the County. It encompasses almost three square miles with about 15 million square feet of commercial and office space, and generates \$50 billion in annual revenue. It is the Hub's

high concentration of retail and commercial space and sports and entertainment destinations that has contributed to the sharp increase in traffic over the years of growth and development. Projections estimate that left unchecked, traffic will increase 36 percent – from 480,000 to 650,000 weekday trips – into and out of the Hub in the next 10 years. To combat this problem, Nassau County is now engaged in a study of the transportation and land use options in and around the Nassau Hub, with findings from this study expected to help shape one of the most important planning decisions to be made by Nassau County in recent years.

vii) Long Island Transportation Plan to Manage Congestion

A long-range area-wide transportation plan to relieve traffic congestion and improve the movement of people and goods throughout Long Island is being prepared as a Major Investment Study by the New York State Department of Transportation (NYSDOT) in conjunction with Nassau and Suffolk Counties, local governments, other agencies and numerous stakeholders. The comprehensive study identifies a variety of solutions, some of which will be implemented in the short-term and some over the period of the Plan. Potential solutions include the Long Island Rapid Commute system, using modern Rapid Commute Vehicles (RCVs) with complementary roadway, freight, bicycle and pedestrian improvements and strategies; transit priority network; and goods movement.

The proposed Long Island Rapid Commute (LIRC) system would have two major components: a bus rapid transit component and a priority-lane system.

LIRC Transit System would be a new workable rapid transit system to serve origins and destinations within Long Island. Developed exclusively for Long Island's unique character, it would serve Long Island's diverse travel needs and patterns and be responsive to projected travel growth. It would be coordinated with other travel modes for maximum efficiency. The LIRC transit system includes 91 new transit routes, modern, comfortable Rapid Commute Vehicles (RCVs)—rubber-tired for travel on roadways—combining the look and comfort of monorail or light rail vehicles with the benefit of routing flexibility because they are not bound by fixed rail. Features of the RCVs are 20 to 45 seats per vehicle; sleek and modern; low floor boarding; flexible routing; fast and reliable; clean fuels; and low emission technology.

RCVs would use major roadways near residential areas to pick up passengers within a short walk of LIRC transit stops. Some routes would begin at park-and-ride lots for those people not within walking distances of LIRC stops. LIRC routes would be coordinated with local bus routes and with LIRR stations.

The LIRC system would also serve residents traveling to major shopping centers and other attractions. The system would operate seven days per week for most hours of the day to conveniently serve shoppers, late-working employees and others on flexible schedules.

The LIRC route system would be a seamless intra-island system consisting of east-west and north-south RCV express routes with limited stops. The system would include the following components:

Suffolk County Feeder Routes RCV express routes would operate throughout Suffolk County and link with major destinations within Nassau and Suffolk Counties. The RCVs would collect passengers within local areas, then travel express with limited stops. The RCV routes were developed to afford “one-seat” rides to most destinations while the limited express stops would allow riders to transfer among routes. 71 express RCV routes would operate with 50 routes on the Long Island Expressway trunk system, 18 routes on the Southern State Parkway/Sunrise Highway trunk system and 3 routes with north-south express service.

Nassau County Feeder Routes Thirteen feeder RCV routes would supplement local bus service and provide increased access throughout Nassau County and also link with the Suffolk County feeder routes.

Queens RCV Routes Three routes would connect the Nassau Hub area with New York City Transit subway stations in Queens. These routes would operate in the reverse commute direction only (i.e., eastbound during the AM peak period and westbound during the PM peak period). A transfer would allow travel to Suffolk County destinations.

Other LIRC System Services In addition to the above express RCV routes, improvements to Suffolk County local bus service in the vicinity of Hauppauge would be implemented, and four express RCV routes would serve Huntington Village and the Freeport and Amityville LIRR Stations.

Priority Lane System The RCVs would make intra-island travel faster because they would bypass traffic congestion by using priority lanes. In addition to the LIE HOV lanes, new priority lanes would be constructed along a total of 68 miles on portions of the Northern, Sagtikos, Southern and Meadowbrook State Parkways; Suffolk County Route 97; and an extension of the LIE HOV lanes to the William Floyd Parkway. Low clearance RCVs would be utilized on the express routes that operate along portions of Long Island’s state parkways in order to safely pass underneath low clearance bridges.

The number of vehicles that would use the priority lanes was estimated under various scenarios. It was determined through a technical procedure that, in order to maximize the person-carrying efficiency of the priority-lane system, carpools carrying two or more persons (including the driver) should be allowed to use the lanes in addition to the RCVs. However, in the future, if the priority lanes should become congested during peak periods, the occupancy rule could be changed to a higher occupancy (e.g., three or more persons per vehicle) with priority given to RCVs.

viii) Sustainable East End Development Strategies (SEEDS)

SEEDS is a collaborative regional planning effort involving the five eastern Long Island towns of East Hampton, Riverhead, Shelter Island, Southampton and Southold, and the villages of Dering Harbor, East Hampton, Greenport, North Haven, Quogue, Sag Harbor, Southampton, Westhampton Beach and Westhampton Dunes. SEEDS is exploring alternative land use and transportation solutions on the East End.

ix) Long Island Sound Ferries

Launched in February 2002, the development of the Long Island Sound Waterborne Transportation Plan is exploring the potential for expanding the use of the Long Island Sound and its tributaries for waterborne passenger and freight transportation. Jointly sponsored by three metropolitan planning organizations in New York and Connecticut, the Plan will outline options for waterborne transportation for Long Island Sound for the 2005-2030 time period.

x) Cross Harbor Freight Movement

A Major Investment Study by the New York City Economic Development Corporation was completed in May 2000 and recommended alternatives for improving freight movement across New York Harbor, including construction of a tunnel dedicated for rail freight, to be further refined and evaluated in an Environmental Impact Statement (EIS). The EIS examined and evaluated these alternatives to develop a more efficient freight network to enhance the region's ability to move goods. The DEIS was completed and released in April 2004.

xi) Lower Manhattan – Jamaica/JFK Airport Transportation Alternatives – see description under 3.1.7 (iii)

3.1.5 Southern Cross-Regional Gateway

The Southern Cross-Regional Gateway accommodates the movement of people and goods between northern New Jersey and points west, and the region's "southern tier," including Staten Island, southern Brooklyn and the rest of Long Island. The Gateway accommodates national and global freight movements via rail terminals in northern New Jersey, and John F. Kennedy International Airport. It comprises a mix of interstate highways, bus transit services, arterial roadways, freight rail services and waterborne modes.

Investment Proposals:

- i. Goethals Bridge**
- ii. Staten Island Expressway**
- iii. Southern Brooklyn/Belt Parkway**
- iv. Gowanus Expressway**
- v. Cross Harbor Freight Movement**
- vi. Port Redevelopment Strategies/Port Master Plan**

i) Goethals Bridge

The Goethals Bridge provides a key link in this gateway between northern New Jersey and Staten Island. In September 2003, a draft Environmental Impact Statement was initiated by the Port Authority of NY&NJ to study options and recommend a preferred alternative for upgrading the bridge. It is anticipated that the preferred alternative will improve customer service, modernize the bridge, provide the capacity for transit options, and enhance the safety and reliability of the crossing.

ii) Staten Island Expressway

A recently completed major investment study identified current and future transportation problems and recommended an intermodal range of alternatives within the Staten Island Expressway/Gowanus Expressway corridor (I-278) from the New Jersey Turnpike to the Brooklyn-Battery Tunnel. These included bus prioritization and interchange improvements.

iii) Southern Brooklyn/Belt Parkway

An areawide major investment study is currently in progress for Southern Brooklyn. This study will assess current and future travel conditions and deficiencies and develop multimodal transportation improvement alternatives that prioritize solutions for improving the movement of people and goods within and through the study area.

iv) Gowanus Expressway

At this time NYSDOT is in the process of selecting a tunnel alternative route for potential evaluation in the DEIS for the Gowanus Expressway, a key portion of I-278 which connects the Verrazano Narrows Bridge with the Brooklyn Battery Tunnel and the Brooklyn-Queens Expressway.

vi) Port Redevelopment Strategies/Port Master Plan

These two long-term plans by the Port Authority of NY&NJ for the Port, will allow the region to take advantage of the global economy. Strategies to be employed in the port redevelopment plan include: increasing terminal capacity by way of various terminal expansion projects; accommodating larger ships through various dredging projects; and improving inland access for intermodal cargo. Some of these projects are already underway.

v) Cross Harbor Freight Movement - see description under 3.1.4.

3.1.6 Other Regional Gateways—NY Harbor

New York Harbor is itself a regional gateway through which goods flow and are distributed throughout the region and beyond. This sector accommodates freight movements via rail terminals in northern New Jersey and the Port of New York and New Jersey and is comprised of terminals, port facilities and roadway and rail linkages.

Investment Proposals:

- i. Port Redevelopment Strategies**
- ii. Port Master Plan/Port Inland Distribution Network/Barge Pilots**
- iii. Cross Harbor Goods Movement/ LITRIM**
- iv. Harbor Navigation**
- v. Portway**
- vi. Gowanus Expressway**
- vii. Comprehensive Port Improvement Plan**
- viii. Erie Basin Bargeport**

i) Port Redevelopment Strategies - see description under 3.1.5.

ii) Port Master Plan/Port Inland Distribution Network/Barge Pilots

This aspect of the Port Master Plan involves improving inland distribution of intermodal cargo, primarily by rail and waterborne modes. Pilot barge services are in development or underway to test the feasibility of moving cargo to inland areas by water. These pilots include services to Albany, NY and Bridgeport, CT.

iii) Cross Harbor Goods Movement/LITRIM - see descriptions under 3.1.4.

iv) Harbor Navigation

A Harbor Navigation Study was completed at the end of 1999 which assessed the need to deepen the port's channels to accommodate the larger vessels now being deployed in international trade. The study recommended deepening all of the port's major channels to fifty feet.

v) Portway

The Portway International Intermodal Corridor is a billion dollar, decade-long program in northern New Jersey that includes the phased development of a number of projects designed to improve truck access and road safety. It aims to relieve highway congestion near and around marine terminals and other intermodal service centers within a 17-mile corridor that runs from Union and Essex counties in the south to Hudson and Bergen counties in the north.

Construction has already started on bridge and roadway improvements at the northern edge of the port.

vi) Gowanus Expressway – see description under 3.1.5

vii) Comprehensive Port Improvement Plan

Forecasted growth in cargo demand of between 3.7 and 4.6 percent a year over the next several decades could increase the Port's annual volume of TEUs (twenty-foot equivalent units) from the current three million to 14.4 million by 2040. This growth will severely test the Port's capacity to handle cargo. With this in mind, a Consortium was formed to prepare a Comprehensive Port Improvement Plan and accompanying Environmental Impact Statement by 2005; a comprehensive assessment of all port-related studies and recommendations, with the goal of drafting an action plan to develop the port in an environmentally and economically responsive manner, defining specific improvements in the harbor, marine terminal facilities and land transportation that will be needed to meet cargo demand through 2060. An Environmental Assessment is currently being progressed for this Plan/Study.

viii) Erie Basin Bargeport

The Erie Basin Bargeport (a joint venture between Reinsure Transportation & Hughes Maritime) is a maritime industrial facility located at the foot of Columbia Street in the Red Hook section of Brooklyn, New York. It contains 30 acres of land and 56 acres of underwater property. It is less than five minutes from the Brooklyn Battery Tunnel and is located on a peninsula. Erie basin has over 4000 linear feet of deepwater pier space available to commercial vessels for lay berthing. There is a barge loading berth for transferring cranes and materials between shore to barge. The

facilities are available to change crews, take on water or make topside repairs to vessels, (crane service is available). The warehouse, office and shed space are available for non-marine, as well as marine uses.

3.1.7 Other Regional Gateways-Airports

The region’s major airports constitute a regional gateway which accommodates goods, travelers and employees via a network of roadway links and transit services.

Investment Proposals:

- i. AirTrain (JFK & Newark)**
- ii. Southern Brooklyn/Belt Parkway**
- iii. Lower Manhattan – Jamaica/JFK Airport Transportation Alternatives**
- iv. Transit Access to Stewart Airport Feasibility Study**

i) AirTrain (JFK and Newark)

AirTrain Newark was developed as a much-needed solution to highway and airport roadway congestion. It's part of the Port Authority's \$15 billion long-term airport investment plan that includes upgraded terminals, improved retail and dining facilities, improved transportation options to and from the airports, and thousands of new parking spaces. Passengers traveling to Newark Liberty International Airport can schedule NJ Transit or Amtrak rail service to the recently opened Newark Liberty International Airport Rail Link station, close to the airport terminals. The Northeast Corridor transfer station was a joint project of Amtrak, NJ Transit and the PA.

AirTrain JFK became operational for revenue customers on December 17, 2003. This system provides fast, convenient and dependable ground transportation serving John F. Kennedy International Airport, a global gateway that handled 37.5 million travelers in 2004. The 8.1 mile system, consisting of three main segments, provides links to JFK's airline terminals, car rental agencies and employee/long term parking areas. AirTrain connects at Jamaica with the LIRR system for service to Manhattan's Penn Station and to Long Island as well as subway lines there, and with the Howard Beach "A" train station at the edge of the airport. AirTrain JFK was built by the Port Authority in partnership with the MTA and support from NYSDOT to accommodate the JFK-Jamaica link above the Van Wyck Expressway.

ii) Southern Brooklyn/Belt Parkway – see description under 3.1.5

iii) Lower Manhattan – Jamaica/JFK Airport Transportation Alternatives

In February 2003, Governor George Pataki and Mayor Michael Bloomberg announced a comprehensive framework to transform Lower Manhattan’s transportation infrastructure and

better connect Lower Manhattan to the rest of the City, region, and the world. Included in the framework was improved rail access to JFK Airport.

The Lower Manhattan Development Corporation (LMDC), which was created to help plan and coordinate the rebuilding and revitalization of Lower Manhattan, has identified both improvements in commuter access between Jamaica, Brooklyn and Lower Manhattan and improvements in access to JFK as key elements needed to support the downtown area's economic recovery and its ability to compete with other world economic centers such as London, Frankfurt and Tokyo.

The Study, jointly sponsored by the MTA, PA NY&NJ, and LMDC, will evaluate alternatives to provide a direct link between Lower Manhattan, Downtown Brooklyn, the Jamaica LIRR station, and John F. Kennedy International Airport. Once a locally preferred alternative is selected, a Draft and Final Environmental Impact Statement will be prepared. The study is expected to take 2-3 years to complete.

iv) Transit Access to Stewart Airport Feasibility Study

The Stewart Airport Transit Access Feasibility Study, completed in December of 2003, identified and evaluated the feasibility to improve transit access to Stewart International Airport from Manhattan and surrounding counties. This study, sponsored by Metro-North (MNR) and the New York State Department of Transportation (NYSDOT), was conducted in coordination with the development of Stewart Airport's updated Master Plan.

The Study evaluated commuter rail, light rail and express bus alternatives. The study concluded that commuter rail alternatives using the existing Metro-North Port Jervis Line, with significant upgrades and constructing an extension of approximately 4 miles into Stewart Airport, would provide the best combination of speed and reliability for transit access from Midtown Manhattan to Stewart.

Once funding is identified, MNR and NYSDOT plan to conduct an Alternative Analysis /Environmental Impact Statement to refine the most promising transit access concepts and evaluate their cost, service, and environmental impacts. The Stewart Airport Master Plan update will include MNR rail transit access in their plans.

3.1.8 Regional Core

See Section 2.2.2.(i)(a) for information on the Regional Core

Investment Proposals:

- i. Second Avenue Subway**
- ii. Access to the Region's Core**
- iii. West Shore Rail**
- iv. MTA LIRR East Side Access/ MNR Penn Station Access**

- v. **No.7 Subway Extension**
- vi. **Lower Manhattan Rebuild**
- vii. **Trans-Hudson Ferries/NY Harbor Ferries**
- viii. **Canal Area Transportation Study**
- ix. **Lower Manhattan – Jamaica/JFK Airport Transportation Alternatives**

i) Second Avenue Subway (SAS)

The project will include a new, two-track, 8.5-mile subway line extending the length of Manhattan's east side from 125th Street in East Harlem to Hanover Square in the Financial District, providing two new subway services: a route operating between 125th Street and Hanover Square and a service operating between 125th Street and Brooklyn via 63rd Street and the existing Broadway Line.

This project is part of the fiscally constrained portion of this Plan. TEA-21 Section 3030(a)(39) authorizes the Manhattan East Side Alternatives/Second Avenue Subway for final design and construction. A Record of Decision was received in June 2004. Construction is targeted to begin in 2005. Through Fiscal Year 2005, Congress has appropriated \$11.4 million in Section 5309 New Starts funds for the project.

ii) Access-to-the-Region's Core (ARC) – see description under 3.1.1.

iii) West Shore Rail – see description under 3.1.1.

iv) East Side Access/Penn Station Access – see descriptions under 3.1.1 and 3.1.4.

v) No. 7 Subway Line Extension

The Metropolitan Transportation Authority and the City of New York Department of City Planning are the co-lead agencies for this project which will promote the transit-oriented redevelopment of the Hudson Yards area (which extends generally from West 28th Street on the south, Eighth Avenue on the east, West 43rd Street on the north and the Hudson River Park on the west). The proposed action includes:

- Construction and operation of an extension of the No. 7 Subway Line to serve the Hudson Yards, and
- Adoption of zoning map and text amendments to the New York City Zoning Resolution and related land use actions to permit the development of the Hudson Yards as a mixed-use community
- Other public actions, including:
 - Expansion and modernization of the Jacob K. Javits Convention Center, including the construction of new exhibition space and a new hotel;
 - A new multi-use sports, exhibition and entertainment facility; and
 - New or replacement transportation facilities for pedestrian movement, vehicle storage and other public purposes.

A Final Environmental Impact Statement (FEIS) was completed in 2004 and construction of the subway extension is expected to begin in 2005.

vi) Lower Manhattan Recovery

Several projects are being advanced to rebuild Lower Manhattan transportation infrastructure from the destructive effects of September 11th: a rebuilt permanent PATH Terminal, the Fulton Street Transit Center in the center of Lower Manhattan, a modernized South Ferry subway terminal, and a realigned West Street/Route 9A. Planning is also underway on ways to link Lower Manhattan with JFK Airport and Long Island. Chapter 4 provides more specifics on the rebuilding process and projects.

vii) Trans Hudson Ferries/ NY Harbor Ferries

Ferry service from northern suburban counties to Lower Manhattan is under consideration to provide an alternative mode of transportation and reduce congestion on Hudson River crossings and the highway network. The potential for a ferry service from Haverstraw (Rockland) to Yonkers (Westchester) and Lower Manhattan is currently being studied.. This service would ease traffic congestion and would play a role in the redevelopment of Lower Manhattan without increasing the burden on the existing transportation infrastructure.

Ferry services to Manhattan have the highest ridership in the world, and recently have been the fastest growing. The Staten Island Ferry and Private Ferries have averaged 38 million trips per year post-September 11th. In comparison, Hong Kong and Seattle average annual ridership totals approximately 30 and 25 million, respectively. Private ferry ridership to Manhattan has doubled from approximately 30,000 trips per day to over 60,000 during this time period. In addition, PATH service to Lower Manhattan was reinstated in November of 2003. This development along with the discontinuation of some ferry services could impact post-September 11th ferry ridership. Analysis of ferry ridership will continue.

Staten Island Ferry The Staten Island Ferry has been a municipal service since 1905, and currently carries over 19 million passengers annually on a 5.2-mile run between the St. George Terminal in Staten Island and the Whitehall Terminal in lower Manhattan. The St. George and Whitehall Ferry Terminals are currently under renovation, and will establish modern transportation hubs for over 65,000 daily riders. Additionally, the first of three fully modernized ferryboats will enter service in 2004, modeled on the Kennedy Class boats with greater capacity and more amenities. The terminals and the new ferry boats are being financed through a combination of federal, state and city funds.

Private Ferry Routes and Operators Ridership on privately operated ferries has increased in every year since 1986. Four companies now operate routes connecting Manhattan with locations in Brooklyn, Queens, and the Bronx in New York, as well as Weehawken, Jersey City, Hoboken, Highlands, Atlantic Highlands, and Belford in New Jersey. Ridership on privately operated ferries citywide approximately doubled post-September 11th, and ridership on Lower Manhattan routes nearly tripled. Ferries played a critical part in replacing lost transit capacity, and it is clear that ferries were a vitally important factor in stabilizing the Downtown economy. Public and private sectors responded decisively, with new slips added at Pier 11 and

the emergency ferry landing at Pier A constructed in less than two months, quickly becoming one of the busiest ferry terminals in the United States.

New investments in the long-term future of ferry transportation continue. A new West Midtown Intermodal Ferry Terminal is under construction at Pier 79 at W. 39th Street. New and reconstructed ferry landings along the East River waterfront will eventually connect to a new ferry landing at LaGuardia Airport, along a route that will support intra-city commutation as well as travel to the airport and baseball stadiums. The Port Authority is constructing an expanded, permanent ferry terminal to replace the existing facility at the World Financial Center, and partnering with NJ Transit for comprehensive improvements to the historic ferry terminal at the Hoboken transit hub to support improved Hoboken-Lower Manhattan service and accommodate additional routes and operators. Additional projects are under consideration, including projects related to NYMTC's Long Island Sound Ferry Study.

viii) Canal Area Transportation Study

A multimodal, multi-agency area-wide analysis focused on Canal Street and its environs, a primary interest area of Lower Manhattan bounded by Houston Street to the north and Chambers Street to the south. The study is an outgrowth of many years of effort on the part of both community interests and transportation agencies to define solutions to transportation problems in the Canal Street corridor, which is both a main street and a significant link for people and goods in the regional transportation network. The first track of this study, initiated in April 2002, has concluded and immediate, localized improvements have been identified. CATS Track 2 will provide a regional, long-term view of transportation issues facing the Canal Street corridor.

ix) Lower Manhattan – Jamaica/JFK Airport Transportation Alternatives – see description under 3.1.7 (iii)

Figure 8 – Major Investment Studies

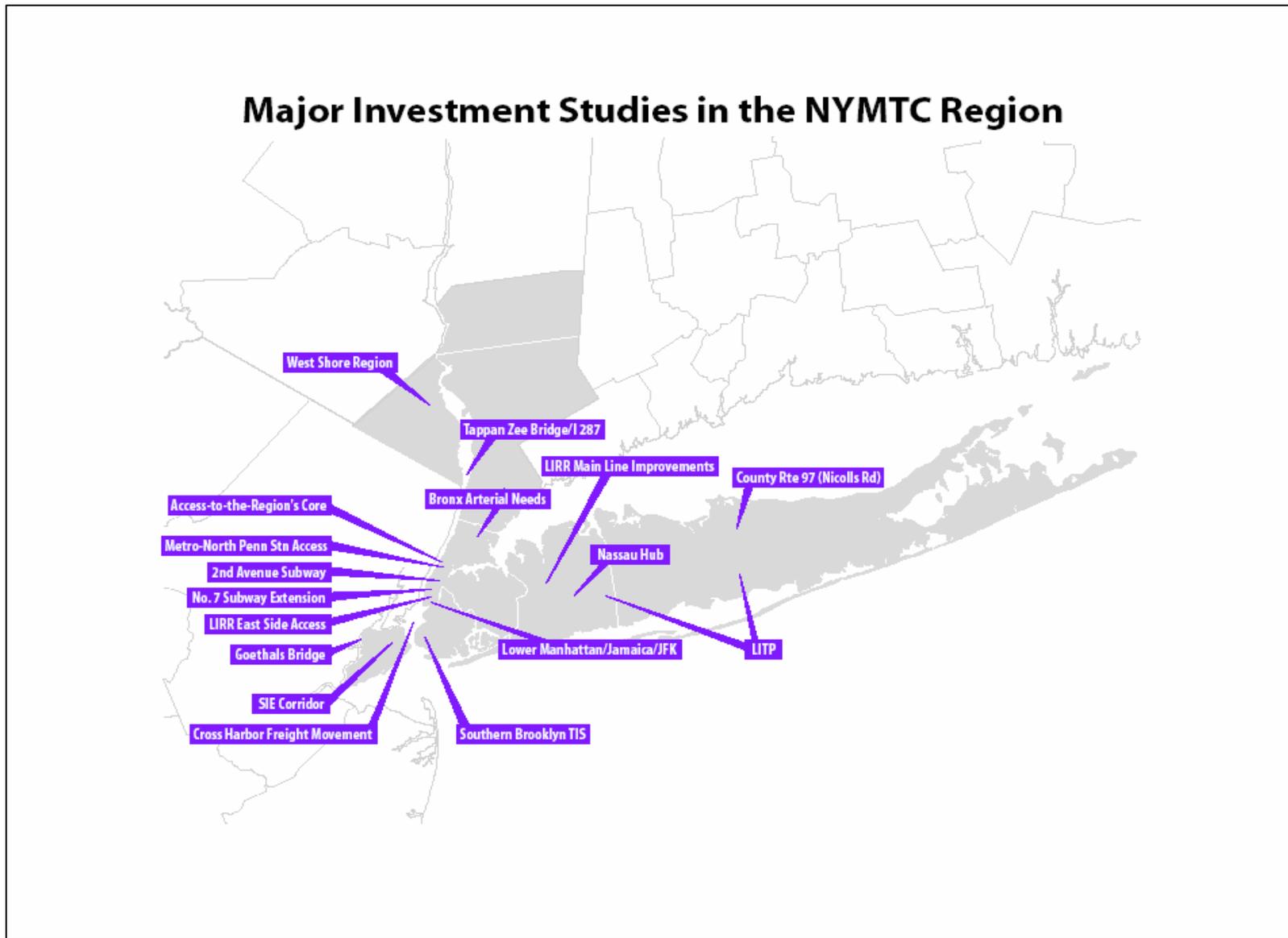
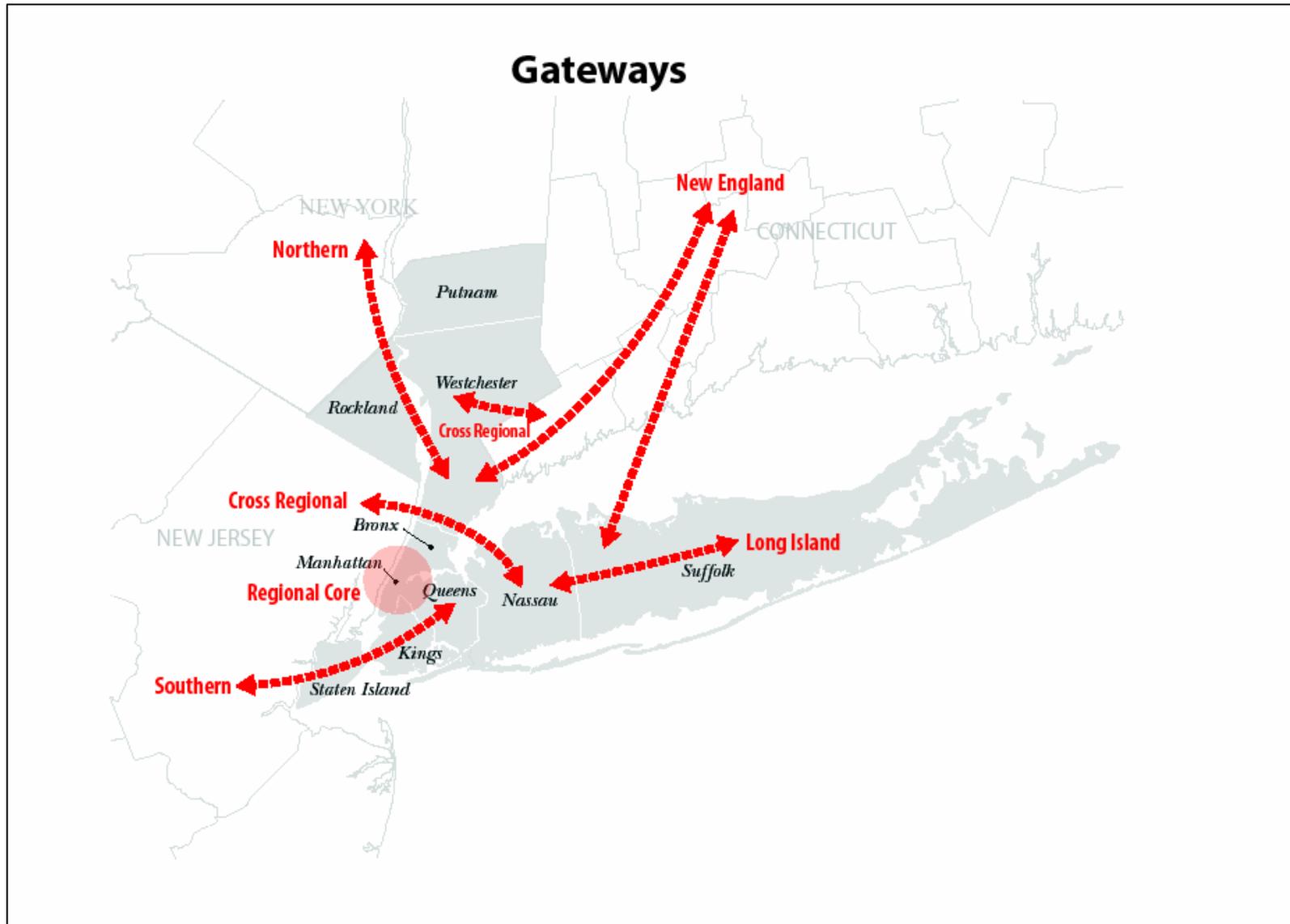


Figure 9 – Gateways



3.2 OTHER REGIONAL INVESTMENT OPTIONS

a) Regional Commuter Choice

The goal of this program is to increase the number of commuters using transportation alternatives as against driving single occupancy vehicles. To achieve this, NYMTC is coordinating the consolidation and promotion of localized programs for the delivery of commuter choice services and benefits under a regional umbrella. Target markets include commuters and employers. Outreach to the general public will focus on social marketing strategies to gauge and influence the public's overall perceptions and awareness of air quality impacts and to promote the reduction of non-work trips, particularly those related to schools. Outreach to commuters and employers will occur directly and through supporting groups such as business organizations, economic development agencies, employment agencies and property managers.

b) Regional Clean Fuels

The goal of this program is to identify and implement new fuel technologies in fleets throughout NYMTC's region. To achieve this, NYMTC staff is working with Northeast States for Coordinated Air Use Management (NESCAUM) to promote the following measures:

- *Clean Cities and Clean Communities* - A Clean Cities or Clean Communities Program is underway in each of NYMTC's three TCC areas. A proposal for a Clean Communities program called HVC3 (Hudson Valley Clean Communities Coalition) has been developed for the Mid-Hudson South sub-area.
- *Clean Fuel & Retrofit Action Plan and Timeline* - A Clean Fuels Action Plan and Timeline has been developed to strategically inventory fleets within the New York region, identify emissions reduction measures and streamline the implementation process.
- *Clean Fuel & Emission Control Device Consortium* - NYMTC is working with NESCAUM to identify a point person and oversee this consortium as well as the implementation of regional clean fuel and retrofit programs within the region. The consortium will lead the effort to coordinate with various agencies and fleet managers, develop and maintain a database of fleet inventories, identify and support opportunities for emissions reduction pilot programs and synergies, match emissions control technologies with fleets and coordinate ongoing programs for fleet manager technical support and the implementation of new fuel technologies.
- *Emulsified Diesel Fuel* - NYMTC is developing a pilot program with Lubrizol/Sunoco to introduce emulsified diesel fuel to a variety of fleets within the City of New York, targeting fleets including buses, vans, ferries, school buses, construction equipment, port equipment and other heavy duty equipment.
- *Low Sulfur Diesel Fuel* - NYMTC is supporting the operational conversion and ongoing analysis of the impacts of low sulfur diesel fuel for use in additional vehicles and fleets within the region.
- *Fleet Managers Meetings* - NYMTC has worked with NESCAUM to hold clean fuels meetings between fleet managers in the New York area and fleet managers

in other parts of the country to share information and assess potential risks and benefits of new fuel technologies. Transportation and environmental representatives attended to share information, including NYS Department of Environmental Conservation, NYC Transit Department of Buses, NYC Department of Sanitation, NYC Department of Transportation, Nassau County Department of Public Works, Suffolk County Department of Public Works, Westchester County Department of Transportation, Rockland County and others.

- *Interagency Coordination* - NYMTC is partnering with agencies in New York City including NYCDOS, MTA, and PANYNJ to identify opportunities to reduce emissions by introducing clean fuels equipment and policies.
- *Additional Clean Fuels* - This measure was recommended for implementation and is under development as part of the Regional Clean Fuels Program. It includes establishment of a *Clean Technologies Group* with the purpose of further optimizing the objectives of the Regional Clean Fuels Program. This initiative will also include a regional branding element, a recognition program, and an effective system to track emissions reductions.

c. **Regional Signal Timing**

The goal of this program is to inventory and upgrade the timing on traffic signals within key regional corridors to optimize traffic flow and reduce emissions. To achieve this, NYMTC is working with NESCAUM to promote the signal inventories and retiming efforts throughout the region.

3.3 Special Elements

3.3 (i) *Pedestrian and Bicycle Transportation*

Overview:

Residents and policy makers in the NYMTC region have developed a greater appreciation of the value and benefits that walkable and bikeable communities contribute towards individual health; reduced reliance on the automobile; civic pride engendering community cohesiveness; and increased economic vitality of downtowns and commercial corridors. This Plan update follows the initial passage of ISTEA and subsequent reauthorizing legislation which call for greater attention and effort towards fulfilling the innovative and inclusive directives of ISTEA. The overarching goals of the Regional Transportation Plan can all be addressed by improving conditions and access for walking and bicycling. These modes of travel will increase mobility by offering choices; decrease congestion by getting people out of their cars; and in many ways improve quality of life, especially when design excellence has been sought and achieved.

The unique and different needs of each travel mode must be addressed, especially to encourage walking and bicycling. Both need adequate access with sidewalks, paths, bicycle lanes and

facilities, pedestrian plazas and good multimodal connections. In addition, safety issues must be addressed for each. The quality of the walking environment plays a critical role in whether people choose to walk rather than drive for short trips; whether they will shop along “main streets” or feel compelled to drive long distances to malls. Access and safety for pedestrians and bicyclists must be achieved as requirements of federal legislation and the quality of the environment must also be improved.

Given the importance of Pedestrian/Bicycle transportation in NYMTC’s planning process, the Council established a Pedestrian and Bicycle Working Group which brings together government professionals from each region to ensure coordination and to develop a synergy between the regions that will feed into a system-wide approach. The Group holds public outreach meetings to further the goals of community-responsive transportation planning and to share resources and information about best practices.

Objectives & Strategies:

As a region, several general focus areas need attention in upcoming years including: missing links, walking centers, data collection, system maintenance and roadway project planning.

Missing Links Much progress has been made over the past decade towards the creation of a comprehensive system of pedestrian and bicycle facilities to maximize usage of non-motorized transportation modes and therefore make the greatest impact on levels of vehicular congestion. However, this comprehensive, linked system is not yet complete in the NYMTC region and significant improvements are needed to optimize non-motorized transportation modes. For example, pedestrian and bicycle access to bridges should be expanded and the specific needs of seniors, children and others should be met by adequate sidewalk connections throughout communities as well as access to public transit.

Walking Centers Special attention should be given to main streets and other walking centers where more walking trips and improved connections with mass transit can boost the economy. The focus should also target additional support for walkable downtowns and neighborhood retail corridors that invite pedestrian circulation through urban design excellence and tamed vehicular traffic.

Data Collection Understanding the level of use and frequency of non-motorized transportation modes’ use, as well as the condition of pedestrian and bicycle facilities are important elements in planning the best use of resources to improve the pedestrian and bicycle transportation networks. An emphasis on mainstreaming non-motorized travel and condition information within the various data collection requirements and programs will lead to a better understanding of what works best to both increase frequency and the number of users.

System Maintenance Success in bringing about a more comprehensive system of pedestrian and bicycle facilities has increased the importance of maintaining those facilities as they age. By bringing these modes into the mainstream planning process, developing strategic alliances and creating public/private partnerships the initial public investment will achieve its full potential and useful life.

Roadway Project Planning Bicycle and pedestrian transportation should continue to be considered and accommodated at each phase of planning to allow the most cost-efficient method of building a non-motorized system. In this way, pedestrian and bicycle improvements can be a fraction of larger roadway construction or repaving projects.

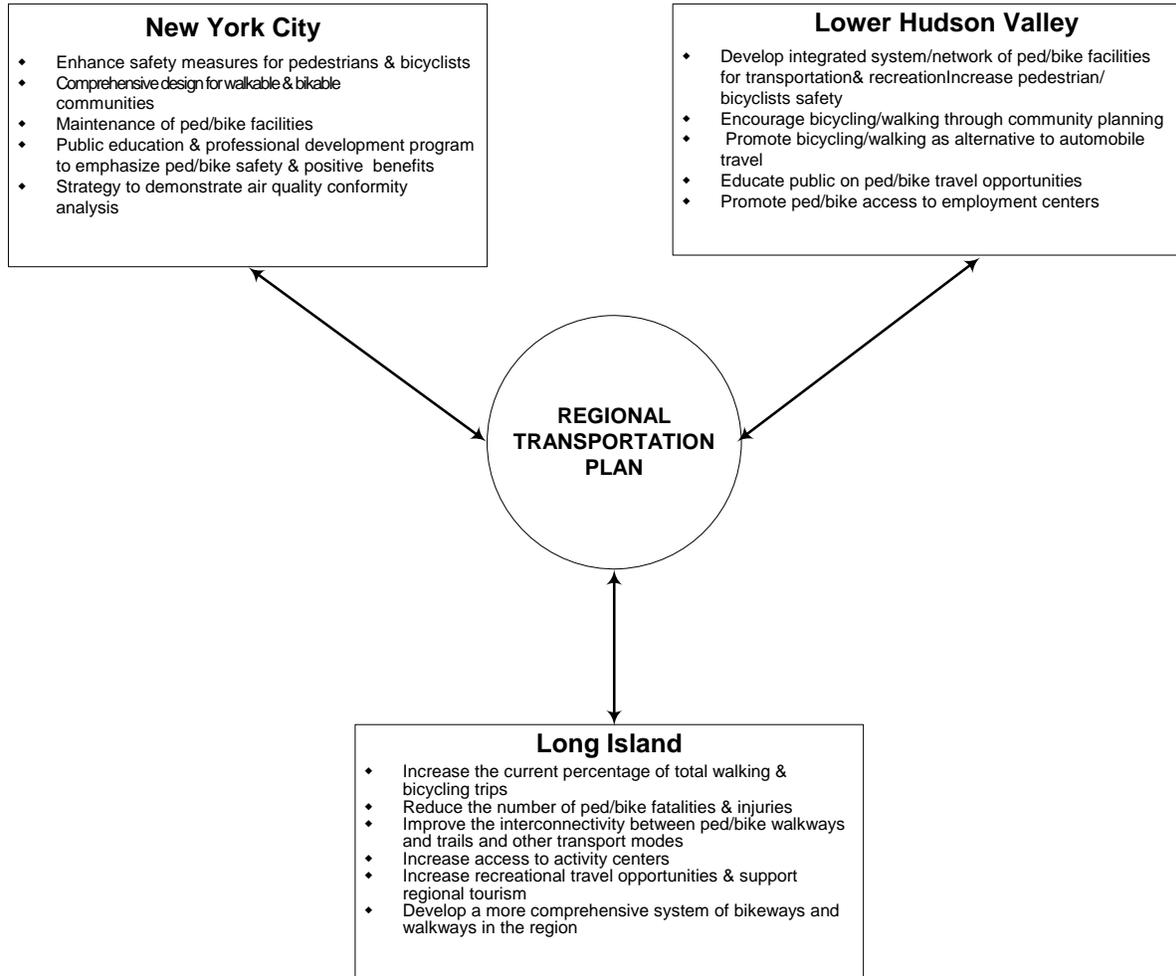
Regional Planning Although bicycle and pedestrian projects tend to be small and localized in comparison to other travel modes, they play an integral role in the New York Metropolitan Region. Federal funding allocations reflect the seriousness with which the region intends to increase the mode share for non-motorized travel.

Each of NYMTC's Transportation Coordinating Committees has developed an individualized plan to address the unique issues and needs of maintaining and enhancing pedestrian and bicycle mobility at the subregional level. These plans were developed in cooperation with local and state agencies and through extensive public outreach processes. They are included in Appendix D.

Figure 9 illustrates the objectives of the three subregional pedestrian/bicycle plans which focus on promoting and improving walking and bicycling as viable transportation alternatives in the region. The strategies to achieve these objectives build upon steps that have already been taken to improve the transportation network for pedestrians and bicyclists, and are outlined in the subregional plans in Appendix D. They include sidewalk widenings, pedestrian plazas, longer "walk" clearances, traffic calming, suburban sidewalks, bicycle lanes, bicycle parking, links to transit and shared use paths.

Figure 10 – Pedestrian/Bicycle Objectives

Regional Pedestrian/Bicycle Objectives



Benefits of Walking and Bicycling to the NYMTC Region:

Many areas within the NYMTC region are known for the quality of their pedestrian and bicycle experience (such as crossing the Brooklyn Bridge, window shopping on 5th Avenue, inching through Times Square crowds, bicycling along Ocean Parkway, the Bethpage Bikepath and Hudson River Trail). The economic benefits obtained from this non-motorized transportation and recreational infrastructure are now being recognized, restored and enhanced in many areas.

New York City alone received 35 million non-regional visitors in 2001. The visitor-dependent economy generated \$25 billion in economic activity and created 300,000 direct and indirect jobs producing \$3 billion in tax revenue, according to data collected by NYC&Company, New York

City’s tourism organization. To maintain the region’s competitiveness, engineers, urban designers, landscape architects and planners must work in close cooperation with affected communities to develop place-specific solutions.

A cohesive system of regional and local bikeways and walkways will be needed. By maintaining urban design excellence, improving access to other modes and keeping the system in a state of good repair, we will have communities that encourage walking and bicycling and provide good transit access. Safe access is needed for walking and bicycling to businesses, shopping places, recreational facilities and parks, transit, schools and cultural institutions. Interstate routes linking parks and communities can become Greenways, which offer walkers and bicyclists paths or trails highlighted by vegetation that connect with landmarks and interesting points in the urban and suburban landscape, for recreation, health, commuting and travel. This plan seeks to build livable communities in partnership with residents to accommodate all travelers. Walkable and bikeable neighborhoods, towns and cities will allow children a head start on an active, healthy lifestyle and seniors an alternative to driving.

Toward this end, all federally funded transportation projects should consider opportunities to enhance and encourage the pedestrian and bicycle modes of travel. Each transportation project should seek to create walk- and bike-friendly designs through “best practices” standards, utilizing both established guidelines as well as innovative and context sensitive design solutions. All projects shall bring the community, as well as the pedestrian and bicycle planning professional, into each project from initial scoping through to project close-out. The transportation engine that moves the region’s people and freight operates in vast and complex yet invisible ways; its walking and bicycling infrastructure may be the most apparent facilities, and also the most utilized, if all trips are counted. Although each project may be small, the issues are neither minor nor ancillary to the provision of regional transportation services.

3.3 (ii) Intelligent Transportation Systems (ITS)

Deployment of Intelligent Transportation Systems (ITS) through a strategy influenced by principles of the RTP is a major component of the RTP towards satisfying regional goals. ITS is the application of data gathering, data processing and data communications in the surface transportation network in a manner that allows agencies to use technology to better monitor, control and secure transportation systems as well as to make more informed plans and decisions. ITS technology provides a means to distribute related information to the public enabling the public to make informed travel choices.

The ability of agencies to more efficiently operate and manage the region’s transportation systems grows in importance as travel demand increases while opportunities to build new infrastructure are limited by prohibitively high costs and fewer available resources, including land. These factors combine to make deployment of ITS technologies an attractive alternative.

The deployment of ITS technologies in the region began several years ago with noticeable benefits to the general public:

- Widespread use and expansion of E-ZPass has decreased travel delays at toll crossings, even as traffic volumes across these facilities continue to increase.
- Expansion of MetroCard has provided the region with increased flexibility on transit fare policies, such as elimination of two-fare zones, while decreasing operating costs.
- The Highway Emergency Local Patrol (HELP) program has assisted thousands of stranded motorists on the region's highway system, helping move vehicles to safe locations out of travel lanes.
- The availability of updated current travel conditions and reports through surveillance images on cable television, transportation network conditions on agency websites, and traveler information via telephone numbers and cable television access channels allows the public to make informed travel choices.
- The implementation of TRANSMIT, TRANSCOM's System for Managing Incidents and Traffic, which calculates travel times and detects incidents, enables agencies to improve the efficiency of the transportation system.
- The implementation of the TRANSCOM Regional ITS Architecture system, which integrates the data from agencies' ITS systems in the region, allowing for the electronic sharing of transportation information among operations centers, enhances cooperation and coordination during regional incidents.

With many basic ITS components in place or being deployed throughout the region, the next step in the progress of the region's ITS network is to further develop and expand use of ITS technologies to seize more efficiencies from the existing transportation network. This Plan's ITS element therefore seeks to utilize technology and human resources to manage the existing infrastructure more efficiently. One important portion of this development is to enhance the ability to exchange information between the different regional transportation stakeholders. To reach this goal, NYMTC initiated the ITS Integration Strategy, a project to guide regional coordination of the ITS network in the region's transportation system.

ITS Integration Strategy The NYMTC ITS Integration Strategy is a plan for systems integration—the deployment of transportation systems in a manner that supports transportation information sharing among systems and agencies—of transportation systems in the NYMTC region over the next 20 years. The strategy was developed to support the region's transportation planning process, specifically addressing planning for ITS systems through a cooperative effort to consider all modes of transportation and all roads in the region. The effort included the region's transportation agencies, stakeholders who will own and operate ITS systems and the public.

While the strategy has a time horizon of up to 20 years, as does the Plan, it places a particular focus on transportation elements likely to be implemented in the next 10 years. It covers the broad spectrum of Intelligent Transportation Systems, including Traffic Management, Transit Management, Traveler Information, Maintenance and Construction, Emergency Management and Archived Data Management over this time horizon.

Regional ITS Architecture An ITS architecture defines the functions (e.g., gather traffic information or request a route) that are required for ITS and the information and data flows that

connect these functions into an integrated system. The U.S. National ITS Architecture provides a common framework for planning, defining and integrating intelligent transportation systems. To satisfy the Federal Rule and Policy, transportation agencies and other stakeholders in the New York City region began to develop a regional ITS architecture. The New York City Sub-Regional Architecture was developed through a series of functional area meetings, workshops and individual discussions in a process that began in early 2003 and is currently in its final draft, dovetailing with an existing regional ITS architecture already in place in the Lower Hudson Valley, called the New York State Region 8 Regional Architecture.

ITS Standards Another important benefit of the ITS Integration Strategy and Regional ITS Architecture is their support for the use of ITS standards and the identification of what ITS standards are applicable to in the region. ITS standards establish a common way devices connect and communicate, allowing transportation agencies to implement systems that cost-effectively exchange pertinent data and accommodate equipment replacement, system upgrades and system expansion. ITS standards contribute to a safer and more efficient transportation system by providing products that function reliably throughout the region, facilitate regional interoperability and promote an innovative and competitive market for transportation products and services.

Next Steps:

The ITS Integration Strategy serves as the region's ITS action plan, reflecting the region's ITS needs and its strategy for satisfying those needs. As ITS projects are implemented, as new priorities and strategies emerge through changes in regional transportation plans and policies and as new user functions and needs are identified, the strategy will be revisited so that it continues to accurately reflect the region's goals and plans.

Similarly, the region continues to work on the initial development of the Regional ITS Architecture. Upon completion, the Regional ITS Architectures will identify opportunities for making ITS investments that will support regional needs and goals in a more cost-effective fashion by identifying the urgency of particular projects, how the projects satisfy regional goals and strategies and the most cost-effective sequencing of projects. However, the Regional ITS Architectures must also be maintained and updated regularly to accurately reflect the region's existing ITS capabilities, projects, plans and policies and map the next steps in the deployment of the regional transportation network.

Both the ITS Integration Strategy and the Regional ITS Architectures provide information for updating this Plan and the Transportation Improvement Program (TIP), providing a guideline to ensure that high priority projects are included and that near-term regional goals are satisfied. The Regional ITS Architectures will also be used by stakeholders in developing their ITS projects to support regional goals and agency needs.

Both documents will continue to be updated and maintained by the region as part of the region's transportation planning process, so ITS projects may be planned and deployed in an efficient manner to effectively support the region's overall transportation goals and plans.

3.3 (iii) Freight

Issues:

Forecasted economic growth in the 10-county NYMTC region should significantly increase the volume of freight moved in the region over the next 25 years. The 10-county NYMTC region already experiences among the highest volume of freight movement of any metropolitan area in the nation. Regional commodity flows are expected to grow from 333 million annual tons in 1998 to 490.5 million annual tons in 2025, a 47% increase. Nationally, it is anticipated that the volume of freight will increase by 68 percent between 1998 and 2020. Thus, the growth of freight movement in the region is forecast to be slightly lower than in the nation as a whole.

The commodities, modes and origins and destinations of freight movement in the region are expected to change little. Highway-based modes are expected to continue to dominate other modes. Trucks carry over 80 percent of regional freight (measured in tons), while rail and air each carry less than one percent. Barges carrying bulk freight handle most of the remainder. Nationally, 16 percent of freight moves by rail. Among the 25 largest metropolitan areas in the country as measured by the Bureau of Economic Analysis (BEA), the New York region (even including the New Jersey portion) ranks second to last in terms of rail mode share, just ahead of Boston.

In general, the NYMTC region's freight system serves admirably to move the large volume of goods needed to keep the nation's largest regional economic engine running. However, those who reside and do business in the region face high levels of traffic congestion. This congestion impacts the predominant mode of freight travel in the region – trucks. For residents, this increases their cost of living. For businesspeople, this forces them to pay more for freight services. There are a number of specific issues that, in aggregate, create less than efficient conditions to move freight. The five major deficiencies (identified through the freight planning process) relate to broad regional issues, specific bottlenecks or detailed terminal interconnections at particular facilities. They are:

Lack of Coordination – Historically, freight transportation has evolved around independent modal networks, each competing with others in a redundant and often destructive manner.

Modal Dependence – The region is overwhelmingly dependent on a highway infrastructure that is subject to tremendous congestion at all times of the day.

State of Infrastructure – Freight movements over both rail and highway systems are restricted by inadequate dimensional envelopes to prevent rail cars and trucks from moving in the most logical and expedient fashion.

Operational Limitations – Truck access is hampered by a highway system that is not always contiguous for commercial vehicle movement, while freight trains must share publicly owned and intensively used passenger rail lines.

Economic Challenges – These deficiencies inflate the price of goods and services, impacting business-location decisions, reducing the profitability of existing companies and otherwise sapping the region’s economic vitality.

These challenges result in the following specific deficiencies: poor highway performance; inadequate access to freight handling facilities; inadequate infrastructure and underused modes; transportation network constraints; and the need for higher security.

It is anticipated that these problems will worsen as the region continues to grow unless action is taken to fix them. Despite the recent recession and the aftermath of the September 11, 2001 terrorist attacks, strong economic growth is still forecast for the region in the next 25 years. An efficient transportation system is essential to achieve this growth, provide economic opportunity for the region’s residents, encourage businesses to locate and expand in the region and to enhance the region’s preeminence in such fields as finance, technology and the arts.

NYMTC Freight Plan

To address these issues and as part of the Regional Transportation Plan development, NYMTC recently completed Regional Freight Plan Project (see Appendix F for summary) to produce a roadmap for the improvement of freight transportation in the region and to develop a consensus on the problems facing the region and the goals and objectives of a regional freight program. The Regional Freight Plan presents a wide range of strategies and actions that include capital projects, operational improvements and policy changes. These strategies are multimodal, targeting highway, rail and marine transport, and can be implemented in the short term – (one to three years), mid term - (three to 10 years), or long term - (more than 10 years). Some of the recommendations call for short-term actions around which a regional consensus for action already exists. In the case of the most capital-intensive projects, the Freight Plan recommends that the various responsible agencies continue the planning process for specific potential highway, rail and waterborne improvements.

The Freight Plan’s recommendations provide a framework for future actions. They complete the iterative process that began with the description of the freight system. This process continued with the formation of goals that help define a healthy system, the development of performance criteria, the identification of possible solutions, and the evaluation of the solution. The process concludes, with this material, in the elaboration of a program that builds upon the previous steps by identifying follow-up activities and responsible organizations, as well as the timeframe within which they are to be accomplished.

It should be noted that the Freight Plan is part of a larger *Action Plan* of the Council’s Freight Transportation Working Group (FTWG). This group, composed of participants from across the three-state region, pursues regional goals and objectives related to freight transportation.

3.3 (iv) Access to Jobs

Access to Jobs

Getting to work can be a daunting challenge for low-income workers, who are less likely to own cars than higher-income workers. In addition, public transit cannot always get them to where the

jobs are. For single parents and persons with disabilities the added burdens of scarce child care and inaccessible transit can further complicate the journey to work. To address these needs, Congress enacted the Job Access and Reverse Commute Program to establish regional approaches to job access challenges for welfare recipients and others with low incomes. Administered by the Federal Transit Administration, the program is designed to create an area-wide Job Access and Reverse Commute (JARC) Transportation Plan and fund projects that connect low-income individuals to jobs and employment-related activities, such as job training and child care.

In keeping with the federal mandate and with extensive community, stakeholder and agency input, NYMTC developed a plan for the 10-county region (New York City, Nassau, Suffolk, Westchester, Rockland and Putnam) to address gaps in the current transit service that impede welfare recipients and others with low incomes from reaching jobs and employment support services. The plan (summary in Appendix G) identifies geographic distributions of constituents, jobs and services, analyzes the gaps in transportation services, and identifies potential solutions to address these gaps. The Revised Area-Wide Plan was adopted by the Council on July 17, 2003.

An important component of NYMTC's access to jobs process is the Access-to-Jobs Planning Group, a diverse network of interests and disciplines at multiple levels from across the tri-state region which serves as a forum for policy and planning advice for the federal Job Access Program. It provides assistance in the interpretation of relevant federal and state programs and regulations; acts as an advisory body and network resource for the administration of the FTA Job Access grant program; assisted in the development the JARC Area-wide Transportation Plan; and acts as an overall advisory body for the development of the planning process.

Since 1999 the access-to-jobs planning process has resulted in the NYMTC region receiving over \$5 million in federal funds for the implementation of projects by member agencies and not-for-profit organizations.

3.3 (v) Long Island Sound Waterborne Transportation Plan

Sponsored by New York Metropolitan Transportation Council, Greater Bridgeport Regional Planning Agency and the South Western Regional Planning Agency, this study explores the potential for expanded use of the Long Island Sound and its tributaries for waterborne passenger and freight transportation. The overall goal is to reduce dependence on highways, support existing rail and bus transit and develop a waterborne transportation plan for the Long Island Sound over the 2005-2025 period.

At the study's end, over seventy potential terminal sites and hundreds of connecting routes will have been investigated. The final report will identify a regional program of feasible, beneficial and sustainable marine transportation improvements. This program will provide guidance for possible future implementation of new or enhanced services to provide an alternative mode of transportation. The report is due to be completed early summer of 2005.

Chapter 4: County/Borough Options for the Future

4.1 County/Borough Options

County- and Borough-level investment proposals and planning studies outlined in Appendices A and B and in this chapter, support and advance the Plan’s vision, guiding principles and goals and provide the framework for future transportation improvements at the level of individual counties and boroughs within the NYMTC region. These proposals and studies were developed based on public input, the individual planning processes of NYMTC’s members, and the collaborative planning of the members within NYMTC’s regional forum. They are also drawn from the current Transportation Improvement Program (TIP) list of all improvement projects proposed for funding over the 2006-2010 period. The Transportation Improvement Program is part of the fiscally-constrained RTP by reference. The Plan will be modified over time to address new information and the results of studies and other planning efforts.

The county/borough options contained in Appendices A and B present investment possibilities and planning studies categorized by highway, transit, other proposals, timeframes and fiscal constraint. The base maps presented for each county/borough highlight forecasted levels of traffic congestion. Pedestrian and bicycle proposals are generally excluded from the lists and maps as they are described in Appendix D.

The plans and programs for Lower Manhattan as a special emphasis area are described below and not identified in the county/borough maps.

4.2 Lower Manhattan

This section provides a brief background on federal funding and identification of transportation projects proposed for federal assistance and efforts underway on planning and project development for these projects which are undertaken in response to the terrorist attacks of September 11, 2001, which damaged or destroyed transportation infrastructure.

4.2.1 *Federal Funding*

Following on President Bush’s proposal, Congress appropriated supplemental funds totaling \$4.55 billion in August 2002 for rebuilding and enhancing transportation projects and facilities that will significantly improve the transportation in lower Manhattan. The *2002 Supplemental Appropriations Act for Further Recovery From and In Response to Terrorist Attacks on the United States* appropriated \$2.75 billion to the Federal Emergency Management Agency (FEMA), now part of the Department of Homeland Security, to further address the restoration of the affected transportation systems. The Act also appropriated \$1.8 billion to The Federal Transit Administration (FTA) “to remain available until expended to replace, rebuild, or enhance the public transportation systems serving the Borough of Manhattan,” and stated that funds shall be “subject to grant requirements as determined by the Secretary to ensure that eligible projects

will improve substantially the mobility of commuters in Lower Manhattan” (Public Law 107-206).

The combined federal program of \$4.55 billion in Supplemental Appropriations funds will support major transportation capital investment projects to lead the way for economic revitalization and improved quality of life in Lower Manhattan. In August 2002, the U.S. Department of Transportation and FEMA signed an agreement identifying the FTA as the lead Federal agency responsible for administration and oversight of the combined total of \$4.55 billion in federal funds.

4.2.2 Transportation Recovery Projects

The FTA Lower Manhattan Recovery Office has been collaborating with a transportation working group assembled by Governor Pataki that includes the Governor’s Office and the State Department of Transportation, the City of New York Mayor’s Office and the Department of Transportation, the Metropolitan Transportation Authority, the Port Authority of New York and New Jersey and the Lower Manhattan Development Corporation, to identify transportation capital investment projects to be implemented with the available funding. On February 6, 2003, Governor Pataki identified nine potential projects to be funded out of the \$4.55 billion in federal aid, with projects in different stages of development. The Governor specifically identified three projects, totaling \$2.85 billion, which are ready to move forward in project development:

- \$750 million for the Fulton Street Transit Center (MTA New York City Transit)
- \$1.7 billion for the World Trade Center Transportation Hub (Port Authority of NY and NJ)
- \$400 million for the South Ferry Subway Terminal (MTA New York City Transit)

Funding for these three projects was approved in December 2003.

a) Fulton Street Transit Center

The new Fulton Street Transit Center will be located at the crossroads of Broadway, Fulton and John streets and completely renovated to reorganize and enhance the existing configuration of ramps, stairs, and platforms, allowing for easier and simpler transfers between six separate subway stations serving twelve different subway lines. The reconfigured Transit Center will improve interconnectivity between services, provide better access to Lower Manhattan and ensure compliance with Americans with Disabilities Act (ADA) accessibility. The Transit Center will provide an efficient transportation center east of Broadway with connections between the subway, the rebuilt Port Authority Trans-Hudson (PATH) Terminal, and the World Financial Center.

b) World Trade Center PATH Terminal

The new Port Authority Trans-Hudson (PATH) terminal at the World Trade Center site would re-establish and enhance the level of service for Lower Manhattan PATH customers, while serving

as a major point of arrival for commuters and visitors, allowing connectivity to subways, the World Trade Center memorial, the World Financial Center, and Hudson River ferry services. The project fulfills the objective of rebuilding the PATH terminal and ancillary concourses that were destroyed on September 11, 2001, improving transit interconnectivity and access to Lower Manhattan to all users, including ADA compliant access and the installation of appropriate systems for security and communication. The terminal will provide multiple direct connections to subways.

c) South Ferry Subway Station

The South Ferry terminal subway station on the 1/9 subway line will be completely upgraded from the existing 5-car loop to current standards to accommodate the full length of a typical 10-car subway train while retaining the existing station facility for train storage. These changes will speed the movement of trains and reduce travel times along the entire subway line. New connections to the Staten Island Ferry and the R/W station at Whitehall Street will also be made available, and additional station entrances, including access for the disabled will facilitate access to Battery Park and Lower Manhattan employment sites. The new facility will increase operating capacity and efficiencies to Lower Manhattan and will improve rail connection for Staten Island Ferry riders.

Route 9A Promenade South

This project will complete the improvements to Route 9A south of West Thames Street in Battery Park City. It will increase and improve pedestrian circulation through this area and make nearby parks and neighborhood destinations more accessible to pedestrians. Enhancements include widening of sidewalks, street trees and other amenities.

WTC Tour Bus Parking Facilities

This will consist of below-grade tour bus parking facility within the WTC site to accommodate visitors to the WTC site.

WTC Street Restoration and Infrastructure

This project includes work to rebuild Vesey and Liberty Streets adjacent to the WTC site, and the continuation of new streets through the site including Fulton and Greenwich streets. Other infrastructure improvements, such as sidewalks and landscaping are included to enhance public access to the WTC Transportation Hub and around the WTC site.

Table 5 – Lower Manhattan Transportation Recovery Funds

Summary of Lower Manhattan Transportation Recovery Funds
 (in \$ Million)

Total Program Funds	\$4,550 *
Fulton Street Transit Center	\$750.00
World Trade Center Transportation Hub	\$1,700.00
South Ferry Subway Terminal	\$400.00
Route 9A Promenade South	\$87.30
WTC Tour Bus Parking Facilities	\$520.00
WTC Street Restoration & Infrastructure	\$230.00
Subtotal Ongoing Projects	\$3,687.30
<i>Funds Unallocated To Date</i>	<i>\$862.70</i>

* Total \$4.55 billion in funds from *The 2002 Supplemental Appropriations Act for Further Recovery From and In Response to Terrorist Attacks on the United States* (P.L. 107-206), specifically including \$2.75 billion appropriated to FEMA and \$1.8 billion appropriated to FTA.

Lower Manhattan – Jamaica/JFK Airport Transportation Alternatives

In February 2003, Governor George Pataki and Mayor Michael Bloomberg announced a comprehensive framework to transform Lower Manhattan’s transportation infrastructure and better connect Lower Manhattan to the rest of the City, region, and the world. Included in the framework was improved rail access to JFK Airport.

The Lower Manhattan Development Corporation (LMDC), which was created to help plan and coordinate the rebuilding and revitalization of Lower Manhattan, has identified both improvements in commuter access between Jamaica, Brooklyn and Lower Manhattan and improvements in access to JFK as key elements needed to support the downtown area’s economic recovery and its ability to compete with other world economic centers such as London, Frankfurt and Tokyo.

The Study, jointly sponsored by the MTA, PA NY&NJ, and LMDC, will evaluate alternatives to provide a direct link between Lower Manhattan, Downtown Brooklyn, the Jamaica LIRR station, and John F. Kennedy International Airport. Once a locally preferred alternative is selected, a Draft and Final Environmental Impact Statement will be prepared. The study is expected to take 2-3 years to complete.

Chapter 5: Financing the Future

5.1 Introduction

Over the past 20 years, the region has invested billions of dollars to rebuild its transportation infrastructure in an effort to reverse decades of disinvestment and deferred maintenance. As a result, large portions of the network have been rebuilt and many other components are nearing a state of good repair. This provides a solid foundation for addressing key gaps and other challenges facing the keepers of the region's transportation network.

In addition to the rebuilding process, the region's transportation agencies are now studying many improvements to the transportation system. Given the success the region has had in securing the necessary resources to bring large portions of the transportation system into a state of good repair and to establish a system to maintain these investments, it is reasonable to assume that additional resources will be secured to fund the balance of the rebuilding effort. However, funding sources for many needed expansions to the transportation network must still be identified. NYMTC's key role will be as an advocate for the region's needs and a forum for the members to discuss ways to secure the necessary resources. This chapter describes the scope of this combined program of rebuilding and expansion, and discusses potential sources for future revenues required to finance this effort.

5.2 The Importance of Transportation Investments to Regional Competitiveness

The greater New York metropolitan area, defined as the 31 counties in the Consolidated Metropolitan Statistical Area, is home to over 20 million people, supports nearly 10.5 million jobs and generates a gross regional product roughly the size of Canada's entire economy. While one-fifth of its jobs are contained within a few square miles in Manhattan, the scope of the economic activity in the region is worldwide, and New York has been an acknowledged global economic leader in business, communications, financial services and the creative arts. Nearly half of the nation's securities and commodities trading are generated in Manhattan. All of the major television networks are based in Manhattan, as are six of the ten largest book publishers.

Over 10,000 international businesses are based in the New York metropolitan area. These firms collectively earn more than four of every ten dollars of the nation's profit in international commerce. Various locales, such as White Plains and the I-287 corridor in Westchester County, Route 110 in Suffolk County, downtown Brooklyn, Long Island City, and Flushing in New York City, are also quickly becoming major business centers that contribute significantly to the region's economic vitality.

While Manhattan is the epicenter of the region's many business centers, its economic vitality is also heavily influenced by sidewalk-based/point-of-sale retail, financial, cultural and entertainment activities that generate tens of billions of dollars annually, further enhanced by

millions of tourists who visit the region each year. The value of this infrastructure is revealed by the fact that 5 of the 10 streets with the highest rent-per-square-foot in the world, and 7 of the 10 streets with the highest rent-per-square-foot in the nation are located in the NYMTC region. Despite these impressive statistics New York remains locked in battle with the world's other major cities for economic dominance. These other world cities have acknowledged the intrinsic relationship between economic development and regional mobility, and have invested or plan to invest heavily to meet future travel demand by planning and constructing significant additional motorized and non-motorized transportation links. Paris, London, Tokyo and Hong Kong have spent billions restoring and integrating their transportation systems. New York needs a unified, integrated regional transportation system to effectively compete with these cities and maintain its ability to create jobs and improve its quality of life. To this end, the members of NYMTC need to increase the level of investment in the regional transportation system, and be successful regarding their selection and financing. Without significant future improvements, the existing transit and highway systems will not be able to provide adequate access to the jobs in the Manhattan Central Business District, as well as the rebuilt lower Manhattan. Without improved access, the region will not reach its economic potential.

The economic well-being of the New York region depends upon the ability of the transportation system to efficiently and reliably link workers to jobs in Manhattan and throughout the region, students and teachers to educational institutions, visitors to attractions, and goods and services to customers. Certainly a challenge in the near future is to adjust and improve the system to accommodate the rebuilding of lower Manhattan. Potential economic growth will expand the demand for goods and services and place an increasing burden on the region's already congested highway system. Currently, significant portions of the highway system, which has not been significantly changed since mid-1960s, operate at or near capacity for most of the day. The rail system has remained virtually unchanged in the last 60 years and efforts have focused on maintenance and rebuilding. As a result, there are very real barriers that make the delivery of freight chronically difficult to serve by truck. The overwhelming majority of freight moves by truck east of the Hudson in the New York metropolitan area.

Underscored by a nationwide trend toward more efficient freight movement, the New York region will have to continue to make strategic investments in its freight transportation system to remain competitive and to accommodate forecasted economic growth. Improving the transportation system will help tie together the growing portions of the region, link them to the various cores, and help maintain the region's preeminent position in the global economy, maintaining the region as the epicenter for business. It will make the region more attractive to business by expanding the areas from which to find qualified workers and by making the delivery of goods and services more efficient. An improved transportation system will also increase the region's attractiveness to individuals, expanding the geographic choice for work and home.

The link between economic development and enhanced mobility has been indicated, for example, by research conducted in Philadelphia, Chicago and New York in the 1990s, which shows that every dollar invested in rebuilding and expanding the transit system generates between two and six dollars in permanent economic benefits. These benefits include increases in business sales, personal income and employment and are largely the product of an increase in

personal discretionary spending due to reduced automobile cost outlays and a decline in business costs attributable to the reduced highway congestion that accrues from improved transit mobility. Other research conducted in the late 1980s and early 1990s indicates that the market value of real estate often increases once new transit service linking a community to the urban core is initiated.

In addition to supporting the region's long-term economic growth, improving the transportation system also has short-term benefits. For example, the \$16 billion the Metropolitan Transportation Authority (MTA) invested in its capital program between 1982 and 1991 generated an estimated \$27 billion in short-term economic activity, wages and state/city taxes. The 1992-1996 MTA capital program generated an estimated short-term economic benefit of \$18 billion from an investment of \$12 billion, including creation of an estimated 148,000 jobs.

The benefits of improved mobility, more jobs, more business investment, increased population and a higher quality of life demonstrate the multiplier effect of transportation expenditures. These investments help motorists in the form of reduced highway congestion, shorter travel times, improved reliability and improved air quality.

5.3 Capital and Operating Needs Through 2030

This section reviews the capital and operating finance issues associated with the strategies envisioned in the Plan. These include continuing the effort to bring the transportation infrastructure to a state of good repair; maintaining normal replacement cycles; system modernization; expansion of existing systems and building new projects to improve mobility as well as operating and maintenance requirements for road and transit systems.

5.3.1 *Transportation System Capital Needs*

Large investments will be needed to fulfill this Plan through 2030, including investments to improve the existing infrastructure and to expand the system in key areas. Capital needs are organized into three categories:

Level 1 Investments needed to bring the region's existing infrastructure to a state-of-good-repair and maintain normal replacement cycles thereafter.

Level 2 Projects that have already been identified as important enhancements to the region's mobility. These system expansions have already received some level of commitment and should be in place by 2030. The key Level 2 transit initiatives are the East Side Access project (ESA) and the Second Avenue Subway (SAS) project which will generate substantial benefits for transit customers in the form of reduced travel times and crowding.

Level 3 Projects that are currently being evaluated, with no proposal recommended. Many of these projects are listed in Chapter 3. These projects would address an existing transportation need and would probably be programmed for construction when an alternative is selected and funding becomes available. Before programming can happen, the project has to be added to the Plan, air quality conformity retested and the financial plan amended.

Levels 1 and 2, needs that have already been identified, include \$145 billion worth of projects (see Table 7). Level 3 projects have not been completely identified, do not have firm timetables or cost estimates developed, but the costs could be significant if all of the projects are found to be constructible and operable.

Table 6
Capital Needs & Resources

Identified Capital Needs and Resources for the NYMTC Region 2005-2030 (in \$ millions) (a)

NEEDS (b)		RESOURCES		
Infrastructure/Normal Replacement & State of Good Repair	Funds Needed	Fund Sources	Amount	
Highways & Bridges		<i>Federal (c)</i>		
		5307	14,778.65	
		5309 (d)	11,476.03	
	MHSTCC	7,700	5310	0.65
	N/S TCC	4,600	5311	0.56
	NYCTCC	43,400	CMAQ	4,637.54
			DEMO	104.57
	<i>Subtotal</i>	<i>55,700</i>	FBD - Ferry Discretionary	40.07
			HBRR	7,138.60
			HPP (Earmarks)	28.48
Transit		IM	1,108.39	
	MTA-NYCT/SIRT	51,300	NHS	2,416.82
	MTA- LI Bus	490	REC	0.21
	MTA-LIRR	8,388	SCBY - Scenic Byway	0.65
	MTA-MNR	8,291	SPAP - Special Appropriations	332.72
	MHS Independent	793	STPR - Rail	12.20
	Suffolk Independent	290	STPS - Safety	156.87
	NYC Independent	1,070	STPU - Urban	2,585.45
	Ferries (NYC)	280	STPV - Small Urban	5.87
			STPX - Flexible	1,867.99
	<i>Subtotal</i>	<i>70,902</i>	TCSP	0.65
	<i>Sub-total</i>	<i>126,602</i>	<i>State</i>	
MTA ESA	5,700	SDF	13,525.42	
MTA SAS	13,300	NYS	222.61	
TIP Needs (g)	1,500			
TOTAL	147,102	<i>Local</i>		
		LCL - Local MTA (e)	86,425.26	
		LOC - Local Govt. etc	3,203.89	
		UTIL	0.01	
		<i>Sub-total</i>	<i>150,070.12</i>	
		East Side Access Federal (f)	2,850.00	
		2nd Avenue Subway Federal (f)	6,650.00	
		TOTAL	159,570.12	

Footnotes:

- (a) Excludes PA NY&NJ needs/facilities
- (b) Refer to Plan Section 2.2.1 for details
- (c) Federal fund sources numbers were from Regional Program Management units through the TCCs (based on allocations from NYSDOT Albany to the Regions)
- (d) Section 5309 **excludes** all New Starts funds
- (e) MTA total includes ESA & SAS local funds
- (f) New Starts funds are shown separately as these are awarded through Full Funding Grant Agreements and as such are anticipated by the MTA who will apply for funds through the New Starts process
- (g) Mobility & other special TIP projects/needs

Transportation System Operating Needs

Following are NYMTC’s estimates of the cost of maintaining and operating the transportation system, including the state highway and bridge system, Metropolitan Transportation Authority and other downstate transit systems, local municipalities that receive New York State's

Consolidated Local Street and Highway Improvement Program (CHIPS), and other authorities and transportation providers in the region. These estimates do not include costs for Port Authority facilities and services. The assumptions used to estimate the operating needs are described below. The results are shown in Table 7 below.

Operating Needs Assumptions:

- The base year is 2005 and inflation factors are not included.
- These estimates are for planning purposes only.
- These estimates include operations and maintenance for the New York State Department of Transportation (lower part of Region 8; all of Regions 10 and 11), the Metropolitan Transportation Authority, other downstate transit systems and local municipalities. Out-year Traffic & Safety, Travel Demand Management and Intelligent Transportation System estimates are for the New York State Department of Transportation only.
- Estimates for operations and maintenance needs are based on past expenditures. The Travel Demand Management and Intelligent Transportation System projections are based on a short but growing history of expenditures. This component does not address the source of resources for operations and maintenance.
- Future operations and maintenance needs will remain flat, with the exception of Travel Demand Management and Intelligent Transportation Systems.

The total operating needs through 2030 are estimated at \$181 billion, including about \$178 billion to maintain existing operating levels and about \$3 billion to pay for new Travel Demand Management and Intelligent Transportation System initiatives. (see Table 7). Travel Demand Management and Intelligent Transportation System operations are currently funded at least partially with capital resources. If this policy continues, the \$3 billion will come from the money available for capital improvements. If the policy is discontinued, a new source must be found for these new Travel Demand Management and Intelligent Transportation System operations.

Table 7
Operations & Maintenance Needs

Operations and Maintenance Needs Estimates 2005-2030
(Millions of Dollars)

Fund Source	Amount (\$)
<i>State System</i>	
State Forces	\$1,756
Where and When Contracts	\$322
Other Contract Maintenance Work	\$1,464
Traffic and Safety	\$1,560
Travel Demand Management	\$388
Intelligent Transportation Systems	\$2,871
Subtotal	\$8,361
<i>Transit System</i>	
Total MTA	\$143,287
Total Non-MTA	\$15,292
Subtotal	\$159,139
<i>Local System</i>	
State CHIPS: Operations and Mtce (O&M) Portion	\$756
Local Municipal O&M Expenditures (Non-state)	\$12,284
Subtotal	\$13,040
<i>Others</i>	
Subtotal	\$113
TOTAL	\$180,653

5.3.2 Redundancy and Security

Issues of transportation safety and security, prompted by existing threats to transportation services and infrastructure, will result in the development of security plans that will likely include coordination and enhancement of emergency procedures for system operation and redundancy of components of the transportation system. This will require a significant investment.

5.3.3 *Intelligent Transportation Systems*

As shown in the preceding Table 7, the Intelligent Transportation Systems (ITS) currently in place requires \$2.9 billion to maintain and operate. But with construction of new highway and transit infrastructure becoming more cost prohibitive, further development and deployment of ITS technologies to make more efficient use of the existing transportation network becomes an attractive alternative. The NYMTC ITS Integration Strategy was discussed in Chapter 3, Special Elements and is also contained in Appendix E.

5.4 Capital and Operating Financial Resources through 2030

The region's transportation resources include funding for operating and maintaining the system and capital funding for system improvements and expansions. This section of the Plan discusses the classes of resources that might be available for each of these activities. This Plan generally assumes current funding levels continue through 2030, as explained below.

5.4.1 *Operating and Maintenance Resources*

Many billions of dollars are spent by federal, state and local jurisdictions to maintain and operate the region's transportation system at existing levels. The Plan assumes that the region will continue to secure the funding required to meet these needs. Actual decisions regarding funding levels for Operation & Maintenance costs are made each year in the operating budgets for each of the hundreds of transportation providers in this region. Therefore, for the purposes of this Plan, the assumption is that each jurisdiction will continue to provide the resources needed to maintain and operate their portion of the system.

5.4.2 *Capital Resources: 2005 Through 2030*

This Plan includes the following assumptions on likely revenue sources for 2005-2030:

Federal Funding

As evidenced by ISTEA and TEA-21, federal funding will continue to play a major role in the renewal and expansion of the transportation infrastructure. TEA-21 includes funding for infrastructure renewal and network expansion. It is assumed that the federal transportation acts that will follow TEA-21 will supply annual amounts of funds equal to those contained in the last program year of TEA-21.

State and Local Funding

Because the region's economic vitality and quality of life are dependent on the transportation network, New York City, the surrounding municipalities, counties and New York State will continue to have a major stake in the health of the network. State resources will support

transportation system projects in the NYMTC region through 2030 with state and local resources remaining at approximately the same level as in the 2003/2004 period.

Metropolitan Transportation Authority (MTA) Resources

Funding will continue to be available from revenue bonds, pay-as-you-go funding and interest earnings. The MTA has been able to refinance bonds, cut expenses and improve fare box revenue through increased ridership and will continue to work at innovative financing to maintain its level of bonding. The MTA's value to investors and customers rests on the organization's dedication to providing safe and reliable transportation essential to the continued economic growth of the region. The MTA will also continue to generate funds from interest earnings and explore untapped resources and new finance strategies.

Other Capital Resources

This Plan assumes that non-STOA supported capital funding for other transportation providers not accounted for in this plan (i.e., intercity bus, interstate bus, etc.) will continue. Amtrak is financed by the federal government and system revenues. It is also assumed that capital funding for other authorities not accounted for in this Plan (PANYNJ, NYS Thruway Authority, others) will continue, that these authorities are self-funded and that their capital investments are governed by their respective capital programs. These authorities have at their disposal internal funds which support future capital investments to their respective facilities.

Also, a number of resources other than federal, state and local have been used to fund transportation projects in the past and can be expected to do so in the future. An example is the use of bridge and tunnel toll revenue to support the sale of bonds for financing transportation projects.

5.5 The Need for Additional Capital Resources

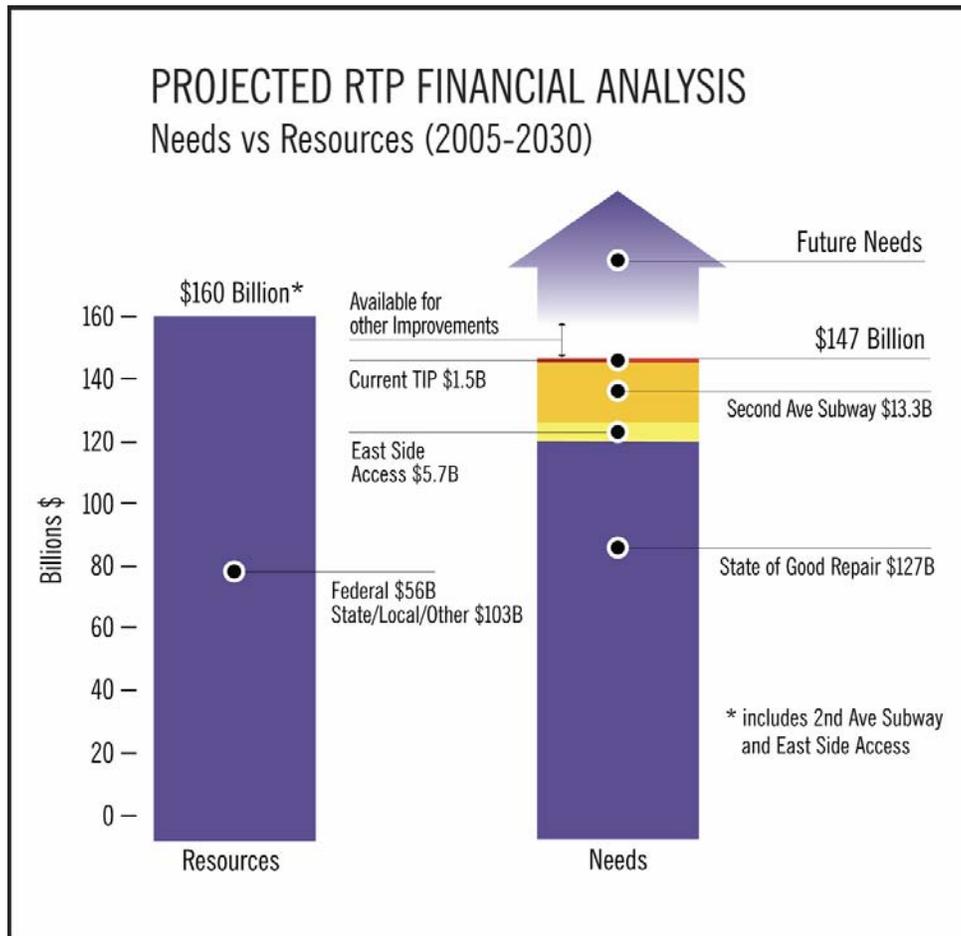
The transportation agencies that compose NYMTC will face considerable challenges over the next 20 to 25 years, with the continuing need to maintain and rebuild the existing system up to a state of good repair and concurrently expand the system to meet increasing needs, improve regional mobility and support economic growth. The challenge will be to find sufficient financial resources to achieve these objectives.

Current estimates for available capital resources through 2030 are about \$160 billion. This will be adequate for funding the Level 1 and Level 2 activities identified in this RTP, leaving about \$13 billion for expanding the system (see Fig. 9 below). Level 3 projects could cost significantly more, requiring that decisions be made to address the funding of recommended alternatives that will result from major investment studies currently underway within the region. This section provides a discussion of strategies used in the past by New York State and other governmental entities to provide transportation resources to meet all levels of need. They are not provided as recommendations but as information and discussion points for transportation decision makers.

5.5.1 Federal Programs

For over 70 years federal aid programs, coupled with state and local revenues, have funded a significant portion of this region’s extensive transportation system. However, the supply of federal aid grants has not kept pace with estimates of needs to maintain and sustain the region’s transportation infrastructure. In order to address this shortfall, the federal government, beginning with ISTEA, began advocating the use of “innovative financing” techniques to leverage limited federal funds, explore public/private partnerships and relax restrictions on federal grant matching share requirements. Although this trend continued under TEA-21, a new transportation act has not been passed. The following provisions, included under TEA-21, are assumed to be available under the new act:

Figure 11
Projected RTP Financial Analysis



Note: Excludes PA NY&NJ

Federal Credit Assistance

In TEA-21, federal credit assistance is outlined in the Transportation Infrastructure and Finance Innovation Act (TIFIA) of 1998. TIFIA permits the Secretary of Transportation to issue up to \$10.6 billion over the next six years (from 1998) in secured loans, standby lines of credit and loan guarantees. The assistance allows project sponsors to borrow up to 33 percent of a project's costs at interest rates similar to US Treasury security. With this federal support, a project sponsor may be more able to leverage private capital and speed construction starts. In addition, the federal credit assistance program has flexible repayment options and allows states and municipalities to defer interest payments on federal debt in order to meet senior debt obligations.

The major provisions in TEA-21 were:

- *Section 182*: Eligible projects must be included in the State Transportation Plan, have anticipated costs greater than or equal to \$100 million or 50 percent of a state's federal highway funds and be able to repay financing through a dedicated revenue source.
- *Section 183*: Secured loans may be used to pay project costs or refinance other debt up to one year after the project is substantially completed.
- *Section 184*: Lines of credit can be used to pay debt service as well as to cover costs of repair, replacement, operating, maintenance, and costs associated with unexpected Federal or State environmental restrictions.

The National Highway System Designation Act of 1995 includes several provisions for financing infrastructure projects, including Section 311, which allows the use of federal aid to cover the interest, insurance costs and bond principal on eligible projects; Section 350, which allows the creation of a State Infrastructure Bank Pilot Program; and Section 122, which allows states to make loans to toll or non-toll facilities with a designated revenue source.

Federal Matching Share Provisions

New federal match provisions under TEA-21 increase flexibility for states to arrive at the non-federal share. States can use toll receipts and land costs, and funds from other federal agencies to cover the local match.

Section 1012 Loan

This allows states to lend portions of their federal aid highway funds to a public or private entity constructing a toll or non-toll facility. Repayment may be used to finance other projects, continuing a revolving fund, or lower interest rates for eligible projects.

5.5.2 State Programs

State Infrastructure Bank (SIB)

New York State established a state infrastructure bank under the provisions in the 1995 National Highway System Act. SIB reserves are based on loan repayments and the current bank balance is about \$2.5 million.

NY State Dedicated Highway and Bridge Trust Fund

Originally established in 1993, the State Dedicated Highway and Bridge Trust Fund (the Trust Fund) provides the state's share of costs for the multi-year highway and bridge capital program, as well as capital program funding for rail, aviation and public transportation systems other than the MTA, administered by the New York State Department of Transportation. The Governor's 2005-2006 Executive Budget proposes a \$17.4 billion capital program for 2005 through 2010, financed by the Trust Fund and Federal aid. State revenues dedicated to the Trust Fund by law include portions of these major highway-related state taxes: the Petroleum Business Tax; Motor Fuel ("gas") Tax; Highway Use Taxes and Fees; and Department of Motor Vehicle fees, auto rental tax, and other miscellaneous taxes and fees.

Currently, about \$1.8 billion in revenues are supplemented by bonds secured by these revenues. Together, with the Federal aid, they support the Department's capital program, operations and maintenance, and administration; as well as rail and aviation programs. Revenues also pay debt service on bonds sold to support the State share of the highway and bridge program, as well as bonds sold to finance local programs, including the CHIPS and Marchiselli capital programs.

NYSDOT Industrial Access Program (IAP)

The IAP is designed to facilitate economic development through the creation or improvement of road or rail access. The IAP awards up to \$1 million per project on a 60 percent grant. The repayment term on the loan is five years from completion of the access project. Eligible costs include design, engineering, right-of-way acquisition and construction. The primary selection criterion is the creation or retention of jobs in businesses that are involved in manufacturing, research and development, warehousing, distribution and agricultural industries.

5.5.3 Public/Private Partnerships

While public/private partnerships are in their infancy in the United States, there seems to be a thriving international market for these investment vehicles to finance large-scale infrastructure. Recent examples include: Hudson Bergen Light Rail Project, northern New Jersey; AirTrain JFK; and Portland Airport Light Rail System, Portland, Oregon.

5.5.4 Travel-Based Revenue Sources

Some states use dedicated travel-based revenue sources to finance their transportation programs. These sources can also become a tool to influence travel behavior by requiring that consumers pay for those transportation services they use, and earmarking the funds to support these services as well as the less obvious costs of transportation, such as related noise and environmental degradation. Examples include the following:

- A regional fuel tax higher than existing federal and state taxes on gasoline/diesel fuels;
- A regional vehicle registration fee;

- A vehicle-miles-traveled fee by type of vehicle, with variations based on a "smog tax" so that "dirty" vehicles pay more than "clean" vehicles;
- Tolls and incentive pricing that vary tolls by time of day depending upon the level of congestion on a facility. Electronic toll collection systems, now in use at most tolled transportation facilities, could also be used for incentive pricing by charging more during rush hours and less during off-peak travel periods. In August 1997, a round trip incentive pricing program for commercial E-Z Pass customers was instituted on the Tappan Zee Bridge to encourage truckers to travel during off-peak periods. Incentive pricing may decrease rather than increase toll agency revenues, or be revenue neutral; and
- In-Vehicle Parking Systems that provide small electronic components capable of reading and writing to and from a free or prepaid debit card could allow graduated rates to discourage peak hour parking and delivery.

5.5.5 Non-Travel Based Sources

Other states have used non-travel based sources, such as a vehicle value (personal property) tax, property tax, sales tax and payroll tax. When considering increasing revenues for transportation purposes by developing a regional financing mechanism, the strengths, weaknesses and impacts of raising additional resources must be evaluated.

Some Transportation Development Districts (TDDs) exist within the NYMTC region, such as Smithtown. These special districts are designed to improve local transportation through a special-purpose tax levied upon local businesses, properties or homeowners. Any locality wanting to establish a TDD to finance transportation projects must first have an enabling bill passed by the State Legislature and signed by the Governor.

Glossary

AADT - Annual Average Daily Traffic: Estimate of typical daily traffic on a road segment for all days of the week over the period of one year.

ADA - Americans with Disabilities Act: Federal law designed to help provide transportation services for the elderly and disabled.

AFC - Automated Fare Collection: Transit fare collection system which allows the use of one ticket for various transit modes and fare policies.

BPM – Best Practice Model: NYMTC's regional travel demand forecasting model.

CAAA90 - Clean Air Act Amendments of 1990: Federal law which stresses the relationship of transportation and air quality and the attainment of national ambient air quality standards.

CBD - Central Business District: Core area of urban center where commercial activity is concentrated; central Manhattan in this case.

Corridor - Any major transportation route that includes parallel limited access highways, major arterials, or transit lines.

Council - (See NYMTC)

FHWA - Federal Highway Administration: Federal agency responsible for the approval of transportation projects that affect the defined federal highway system, administratively under USDOT. FHWA is a non-voting member of the Council and each TCC.

FTA - Federal Transit Administration: Federal department of mass transportation under USDOT. FTA is a non-voting member of the Council and each TCC.

HART - Huntington Area Rapid Transit: Bus system operator within the town of Huntington, NY.

HOV - High Occupancy Vehicle: Vehicle carrying a large number of passengers, such as busses, carpools, and vanpools.

HOVL - High Occupancy Vehicle Lane: Highway lane designed for HOV use only.

ISTEA - Intermodal Surface Transportation Efficiency

Act of 1991: Federal law passed by Congress to help maintain mobility, reduce congestion, and link environmental issues with transportation issues.

ITS - Intelligent Transportation System: Development and use of technology to enhance ground travel, to improve safety and the environment. This includes the gathering and dissemination of traveler information, traffic management, and vehicle management in an overall integrated manner.

LIB - Long Island Bus: Agency which operates the Nassau county bus system, a subsidiary of MTA.

LIRR - Long Island Rail Road: MTA operating affiliate; the commuter railroad company serving Long Island and Queens.

LOS - Levels of Service: Traffic engineering term describing the operating conditions a driver experiences while traveling a particular street or highway.

MHSTCC - Mid Hudson South Transportation Coordinating Committee: Northern sector transportation coordinating committee for the NYMTC region with voting members that include Rockland, Putnam, and Westchester counties, MTA, NYSDOT, Region 8, and the NYS Thruway Authority.

MNR - Metro North Railroad: MTA operating affiliate; the commuter railroad company serving Bronx, Dutchess, Orange, Putnam, Rockland and Westchester counties in New York State, and Fairfield and New Haven counties in Connecticut.

Mode - Particular form of travel, such as walking, traveling by automobile, or taking the bus.

MPO - Metropolitan Planning Organization: Federally mandated organization for coordinating transportation planning. Each urbanized population over 50,000 must have an MPO.

MTA - Metropolitan Transportation Authority: Voting council member and voting member of each TCC. It is the major mass transit operator in the region.

MTA B&T - MTA Bridges and Tunnels: MTA affiliate, which operates toll bridges and tunnels.

NR - Normal replacement of transportation facilities as they wear out.

N/STCC - Nassau-Suffolk County Transportation Coordinating Committee: Eastern sector TCC with voting members that include Nassau and Suffolk counties, MTA, and NYSDOT Region 10.

NYCDEP - New York City Department of Environmental Protection: Advisory member of NYC TCC.

NYCDCP - New York City Department of City Planning: City agency responsible for transportation and land use matters in city of New York, a voting member of the NYCTCC.

NYCDOT - New York City Department of Transportation: City agency responsible for maintenance and operation of certain highways and oversight of private bus and ferry operations in New York City; it provides planning input for city transportation facilities and is a voting member of NYCTCC.

NYCT - New York City Transit : Rapid rail and surface (bus) operating affiliate of the MTA, providing public transportation service within New York City.

NYCTCC - New York City Transportation Coordinating Committee: Central sector TCC with voting members that include NYCDOT, NYCDCP, MTA and NYSDOT Region 11.

NYMTC - New York Metropolitan Transportation Council: Metropolitan Planning Organization designed by the Governor for the New York metropolitan region.

NYSDEC - New York State Department of Environmental Conservation: Advisory member of the Council.

NYSDOT - New York State Department of Transportation: Voting council member and voting member of each TCC.

NYSTA - New York State Thruway Authority: Voting member of MHS TCC and operator of the Thruway, the Tappan Zee Bridge, I-84 and I-287.

PANY&NJ - Port Authority of New York and New Jersey: Bi-state port and transportation facility operator and advisory member of the council and nonvoting member of each TCC.

PART - Putnam Area Rapid Transit: Agency which operates bus transit service within Putnam County.

Peak Hour - Period in which the maximum amount of travel occurs. It may be specified as morning or evening peak.

PHD - Person Hours of Delay: Measure of delay indicating the number of hours a person(s) in a vehicle is delayed.

Region 8 - The NYSDOT regional office headquartered in Poughkeepsie: NYSDOT staff responsible for state transportation matters in the Hudson Valley.

Region 10 - The NYSDOT regional office headquartered in Hauppauge: NYSDOT staff responsible for state transportation matters on Long Island.

Region 11 - The NYSDOT regional office headquartered in Long Island City: NYSDOT staff responsible for state transportation matters in New York City.

ROW - Right-of-Way.

ROW ACQ - Right-of-Way Acquisition: Procurement of linear right-of-way for transportation purposes.

RTP – Regional Transportation Plan: The long-range multi-modal plan for the region.

SCT - Suffolk County Transit: Agency which operates Suffolk County bus service.

SDF - State Dedicated Funds: State funds dedicated to transportation in New York State.

SIP - State Implementation Plan: A document required by the CAAA90 to be produced and updated. The document details required levels of pollution emission reduction and sets deadlines to meet emission reduction targets.

SIR - Staten Island Railway: An MTA affiliate, which operates a rapid rail transit line serving the southern coastal portion of Staten Island

SOGR or SGR - State of Good Repair: Transportation facility which has no deferred maintenance and is in good condition.

SOV - Single Occupant Vehicle: Vehicle occupied by one person, the driver.

Subregions - Suburban Counties and New York City: Nassau County Planning Commission, Suffolk County Department of Public Works, Putnam County Division of Planning and Development, Rockland County Department of Planning, and Westchester County Department of Transportation, which are the principal TCC voting members and which participate in the Council's subregional planning program.

TCC - Transportation Coordinating Committee: Confederation of subregions established to implement the subregional elements of the Council work program, e.g. MHSTCC, N/STCC, NYCTCC.

TCM - Transportation Control Measures: Means established by ISTEA and CAAA90 to reduce single occupant vehicle use or total vehicle miles of travel (e.g. HOV lanes, new parking regulations, tolls).

TDM - Transportation Demand Management: Strategy designed to improve travel by reducing demand through techniques such as ridesharing.

TEA-21- Transportation Equity Act for the 21st Century: This legislation, enacted June 1998, authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 6-year period 1998-2003.

TIFIA - Transportation Infrastructure Finance and Innovation Act : Authorized in TEA-21, TIFIA provides federal credit assistance in the form of secured loans, loan guarantees or standby lines of credit.

TIP - Transportation Improvement Program: Five-year program of capital projects, as required by federal regulation.

TSM - Transportation System Management: Strategies designed to improve the existing transportation system efficiency by making better use of the system through short-term, low-capital transportation improvements such as signal coordination, ITS, and intersection improvements.

UPWP - Unified Planning Work Program: Agenda which guides the planning activities of the Council members and the Central/TCC staff.

USDOT - United States Department of Transportation: Department of the federal government including the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). USDOT is headed by the Secretary of Transportation, a cabinet-level post.

USEPA - United States Environmental Protection Agency: Advisory member of the Council and a nonvoting member of each TCC.

VHD - Vehicle Hours of Delay: Measure of delay indicating the number of hours the traffic stream is delayed.

VMT - Vehicle Miles Traveled: One vehicle traveling one mile.

VPH - Vehicles Per Hour: Number of vehicles moving over a link or section of roadway in one hour.