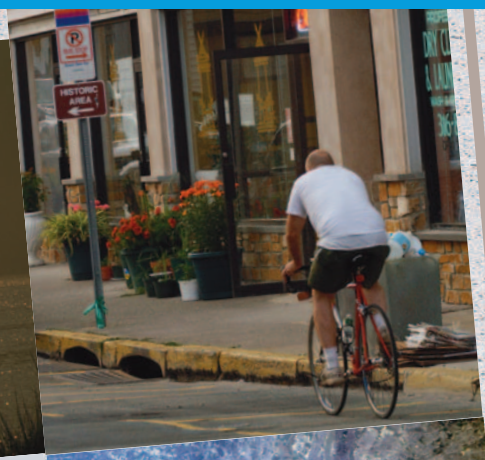
REGIONAL TRANSPORTATION PLAN

Access & Mobility 2030



North Jersey
Transportation Planning
Authority, Inc.

REGIONAL TRANSPORTATION PLAN

Access & Mobility 2030

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Available separately on CD-ROM or at www.njtpa.org

Chapter 1

Dwight Hiscano

Shaping the Future – The Regional Transportation Plan

The transportation system that serves the 13 counties of northern and central New Jersey is among the region's most vital public assets. It uses every mode of transportation to move people and goods in staggering numbers, including: nearly 150 million miles driven by vehicles over the region's roadways each day; more than 250 million trips taken by bus, rail and ferry each year; more than 550 million tons of freight moved in, out and through the region by truck, train, ship and airplane; and an average of more than seven trips a day by each of the region's nearly 2.4 million households to reach work, recreation, school, shopping and other destinations (see Maps 1-1 and 1-2).

This extensive transportation system, with its ability to handle such a huge volume of movement, has contributed to New Jersey's strong economic performance in recent years. Despite its small size, New Jersey has the eighth largest economy in the U.S., with a gross state product of $416 billion in 2004.

Though an increasing share of commerce involves the movement of information over telecommunications networks, the physical movement of people and goods remains — and always will be — an indispensable requirement for generating economic wealth. And it is in facilitating this movement that the region has much to offer: the largest marine port on the east coast; a major international airport; an extensive highway system branching throughout the region and to neighboring states; one of the nation's heaviest traveled


Bill Wittkop

Jersey City waterfront, Hudson County

roadways (the New Jersey Turnpike) and rail lines (the Northeast Corridor, Amtrak's most profitable route); a well-developed mass transit network giving commuters access via bus, rail and ferry to New York City and growing job centers in the region; and freight rail yards that are the end point of transcontinental supply chains. Indeed, the NJTPA region sits in a key strategic location for the national economy and transportation system.

The region's extensive transportation facilities have been a key attraction for companies whose business depends on ready access to the enormous customer base and economic resources in the Mid-Atlantic and New England states. Their investments in plants, offices, research labs, warehouses, retail outlets and a host of other facilities in northern and central New Jersey, in turn, support the high standard of living enjoyed by much of the region's population. New Jersey — with three-quarters of its residents in the 13 northern counties — has the highest per capita income in the nation. In crucial ways, this wealth can be traced back to the transportation system.

It is against this backdrop of economic success and dynamism tied to transportation that the real and growing problems confronting the transportation system must be viewed. As any resident can attest, in many locations the road network is overwhelmed by traffic, especially at peak travel times. Congestion is a sign of economic health, to an extent, but it still must be managed effectively. Projections are that the congestion will get worse — possibly much worse in some places if nothing is done — as a result of increased population, rising incomes, growing freight traffic, continued sprawl development, and other factors over the next two and a half decades.

Bus and rail transit, as well as walking and biking, have realized growing success as alternatives to driving, relieving the road network of hundreds of thousands of trips each day and providing transportation opportunities for all the region's residents. But the end is in sight in terms of fully meeting future transit ridership demands without major projects to expand capacity. At the same time, the region faces a long and growing backlog of projects to repair and replace aging elements of the system — including over 600 deficient bridges (with more falling into that state each year) — just to safely accommodate existing travel demand.

The approximately $2 billion available to the region each year in state and federal funding addresses many of the region's transportation needs. Still, the NJTPA and other transportation agencies are left to make hard choices among the hundreds of worthy projects and project proposals waiting in line for funding each year.

The NJTPA

The North Jersey Transportation Planning Authority (NJTPA) is the federally authorized Metropolitan Planning Organization (MPO) for the 6.5 million people in the 13-county northern and central New Jersey region. Each year, the NJTPA oversees over $2 billion in transportation investments. The NJTPA evaluates and approves proposed transportation improvement projects and provides a forum for interagency cooperation and public input into funding decisions. It also sponsors and conducts studies, assists county planning agencies and monitors compliance with national air quality goals. The NJTPA serves the fifth most populous MPO region in the country. The NJTPA Board consists of one elected official from each of the region's 13 counties and two largest cities, Newark and Jersey City. The Board also includes a Governor's Representative, the Commissioner of the NJ Department of Transportation, the Executive Directors of NJ Transit and the Port Authority of NY & NJ and a Citizens' Representative appointed by the Governor. NJTPA Board meetings are held bi-monthly and are open to the public.


LEGEND
Interstates/Toll Roads
US Highways
State Highways
County/Local Roads
County Boundaries
Water Features
Map 1-1
Roadways
SUSSEX
PASSAIC
BERGEN
WARREN
MORRIS
ESSEX
HUDSON
UNION
HUNTERDON
SOMERSET
MIDDLESEX
MONMOUTH
OCEAN
See Detail Area
Detail Area
Newark
Jersey City
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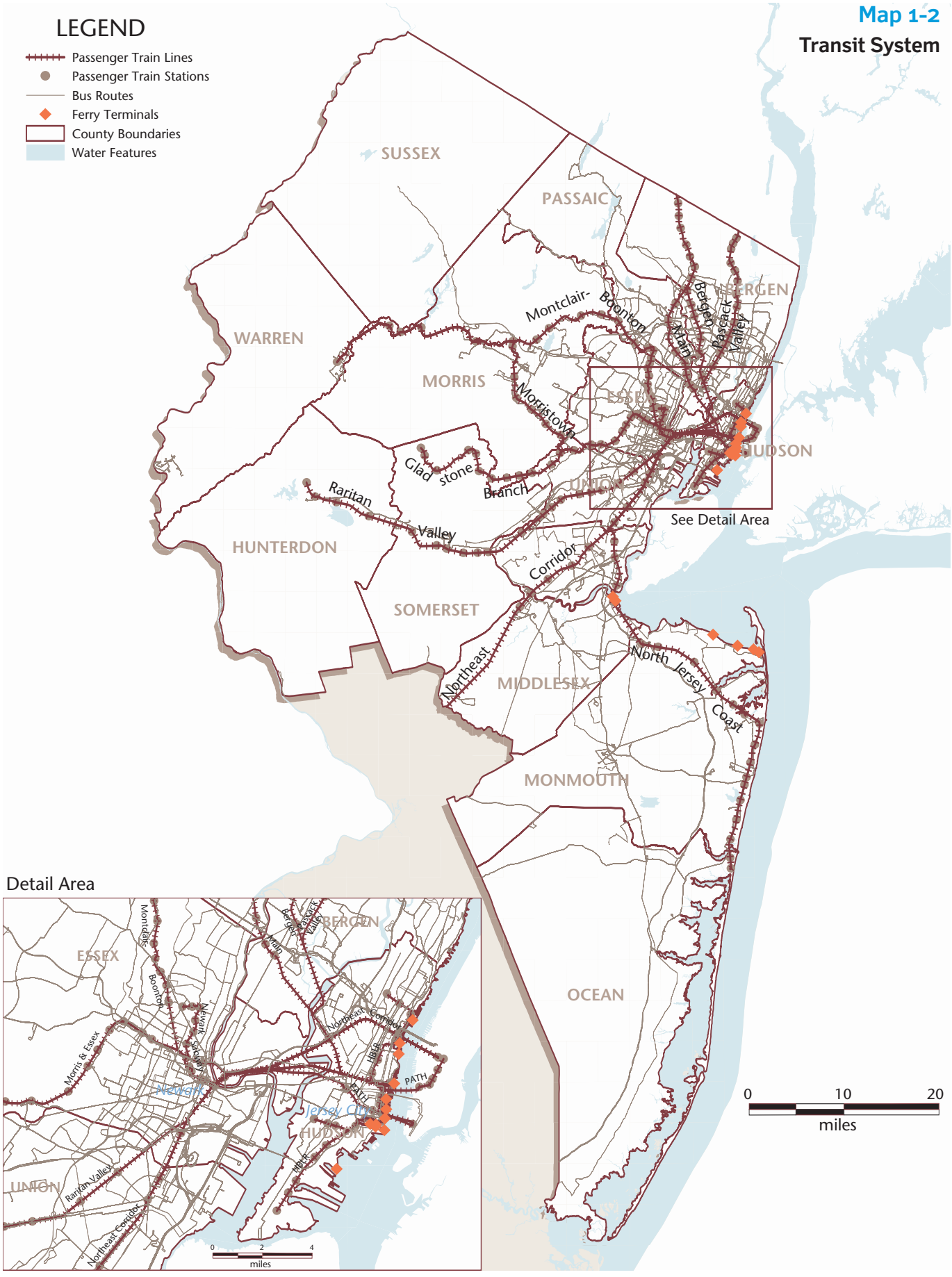
miles
0 2 4
miles


Map 1-2
Transit System
LEGEND
Passenger Train Lines
Passenger Train Stations
Bus Routes
Ferry Terminals
County Boundaries
Water Features
SUSSEX
PASSAIC
BERGEN
WARREN
MORRIS
ESSEX
HUDSON
UNION
HUNTERDON
SOMERSET
MIDDLESEX
MONMOUTH
OCEAN
Montclair-Boonton
Main
Bergen
Passaic Valley
Morristown
Gladstone Branch
Raritan Valley
Corridor
Northeast
North Jersey Coast
See Detail Area
0
10
20
miles
Detail Area
Montclair-Boonton
Bergen
Passaic Valley
Main
Morris & Essex
Newark Broad St.
Northeast Corridor
HBLR
PATH
Newark
Jersey City
Raritan Valley
Northeast Corridor
0
2
4
miles

Yet addressing transportation issues is not just a matter of money. In such a densely populated and heavily traveled region, it can be all but impossible to implement even the most obvious solutions. Widening a short stretch of highway can require acquiring properties that turn a modest undertaking into a multimillion dollar commitment and one that can provoke fierce opposition from nearby residents. Even if built, such a project can draw traffic from other overburdened roads, providing little net relief for congestion. The complex problems in the region invariably require complex and creative solutions.

The stakes in finding such solutions — and applying funding to them in the right amounts in the right locations and with the right timing — have never been greater. The incredible economic benefits generated by the transportation system will surely erode in the face of mounting national and international competitive pressures if the issues facing the system are not attended to wisely and effectively. This Regional Transportation Plan is intended to help meet that challenge, safeguarding the region's economy as well as a fostering progress on a variety of social, environmental and other goals important to the region's residents.

The Regional Transportation Plan

As the region's designated Metropolitan Planning Organization (see sidebar "NJTPA"), the NJTPA has developed this Regional Transportation Plan in fulfillment of federal requirements for regional transportation planning. A key requirement is that year-to-year investments of federal transportation funding be guided by a long-term plan and vision approved by elected officials and state representatives in each metropolitan region. This helps ensure that investments are the result of open debate about the desired shape of the future transportation system; take into account the needs of all of the region's residents rather just the interests of particular communities; and lead to lasting solutions. The long-range plan is required to be updated every four years to reflect changing conditions and priorities. It also must help fulfill several "planning factors" contained in federal regulations which are consistent with the NJTPA's own goals for regional transportation (see sidebar "Planning Factors & Goals).

This latest 2005 plan update for northern New Jersey builds directly upon the last plan update adopted in September 2002. Both plans bear the title *Access & Mobility*, reflecting an approach to future planning that couples concerns for facilitating the movement of people or goods (*mobility*) with a focus on better satisfying the purposes of travel — namely facilitating *access* to desired destinations and resources including jobs, homes, schools, shopping, warehouses, and others. Among other implications, this dual approach requires greater attention to why and where people travel rather than just the routes and modes they use.

Examining the system in terms of access necessarily connects land-use with transportation, since access can be improved by encouraging residents to live physically closer to jobs, shopping, entertainment and other opportunities. This approach leads to Smart Growth, which involves promoting development and redevelopment in designated areas, especially those with already-existing infrastructure. The Smart Growth concept for New Jersey is embodied in the State Development and Redevelopment Plan, which specifies targeted growth areas. In this plan update, the NJTPA has made the connection between land-use and transportation more strongly than ever. Future plans will strengthen this commitment to growth management in the region.

The NJTPA uses various means to determine the transportation investment needs of the

Planning Factors & Goals

This plan was developed in accordance with federal requirements for regional transportation planning. In particular, this plan reflects consideration of several "planning factors" included in the federal Transportation Equity Act for the 21st Century (TEA-21). In August 2005, this act was superseded by a new federal transportation law, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). But the essential elements of the planning factors that guided this plan have remained unchanged. They are :

- 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 nonmotorized users;
- Increase the accessibility and mobility options available to people and for freight;
- Protect and enhance the environment, promote energy conservation, and improve 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.

Development of this plan was also guided by the following six goals, which are consistent with the above factors for regional transportation planning. The goals were adopted by the NJTPA in 1995.

- Protect and improve the quality of natural ecosystems and the human environment
- Provide affordable, accessible and dynamic transportation systems responsive to current and future customers.
- Retain and increase economic activity and competitiveness.
- Enhance system coordination, efficiency, and intermodal connectivity.
- Maintain a safe and reliable transportation system in a state of good repair.
- Select transportation investments that support the coordination of land use with transportation systems.

These goals have guided several Regional Plans and formed the basis for the Strategy Evaluation, the Regional Capital Investment Strategy and the prioritization of projects in our region. This plan is intended to advance the region towards attaining these goals.

region. In determining which highways and bridges warrant repair, replacement or improvements to address safety or congestion concerns, this plan draws on various "management systems." Maintained by NJDOT, these systems evaluate extensive data on the condition of infrastructure throughout the region.

In addition, this 2005 plan takes as its foundation the results of a study effort, called the Strategy Evaluation, which formed the heart of the 2002 plan. The Strategy Evaluation sought to take a comprehensive look at transportation performance throughout the region. It evaluated performance in 158 districts designated according to their density, both now and in the future, by gathering and analyzing a wide variety of data. For each district, questions included: How reliable is the transportation system in the district? Can people readily access employment? Do they have access to transit? How bad are highway delays? Is freight movement efficient? How safe and convenient is travel by bicycle and on foot?

It was a very ambitious effort, conducted in consultation with local officials, that yielded a wealth of information about transportation needs as well as recommended strategies appropriate for districts with similar characteristics. The Strategy Evaluation thus gave the NJTPA and its partners an improved technical foundation and new objective measures on which to base investment decisions. It also established standards for measuring performance in different types of areas.

The Strategy Evaluation was a comprehensive "first cut" regarding regional transportation needs. It provided broad guidelines for strategies to meet needs in each identified area. In developing the current plan update, efforts were made to further improve upon and extend the Strategy Evaluation to enhance the NJTPA's performance-based planning.

A key effort was the development of the Regional Capital Investment Strategy (RCIS) pre-

sented in Chapter 4. Alternative scenarios were examined to better understand the impacts of various mixes of transportation investments over a 25-year horizon. The final RCIS approved by the NJTPA Board includes several broad principles and numerous related guidelines for future investments. In doing so, it provides the heart of this plan's vision for the future of the region.

In conjunction with the development of the RCIS, the NJTPA carried out a number of large-scale studies over the last two years. Findings of the studies are incorporated into this plan and technical reports from each of the studies are included as appendices.

Among the products of the studies were new data about current and future conditions in the region, new tools for analyzing transportation system performance, insights into key issues facing the region, and detailed assessments of needs and potential solutions at particular locations. There were seven studies/reports in all:

- Regional Performance Indicators Report — Took a comprehensive look at the region's progress based on various transportation- and land use-related performance measures.
- Demographic Forecasting — Developed predictions about the region's population and employment out to the year 2030.
- Freight System Performance Assessment — Provided data and forecasting on use of the regional freight network
- Regional Safety Priorities - Identified key safety needs and developed strategies to address them.
- Model Integration - Created a single program that provides multimodal computer simulation of regional transportation.
- Strategy Refinement Study - Explored new project concepts around the region.
- ITS Architecture - Explored Intelligent Transportation Systems (ITS) technologies to better manage traffic and transit resources and created a federally required architecture for the region's ITS.

Dwight Hiscano

Garden State Parkway

Public Outreach & Involvement in the 2030 Regional Transportation Plan

This Regional Transportation Plan has been developed with wide-ranging input from officials, stakeholders, interested organizations and citizens throughout the region.

The plan builds upon the last plan update adopted in September 2002. Outreach for this previous update included stakeholder interviews, focus groups and 26 local outreach meetings that drew more than 600 individuals during 2000. This outreach also included a Regional Transportation Advisory Group that assisted in the development of the Strategy Evaluation (which underpins both that previous plan and the current update) during 2001 and 2002. This advisory group included representatives of a variety of interest groups representing the public on a regional basis.

This extensive previous outreach provided a baseline of needs, issues and concerns to which the current update responds. A key aspect of this response, which has bolstered the current plan's technical foundation, has been a number of large-scale planning studies conducted over the last two years. These studies focused on demographic forecasting, the freight system, safety priorities, a capital investment strategy, strategy refinement and ITS architecture. Each study was guided by a Technical Advisory Committee and included on-going consultation with NJTPA member agencies and key officials, opportunities for public review and comment as well as regular presentations at NJTPA committee meetings.

Each study also had its own website, to which key documents were posted. Notable special outreach activities conducted as part of these study efforts included the following:

- For the Regional Safety Priorities study, an online survey was posted soliciting concerns and ideas about safety in the region. More than 550 people responded to the survey, identifying approximately 400 locations throughout the region and proposing a variety of solutions. In addition, 22 field visits were conducted with key public officials in each subregion, including county planners, engineers, police, fire, concerned citizens and others. One outcome of the study was the identification of priority safety improvements to be advanced through a new regional funding program.
- The ITS study included over twenty "functional area workshops" with nearly 100 stakeholder participants in the NJTPA region, including many traffic engineers and law enforcement officers. These workshops provided crucial insight about how ITS could be applied to aspects of the transportation network in the region.
- The Freight Assessment study presented progress reports and findings to meetings of the NJTPA's Freight Initiatives Committee, which is well-attended by freight industry representatives and the interested public. Valuable feedback which helped consultants identify potential data sources was received.
- Presentations were made at Board and Committee meetings on options for the proposed Regional Capital Investment Strategy which is intended to provide the framework for all future investments. The decision to formally adopt the RCIS separately, rather than only as part of a final plan, ensured that it received the appropriate attention and input from all interested parties. Several modifications to the RCIS were made based on input received.

Outreach on the draft plan document included presentations to the Monmouth County Transportation Council's Transportation Summit and to a meeting of the Meadowlands area Sierra Club in Edgewater, Bergen County.

A formal public comment period on the plan was held from July 12 to August 10, 2005. Three public meetings were held around the region during this period to provide additional opportunity for public input. The plan and its supporting documents also were made available on the NJTPA website and through major libraries in the region. Mailings announcing the plan (including a special issue of the NJTPA newsletter) were made to solicit input from a wide range of individuals and organizations, including those traditionally underserved in the transportation planning process. The final plan document includes an appendix with summaries of public comments received and how they were addressed.

All these studies involved extensive technical work, most conducted with the assistance of transportation consultants. They also included ongoing consultation with NJTPA member agencies and key officials as well as opportunities for public comment through advisory committees, general meetings, workshops, online tools and other forums. In some cases, field meetings with local officials were conducted around the region. This outreach provided a "reality check" for much of the technical findings and provided valuable input in crafting recommendations for inclusion in the 2005 plan update. This plan update, in turn, was subject to review and comment by the NJTPA member agencies and the public (see box "Public Outreach").

Shaping the Future

Can northern and central New Jersey meet the difficult challenges facing the transportation system and sustain the region's economic progress while protecting the environment and meeting other regional goals?

Viewed in isolation, the trends in the region brought into focus by the NJTPA's recent study efforts can appear threatening. As discussed in Chapter 2 (Regional Context & Trends), these trends include the likelihood of increased miles of vehicle travel by 2030 — involving both cars and trucks — much of it in already congested urban and suburban areas. Chapter 3 (Regional Transportation Needs) takes a closer look at specific needs related to infrastructure and locations in the region.

Dwight Hiscano

Downtown Dover, Morris County

Trends & Forecasts

Below is a compilation of several trends and forecasts discussed within this plan relating to key features of the region and its transportation system.

Transportation Demand

	Recent Trend	Forecast, 2005-2030	
Population	10% growth, 1990-2000	16% growth	Slower than past
Jobs	10% growth, 1990-2000	22% growth	Slower than past
Settled Land	16% growth, 1986-2000	30% growth	Faster than past
Density of Settled Land	4% decline, 1986-2000	10% decline	Faster than past
Warehouse Space	-	105% growth	-

Transportation Usage

	Recent Trend	Forecast, 2005-2030	
Vehicle-Miles Traveled	9% growth, 1999-2003	25% growth	Slower than past
NJ Transit Rail Ridership	56% growth 1992-2001	100+%	Similar to past
Sea Container Freight	118% growth, 1991-2003	270% growth	Similar to past
Rail Container Freight	-	330% growth	-
Truck VMT	-	93% growth	-

Transportation Impacts

	Recent Trend	Forecast, 2005-2030	
Job Accessibility	-	17% growth	-
Roadway Congestion Delay	-	Slower relative growth (about 15%) in already congested urban areas, but upwards of 200% growth in rural areas where current congestion is low	
Median Commute Time	14% growth, 1990-2000	2% growth	Slower than past
Traffic Accidents	Constant, 1994-2002	Decline on a per-capita basis	

Yet this plan explicitly recognizes that these and other trends can be managed, moderated or, in some cases, altered in important ways through the actions and policies of the NJTPA and its member agencies. Chapter 4 includes the investment principles and guidelines of the RCIS that will help the region accommodate and shape future travel in the region. Chapter 5 includes specific actions — studies, projects, policies and programs — the NJTPA will pursue in the next two decades to implement the RCIS.

The sheer cost of maintaining existing transportation facilities in a state of good repair is a fundamental and severe constraint on what the NJTPA can do to prepare for the future. The high cost stems from the age of many facilities, the heavy use they receive and the fact that repair and maintenance needs will continue to accrue every year. With only modest increases in funding likely to be realized over the next two decades, this plan, therefore, calls for the region to continue to dedicate the majority of available funding to maintenance and repair of existing facilities — roads, bridges and mass transit lines and vehicles.

The remaining funds can be used to enhance and expand the transportation network. Studies undertaken in the course of developing this plan identified dozens of places where measures can be taken to improve the safety and efficiency of the network. Redesigned intersections, new bus park-and-rides, traffic "calming" to promote walking and biking, facilities for separating trucks from passenger traffic, and more efficient railroad signal systems are among the improvements that will be the focus of further study and planning by the NJTPA and its member agencies. This plan also offers the prospect of using new technologies to improve traveler information and minimize disruptions on the road and transit network, among other objectives.

The most far-reaching recommendations in this plan are for strategic expansions to the network. The high cost of acquiring new rights-of-way and building new lanes, air quality issues, and environmental problems created by road expansion mean that little new capacity will be added to the road network; but the plan calls for allocating up to $13 billion for an array of rail transit improvements, including: a new rail tunnel under the Hudson River and new station under 34th Street in Midtown Manhattan (by 2015) and extending rail services geographically in measured steps over 25 years to open up new markets for transit services in the region. The plan also calls for implementing innovative travel systems — dedicated bus ways along congested corridors, passenger and freight ferries, new or upgraded freight rail lines, and new diesel technologies for commuter trains.

These plans for expanding and enhancing the system will enable the region to better accommodate and manage future travel demands. They will also help the region address the potentially serious environmental impacts of these demands by, for instance, shifting a greater share of travel — by both people and freight — from highways to less polluting rail modes. The important role for transit in helping the region prepare for the future — including providing travel alternatives that will help hold the growth of road congestion in check — is reflected in the NJTPA's commitment to continue allocating about half of yearly funding to maintaining, upgrading and expanding the bus and rail network.

This plan also endorses land use policies that will help fundamentally change the course of trends that impact transportation. Smart Growth initiatives promise to reduce both the volume and length of trips while giving people greater access to jobs, shopping and other destinations. Fulfilling Smart Growth goals requires retooling a broad set of policies at all levels of government including housing, zoning, taxes and others. Transportation polices must also play a role. This plans looks to limit transportation investments — particularly road expansions — that contribute to sprawl while supporting those that promote more compact, walkable and transit-friendly forms of development — such as revitalized districts around train stations. This vital connection between land use and transportation is discussed in Chapter 6.

With all these measures, attention will be given to seeing that the benefits and burdens of transportation investments are shared equitably among all communities and that essential travel is assured for those with special needs such as low-income residents, the disabled and the growing population of older persons. The region must also heed the lessons of the tragedy of September 11, 2001 by improving the safety, security and redundancy of the transportation network, even, in some cases, at the expense of the ease of travel.

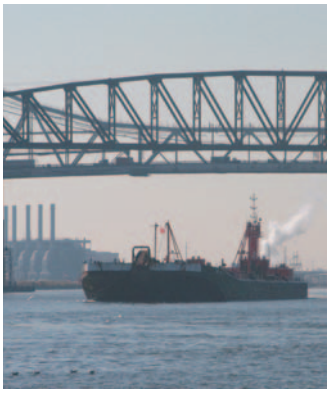
It is clear that the region faces a long and daunting list of needs and priorities it must attend to if it is to safeguard the future of its transportation system. Yet the region is fortunate in starting from a position of strength. Its extensive, multimodal transportation system — the legacy of New Jersey's centuries-long history of settlement and industrial development — offers untold opportunities and options for handling the demands of

future growth. Taking advantage of them will require substantial investments — but investments that are within reach of anticipated finances if these finances are put to use carefully and wisely. Guided by this plan in doing so, the region's citizens, businesses and public officials can take steps today to assure a continuation of northern New Jersey's extraordinary record of economic and social progress for many decades to come.

Chapter 2

Regional Context & Trends

Sean Vroom



Geography

Northern and Central New Jersey is a densely populated, geographically diverse region, home to more than 6.5 million people in 384 municipalities. It stretches over 120 miles from the New York border to the north to Great Bay at the southern tip of Ocean County. The Atlantic Ocean and Delaware and Hudson rivers also border the region. The presence of so many people and communities in this dense, tightly bound region wedged between New York City and Philadelphia presents a variety of challenges to the efficient movement of people and freight. Some key features of the region's transportation system are summarized in the box on the next page.

The greatest natural physical barriers to transportation infrastructure stem from the region's numerous waterways. The transportation system includes hundreds of bridges, especially numerous in coastal areas. In addition, extensive wetlands throughout the region constrain how and where roads and rail lines can be built or expanded due to added costs and environmental regulations.

While much of the region is developed — with a densely populated urban "core" in the northeast closest to Manhattan, surrounded by a ring of largely suburban areas — the

Bill Wittkop

View east from West Orange, Essex County

region still includes extensive open space, especially in the mostly rural southern and western counties. Efforts have been made to preserve the region's open space, notably with the enactment of development restrictions in the environmentally sensitive Pinelands, Highlands and Meadowlands districts.

All these factors combine to create a region in which it is particularly difficult and expensive to pursue new, large-scale infrastructure projects. It is a region where long range planning, such as that reflected in this document, is crucial to balancing competing needs and interests to achieve a sustainable future.

Population Growth

The 13-county NJTPA region has seen strong growth in population in recent years. In 1990, there were nearly 5.8 million people in the region. By 2005, that number had grown to more than 6.5 million. In keeping with historic decentralization trends seen throughout the United States, the outlying areas experienced the most rapid growth in population and development in recent years, while cities and older suburbs in and around the urban core absorbed immigrants and other new residents to help stave off declining populations.

Regional growth will continue at a steady pace over the next 25 years, with population reaching more than 7.6 million in 2030, an increase of nearly 16 percent (see Map 2-1). Growth rates are expected to continue to be most rapid in the southern and western counties, including Ocean, Sussex and Warren. But it is significant to note that all counties in the region are expected to grow. In terms of absolute growth, Ocean County is expected to add more people than any other county, but dense, urban Hudson County and geographically diverse Middlesex County also will see large increases in terms of actual numbers. This widespread growth that cuts across rural, suburban and urban areas throughout the region presents an ongoing set of transportation challenges in terms of both the increasing volume of travel and how it is distributed throughout the region.

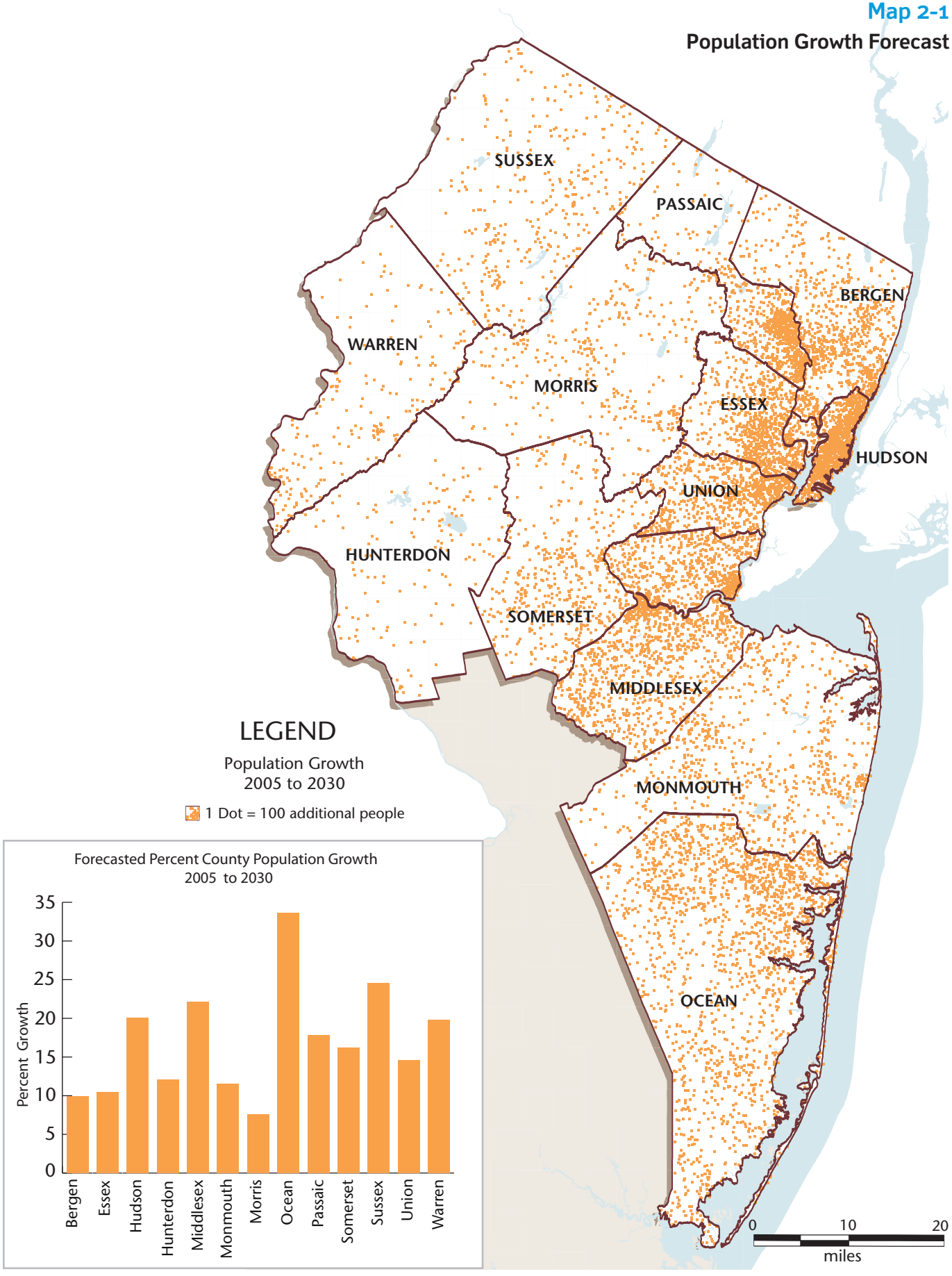
The Regional Transportation System

The region's transportation system is a vast and complex network of roads, bridges, rail lines and bus and ferry routes that work every day to move millions of people and thousands of tons of goods. Here are a few key facts that give an idea of the range and extent of the system:

- The region is home to 2,000 miles of freeways/expressways, 6,000 miles of arterial highways and 15,000 miles of county and local roads.
- NJ Transit provides some 250 bus routes throughout the region.
- NJ Transit's rail system in the region includes 10 lines, 150 stations and 390 miles of track.
- The 14-mile PATH commuter rail service connects Newark, Harrison, Kearny, Hoboken and Jersey City with Lower and Midtown Manhattan.
- There are nearly 58,000 park-and-ride spaces serving the region's NJ Transit rail stations and bus facilities.
- There are more than 4,700 bridges, of which 674 are currently rated structurally deficient, in the region.
- Four ferry operators run 18 passenger ferry routes linking New Jersey with New York City out of 14 facilities with a total of 37 slips.
- The region is home to the largest container port on the Atlantic seaboard, which also is the third largest in the U.S. and the 14th largest in the world.
- The 13-county region is served by extensive freight rail operations that in 2003 moved 25 million tons of goods in New Jersey.
- The region also is home to Newark Liberty International Airport, which handles about 700,000 tons of high value air cargo a year.
- The region has an extensive trucking industry that handles nearly 300 million tons of freight annually.

Map 2-1

Population Growth Forecast



Pt. Pleasant Beach, Ocean County

Dwight Hiscano

These impacts are discussed in detail in Chapter 6, Linking Land Use and Transportation.

Other demographic changes also will affect transportation. The region's population will grow older, with the average age increasing approximately 4 percent from 37.2 to 38.6. This will mean more middle-aged adults who do the most driving as well as more senior citizens with special transportation needs. This aging of the population, along with long term lifestyle trends, will result in smaller, more numerous households, adding to the number of regional trips. Overall, the number of households will increase by 23 percent from 2005 to 2030, a higher growth rate than that of the population.

Economic Growth: Trend Analysis

The region's economy expanded during the last decade and a half as well, with the number of jobs growing from 2.6 million in 1990 to nearly 3.1 million in 2005, an increase of more than 18 percent. The pharmaceutical, high-tech and financial services sectors were particularly strong. While the region, like the rest of the nation, saw a decline in jobs in 2000-2002 due to recession, by 2003 it was again adding employment and growing economically.

Between 1990 and 2000, the rate of job growth was most rapid in the counties in the western part of the region. Hunterdon's job growth rate between 1990 and 2000 was more than 50 percent, Somerset's was more than 42 percent, and Sussex saw an increase in jobs of more than 35 percent. The counties that showed losses or the lowest growth rates were predominantly urban and included Union (-5.1 percent), Passaic (-2.1 percent) and Essex (2.3 percent)

In terms of absolute numbers, the most jobs added in the 1990s were in counties with well-developed and expanding suburbs — particularly Bergen, Middlesex, Monmouth, Morris and Somerset. The one exception was Hudson County, which realized significant job gains as a result of its emergence as an alternative to increasingly expensive Manhattan, especially for "back office" operations in the financial and high-tech sectors.

Hudson County's proximity to Manhattan and its extensive transportation infrastructure — including NJ Transit commuter and light rail, PATH and bus and ferry service — all combine to give it a great deal of accessibility.

Employment Forecast

These trends are expected to continue over the next 25 years, with all counties realizing increased employment by 2030, bringing the region's total to nearly 3.8 million, an increase of more than 22 percent from 2005 (see map 2-2). The most rapid growth rates will occur in the western parts of the region, with the highest rates in Sussex and Hunterdon counties at 44 percent each. Hudson will continue to show a robust growth rate of 32 percent. Other counties with high rates of growth include Middlesex (29 percent), Monmouth (32 percent), Morris (21 percent), Ocean (23 percent) and Somerset (31 percent). Growth will be slower (but substantial in absolute terms) in the other counties, with Bergen and Union expected to grow at a rate of 13 percent and with Essex growing by about 11 percent.

As discussed later in this chapter, the ongoing growth of jobs outside the urban core area presents a variety of challenges for transportation investment in the region, including mounting congestion on road systems and difficulties in providing cost-effective transit services. Similarly, the strong job growth in the dense area of Hudson County presents different but equally daunting transportation challenges.

Job growth is not the only key indicator of the region's future economy. The roads, rails and ports of the region are among the busiest in the nation in terms of freight movement. The volume of traffic they handle is not only a function of the region's strong consumer demand and continuing (though declining) role in manufacturing but also its "gateway" function in handling goods traveling to and from the larger metropolitan region as well as northeastern states. This gateway function includes a growing number of warehouses in the region serving as multi-state distribution centers. Overall, the freight industry directly employs more than 484,000 workers in New Jersey, and goods shipped through the region's sea and airports alone are valued at more than $150 billion a year.

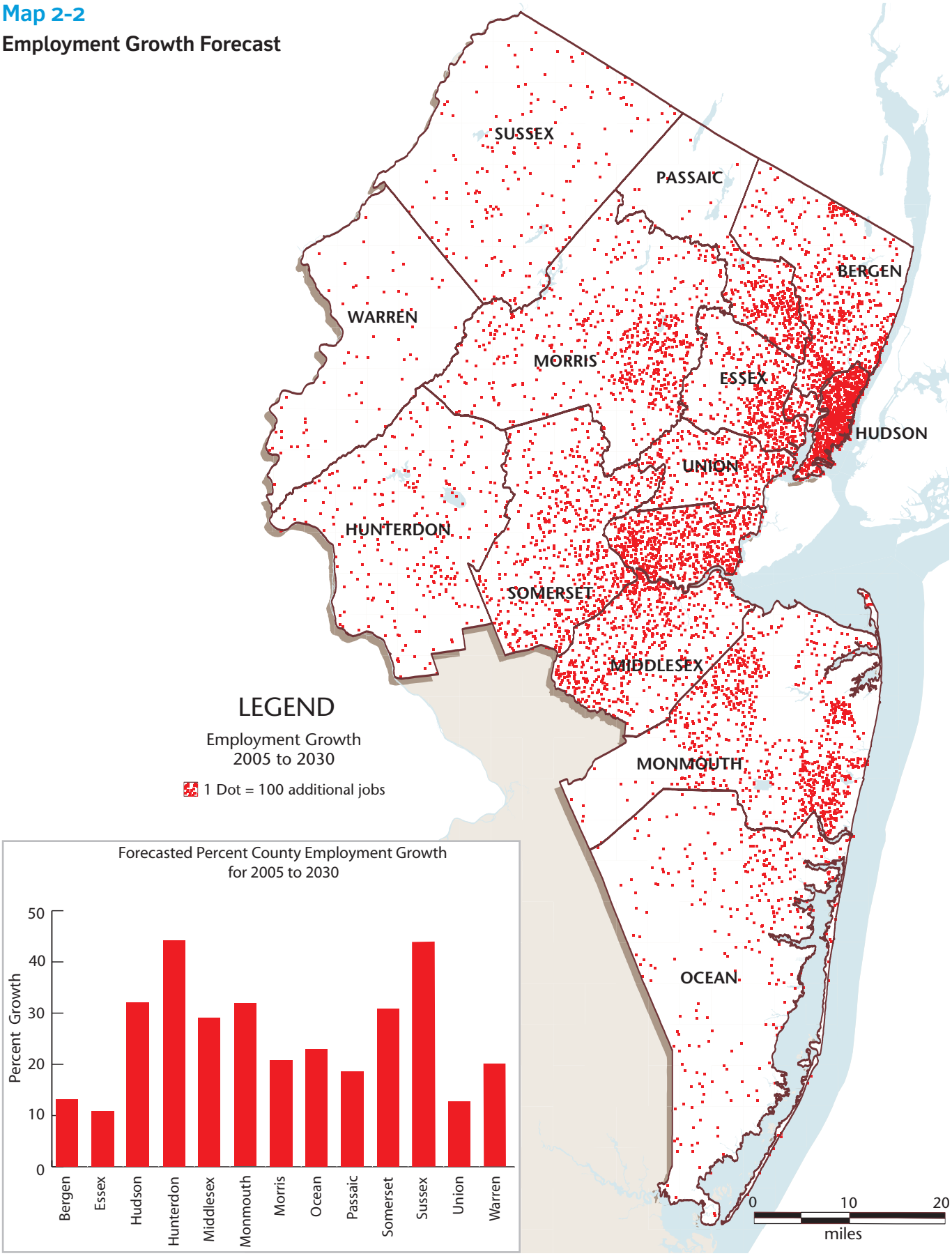
International shipping trends and continued economic growth are expected to lead to a surge in nearly all aspects of freight being transported to, from and through the region. As discussed later, this presents a great challenge, particularly for the road and rail networks.

Travel Behavior

The following are some key facts about travel in the NJTPA region:

- Eighty-five percent of commuters travel to work by car, with 74 percent of commuters driving alone and 11 percent carpooling with one or more people.
- Since 1999, drivers in the region have logged more miles, with the vehicle miles traveled (VMT) in the region showing a 2 percent increase each year despite a stable rate of auto ownership.
- More people have opted to use transit in recent years, with ridership growing 38 percent from 1991 to 2001. The share of work trips made by transit also increased during the 1990s, with 11 percent of the region's commuters traveling to work via transit. Two percent of non-work trips are made by transit.
- Travelers make 10 percent of non-work related trips by foot or bicycle, though only 4 percent of work trips are made by these nonmotorized modes.
- About 90 percent of all surface freight in the NJTPA region moves by truck, though rail alternatives are gaining ground, particularly as a means of transporting freight containers to and from the region's seaport.
- The ferry network serves approximately 35,000 trips per day between New Jersey and Manhattan.

Map 2-2
Employment Growth Forecast



Transportation Trends

Regional demographics and economic growth, as discussed above, are the key factors that influence how and where travel occurs in northern New Jersey. The expected changes in these factors — including the projected 16 percent increase in population, continued rapid job growth in outlying areas, and a surge of freight-generating economic development, among others — will create a variety of new and difficult challenges for the efficient operation of the regional transportation system.

The following sections provide an overview of the key transportation trends that the region expects to confront in the next 25 years. It provides a context for discussions later in this plan of how the region will invest in projects and programs to help accommodate, manage and shape transportation trends and future travel demand. In particular, the Regional Capital Investment Strategy (RCIS) presented in Chapter 4 includes principles and guidelines for this investment; specific planned investments are presented in Chapter 5, Implementation.

Any discussion of transportation trends must begin with an appreciation of the "baseline" of travel upon which future demand will grow. A few key dimensions of current travel are provided in the box "Travel Behavior"on p. 17.

More Travel to More Places

The volume of travel in northern and central New Jersey — by autos, trucks, trains, buses, bicycles, walking, ships and every other conceivable mode — will increase over the next 25 years, placing stress on all aspects of the transportation system.

The brunt of the increase will occur on the roads. Since 1999, vehicle miles traveled (VMT, a key measure of auto and truck use) has grown by 2 percent a year. People and businesses are making more trips over longer distances in large part due to the continued dispersion of destinations and development in outlying areas. This trend will continue. By 2030, VMT is projected to increase by 25 percent over current levels. This is a rate of increase of 1 percent a year.

Transit ridership — on buses, rail lines and ferries — also will grow. Transit use increased rapidly during the 1990s and, despite a lag after the attacks of September 11, 2001, continues to grow and still represents one of the highest levels of ridership in the nation. In coming decades, the NJTPA expects that the transit system will capture a greater share of travel, likely increasing from the current 11 percent of work commutes to at least 12-15 percent over the next 25 years. The extent to which the region can satisfy growing demands for transit, however, will depend on its success in enhancing and expanding the rail and bus system as advocated elsewhere in this plan.

The likelihood of significant increases in regional trips by residents and businesses — including escalating freight movement, as highlighted later — clearly represents a potential threat to mobility if measures are not taken to prepare for it. But it is important to note that it is also a sign of the region's vitality — more travel means more workers employed, more commerce being conducted, more visits to friends, more recreation and more of every activity that contributes to the region's attractiveness as a place to live. The intent of this plan is to facilitate and sustain regional growth and accompanying increased travel in beneficial ways.

Aging, Heavily Used Infrastructure

Much of the infrastructure in the NJTPA region is aging and heavily used, making repair, maintenance and preservation an ongoing challenge and one of the region's highest priorities. The forecasted increases in travel demand will add to infrastructure wear, making it all the more important that progress be made in reducing the current backlog of repair and maintenance projects.

In recent years, an emphasis on maintenance and repair before expansion — "fix it first," as it is known — has led to steady progress in addressing the backlog and in realizing improvements in the region's bridge and road conditions. This plan — through the Regional Capital Investment Strategy — continues this principle, allocating the majority of projected funding to repair and maintenance. Maintaining the system will require continued care in prioritizing and choosing projects each year.

For reasons of mobility and safety, bridges are a particularly important part of the system. The region has seen the condition of its bridges improve steadily in recent years. In 2003, 13 percent of the region's more than 4,700 bridges were structurally deficient, down from 27 percent in 1991. Nevertheless, many of the region's busiest and largest bridges are in need of expensive and extensive improvements, posing a significant challenge for the region. In addition, over the life of this plan, bridges will age and, eventually, more will deteriorate, adding to the bridge maintenance needs of the region.

Another key element of infrastructure that requires constant maintenance is the region's pavement system. The condition of road surfaces has improved since the early 1990s, but much work still remains to be done. As discussed later, more than 40 percent of pavement is considered deficient and will require attention.

Like the highway network, the system operated by NJ Transit requires substantial maintenance and repair. The system, including both light rail and commuter rail, has 741 bridges, 618 miles of track to maintain with 292 of these electrified, as well as 238 bus

Route 22, Union County

Dwight Hiscano

and rail stations. Most of this infrastructure is in the NJTPA region. Attending to these needs will continue to consume a large share of available transit funding.

This plan's commitment to achieving a state of good repair for existing infrastructure insures that the region's substantial transportation assets — and the level of access and mobility they provide — will provide a strong foundation for future regional growth and progress.

Auto Congestion

Congestion is a fact of life in the NJTPA region. However, the impacts of congestion and residents' expectations about it vary considerably depending on the location (see map 2-3). Travel delays that are considered "acceptable" in urban areas are likely be major obstacles to travel for residents in outlying areas. Rural residents need to travel at high speeds in order to access jobs and other opportunities, because destinations are located far apart. Urban residents, on the other hand, can access many jobs and other opportunities even under congested conditions as activities are clustered closer together. As discussed further in Chapter 3, congestion is projected to increase considerably over the next 25 years, though at a slower rate than previously.

In part, congestion is increasing because road capacity expansion could not keep pace with the growth in vehicle travel. The region's highways are carrying increasingly dense volumes of traffic. Yet, as discussed elsewhere in this plan, the region will severely limit expansions of road capacity for several reasons: federal air quality regulations, environmental issues, growth management concerns and the fact that the high cost of right-of-way acquisition has made such projects prohibitively expensive.

More fundamentally, there is a growing understanding that simply adding road capacity cannot "solve" the region's congestion problem. Adding new road capacity can encourage people to drive more ("induced demand") and can attract low-density, auto-oriented development ("sprawl"), ultimately leading to even more congestion. In the future, road expansions will be narrowly targeted to address known bottlenecks, and will be made in conjunction with strategies to promote alternatives to driving, Smart Growth land use policies and the application of Intelligent Transportation System (ITS) technology to increase the efficiency of road networks.

Promoting transit use as an alternative to driving is particularly important in reducing congestion. Currently the transit system takes hundreds of thousands of trips each day off the highway network — if it did not, congestion would be all the more crippling in many locations.

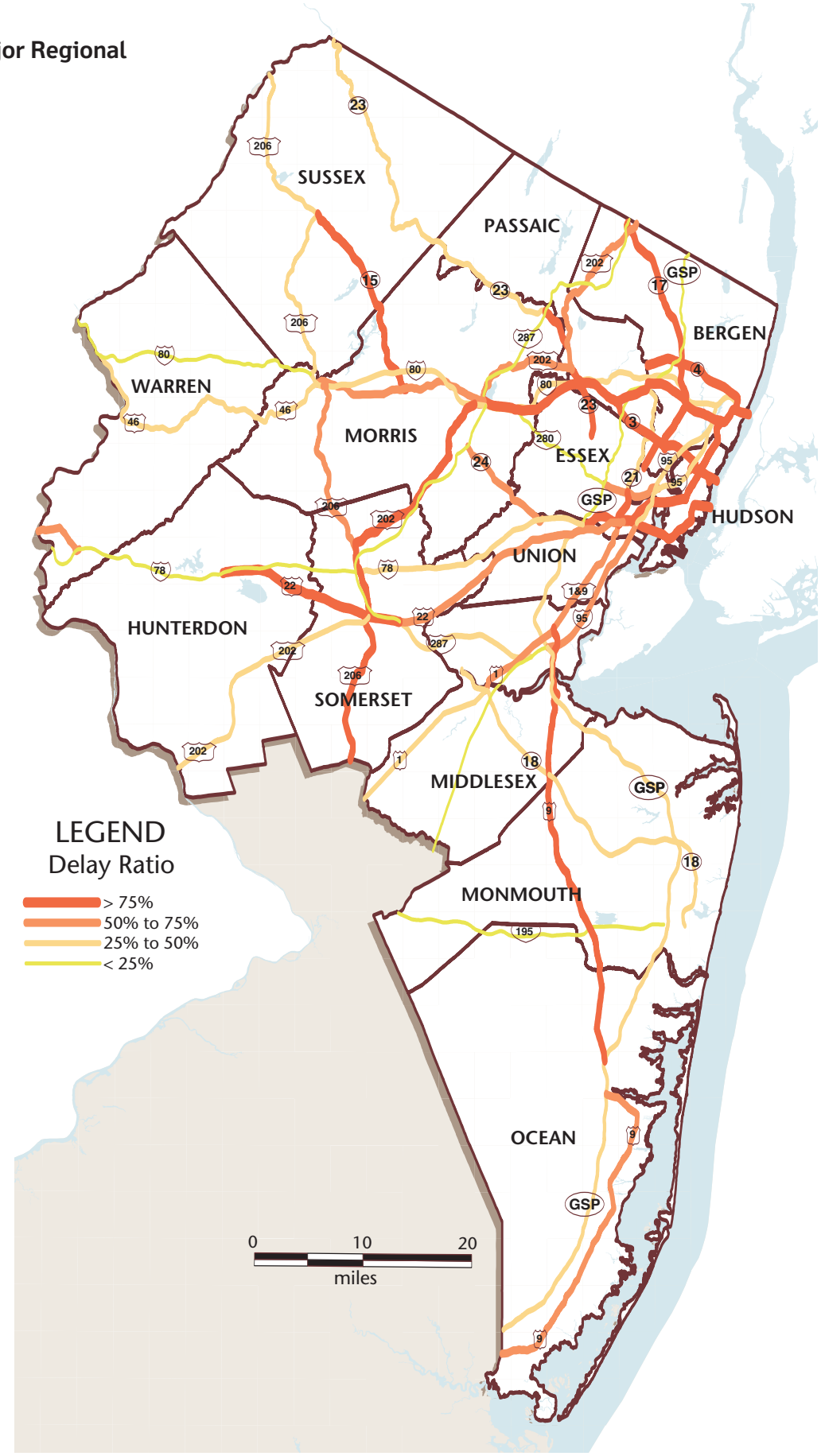
While much traffic delay is caused by sheer traffic volume, accidents and other unexpected incidents also are a major source of congestion (called non-recurring delay) and a great source of frustration for travelers. The NJTPA will pursue strategies such as ITS, incident management, and safety enhancements to reduce non-recurring delay as discussed in Chapter 5.

Auto Emissions

Transportation is essential to the region's economy and quality of life, but it also is a significant source of air pollution. Cars and trucks produce many pollutants, including nitrogen oxides and volatile organic compounds (which combine to form ground-level ozone), and carbon monoxide. These pollutants can have a variety of serious effects on human health, natural habitats and global climate.

Map 2-3

Congestion Delay on Major Regional Highways



Dwight Hiscano

Millburn station, Essex County

The NJTPA region has made great progress in reducing air pollution from cars, trucks and buses. From 1990 to 2001, auto emissions of carbon monoxide dropped by 41 percent, emissions of nitrogen oxides fell 28 percent and emissions of volatile organic compounds declined by 53 percent. Carbon monoxide levels in the region now meet national health standards.

Much of the recent drop in auto emissions can be attributed to improved vehicle technology, which should continue to benefit the region's air quality. The continuing effort to fund projects that promote mass transit alternatives to driving have also had an impact.

Even with these positive trends, the projected growth of regional travel means the region will still not meet federal air quality standards for many years. Measures to promote transit and address congestion and other impacts of growth in this plan should help limit negative air quality impacts. The NJTPA also will make investments specifically targeted to easing the pollution from transportation modes. These are discussed in Chapter 5, Implementation.

With these investments, the air quality in the NJTPA region is projected to meet national standards for ground level ozone by 2010. Carbon monoxide levels are expected to remain acceptable for the life of this plan. The complete analysis of future emissions is documented in this plan's air quality conformity determination, included as Appendix A.

Transit Ridership

The regional transit network, consisting of rail, bus and ferry facilities, provides a fast and reliable means of moving 860,000 travelers in the region each weekday. In doing so it adds a level of flexibility and redundancy to the transportation system that is matched by only a handful of other metropolitan regions across the nation. As noted above, the transit system is responsible for serving hundreds of thousands of trips each day that might otherwise be made on the region's congested highway networks. It also safeguards the region's air quality, provides essential travel to the disabled and those without cars and contributes to the quality of life enjoyed by the region's residents.

The transit system faces many challenges — not the least of which is financial, as dis-

cussed in Chapter 7 — but it has been remarkably effective. Ridership on buses, trains and ferries grew in northern New Jersey by 38 percent between 1991 and 2001 to 280 million annual rides. After a slump in the years following September 11, 2001, the growth resumed last year with a 4.4 percent increase. Growth is being experienced across almost all sectors and modes of NJ Transit's network.

A major inducement for this growth has been the ability of NJ Transit to give riders improved services and access to new destinations. While historically the rail system focused on serving Manhattan-bound commuters, increasingly it is providing travel options for reaching destinations within the state like the Jersey Shore, downtown Newark and the Hudson River Waterfront. Manhattan-bound commuters have also benefited with new rail connections that eliminate the need to transfer between trains.

The region's bus network, which serves two-thirds of transit passengers, provides an effective circulation system for communities, especially urban areas, and serves long-distance commutes from many areas. It has realized growing ridership. These and other successes have bolstered economic development in forms and locations that are sustainable and environmentally sound — including reviving business districts around bus and rail terminals.

Major projects such as the Hudson Bergen Light Rail and Secaucus Junction have been matched by a host of smaller and complementary system improvements — new parking decks, new shuttle bus services, new or upgraded stations, expanded bus park-and-rides, more frequent and increased express buses and trains, etc. These improvements have made transit more competitive with auto travel in terms of speed, convenience, price and reliability— especially for work commutes.

Much progress has been made but much, much more needs to be done. By 2030, population and employment growth in the region will boost demand for transit services — rail ridership is expected to more than double and bus ridership also will increase substantially depending on where and how the growth occurs. The region also will have an older population, with many citizens continuing to work — and commute — beyond traditional retirement age.

Meeting this expanding demand will require upgrading existing services, including adding new trains and buses. NJ Transit also must continue to seek new markets to serve. More than 80 percent of northern New Jersey residents who work in the Manhattan Central Business District (that is from south of 59th Street to the Battery) commute by transit. However, looking at all commutation, transit accounts for only about 11 percent of work commutes by NJ residents to all destinations — a share that nevertheless is one of the highest among metropolitan areas across the nation. The share is even lower when non-work trips — for shopping, recreation, school etc. — are considered. This reflects an historic orientation since the end of World War II for transit to be viewed primarily as a way to get to and from work.

Yet serving expanded markets, especially in the suburbs, can be difficult. These areas often lack the density of population and employment necessary to support cost-effective transit operations. Potential solutions include providing collection points for riders, such as regional park-and-rides, or shuttle bus services to pick-up and drop off travelers at dispersed sites. Speeding transit trips by providing buses with separate lanes or other means to escape road congestion also is important in attracting suburban riders.

This plan seeks to advance projects and policies that will put the state's transit system on

a solid financial footing to maintain and upgrade the existing bus and rail network, take advantage of opportunities to cultivate and serve new markets of transit riders and allow cost effective expansions of the system — including a new rail tunnel under the Hudson River — in measured steps over the next two decades. These and other recommendations are included in Chapter 5. Appendix I is an analysis of transit investment needs and issues in the region.

Freight Movement

All metropolitan areas experience significant volumes of freight movement, but the NJTPA region — hosting a major international seaport and airport, serving as the eastern terminus of the nation's east-west rail system, providing through routes for truck traffic moving between New York City/New England and the rest of the country, and being home to residents and businesses that consume and produce millions of tons of goods each year — experiences it to a far greater extent than most (see map 2-4).

This situation — which has evolved from a combination of geographic, demographic, and economic forces over the last 150 years — has both positive and negative aspects. On the positive side, goods movement is a major contributor to a successful regional economy, generating nearly half a million jobs associated with freight-related commerce and the region's freight "gateway" function, as noted previously. On the negative side, the region faces increased congestion and incidents associated with trucks, and conflicts between rail freight traffic and other activity. It also faces increased environmental impacts including noise, vibration, air emissions, wetlands impacts, community and neighborhood quality of life, etc.

The NJTPA's Freight System Performance Assessment study prepared for this plan (Appendix E) forecasts at least a doubling — and perhaps even a tripling — of freight demand over the next 25 years. Specifically:

- Marine Terminals: Container handling through the region's seaports will grow rapidly, and will triple (more or less) by the year 2030. Growth in non-containerized goods — that is, cargos like oil, cement, scrap metal, autos, etc. — will be modest by comparison.
- Rail: Containerized rail traffic will at least triple by the year 2030, while non-con-

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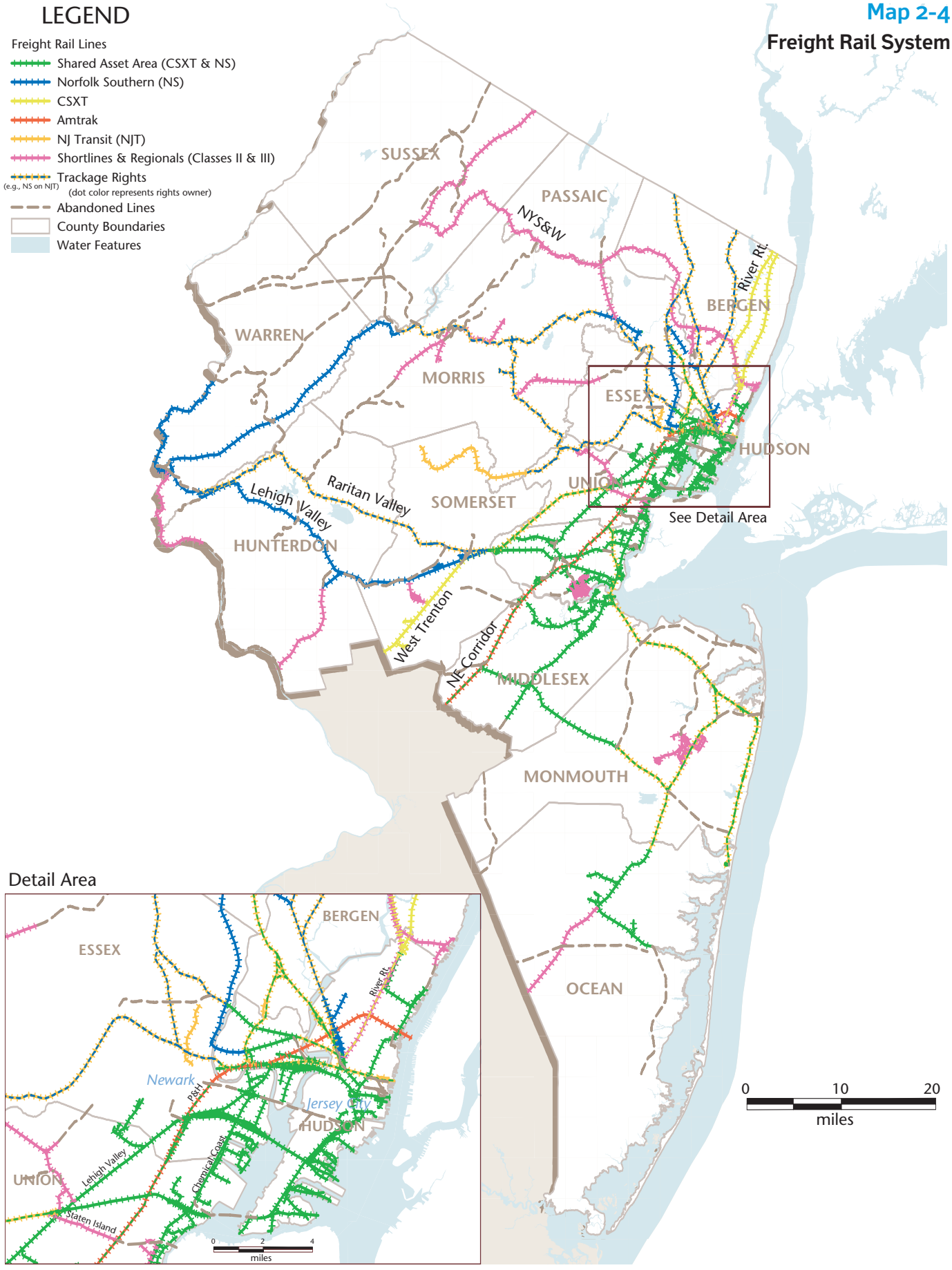
Port Newark-Elizabeth, Essex and Union Counties

Map 2-4
Freight Rail System



tainer rail traffic will double in that period.

- Highway: Container truck VMT will grow around two and one-half times and non-container trucking will double.
- Air cargo: Air cargo traffic will double by 2030. Air carriers are increasingly using trucking for domestic shipments, so this may also increase freight truck volume.
- Warehouse/distribution. Warehouse space demand in the NJTPA region is expected to double by 2030, to more than 1.3 billion square feet — a huge number by any measure.

This projected dramatic growth in freight movement could greatly compound road congestion and contribute to other negative freight impacts if not dealt with effectively. Solutions, such as promoting greater freight movement during off peak hours and shifting a greater share of goods movement to rail or waterborne modes, appear promising. These measures are discussed further in Chapter 5.

This plan includes recommendations — in the form of physical improvements, operational improvements, changes in business practices, new public policies and targeted transportation financing — to help minimize and mitigate negative impacts, while fostering the potentially vital economic benefits accompanying freight growth in the region.

Auto and Pedestrian Safety

There are nearly 250,000 motor vehicle crashes in the NJTPA region every year, including more than 400 fatal crashes — a fatality every 21 hours. More than 85,000 people are injured — one every six minutes — including more than 6,500 pedestrians. Clearly, transportation safety is a critical concern for the NJTPA region. In addition, the US Department of Transportation has named safety as its number one national priority.

The number of fatal crashes per year has remained roughly constant since 1994, despite growth in population and VMT, suggesting that the region's roadways are generally safer now than a decade ago. It is important to note that the region's most vulnerable travelers — pedestrians — are killed at a disproportionate rate. They accounted for 26 percent of the region's fatalities in 2002, even though walking accounts for less than 10 percent of all trips in the region.

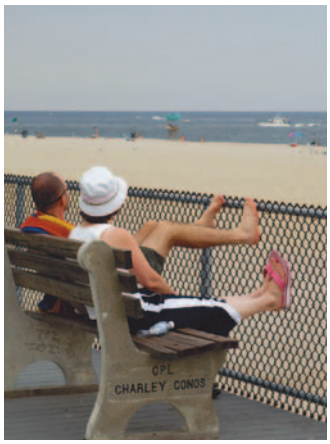
The number of fatal crashes in the region is expected to hold steady over the life of the plan, even as cars log more and more miles on the region's roads. Thus, the per capita rate of accidents will decline. Nevertheless, an increasing population and other factors will continue to make managing safety a challenge in the region. This is discussed further in the next chapter.

Based on a detailed study of safety issues in the NJTPA region (Appendix F), this plan offers a series of proposed improvements at specific locations. It also makes a commitment to "Safety Conscious Planning," which involves the integration of safety as a top priority in all phases of transportation planning and project development.

Chapter 3

Regional Transportation Needs

Dwight Hiscano



Trends in population, jobs and development are critical to understanding the transportation needs of the region. Needs represent how and where the transportation system should be performing better, that is, where it should be providing better service or where transportation facilities should be in better condition. This chapter focuses on specific, localized needs and discusses how they were identified throughout the region. Subsequent chapters will present this plan's approach to meeting the identified needs appropriately and cost-effectively.

In developing *Access & Mobility 2030*, the NJTPA has used a variety of tools to gauge and quantify the transportation needs of the region. In determining maintenance, repair and replacement needs, the NJTPA relies on infrastructure "management systems" overseen by the state. These systems track the condition of the region's road, bridge and transit networks, as well as key issues such as congestion and safety. Data from the management systems can be used to evaluate where needs are greatest.

Other emerging transportation needs are more difficult to quantify. In Chapter 2, this plan examined several transportation trends and issues confronting the region over the next 25 years. These challenges create needs that will manifest themselves in different ways throughout the region, their impact varying in each locality.

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Pulaski Skyway, Hudson and Essex Counties

To address this wide range of challenges, the NJTPA in 2002 carried out the Strategy Evaluation, an effort to assess localized transportation needs and issues throughout the region. This analysis looked at several measures of transportation performance in 158 districts to help identify where specific types of transportation strategies could prove effective. Most districts were groupings of census tracts representing about 50,000 residents each. Others were defined to allow a focus on places with special characteristics like urban cores, rural towns and shore communities.

In preparing this current plan, key aspects of this effort were refined and updated. This chapter highlights the results of the Strategy Evaluation and follow-up analysis, as well as information drawn from the various management systems, to provide insight into many of the key challenges confronting the NJTPA region. Additional information on specific project needs and issues in each of the NJTPA city and county subregions can be found in Appendix C. It summarizes the priority concerns identified by officials and staff in each subregion.

Strategy Evaluation Needs Analysis

The Strategy Evaluation analyzed eight aspects of transportation performance in each district, using the following categories:

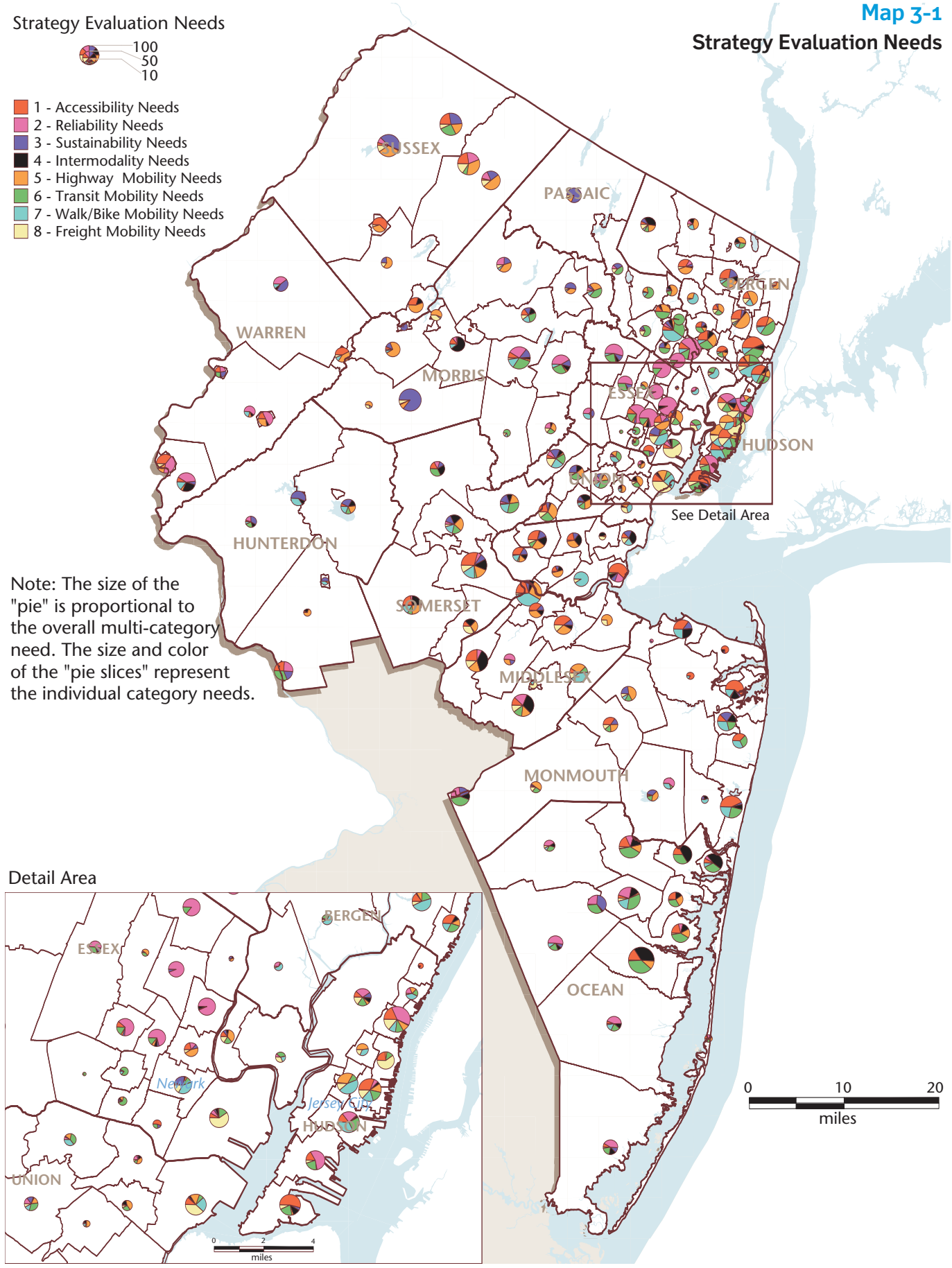
- Accessibility – Can travel destinations be reached?
- Reliability — Can the transportation system be counted on day in and day out?
- Sustainability — Can the transportation system maintain performance over time?
- Intermodality — Are different modes well connected?
- Highway Mobility — Can roads be traveled without delay?
- Transit Mobility — Can public transit be used without delay or crowding?
- Walk/Bike Mobility — Are walking and bicycling effective modes of travel?
- Freight Mobility — Can freight be moved without delay?

Performance measures and data were applied to each of these questions. To create a common framework, all measures were placed on 0-100 index scales, with a value of 100 representing the most favorable conditions. Forecasts were generated for the most part using the sophisticated computer travel models employed by the NJTPA, NJDOT and NJ Transit.

The performance measures were used to define local goals — specific performance targets in specific places to aim for over the life of this plan. The qualities described by the eight categories are all desirable, but not uniformly so across the region, which boasts immensely varied landscapes — dense urban and older suburban areas, growing suburban areas and suburban employment centers, and rural places where small towns, farms and forests dominate. Congestion means different things in these different places. For example, slow-moving traffic in an urban downtown allows pedestrians to stroll and shop and buses to stop safely for passengers. On the other hand, the same slow-moving traffic on a scenic rural byway would be completely "out of character" for such an area. So the established performance goals were set accordingly for the different types of areas in the region.

Further analysis and forecasting pointed to areas where the goals might not be met, revealing system performance needs in specific locations. Below is a brief overview of those identified needs throughout the region. The full body of identified accessibility and mobility needs is shown in Map 3-1. Further detail and a complete table of identified needs are included in Appendix K. It is important to note that through the needs identifi-

Map 3-1
Strategy Evaluation Needs



cation discussed here and the strategy selection described in Chapter 5, the Strategy Evaluation process represents many of the steps of the region's federally-mandated Congestion Management System.

Repair and Maintenance Needs

Given the maturity of so much of the region's transportation infrastructure, maintaining roads, bridges, rails and other facilities will continue to dominate the region's transportation spending for the next 25 years. Repair and maintenance must be the first order of business for the regional transportation system. Only when the region is assured that the existing system is in a state of good repair can we consider expansions or other improvements. The discussions that follow examine the extensive repair and maintenance needs of both the state and county road and bridge inventories.

Bridges

As discussed in Chapter 3, the region is home to more than 4,700 bridges, and 674 are currently rated structurally deficient. While not necessarily unsafe, these bridges have significant deterioration to warrant repair or replacement.

Traffic and weather continually contribute to deterioration of bridge decks and structures. When bridges reach 40-50 years old, they typically are due for major repair or replacement. Many bridges in northern New Jersey have reached or are approaching this age, reflecting the considerable number of bridges that were added in the 1950s and 1960s as the interstate system and other new roads that were built to support widespread growth and development. Statewide, NJDOT has estimated that 42 percent of all state, county and municipal bridges are 50 years old or greater. Compared to the average age of bridges nationwide, the New Jersey bridge population is nine years older. The result is that even with substantial funding directed at current bridge needs, the northern New Jersey region will face a continuing accrual of new bridge needs in coming years.

Bridges vary widely in size and cost of repair. An estimated two-thirds of bridges are small (under 10,000 square feet of bridge deck) and costs to repair or replace them typically range from hundreds of thousands of dollars to several million dollars. But the region has numerous larger bridges whose costs for repair or replacement typically run in the tens of millions of dollars. The largest of these bridges have price tags in the hundreds of millions of dollars. Addressing these "high cost" bridges is a great challenge given continuing funding limitations.

As detailed in Chapter 5, this plan foresees meeting all current and accruing bridge needs over the next 25 years, which could cost nearly $12 billion. This includes the existing 674 deficient bridges identified for rehabilitation or replacement; nine high cost bridges (totaling $1.5 million or more); and about 20 to 50 deficient bridges (depending on size) that are expected to be added each year, based on past trends.

Roads

New Jersey has the most intensively used roadways in the nation. On average, about 9,500 vehicles travel over each lane mile of state-operated highways each day compared with an average of 2,700 nationwide (the next highest states are California at 9,200, Massachusetts at 8,300 and Florida at 6,700). This results in constant need for mainte-

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Route 17, Bergen County

nance and preservation of the state's extensive road network, especially in the heavily populated and traveled northern New Jersey region.

A statewide Pavement Management Program, operated by NJDOT, seeks to stay on top of pavement needs, not only by filling potholes and repairing deteriorating surfaces but by repaving major routes on a regular schedule. The program recognizes that a dollar spent today on preventive treatments can save anywhere from $3 to $10 in future major reconstruction and extend pavement life by up to 10 years.

But the benefits are more than financial. Eliminating potholes and rough surfaces reduces wear and tear on vehicles and the need for costly repairs. Most importantly, these improvements result in safer roads.

The Pavement Management System assesses the needs of the region through an evaluation procedure that takes into account a Roughness Quality Index and a Surface Distress Index. These numbers, as well as how much traffic the road sees, are used to generate a ranking that determines how much rehabilitation is required to bring each section of highway up to standards for safe and functional pavement.

Some roads in the region require more than repaving. Each year numerous road reconstruction projects are undertaken that can involve excavating, grading and repairing road beds, widening shoulders, replacing curbs, improving drainage, adding signs and other improvements.

Even with $100 million or more invested in roadway maintenance and preservation each year, approximately 40 percent of the region's roadway mileage is deficient at any one

period of time due to continuing wear. A needs assessment prepared by NJDOT indicates that more than 10,400 lane miles of state roads and more than 20,400 lane miles of county roads will need to be paved or repaired over the next 25 years. That's more than the total 18,700 lane miles that comprise the network because some stretches will need to be repaired more than once over the life of this plan. As discussed in the implementation section, the region expects to moderately reduce the amount of deficient road surface in the region by 2030.

Accessibility

Accessibility is defined as the number of opportunities (such as jobs, shopping, etc.) that can be reached from a given location within a given amount of travel time by auto, transit, or non-motorized modes. It is a measure of the range of possibilities available to travelers. An effective transportation system should provide its users with a high level of accessibility.

Accessibility in the Region: The region's existing highway system provides a tremendous level of job accessibility. Urban areas have higher accessibility than rural areas. A resident of Essex County can access 4.7 million jobs within a 60 minute drive from home, while a resident of Sussex County can access only 300,000 jobs.

The region's highway system provides a higher level of accessibility than its transit system (see map 3-2). On average, a resident of the NJTPA region can access more than three million jobs within a 60 minute drive, but fewer than 650,000 jobs within a 60 minute transit trip. Transit does provide good accessibility in certain areas of the region — particularly in Hudson and Essex counties and along major rail lines. In those areas, transit is widely used. Many residents choose to live in areas served by transit because of benefits of commuting by bus and rail, including cost savings, reduced stress and other factors.

Overall, accessibility to jobs is expected to increase throughout the region in the coming decades. By 2030, the number of jobs within reach of the average resident will increase by 17 percent. The number of workers accessible to the average employer will go up 10 percent. Improvements in accessibility will result from the region's growth and increasing population and employment density, as well as transportation investment to improve connections between residents, employers, and other destinations.

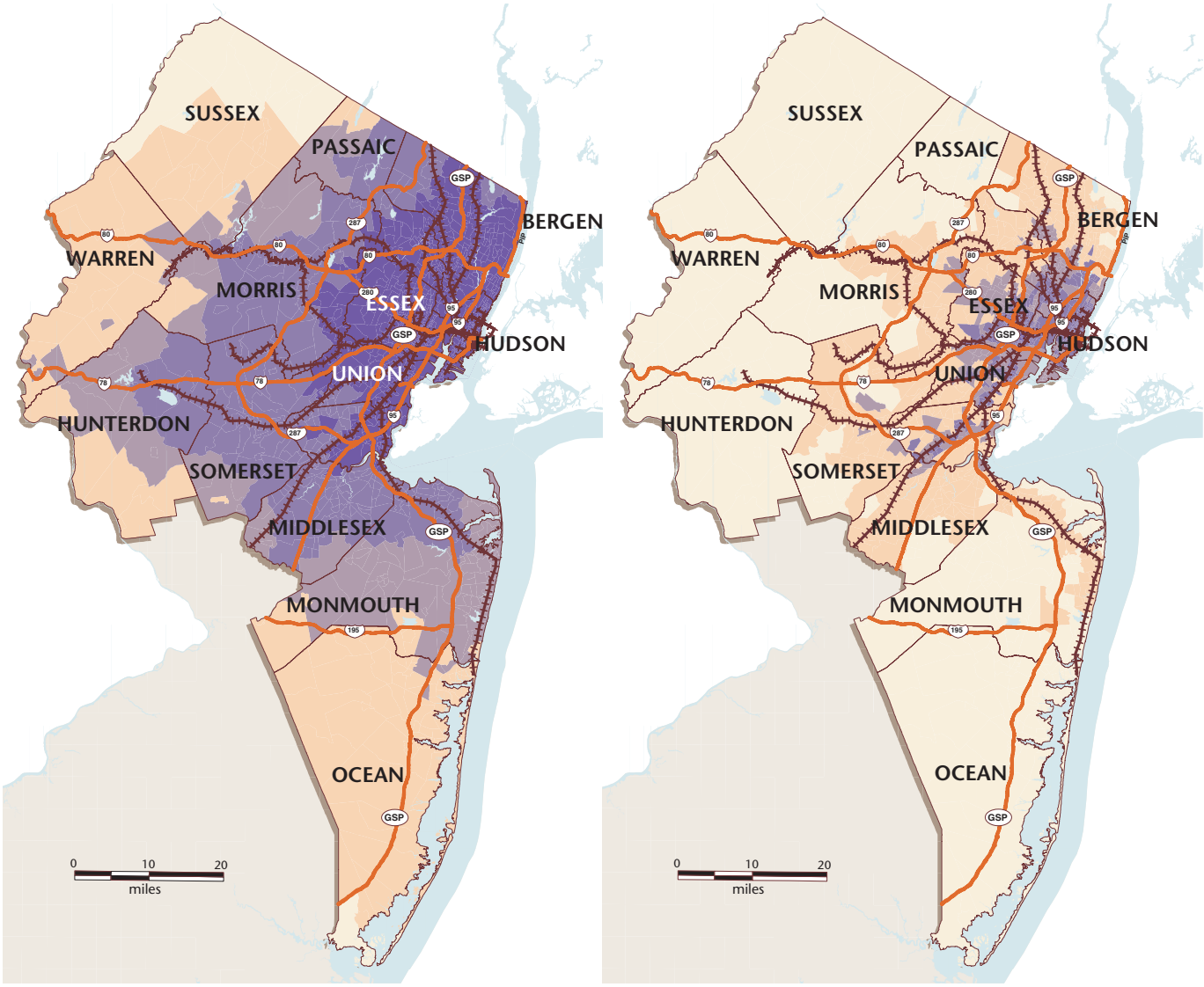
Places with the Greatest Needs: Rural areas are generally less accessible than urban areas, because they are located at the farthest reaches of the region and have limited transporta-

Accessibility Example

An example of an area in the region with unacceptably low accessibility is Little Egg Harbor in Ocean County. Communities along the bay in southern Ocean County have grown substantially in recent years. The traditional travel corridors – Route 9 and the Garden State Parkway – experience chronic congestion at numerous locations, making it difficult to access employment centers and other key areas within an acceptable timeframe.

In response to this need, the region is conducting the Route 9 Corridor Integrated Land Use/Transportation Study, led by NJDOT. The study includes a long-term visioning exercise for the corridor, though it also will lead to interim improvements to enhance safety and operations on the route. It also includes longer term highway improvements and bicycle and pedestrian improvements.

Related efforts in the vicinity include improvements at Garden State Parkway Interchange 67, the intersection of Route 166 at Route 37, Mule Road and Route 72 at Ship Bottom, as well the Ocean County Bike Trail improvement and the extensive Route 72 Manahawkin Bay Bridge Rehabilitation and Expansion.



Jobs Accessible in 60 Minutes by Highway

Jobs Accessible in 60 Minutes by Transit

LEGEND

- Interstates/Toll Roads
- Passenger Train Lines
- County Boundaries
- Water Features

Number of Jobs Accessible
Within 60 Minutes by Highway or Transit

- 3,000,000 to 5,000,000
- 1,000,000 to 3,000,000
- 500,000 to 1,000,000
- 100,000 to 500,000
- 0 to 100,000

Map 3-2
Accessibility to Jobs

tion connections to major activity centers. However, many residents of these areas prefer to maintain the rural character of their communities rather than enhance transportation access and encourage sprawl. Some urban and dense suburban areas also have accessibility needs. Roadway congestion may limit access to nearby destinations, and transit service may be inadequate.

The complete list of accessibility needs identified through the Strategy Evaluation can be found in Appendix K.

Summit, Union County

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Reliability

Perhaps the most frustrating delays for travelers are those stemming from incidents, such as crashes, vehicle breakdowns, road repair work, and inclement weather. These incidents occur sporadically, and often without warning, so the resulting delays are difficult for travelers to predict.

Reliability in the Region: In the NJTPA region, roadway incidents result in more than 100,000 unanticipated vehicle-hours of delay, daily. Of course, because incidents occur sporadically, incident delay varies widely from day to day. This so-called non-recurring delay is forecasted to increase dramatically in the region by 2030 (see the "Highway Mobility" section below for more information on *recurring* delay due to volume in the region).

Incident delay amounts to approximately 10 percent of the total time motorists lose to congestion, but is likely a much greater percent of their frustration. Unlike other forms of

Reliability Example

The Garden State Parkway/Route 21 Corridor between Newark and Clifton is an example of an area with particularly poor reliability. In this area, several county routes have high crash rates. These accidents cause a great deal of unanticipated road congestion, affecting reliability in various locations throughout the area. A minor incident can result in significant delay on these roads, because they already are so congested.

To address this need, this plan calls for a study of safety needs on arterials leading to the Garden State Parkway, from Exit 148 to Exit 151, with the objective of reducing high crash rates. Arterials to be considered include Belleville, Bloomfield and Watchung avenues. This study was recommended in the Strategy Refinement analysis (see Chapter 5 and Appendix G for more details on this effort).

Related efforts in the vicinity include realignment of the Route 21/Route 3 interchange to improve safety and upgrades to the Main and Bergen commuter rail lines

congestion, travelers cannot easily take these delays into account when planning their trips. Equally important, delay caused by incidents can hamper medical, fire and police assistance to those in need. Roadway incidents also affect the transit system by causing bus delays. Strategies such as deployment of Intelligent Transportation Systems (ITS), incident management and improved safety all can help reduce non-recurring delay on the region's roadways.

The rail network, in general, is more reliable. On-time performance for NJ Transit services exceeds 90 percent for rail routes and 85 percent for bus routes serving Manhattan. But rail infrastructure can become congested as well. Mechanical problems and passenger-related incidents can cause delays on all modes of transit. Unreliable transit service can be especially problematic because riders often need to transfer between transit routes to complete their trips. An unexpected delay on one route can result in a missed connection and a disrupted journey.

Redundant transportation systems improve reliability by providing alternatives in the event of an incident, whether it is a major multi-vehicle accident on a regional roadway or even a terrorist attack. Rail transit provides important redundancy to the highway system, and different transit modes provide redundancy to each other. The value of redundancy was seen in the aftermath of the September 11, 2001 terrorist attacks. While the PATH system was disrupted, thousands of daily riders were able to use NJ Transit commuter rail and ferries as an alternative means of accessing Manhattan.

NJDOT is working with the counties to develop county-wide diversion plans for all state highways. These are distributed to local police departments so that everyone knows what the detour plan is in the event of an incident or emergency and can quickly and safely redirect traffic.

Places with the Greatest Needs: Congested urban areas, particularly those traversed by major highways, have the greatest reliability needs. Incidents occur frequently in these areas, and incidents result in severe delays because transportation systems operate close to capacity even under normal conditions. Many important routes in these areas also lack useable shoulders, making it difficult for EMS and police to reach incidents. Reliability needs throughout the region are identified in Appendix K.

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Clifton, Passaic County

Intermodality Example

One part of the region with significant intermodality needs is the South Brunswick/Cranbury area in Middlesex County. In this low to moderate density area, Route 1 experiences significant traffic congestion. The Route 1 Bus Rapid Transit (BRT) Study, to be completed in 2005, arose from the ongoing efforts of the Central Jersey Transportation Forum, a group consisting of stakeholders, public officials and staff of relevant transportation agencies. The study area covers two townships in southern Middlesex County as well as several in Mercer County.

The study, which is supported by this plan, would add new bus service to reach previously unserved customers with new routes, major extensions of existing routes and/or upgrades in service. A terminal is proposed at the intersection of US 1 and I-295 in Lawrence Township, with shuttle connections from outlying park and ride lots. The routes would serve existing and growing employment and shopping destinations, as well as the increasing residential developments on both sides of US 1 in the two counties. A related integrated transportation and land use study will examine existing land use and the need for increased residential densities to complement the enormous office/commercial floor space in the corridor and to support the BRT service.

Related efforts in the vicinity include the US Route 1 Smart Growth Study, Trenton to New Brunswick, the Penn's Neck bridge improvement project, NJ 92 improvements, and a proposed Transit Village at Princeton Junction.

Intermodality

An efficient, coordinated transportation system depends on effective connections between travel modes. Functioning intermodal connections provide options for travelers, making a variety of methods of travel feasible. Fixed route bus and rail transit, in particular, depends highly on the quality of such connectivity. Virtually all transit trips begin with another mode – on foot, by car, from another transit line, or by bicycle.

Intermodality in the Region: There are more than 60,000 park-and-ride spaces at NJ Transit rail stations and bus facilities. Usage rates vary by transit line, and parking lots at some transit stations operate at 100 percent of capacity.

Even where occupancy rates are below 100 percent, there may be significant waiting lists for parking permits. NJ Transit is working to address the issues, seeking to add 20,000 parking spaces throughout the system over the next several years. Since 2001, more than 7,000 have been added, including a 1,300 space parking deck at the newly constructed train station in Ramsey, 1,500 parking spaces at the Station at Montclair State University in Little Falls and a 480-space parking facility on the Raritan Valley Line in Union. Still, limited capacity at park-and-ride facilities remains an issue to be addressed. In addition to adding new park-and-ride spaces, promoting other means of access to transit (walking, biking, feeder buses) will help to relieve the demand for such spaces. Transit-oriented development (as discussed in Chapter 6) will enable more commuters to live within walking distance of transit stations.

Places with the Greatest Needs: The highest intermodality needs are typically found in populated suburban areas that lack convenient access to rail transit. Appendix K provides a full list of intermodality needs identified through the Strategy Evaluation.

Highway Mobility

Mobility on highways depends on a well-connected road network and on flowing traffic conditions. Congestion hinders travel and frustrates travelers. The principal cost of congestion is time lost or wasted for individuals and businesses. In effect, this hampered

mobility limits travelers' access to jobs and other opportunities available within a given travel time.

Highway Mobility in the Region: Congestion is a fact of life in the NJPTA region and is projected to increase significantly over the next 25 years. Congestion on the region's busiest roadways — arterials and freeways — will increase dramatically as outlined in Chapter 3. Overall, congestion will increase by as much as 50 percent by 2030. It is important to note, however, that much of this increase is expected to occur in outlying areas that are currently relatively uncongested. Perhaps most importantly, average travel times will not increase dramatically and accessibility offered by the highway system actually will increase by 10 percent.

Travel forecasts show that congestion will increase throughout the region, but certain areas will experience more dramatic growth than others. For example:

- From 2005 to 2030, the greatest percentage increases will occur in Hunterdon and Sussex counties — where current levels of congestion are relatively low. This increase is expected to stem from rapid population and employment growth in these counties. Despite the sharp *rates* of increase, these counties are projected to remain relatively uncongested.
- Large percentage increases in delay also will occur in Middlesex and Somerset counties. Middlesex will experience the greatest increase in absolute hours of delay. These counties are home to well-established and growing population and employment centers, but have relatively sparse road networks.
- Hudson County — by all measures the most congested county as of 2005 — also will see a large increase in absolute hours of delay from the present until 2030. While of significant concern, this congestion may be less of a problem for county residents due to the availability of transit alternatives.

Also of note is the fact that arterial roadways experience the greatest congestion. Arterials, such as US 1, US 9, US 22 and NJ 17, handle a mix of local and long-distance traffic while providing direct access to commercial development. This requires driveways and signalized, at-grade intersections, causing an obvious conflict with through traffic. Congestion

Highway Mobility Example

New Brunswick and Old Bridge experience highway mobility needs relating to recurring traffic delays on Route 18 between Route 1 and the NJ Turnpike. This stretch of Route 18 experiences chronic congestion at numerous locations, making it difficult to reach employment centers and major activity centers within an acceptable timeframe. Mobility through the area is hindered by excessive volumes of traffic entering and exiting the NJ Turnpike. Intersections and interchanges exceed their capacity during peak hours.

This has led to the initial development of several proposed improvements. Certain traffic movements – particularly Route 1 south to Route 18 north, Route 1 north to Route 18 north, and Route 1 south to Route 1 north via the Route 18 south ramp – will be re-examined to determine how ramp capacity can be enhanced. Additionally, a traffic signal at Route 18 and Naricon Place is often a major contributing factor to long delays and back-ups. There is significant traffic that enters and leaves Route 18 to and from the Town Center and NJ Turnpike Park and Ride facility which provides transit service to New York. Ultimately, a grade-separated interchange at this location would ease congestion and improve the overall level of service and safety along the heavily congested Route 18 corridor in East Brunswick.

Related efforts in the vicinity include widening and improvements to Route 18, the Route 1 corridor study in South Brunswick, the Route 1 Bus Rapid Transit effort and New Brunswick bike trail improvements.

on arterials can be relieved somewhat with localized intersection improvements and by limiting or redesigning commercial development – and thus the number of driveways — along them. Regional arterials will be a focus for NJTPA planning efforts to relieve congestion, as discussed in Chapter 5.

As noted previously, roadway congestion is not necessarily a bad thing. Congestion in urban areas is a sign of economic vitality and can be conducive to pedestrian-friendly, mixed-use development. Congested areas also have fewer accident fatalities due to slower speeds.

Places with the Greatest Needs: In addition to the areas mentioned above, highway mobility needs are greatest in areas adjacent to major east-west and north-south highway arteries. Highway mobility needs also are high in congested urban areas. Reflecting different expectations about levels of congestion in different places, some rural areas also have significant highway mobility needs.

Highway mobility needs identified in the Strategy Evaluation are listed in Appendix K.

Transit Mobility

Mobility on the region's transit system depends on the availability of fast, frequent, and direct service to major regional destinations. Many areas of the region lack the density to support frequent transit service. Other hindrances to transit mobility include traffic congestion affecting buses, the lack of capacity on rail lines, and the need to change trains or buses en-route.

Transit Mobility in the Region: Eleven percent of the region's commuters travel to work by transit — a relatively small share but one of the highest shares among metropolitan areas across the nation. The dense urban counties closest to New York City have higher rates of transit use by commuters: 34 percent in Hudson County and 19 percent in Essex County.

When it comes to non-work trips, transit usage is even lower, with residents of the region using transit for only 2 percent of all such trips. Again, Hudson County is notably higher, with transit used for 12 percent of non-work trips. This reflects the historic orientation after World War II for transit to be viewed primarily as an alternative mode to get to and from work.

Transit Mobility Example

With passenger rail service lacking in Ocean County and the western region of Monmouth County, those areas represent an important example of high transit mobility needs. Previous studies have proposed enhanced bus service along the Route 9 corridor to solve this need, but increasing traffic congestion on this arterial contributes to long delays for bus commuters.

This has led to consideration of a major new transit line serving parts of Ocean and Monmouth counties. There are three existing freight rail rights-of-way connecting Lakehurst to the North Jersey Coast Line in Red Bank or Matawan and to the Northeast Corridor Line in Monmouth Junction.

The proposed Monmouth-Ocean-Middlesex rail line aims to provide transit service to areas with none or with extensive unmet demand. The three proposed alternative routes would provide residents of central Ocean County with an alternative to driving to Newark, New York City and other centers in the region. Service would run on the existing rights-of-way with rebuilt rail bed, station stops, parking lots and new bridge structures. The equipment would include diesel locomotives and new or renovated coach cars. The Environmental Impact Statement is scheduled to be completed this year, and the preferred alternative is expected to be selected in 2006.

Michael Rosenthal/ NJ Transit

Union Station, Union County

It is important to note, though, that transit service to shopping, schools, health care facilities and other non-work destinations fills an important niche. Many of the region's low-income, elderly and disabled residents depend on transit for access to these places and activities. In fact, in the NJTPA region, 42 percent of households earning less than $15,000 per year do not own a car, and must rely largely on transit for access to jobs and other activities. It should also be noted that a host of measures recommended elsewhere in this plan — including programs to promote Transit Oriented Development, expanding bus and rail services, creating new park and rides, and others — will lead to a more robust and central role for transit in serving all types of trips over the next 25 years.

Ferry services provide an important adjunct to the region's mass transit system, giving about 35,000 commuters each day a more convenient and faster travel alternative to bus and rail travel — though at a higher price. There are six owner/operators of passenger ferries in the NJTPA region, serving 14 locations on both sides of the Hudson. As noted previously, following the attacks of September 11, 2001, ferry services showed how effectively they provide redundancy to the transit network and other Hudson River crossings.

In recognition of their continued importance, ferries have received public support for their capital needs, including access roads, terminal buildings and docks. In addition, transit routes have been scheduled and designed to provide feeder services to ferries in some areas.

Places with the greatest needs: Rural areas typically have little or no transit mobility. This is to be expected, however, because most rural areas lack the density to support traditional transit service. Suburban areas in the heart of Ocean County have particularly high transit mobility needs. These areas have no rail service nearby, and existing bus service on Route 9 is subject to congestion-related delays. The region's urban areas already have rich transit service, but these areas may still have transit mobility needs because heavy congestion can cause delays to bus service.

Numerous locations along the NJTPA region's coastline and extensive waterways offer the potential for future ferry services. In the near term, the Federal Transit Administration has awarded Union County a $9.5 million grant to establish ferry service between Elizabeth

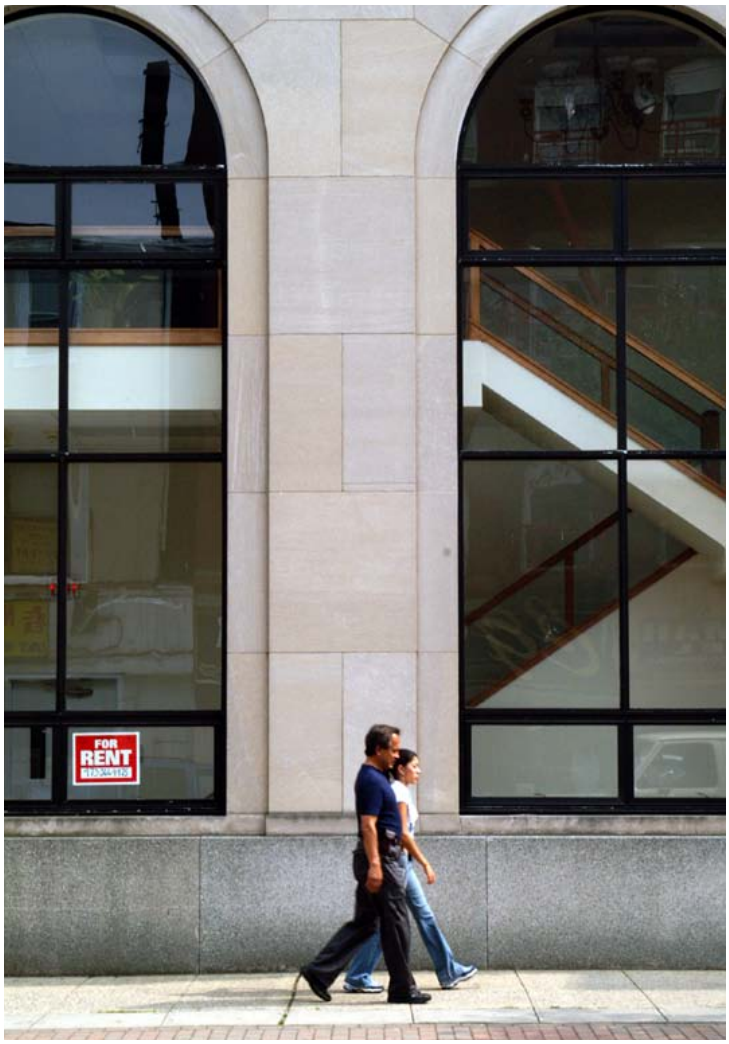
and lower Manhattan. In addition, the Port Authority is funding development of a ferry terminal in Edgewater, which is currently going through the permitting process. Other locations, including Perth Amboy and Long Branch, are under consideration for future services. Over the long-term, innovative services, such as water taxis operated along inland waterways, should be explored. Appendix K notes the full range of transit mobility needs analyzed in the Strategy Evaluation.

Walk/Bike Mobility

Walking and bicycling can be extremely viable, healthy, inexpensive, and community- and environmentally-friendly modes of travel for shorter trips. For this to be the case, however, facilities like sidewalks, shoulders and bikeways must exist, traffic must be "calm" and manageable, and destinations must be relatively close.

Walk/Bike Mobility needs may also be intimately connected to safety concerns. For instance, many transit-dependent employees have difficulty walking to jobs along busy Route 22 in Union County and there is a need for safe routes for bicycle commuters to jobs, school, and transit service in New Brunswick.

Walk/Bike Mobility in the Region: While only 4 percent of work trips are made on foot or by bicycle region-wide, 10 percent of non-work trips are accomplished without motorized travel. This varies widely around the region: From a high of 9 percent of work and 31 per-



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Walk/Bike Mobility Example

The congested section of Route 22 through the municipalities of Springfield, Union and Kenilworth in Union County is almost completely auto-oriented, presenting a dangerous challenge to pedestrians seeking to access the numerous businesses there. Part of the problem is the configuration of the corridor, with businesses located on both sides as well as within a strip between the north and south roadways. Between Springfield Avenue and Fairway Drive, there is no safe or legal way to cross Route 22.

A project is being developed to address the situation, providing for safe pedestrian and bicycle movements. This project aims to support overall mobility and safety; reduce the conflicts between vehicles and pedestrians without adding to the congestion on Route 22; and encourage further use of public transportation services along this corridor. It will be coordinated with the land uses in the corridor. In the short term, improvements will include overpasses and pedestrian bridges at four critical points, pedestrian actuated signals, sidewalks, crosswalks, U-Turn modifications, driveway modifications, bus turnouts at selected locations, bus stops, shelters and transit related improvements. A long-term improvement plan will be needed to resolve many of these issues.

Related efforts in the vicinity: Additional roadway and intersection improvements are being investigated along Route 22 east and west of the project area discussed above.

cent of non-work trips in Hudson County to only 2 percent of work and 4 percent of non-work trips in Hunterdon and Somerset Counties.

Places with the Greatest Needs: Walk/bike mobility needs are concentrated in suburban and urban areas of the region, where demand for non-motorized travel is high, but pedestrian/bicycle compatibility is not ideal. Shore communities also have significant needs due to demographic patterns and the recreational nature of many trips in these areas. Walk/bike mobility needs are widespread throughout the region; those identified in the Strategy Evaluation regionally are listed in Appendix K.

Freight Mobility

Effective goods movement is essential to the northern New Jersey economy and supports the quality-of-life enjoyed by residents. Highway congestion experienced by trucks, freight-intermodal transfer effectiveness, port and ship access, and the viability of rail freight transport are preeminent issues impacting on freight mobility. In 2005, the NJTPA completed an extensive and detailed Freight System Performance Assessment Study, an in-depth examination of the current and future needs of the region's goods movement network that was a follow-up to the broader analysis of the Strategy Evaluation. The information below originated in that study, which has been included in the plan as Appendix E.

Freight Mobility in the Region: Freight traffic in the NJTPA region is growing rapidly and is expected to continue to do so, as discussed in Chapter 3. Approximately 80 percent of all freight in the NJTPA region moves by truck, but rail alternatives are gaining ground. Intermodal freight transfers between sea and rail increased nearly tenfold from 1991 to 2003. Truck traffic in the region is expected to increase by roughly 80 percent by 2030 (see Map 3-3).

Places with the Greatest Needs: The NJTPA Freight System Performance Assessment Study of 2005 (Appendix E) looked at current and projected freight volumes by the various modes — truck, marine, rail and air — to determine which parts of the transportation network are currently most impacted by freight movement. The study also projected which addi-

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tional segments may experience greater use as the volume of freight passing through the region continues to grow over the next 25 years.

Regional Truck Freight Needs: The network segments with the greatest numbers of trucks (more than 180 per hour) during peak period use are:

- NJ Turnpike (Bergen, Hudson, Essex, Union and Middlesex counties)
- I-78 west of NJ Turnpike (Essex, Union, Somerset, Hunterdon and Warren counties)
- I-80 west of George Washington Bridge (Bergen, Passaic, Morris & Warren counties)
- I-287 from I-80 to the NY state line (Somerset, Morris, Passaic and Bergen counties)
- NJ 3/NJ 495 (Hudson and Bergen counties)
- NJ 17 (Bergen County)
- NJ 440 (Hudson County)

Freight Mobility Example

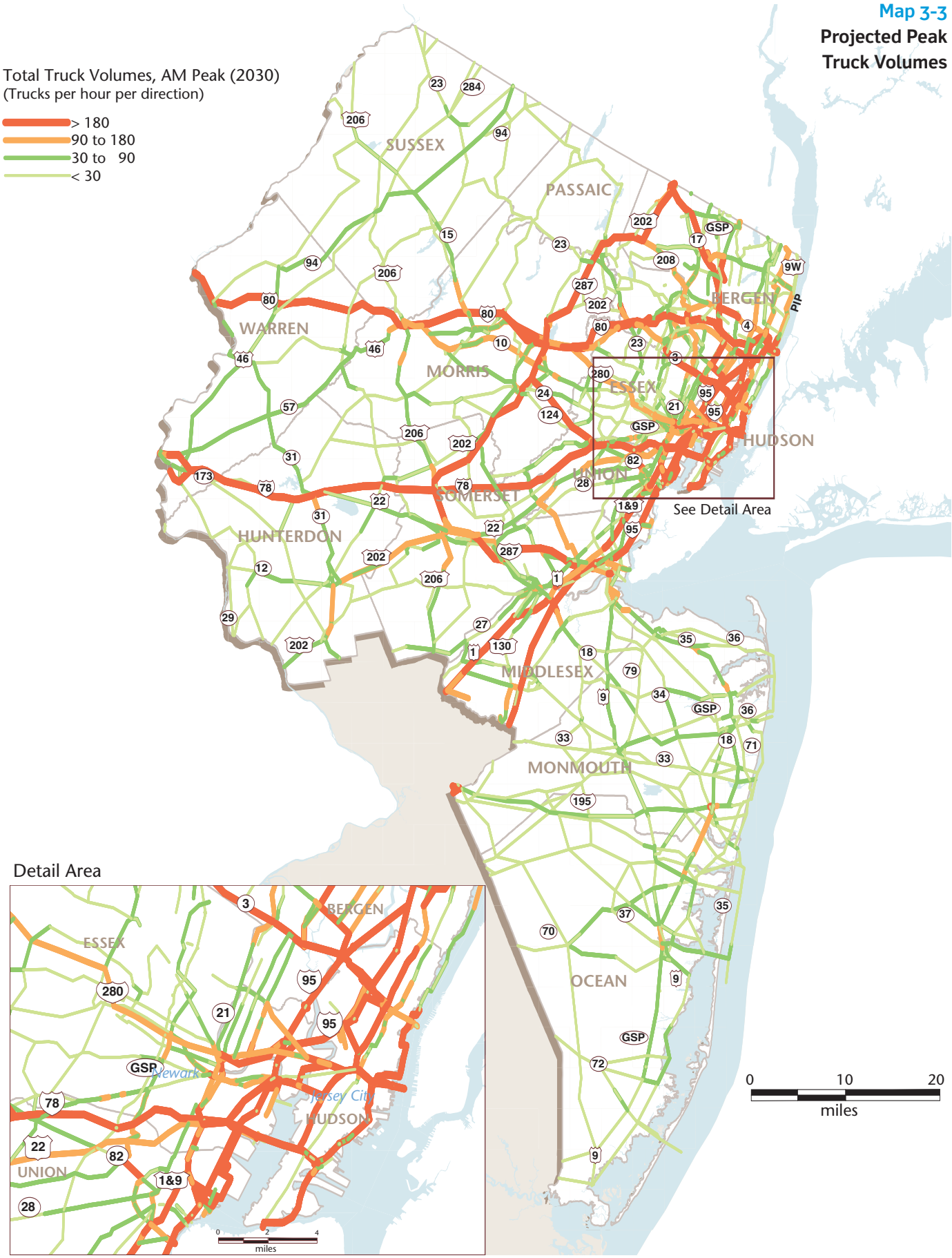
A primary need relates to Newark Liberty International Airport, the northeastern United States major hub for package airfreight. As discussed in the NJTPA's Freight System Performance Assessment study (Appendix E), airfreight volumes are expected to continue to increase, with significant facility and freight handling capability investments being made by the major shippers. The air cargo industry relies on quick, efficient, reliable connections between the air terminals and proximate warehouses.

There is a cluster of industrial and support land uses surrounding the airport, along Delancey Street and South Street, but roadway access is not direct, necessitating use of Brewster Road, Routes 1&9, and the Delancey Street exit, which experiences significant recurring congestion. Congestion is expected to worsen, hampering operations and potentially stifling growth in the air cargo industry.

Development of improved, and potentially truck-only, road connectors between the Newark Airport air terminals and nearby offsite air cargo-related warehouse and distribution facilities could do much to improve the flow of cargo and traffic in this area. This area was selected as one of the Freight Impact Concept Areas by the study.

Related efforts in the vicinity include: Portway, Port Authority improvements to the Newark Liberty International Airport southern access roadway, project concepts in the area developed through the Strategy Refinement study and policy recommendations, particularly time-shifting to encourage off-peak air cargo operations. Additionally, port access improvements to separate trucks from general vehicular traffic are being planned south of the port at Kapkowski Road/North Avenue.

Map 3-3
Projected Peak Truck Volumes



Other stretches with significant yet more moderate peak period truck volume (between 90 and 180 an hour) include I-280, US 1&9, US 46, US 202, NJ 3, NJ 4, NJ 7, NJ 24, NJ 63, NJ 82 and Doremus Avenue.

The expected growth of freight in the region means the busiest truck routes listed above will see more and more intense use by trucks, while most of the moderately used routes will move into the high-volume category. The growth in truck volume also will have pronounced effects on US 22, NJ 10, NJ 18, NJ 21, NJ 31, NJ 63, NJ 82, County Routes 503 and 505 through Bergen County, and some portions of the Garden State Parkway in Ocean County, where trucks are allowed.

Regional Freight Rail Needs: As discussed earlier, the NJTPA regional freight rail system expects to see at least a tripling of intermodal rail traffic and a doubling of noncontainer traffic. Significant parts of the regional rail freight network — the CSX Trenton Line, National Docks Branch and Port Reading Secondary — are expected to handle this growth without major improvements. On other segments — the Chemical Coast Line, the P & H Line and the Northern Running Track — already-planned improvements should bring them to a point where they can handle the demand they will face in 2030.

As more freight trains are run on the busiest rail lines, local impacts could include: longer delays at major road crossings at grade; reduced safety as emergency vehicles are blocked from responding to areas that are made temporarily inaccessible by the passage of a train; potential grade crossing incidents, and noise. There is a need to identify key freight rail grade crossings and accelerate grade crossing separations and safety enhancements at these locations throughout the region.

Certain critical lines are potentially inadequate for 2030 demand. The NJ Shared Assets Area of the Lehigh Line likely will not be able to handle the freight volume it will face in 25 years, even after the completion of planned improvements. In addition, the Norfolk Southern portion of the Lehigh Line and the CSX River Line may not be able to handle their traffic in 2030. No improvements are currently planned for these lines.

Regional Marine Cargo Needs: Two recent and extensive studies of the region's ports — the Port Authority of New York & New Jersey's Comprehensive Port Improvement Plan and the US Army Corps of Engineers' Harbor Navigation Study and Limited Re-evaluation Report — indicate that the ports will be able to handle the significant forecasted growth of shipping container traffic. However, this is dependent on the completion of improvements underway or planned by the Port Authority. These include channel deepening, terminal reconfiguration, wharf extension, rail improvements and highway improvements.

Air Cargo Needs: The region's air cargo facilities are adequate for its current demand, but future study is needed to determine what, if any, physical or operational improvements might be required to accommodate future growth.

Warehouse/Distribution Needs: In general, the region's warehousing sector has seen a boom of new construction and redevelopment in recent years, thanks to increased demand. Prices per square foot have risen despite the new facilities coming onto the market.

However, the trend has been toward new, larger warehouses in outlying "greenfield" areas far from the ports. This leads to an increase in truck traffic through the region, sometimes in the form of multiple trips. For instance, a truck hauls cargo from the port to a warehousing facility in eastern Pennsylvania or southern Middlesex County. Goods are processed or stored there, then put back on trucks for shipment back into the urban core. The NJTPA continues to champion redevelopment of industrial sites close to the port that would convert these areas into warehousing and freight processing centers and reduce

Bill Wittkop

unnecessary truck trips across the region. Appendices D and J detail regional freight mobility needs identified in the Freight Performance Assessment and Strategy Evaluation studies respectively. Chapter 5 discusses a number of specific projects and policy recommendations for addressing freight needs in the region.

Safety Needs

In response to a renewed national emphasis on transportation safety, the NJTPA in 2004 undertook an extensive examination of transportation safety in the region. The study examined hundreds of locations throughout the region to determine which spots were most dangerous to drivers, bus riders, cyclists and pedestrians.

The study analyzed data, looking at frequency, severity and types of accidents to identify crash-prone locations in the region. In addition, there were several meetings with stakeholders, and a public online safety survey provided further information and confirmed many of the data findings. In the end, a list of 21 roadway locations and two bus stops was developed to receive priority for new safety initiatives. These locations were selected based not only on how prone to crashes they were, but also on how effectively and efficiently their problems could be remedied. The locations selected were:

- Market and Essex Streets (Lodi, Maywood, Saddle Brook, Hackensack) — Bergen
- Teaneck Road (Teaneck) — Bergen
- NJ 10 (Livingston) — Essex
- South Orange Avenue (Newark) — Essex
- West Market Street/Hudson Street (Newark) — Essex
- Ferry and Market Streets (Newark) — Essex
- Kennedy Blvd (Jersey City, West New York, Union City, North Bergen) — Hudson
- Frank E. Rogers Boulevard & Harrison Avenue Bus Stop (Harrison) — Hudson
- Montgomery Street (Jersey City) — Hudson
- NJ 12 near Flemington Circle (Flemington) — Hunterdon
- Stelton Road (Edison, Piscataway) — Middlesex
- NJ 71 (Asbury Park) — Monmouth
- Route 510 around Morristown Square and Train Station (Morristown) — Morris
- Mule Road (Berkeley) — Ocean
- County Line Road (Lakewood) — Ocean
- Main Avenue (Clifton and Passaic) — Passaic
- Madison Avenue & Broadway Bus Stop (Paterson) — Passaic
- Watchung Avenue (North Plainfield, Plainfield) — Somerset, Union
- US 94 and US 206 around Town Green (Newton) — Sussex
- Chestnut Street/Stuyvesant Avenue (Union) — Union
- Park Avenue (Plainfield) — Union
- NJ 182/Mountain Avenue (Hackettstown) — Warren

Further detail on these locations, including mileposts, and information on the particular safety problems at each location can be found in Appendix F, which also contains the full list of transportation safety needs analyzed in the Safety Priorities study.

Safety Needs Example

In Hudson County, Kennedy Boulevard (County Route 501) is a major road facility running through Jersey City, West New York, Union City and North Bergen. In many places, the roadway is difficult and dangerous for pedestrians to cross, including many elderly residents of the county. It is difficult to make a left turn, resulting in greater congestion and numerous rear-end collisions. In addition, many buses use the route.

The site was selected as a top priority in the NJTPA's Regional Safety Priorities study. Recommended strategies include reducing sign clutter, restriping, installing better signs for pedestrians, creating better pedestrian crossings and developing left-turn lanes where possible.

Chapter 4


Bill Wittkop

Regional Capital Investment Strategy

To address the numerous and complex needs identified in the previous chapters, the NJTPA will rely upon a Regional Capital Investment Strategy (RCIS) that sets out principles and guidelines for future investments. The RCIS, developed in 2004 and 2005, attempts to create a balanced, realistic approach to regional spending. This chapter outlines the strategy's broad investment principles and more specific investment guidelines in several categories. These principles and guidelines form the basis for the investment decisions outlined in Chapter 6, Implementation.

Developing the Capital Investment Strategy

About $2 billion a year has been spent on capital transportation investments in the region in recent years. Over the next 25 years, the NJTPA anticipates that significant additional funding will be available for these investments (see Chapter 7). However even this increased revenue stream will fall short of fully addressing the region's needs, making identifying investment priorities all the more crucial.

To help understand how investments in specific types of transportation projects would benefit the region's economy and quality of life, the NJTPA analyzed several future investment scenarios. The scenarios illustrated the tradeoffs inherent in trying to focus on key investment principles: supporting smart regional growth, preserving existing infrastructure, enhancing goods movement, or expanding public transit or highways (Appendix D).

Dwight Hiscano

Investment Principles

Help The Region Grow Wisely

Transportation investments should encourage economic growth while protecting the environment and minimizing sprawl in accordance with the state's Smart Growth plan.

Make Travel Safer

Improving safety and security should be explicitly incorporated in the planning, design and implementation of all investments.

Fix it First

The existing transportation system requires large expenditures for maintenance, preservation and repair, and its stewardship should be the region's highest priority.

Expand Public Transit

Investment to improve the region's extensive transit network should be a high priority, including strategic expansions to serve new markets.

Improve Roads but Add Few

Road investments should focus on making the existing system work better, and road expansion should be very limited.

Move Freight More Efficiently

Investments should be made to improve the efficiency of goods movement because of its importance to the region's economy and quality of life.

Manage Incidents and Apply Transportation Technology

Investments should be made to improve information flow, operational coordination and other technological advances that can make the transportation system work smarter and more efficiently.

Support Walking and Bicycling

All transportation projects should promote walking and bicycling wherever possible.

This Regional Capital Investment Strategy was informed by the scenario analysis. It also drew upon input from a series of NJTPA Board of Trustee workshops and the technical analysis of staff, a consultant team, and an advisory committee of planning partners. As NJTPA policy, the guidance here attempts to best balance the region's priorities, with the ultimate goal of realizing a robust and positive long-term future for northern New Jersey.

The selected investment strategy largely mirrors current spending patterns, with some minor adjustments, and serves as a validation of past investment decisions by the NJTPA. As expected given the extensive needs that exist, the majority of funding will be used to maintain and preserve the existing transportation network. Nevertheless, this investment strategy maintains or builds upon the region's commitment to expanding transit, improving safety, enhancing transportation efficiency, optimizing the system, improving freight facilities, augmenting bicycle and pedestrian travel and encouraging Smart Growth.

There are eight basic principles of the NJTPA Regional Capital Investment Strategy. These vary in scope. The call for investments that promote Smart Growth is broad and cuts across all investment categories, for instance, while principles about the road or transit system are more specific. The eight principles are listed separately in the box above and together with related guidelines in the text below.

Help the Region Grow Wisely

Investments in the region's transportation system should support smart, sustainable growth. That means following the guidelines set out by the state to encourage development and redevelopment in cities, planned growth areas, regional centers, brownfields, grayfields and other places with existing infrastructure. Investments in other areas must be scrutinized carefully to ensure that they are justified and that they do not encourage sprawl.

Investment Guidelines

- Make investments that fulfill Smart Growth goals, including supporting development in cities, planned growth areas, distressed areas, centers, redevelopment areas, brownfield and grayfield sites and other places with existing infrastructure.
- Scrutinize investments outside of areas targeted by state growth policies to ensure that alternatives are examined, that they are justified by economic and community needs, and that sprawl-inducing impacts are minimized.
- Fund investments that encourage compact, mixed-use development that supports transit use ("transit oriented development"), walking/biking, and cost-effective use of existing or planned public infrastructure.
- Protect the character of communities and the natural environment through context-sensitive design, traffic calming, historical preservation and roadway beautification.
- Encourage fewer motor vehicle trips, especially those involving single-occupancy vehicles through continued support (about 0.5 percent of transportation funds) for demand management including the programs of Transportation Management Association programs.
- Develop transportation improvements that distribute benefits and burdens equitably and serve all communities, including low-income residents, minority populations, senior citizens, the disabled, children and other groups.

Make Travel Safer

Transportation planning and investment in the region must make travel safer and more secure. These concerns should be explicitly incorporated in the planning, design and implementation of all investments. Spending on direct safety improvements should be increased substantially, and safety enhancements should be fully incorporated into other projects as well when possible and practical.

Bill Wittkop

Investment Guidelines

- Increase current allocations to direct safety improvements by roughly 25 percent (from about 2 percent of overall spending to approximately 2.5 percent), while also fully incorporating safety enhancements in other investments.
- Enhance safety in areas with high fatality, and injury rates, with particular attention to pedestrian travel and safety for seniors.
- Develop improved safety measures at at-grade rail crossings along heavily traveled corridors.
- Consider national security and disaster response issues in facility designs.

Fix it First

The existing transportation system requires large expenditures for maintenance, preservation and repair, and its stewardship should be the region's highest priority.

Investment Guidelines

- Maintain or modestly increase the commitments made in recent years to maintenance and preservation, which averaged 60 percent of overall spending with about 35 percent going to transit, 15 percent to bridges, and 10 percent to roads.
- Maintain, preserve, rehabilitate and replace infrastructure according to objective measures such as facility condition, level of use and projected service life ("life cycle").

Funding Guidelines

The following funding guidelines, contained in the RCIS, will be used as benchmarks for future investments. They represent a continuation, with minor modifications, of funding allocation patterns in recent years.The NJTPA will use the guidelines as targets for the long term, recognizing that funding amounts in the various categories may have to vary from year-to-year. As such, the percentages are approximate:

- Maintain or modestly increase maintenance and preservation, which now averages 60 percent of spending — 35 percent going to transit, 15 percent to bridges, and 10 percent to roads.
- Maintain current total allocations at around 21 percent of spending for enhancing and expanding public transportation — 5 percent for enhancing the system (projects such as station and operational improvements) and 16 percent for expansion (new bus routes, new or extended rail lines, etc.)
- Maintain the 10 percent of spending for enhancing roadways (such as renovating intersections or adding turning lanes)
- Limit expanding roadway capacity (new roads or widening) to slightly below the current 2.5 percent of funding.
- Maintain or increase slightly allocations for incident/emergency management projects and intelligent transportation systems from 1.2 percent of funds to 1.5 percent.*
- Increase spending from about 1 percent of funding to 1.25 percent for walking and biking facilities.*
- Modestly increase the current allocation of dedicated freight improvements (such as freight rail facilities and intermodal infrastructure) from 0.8 percent of spending to 1.0 percent.*
- Continue providing 0.5 percent of funds for demand management including the programs of Transportation Management Association programs.*
- Increase current allocations for direct safety improvements from 2 percent to 2.5 percent.*

* The increased investment relates to projects dedicated to addressing this need. Expenditures on other types of projects will also support improvement in this area.

Expand Public Transit

Investment to improve the region's extensive transit network should be a high priority, including strategic expansions to serve new markets.

Investment Guidelines

- Roughly maintain current total allocations to enhancing and expanding public transportation, which averaged 21 percent of total spending over the last five years. (Historically, this has included about 5 percent dedicated to enhancing the public transit system — projects such as station and operational improvements—and 16 percent for expansion — new bus routes, new or extended rail lines, etc.)
- Focus enhancements on improving the speed and reliability of trips, facilitating access to the system, incorporating pedestrian and bicycle facilities, integrating bus and rail services and achieving new intermodal connectivity.
- Expand the system in measured steps based on the ability to attract new riders and achieve cost-effective operations.
- Build a new passenger rail tunnel under the Hudson River, which is the region's top transit expansion priority, by obtaining additional dedicated funding.

Improve Roads but Add Few

Road investments should focus on making the existing system work better, and road expansion should be very limited, without compromising the tremendous accessibility provided by the existing highway system.

Investment Guidelines

- The investment mix should roughly maintain the commitments made in recent years to physically enhancing roadways (such as renovating intersections or adding turning lanes), which averaged 10 percent of spending.
- Limit expanding roadway capacity (new roads or widening) to slightly below current spending allocations, which averaged about 2.5 percent of funding over the last five years.
- Use management systems and objective criteria to target roadway investments to congested hotspots and bottlenecks.
- Make improvements that strengthen parallel routes and network redundancy.
- Complement road improvements with transit, ridesharing and pedestrian/bicycle projects to help limit auto trips.
- Avoid roadway expansion in environmentally sensitive areas or away from planned growth areas.

Move Freight More Efficiently

Investments should be made to improve the efficiency of goods movement because of its importance to the region's economy and quality of life.

Investment Guidelines

- Support the transport of goods with improvements in roadway operation and efficiency, giving priority to transportation facilities with heavy freight traffic (such as major interstates and highways).
- Modestly increase the current allocation of spending that now goes to dedicated freight improvements (such as freight rail facilities and intermodal infrastructure) from about 0.8 percent to 1.0 percent.
- Fund investments that separate truck traffic from passenger autos and pedestrian movement wherever possible.
- Focus transportation investments on encouraging freight related redevelopment of brownfield sites and similar Smart Growth strategies particularly in and around the port.
- Make investments that promote intermodal options where possible, including rail and waterborne freight movement via barges or ferries.

Manage Incidents and Apply Transportation Technology

Investments should be made to improve information flow, operational coordination and other technological advances that can make the transportation system work smarter and more efficiently.

Investment Guidelines

- Funding levels over the last five years dedicated to incident/emergency management projects and intelligent transportation systems (about 1.2 percent of funds) should be maintained or increased slightly to about 1.5 percent of funds.
- Fund development of systems that provide real-time scheduling and connection information on travel conditions to public transit customers, roadway travelers and freight movers.
- Invest in information systems that support information flow within and among operating agencies including those responsible for addressing roadway incidents.
- Invest in technological improvements in accordance with the region's intelligent transportation system standardized architecture.
- Invest in improved and standardized electronic fare and toll payment systems.
- Focus initial ITS investments on demonstration projects to evaluate potentially beneficial new technologies and systems.

Support Walking and Bicycling

Investment Guidelines

All transportation projects should promote walking and bicycling wherever possible.

Dwight Hiscano

Boonton, Morris County

- Enhance or create pedestrian and bicycle facilities, including sidewalks, bike lanes and bike paths, which improve their connectivity for walking and biking trips and also complement other transportation improvements.
- Increase spending by about a quarter over current amounts (from about 1 percent of funding to 1.25 percent) to build and redesign facilities for walking and biking.
- Coordinate roadway and transit projects with pedestrian and bicycle improvements made by counties and municipalities.
- Target improvements to areas with existing, growing, or strong potential for walking and bicycle travel.
- Invest in improvements that support walking by children (such as Safe Routes to School) and others with limited motor vehicle travel options.

Benefits of the Regional Capital Investment Strategy

The scenario testing conducted for the Regional Capital Investment Strategy shows that the selected strategy, embodied in the principles and guidelines listed above, will allow the region to manage its growth while maintaining an efficient and safe transportation system. The long-term benefits of this investment strategy are expected to allow the region to:

- **Realize sustainable growth.** Smart Growth policies will help accommodate the 1.2 million people and nearly 700,000 jobs the region is expected to gain over the next 25 years while making cost effective use of infrastructure, preserving open space and protecting the environment.

Hunterdon County

Dwight Hiscano

- **Increase overall accessibility.** The number of jobs within reach of the average resident will increase by 17 percent. The number of workers accessible to the average employer will go up 10 percent.

- **Make travel safer.** The number of accidents per capita in the NJTPA region will decrease.

- **Maintain the existing transportation system.** The region's bridges will be repaired and replaced as needed, and more of the region's roadway surfaces will be in good condition by 2030. Cost savings will also result from improved preventive maintenance.

- **Increase transit accessibility.** Up to 20 percent more jobs and people will be conveniently reachable by bus, rail, and other public transportation.

- **Slow the growth of roadway congestion.** Much of the growth in congestion occurring in outlying areas that currently are relatively uncongested. Average travel times will not increase dramatically in the region and the accessibility currently offered by the highway system will go up by 10 percent.

- **Accommodate increased freight traffic**. The region will limit road congestion and community impacts from dramatic growth in freight traffic by increasing the share of goods moved by rail and barge, implementing a series of "Portway" road improvements, encouraging off-hours deliveries and other measures.

- **Realize system efficiency.** More capacity and efficiency — and fewer disruptions — on the existing system can be realized by maintaining the current emphasis on relatively low cost improvements, such as redesigned intersections, new park-and ride lots, etc. and by pursuing new technologies through Intelligent Transportation Systems.

Ultimately, these benefits can be realized through an extensive program of investment in the region, as discussed further in the next chapter.

Chapter 5

Implementation

Sean Vroom

The Regional Capital Investment Strategy (RCIS) detailed in the previous chapter provides a foundation upon which the region can build a far-reaching transportation investment agenda that meets its long-term needs. As funds become available, the NJTPA will turn again and again to these core principles to guide investment decisions.

In striving to meet the principles, the NJTPA will continue to refine its technical processes and encourage public dialogue for identifying, evaluating and prioritizing needs in the region. The region's vast transportation needs will always outstrip its resources, but with well informed decision-making backed by sound technical support, the NJTPA will be able to implement a wide variety of critical transportation projects over the next 25 years while maintaining the existing system in a state of good repair.

This chapter highlights individual projects and planning studies that address some of the the needs discussed in Chapter 3. The chapter focuses on improvements to the region's transportation infrastructure. Projects, studies and policies related directly to improving regional land use — including using transportation investments to promote Smart Growth — are addressed separately in Chapter 6, Linking Land Use and Transportation.

This chapter highlights just a few examples of the hundreds of projects and studies being conducted in the region. A complete picture of all the projects and initiatives called for by *Access & Mobility 2030* is provided in the Project Index included at the back of this plan.

Projects and studies are discussed in terms of three timeframes: near-term, mid-term and

Bill Wittkop

long-term. Near-term projects are scheduled to be completed within the next five years while mid-term projects are slated to be finished five to 15 years from now. Most of these projects are currently included in the NJTPA Transportation Improvement Program (TIP) or Project Development Work Program (PDWP).

Long-term initiatives include studies currently underway throughout the region that will produce an array of recommendations, many of which will be implemented in the 2020-2030 period (though some may, in fact, lead to shorter-term projects).

In addition to the projects and studies, this chapter contains several sections entitled "Access & Mobility Initiatives." These list broad policy initiatives and other recommendations that would improve the regional transportation system over the life of this plan.

Roadway/Bridge Repair and Maintenance

The NJTPA region boasts an extensive network of roads, bridges, rail lines and other facilities. No task is more vital to the future of transportation in the region than maintaining existing assets in a state of good repair. Only then can the region turn to other investments that will improve and expand the system. This is reflected in RCIS guidelines that call for devoting the majority of funding to a "fix it first" investment strategy.

As discussed in Chapter 3, the region's repair and maintenance needs are mainly identified using various management systems that track the condition of bridges, roads and transit networks.

This section contains a summary of the region's commitment to address repair and maintenance on the roadway network, focusing on bridges and pavement. Projects to improve transit maintenance (including transit bridges) are dealt with in a separate section as part of a broader discussion of transit in the region.

Bridges

The RCIS guidelines call for devoting 15 percent of available funding to bridge needs. The region is home to hundreds of structurally deficient bridges, and more will fall into that state over the life of this plan. Repair and maintenance of this critical infrastructure is a top priority of the region.

This plan recommends the reconstruction — or replacement, if need be — of all 674 currently existing structurally deficient bridges in the region (containing some 5 million square feet of bridge deck) over the next 25 years. Work on the most costly of these bridge projects, the "high cost" bridges totaling approximately $1.5 billion, will be initiated in the near term (with completion of some of the projects extending to the midterm). These are shown in the box.

High Cost Bridges

Bridge	County	Est. Const. Cost
Route 3, Bridge over the Passaic River	Bergen/Passaic	$235 million
Route 1&9, Pulaski Skyway, painting	Essex/Hudson	$176 million
Route 1&9, Pulaski Skyway, deck rehab	Essex/Hudson	$300 million
Route 1&9(T), St. Paul's Avenue Bridge	Hudson	$140 million
Route 7, Hackensack River, Wittpenn Bridge	Hudson	$370 million
Route 139 Viaduct	Hudson	$125 million
Route 36, Highlands Bridge	Monmouth	$76 million
Route 72, Manahawkin Bay	Ocean	$83 million

Sean Vroom

Branchburg and Bridgewater, Somerset County

Also in the near term, 64 less costly bridges are slated to undergo replacement or rehabilitation. This includes work on the state and county road networks throughout the region. In the mid-term, an additional 41 bridge replacement and rehabilitation projects are scheduled to be completed in the region. All these projects are listed in the Project Index.

As these current needs are being addressed, NJTPA and its partner agencies will seek to work quicker to address accruing needs and limit the backlog of bridge projects. These accruing needs are likely to result in an additional 10 million square feet of deficient bridge deck (20-50 bridges, depending on size) between now and 2030. This is double the current bridge deck deficiency of 5 million square feet. Relying on the Bridge Management System, the NJTPA will work closely with the NJDOT to determine which bridges in the region are of the highest priority.

In terms of funding needs, the 674 deficient bridges identified for rehabilitation or replacement are estimated to cost $6 billion; the nine high cost bridges are estimated to cost $1.5 billion; and the 20 to 50 deficient bridges expected to be added each year will cost an estimated additional $4 billion over 25 years — for a total estimated cost of $11.5 billion. Under the financial assumptions of this plan, this amount will be more than covered by available funding. As detailed in Chapter 7, the NJTPA foresees allocating $12.4 billion for bridge needs over the next 25 years.

Roads

The RCIS guidelines call for investing 10 percent of available funding in road maintenance and repair needs. This will allow the region to moderately improve the condition of the region's pavement. Currently, approximately 40 percent of road lane miles are in need of repaving or repair at any one time; this will be reduced to 30 to 35 percent over the next 25 years. This modest reduction will be an achievement given the expected substantial increases in car and truck VMT expected over the 25 years.

As discussed in Chapter 3, the statewide Pavement Management System will be relied upon to rate the condition of roads and prioritize pavement project needs. This plan calls for systematic efforts to implement preventative maintenance on the region's roads to avoid the need for more costly future repairs. The NJTPA will continue to adequately fund an ongoing pavement program.

In addition, available funding will be used for numerous rehabilitation projects each year to address major deficiencies and bring roads up to standards needed to accommodate growing volumes of traffic. Road projects will incorporate improved safety features and take advantage of opportunities to promote walking and biking, wherever possible.

In the near-term, approximately 50 major roadway preservation projects are slated for the NJTPA region. Others are scheduled for completion in the mid-term timeframe. These projects are listed in the Project Index. As with the region's bridge inventory, additional stretches of roadway are constantly being evaluated and studied for the need for resurfacing or other major preservation efforts.

Roadway Enhancement and Expansion

The RCIS contains a strong commitment to making the region's roadway system smarter and more efficient. However, it also recognizes that funding, environmental and other constraints limit building new roads or significantly widening existing ones. Therefore, the main focus of road investment in the region will be to optimize the existing network through "enhancement" projects such as redesigning intersections and interchanges. Major capacity expansions will be very limited. The implementation of these strategies is discussed below.

Road Enhancement

Over the life of this plan, the RCIS guidelines call for spending 10 percent of available funding on road enhancement projects. The Strategy Evaluation conducted in 2002 (see Chapter 3) identified more than 120 places in the region that are likely to represent priority areas for minor spot roadway improvements. Some of these areas might contain more than one potential enhancement project. Physical improvements in road engineering can make traffic flow more smoothly and provide better access to some destinations. Such approaches work best when coordinated with multimodal, land use, and other "context-sensitive" considerations.

Sean Vroom

Improvements to intersections, interchanges, and ramps can maximize the efficiency of the road system at some locations. This might include signalization improvements, signage improvements, intersection geometry modifications, lane and shoulder widenings, channelization, restriping, new lane assignments, and bicycle and pedestrian infrastructure improvements. In many cases these operational improvements also improve travel safety.

The construction of new ramps connecting major roadways can ease the traffic burden on the surrounding local road network. Various strategies that improve intersection function can reduce corridor-wide delays, since intersections and interchanges are often congestion hot spots that serve as a limiting factor in roadway traffic flow.

In the near-term, this plan will implement approximately 80 such projects, distributed throughout the region to address particular bottleneck areas and localized congestion (See map 5-1). These projects are contained in the Project Index found at the end of the plan. In the mid-term, another approximately 30 such projects have been identified so far. Additional road enhancement projects in the mid- to long-term will be chosen based on the needs found in the Strategy Evaluation Study and additional, ongoing analysis of the region.

Road Expansion

The RCIS calls for less than 2.5 percent of available funding to be allocated to road expansion (slightly below the average expenditure over the last five years). This recognizes that fiscal, environmental and planning considerations have combined to make major expansion of roadway capacity a solution with only very limited application in the NJTPA region.

In particular, as noted in Chapter 2, past experience has shown that expanding roadway capacity is expensive and often faces strong local opposition. It also may not provide permanent congestion relief, since it can encourage sprawl development that adds more cars to the road and, under some circumstances, even "induce" additional auto trips that otherwise would not be made. Yet meeting rising travel demand expected in the future, including a projected 25 percent increase in vehicle miles of travel (VMT), will inevitably require some increases in road capacity around the region.

This plan calls for such increases to be carefully chosen after detailed study. In addition, capacity increases should only be considered in conjunction with appropriate complementary strategies — including ITS, Smart Growth and transit enhancement measures — to manage demand and maintain performance. Over the 25 year life of this plan, up to about 100 lane miles of expansion should be pursued — an average of 2.5 miles per year or the equivalent of five projects adding a lane in each direction for 10 miles. This is a tiny fraction of the region's total lane miles.

In the near-term, five significant road expansion projects are slated for implementation in the region. Four of these are on critical highway corridors in the region (NJ 18, US 46, US 206 and NJ 440); the fifth involves expansion of an important truck and economic development route in Union County (Kapkowski Road) (See map 5-1).

In the mid-term, additional potential work on US 46 and US 206 is under study, as is possible expansion of NJ 31 in the area of the Flemington Circle. Another road expansion project is under study for Helen Street in South Plainfield, Middlesex County, a street that would serve as an alternate truck route.

In the mid- to long-term, road expansion is being considered by NJDOT for NJ 15 in

The Strategy Refinement

Every transportation problem has numerous solutions. Finding the most cost-effective is among the key purposes of the planning process overseen by the NJTPA. To assist in this effort, in 2002, the NJTPA assessed needs around the region and developed a catalogue of the most appropriate strategies to address the needs in particular locations. This was known as the Strategy Evaluation study (its results are reported on in Chapter 3 and in Appendix K).

As part of the preparation of this 2030 plan, the NJTPA conducted a follow-up study, the Strategy Refinement, to systematically investigate the previously identified strategies in selected locations. Its goal was to develop concepts for future improvement projects on the highway and transit networks, such as added turning lanes, redesigned intersections, synchronized signals, and new park-and-ride facilities, bus stops, or bike lanes.

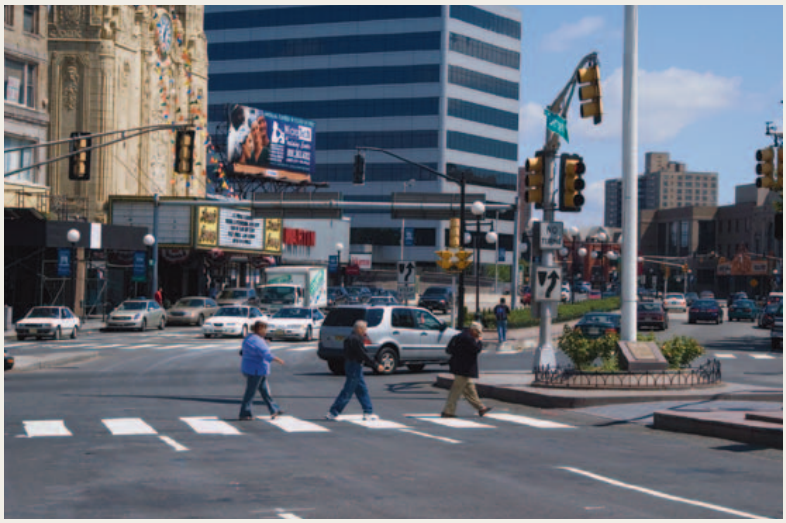
Completed in 2005, the Strategy Refinement produced a total of 30 concepts, including studies, to address significant needs in 18 places within the NJTPA region. Each concept includes an assessment of the place's needs, strategies to address them, specific potential transportation improvements, anticipated performance benefits, basic consideration of environmental issues in the area, cost estimates and recommendations for implementation.

While concepts emerge through many avenues in the NJTPA process, those developed in the performance-based Strategy Refinement are important candidates for project development and implementation. As such, many will formally enter "the project pipeline" by being listed in the NJTPA Project Development Work Program (PDWP). Further detailed study and project implementation will be the responsibility of the NJTPA and the region's implementing agencies, including NJDOT, NJ Transit, and Transportation Management Associations (TMAs).

By using data from the NJ Department of Environmental Protection, the Strategy Refinement study made a very preliminary environmental assessment of each identified concept's location. Proximity to wetlands, critical habitats, fresh water sources, and historical sites were examined in keeping with the National Environmental Policy Act (NEPA). By identifying such issues early on, it is more likely that concepts will be developed more appropriately into viable and suitable projects.

The concepts developed through this study are listed below. A detailed description of the concepts is presented in Appendix G. It should be noted that other concepts and strategies, beyond those listed, will emerge from continuing planning efforts by the NJTPA and its member agencies; these will be reviewed periodically and listed, as appropriate, in the PDWP:

- Study of transit priority treatments allowing existing bus routes to bypass congestion, Fort Lee and surroundings, Bergen County.
- Study of pedestrian accessibility needs along Routes 4 and 17, Paramus and surroundings, Bergen County.
- Improving coordination of bus service with retail development, Paramus and surroundings, Bergen County.
- Implement shared parking at shopping centers on Route 46, Parsippany and surroundings, Morris and Essex Counties.
- Reduce incident delay through improved response time of Emergency Service Patrol vehicles, Parsippany and surroundings, Morris and Essex Counties.
- Study of east-west traffic flow along a segment of Route 46, Parsippany and surroundings, Morris and Essex Counties.
- Develop a coordinated set of traffic signs directing trucks to the regional highway system, Newark-Elizabeth East, Essex and Union Counties.
- Implement traffic calming measures and other pedestrian treatments along major commercial streets in Elizabeth, Newark-Elizabeth East, Essex and Union Counties.



Bill Wittkop

Journal Square in Jersey City

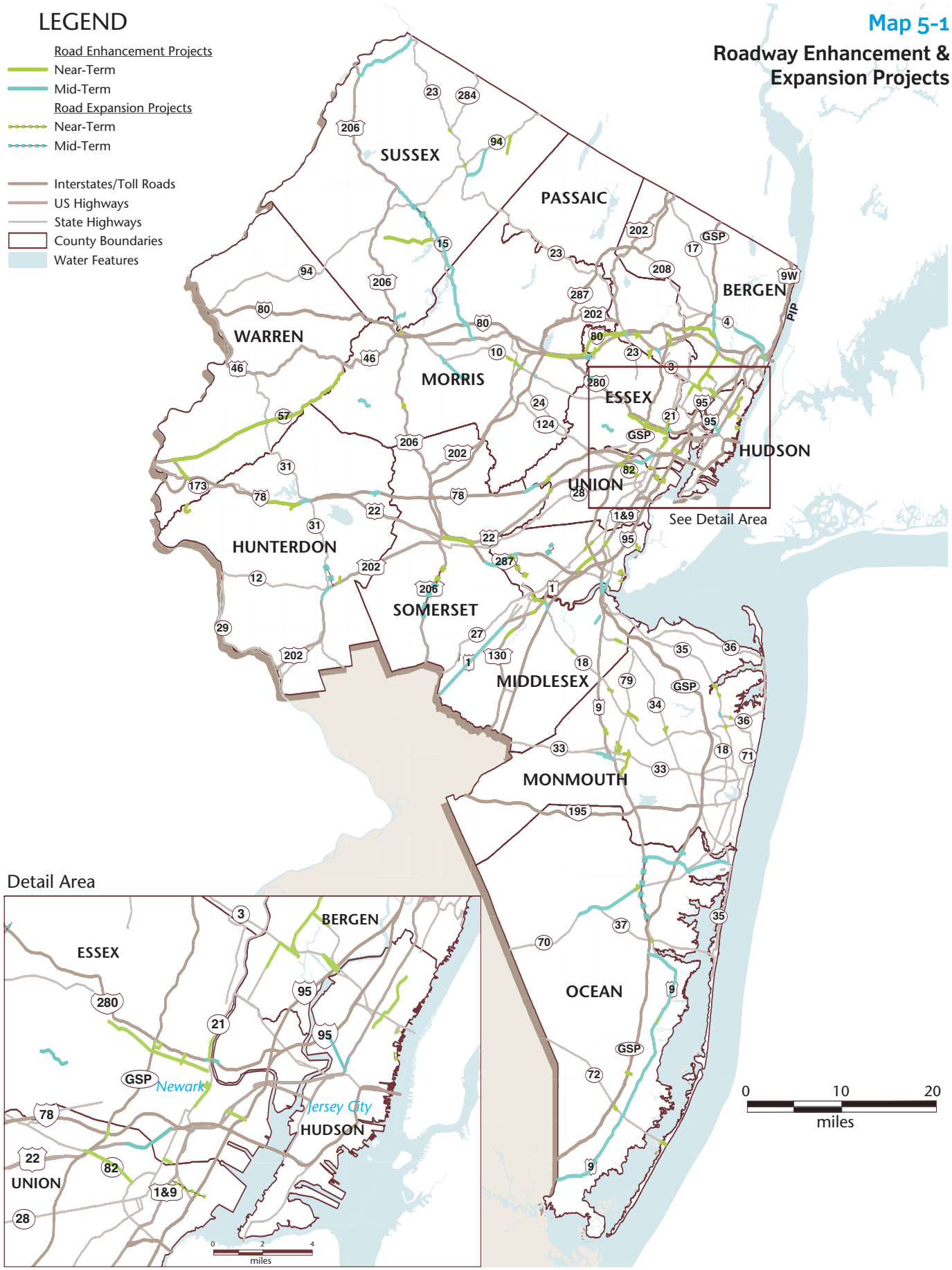
Ron Tindall

Somerset County

- Study of safety needs on arterials leading to a segment of the Garden State Parkway, Newark-Clifton, Essex and Passaic Counties.
- Study of bicycle and pedestrian access to Journal Square and surroundings, Jersey City and surroundings, Hudson County.
- Study the feasibility of improved incident response and incident management on east-west highways and arterials, Jersey City and surroundings, Hudson County.
- Implement pedestrian and bicycle enhancements to the Union Blvd./Union Ave. corridor, Paterson and surroundings, Passaic County.
- Introduce reverse-commute bus service from Paterson to suburban employment centers, Paterson and surroundings, Passaic County.
- Create a new County Transit route, or modify an existing route to provide scheduled bus service to Vernon, Northwest Sussex/Passaic, Sussex and Passaic Counties.
- Focused effort by local TMA to encourage the formation of carpools and vanpools to link local residents with major suburban employment centers, Northwest Sussex/Passaic, Sussex and Passaic Counties
- Study the need for new or expanded park-and-ride facilities on Routes 15, 23, 94, and 206, Northwest Sussex/Passaic, Sussex and Passaic Counties.
- Study of congestion along Route 24 and arterials leading to it, with special attention to transit, Summit-New Providence, Union County.
- Study short-haul rail shuttle options to move containers between the port and key warehouse/distribution center concentrations, Summit-New Providence, Union County.
- Examine creation of one or more new rail stations on the Northeast Corridor between Jersey Avenue and Princeton Junction, New Brunswick-South Brunswick, Middlesex County.
- Study of a segment of Route 18 to evaluate the feasibility of improving traffic flow with emphasis on bike/ped and transit, New Brunswick-East Brunswick, Middlesex County.
- Enhancements of directional traffic signage along segments of Rt. 18, with special emphasis on transit (East Brunswick, Middlesex County)
- Study of Route 36 segments with emphasis on alleviation of congestion, Eatontown and surroundings, Monmouth County.
- Study of accessibility needs in parts of the Garden State Parkway corridor, Eatontown and surroundings, Monmouth County.
- Study of transit and pedestrian needs along the Route 9 corridor, Manalapan-Freehold, Monmouth County.
- Improving circulation at the interchange of Rt. 202/206 and Rt. 22, Bridgewater-Raritan, Somerset County.
- Examine potential for new pedestrian overpasses over Rtes. 22, 202, and 206, Bridgewater-Raritan, Somerset County.
- Study of possible operational improvements at the interchange of I-78 and Oldwick Road, Tewksbury, Hunterdon County.

Dwight Hiscano

- Study the viability of bus service from Lambertville to major employment centers in surrounding counties, Lambertville, Hunterdon County.
- Study of a Rte. 22 segment to improve traffic flow, Phillipsburg, Warren County.
- Elimination of bottlenecks at specific intersections of Rte. 70 with various measures, Central Ocean, Ocean County.


LEGEND
Road Enhancement Projects
Near-Term
Mid-Term
Road Expansion Projects
Near-Term
Mid-Term
Interstates/Toll Roads
US Highways
State Highways
County Boundaries
Water Features
Map 5-1
Roadway Enhancement & Expansion Projects
SUSSEX
PASSAIC
BERGEN
WARREN
MORRIS
ESSEX
HUDSON
UNION
HUNTERDON
SOMERSET
MIDDLESEX
MONMOUTH
OCEAN
See Detail Area
Detail Area
Newark
Jersey City
0 10 20
miles
0 2 4
miles

Sussex County, and Essex County is studying a potential extension of the Eisenhower Parkway in Essex and Morris counties. In addition, the 2002 Strategy Evaluation identified more than 20 corridors that could potentially warrant further study for capacity expansion. These corridors are listed in Appendix K.

Transit System

The call for improved mass transit is a core principle of the Regional Capital Investment Strategy. Roughly half of available funding will continue to be devoted to addressing transit needs under RCIS guidelines.

At the heart of this plan's transit vision are five elements for expanding and enhancing the regional transit system. They are: 1) maintaining a state of good repair; 2) making trips faster and more reliable on the core existing rail and bus transit network; 3) improving system access through more park-and-rides and other methods; 4) developing new capacity and greater connectivity, with particular emphasis on the Trans-Hudson Express (THE) Tunnel; and 5) promoting transit as part of Smart Growth development.

Michael Rosenthal / NJ Transit

Hudson-Bergen Light Rail Line at Exchange Place, Jersey City

New Trans-Hudson Rail Tunnel Needed

The NJTPA has identified the proposed new rail tunnel under the Hudson River as the region's highest transit expansion priority in its investment strategy. The proposed $6 billion Trans-Hudson Express Tunnel (THE Tunnel) emerged as the Locally Preferred Alternative of the Access to the Region's Core (ARC) study. This study found that the existing trans-Hudson rail tunnel into Penn Station New York is a significant choke point in the regional rail system. With capacity constrained today, it is doubtful the rail system can accommodate the growth of rail passenger demand over the next two decades. Failure to do so could jeopardize economic growth in both New York and New Jersey. The solution is THE Tunnel which will:

- Immediately double commuter rail capacity
- Meet demand for NJ Transit service for at least 20 years
- Provide more one-seat-ride opportunities for commuters from New Jersey and from Orange and Rockland counties NY
- Create more incentive for switching to mass transit
- Improve service to existing rail lines in the NJ Transit network
- Create opportunities for new service to new markets
- Support development in Manhattan and along rail lines in New Jersey
- Add flexibility to the rail system to respond to security concerns

THE Tunnel consists of: two new single track rail tunnels beneath the Hudson River, serving a new station underneath 34th Street between 6th and 8th Avenues; two new tracks adjacent to the Northeast Corridor, and a Secaucus loop connecting the Bergen County and Main lines with these new tracks; and supporting investments such as track improvements, rail yards, signal systems and facilities. Plans for adding rail capacity will progress incrementally with the entire project expected to be completed in 2017.

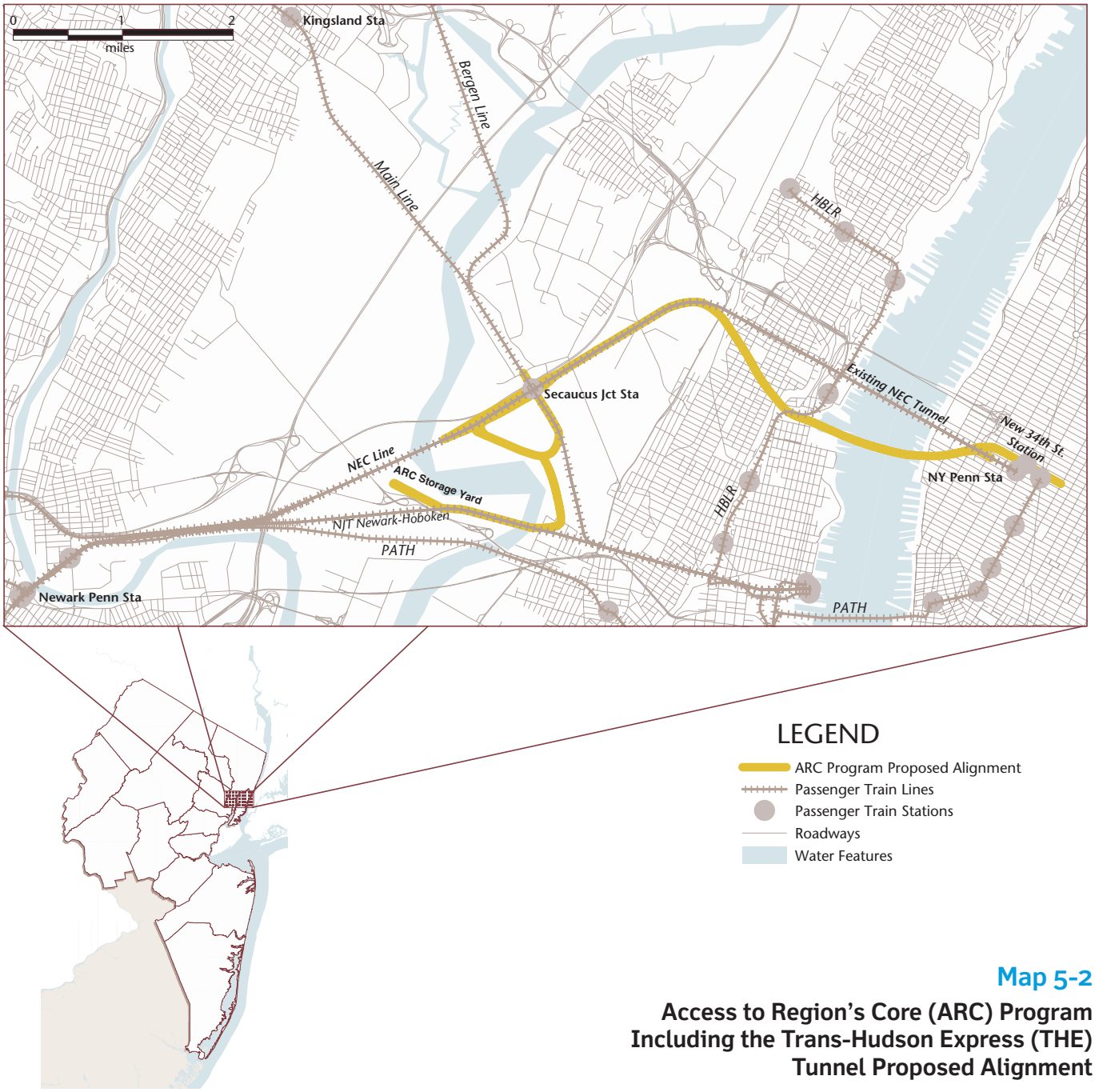
All these elements of the transit vision are discussed in greater detail in Appendix I, the NJTPA Transit Investment Analysis. Over the life of this plan, the NJTPA will work with NJ Transit to realize this vision, including helping to identify priorities for improving the transit network, analyze emerging needs and set directions for future investments. In doing so, the NJTPA will draw upon the results of its 2002 Strategy Evaluation, which suggested locations around the region that have the need for and potential for supporting expanded bus and rail services (see Chapter 3).

The improvements discussed below are contingent upon not only on the receipt of sufficient funds, including adequate and stable funding for operations (as discussed in Chapter 7), but also the satisfactory completion of detailed studies.

State of Good Repair

Keeping the existing system in good working order is the foundation of this plan's future transit vision. NJ Transit will spend the majority of its capital funding each year for preservation and maintenance. This includes replacing vehicles as they age as well as attending to 600 rail bridges, over 500 miles of track, signal systems, stations and other infrastructure — the large majority in the northern New Jersey region. With this investment, delays due to breakdowns and system failures should steadily decline and be held to a minimum.

The RCIS guidelines call for about 35 percent of available funding to be allocated to repair and maintenance needs on the transit network. NJ Transit has several major preservation efforts already underway and slated for completion in the near-term. These include improvements to Hoboken Terminal and Yard, the Newark City Subway and Newark Penn Station. In addition, significant investments in the region's transit fleet are essential to replace aging rolling stock and to provide additional capacity for increasing ridership.



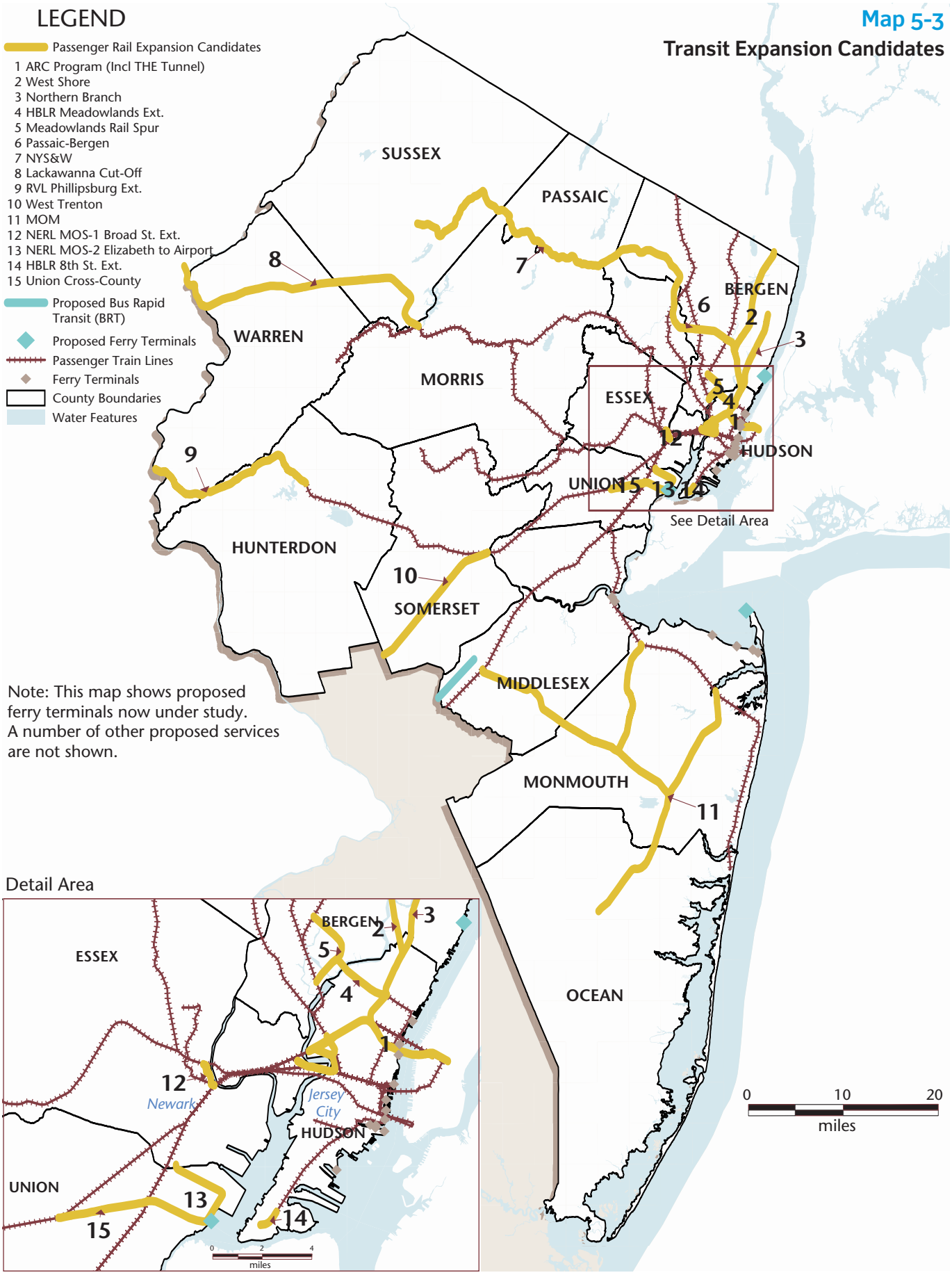
Map 5-2

Access to Region's Core (ARC) Program Including the Trans-Hudson Express (THE) Tunnel Proposed Alignment

Trans-Hudson Express Tunnel

The Trans-Hudson Express (THE) Tunnel proposal that emerged from the Access to the Region's Core (ARC) study involves building a new state-of-the-art two-track tunnel under the Hudson River (see box and map 5-2). Supporting the tunnel would be a new rail station adjacent to Penn Station New York under 34th Street. Improvements in New Jersey include new track along the Northeast Corridor and a connection to existing rail lines serving residents of Bergen, Rockland and Orange counties, resulting in a one-seat ride to New York for the first time. Raritan Valley Line customers would also benefit from a one-seat ride. Its estimated cost is $8.7 billion (year of expenditure dollars) and ultimately will also require $400 million for new train equipment required to operate the 2030 service plan.

The NJTPA has identified THE Tunnel as the region's highest transit expansion priority in its investment strategy. It will provide the capacity necessary to meet future trans-Hudson


LEGEND
Passenger Rail Expansion Candidates
1 ARC Program (Incl THE Tunnel)
2 West Shore
3 Northern Branch
4 HBLR Meadowlands Ext.
5 Meadowlands Rail Spur
6 Passaic-Bergen
7 NYS&W
8 Lackawanna Cut-Off
9 RVL Phillipsburg Ext.
10 West Trenton
11 MOM
12 NERL MOS-1 Broad St. Ext.
13 NERL MOS-2 Elizabeth to Airport
14 HBLR 8th St. Ext.
15 Union Cross-County
Proposed Bus Rapid Transit (BRT)
Proposed Ferry Terminals
Passenger Train Lines
Ferry Terminals
County Boundaries
Water Features
Map 5-3
Transit Expansion Candidates
SUSSEX
PASSAIC
BERGEN
WARREN
MORRIS
ESSEX
HUDSON
UNION
HUNTERDON
SOMERSET
MIDDLESEX
MONMOUTH
OCEAN
See Detail Area
Note: This map shows proposed ferry terminals now under study. A number of other proposed services are not shown.
Detail Area
Newark
Jersey City
0 10 20
miles
0 2 4
miles

Michael Rosenthal / NJ Transit

Hudson Bergen Light Rail Line

demand and to accommodate the other proposed rail expansions discussed below. The project will have substantial economic benefits for both New Jersey and New York. As a conduit for the busy Northeast Corridor, it will also have important benefits for the nation.

Strategic Transit Expansions

Expansion of the region's rail network is a key long term goal. Several proposals, listed below, are now undergoing various levels of planning and environmental analysis. Appendix I (Table 3) provides further description and status information on each proposal. The proposals, depicted on Map 5-3, are:

- Hudson Bergen Light Rail (HBLR) 8th Street Bayonne Extension
- Extension of HBLR from North Bergen to Rutherford/East Rutherford area
- Northern Branch Line
- West Shore Region Line
- Passaic/Bergen New York, Susquehana & Western (NYS&W) Project
- NYS&W Railroad
- Newark-Elizabeth Rail Link (NERL) Minimum Operating Segment 2 (MOS2)
- Union Cross-County connection
- Monmouth-Ocean-Middlesex (MOM) Rail Line
- West Trenton Line
- Lackawanna Cutoff
- Central New Jersey Route 1 Bus Rapid Transit Alternatives Analysis
- Extension of Raritan Valley Line to Phillipsburg

The above future candidate projects include building entirely new rail lines, extending existing rail lines and adding passenger trains on existing freight lines. The proposals involve both commuter rail and light rail technologies and touch every county in the NJTPA region.

Access & Mobility Initiatives: Transit

The following are several broad policy and planning recommendations that the NJTPA will pursue to improve the effectiveness of transit in the region throughout the life of this plan.

Integrate Bus Planning into Highway Projects: The design of all roadway improvements should include physical features to facilitate bus movement and improve pedestrian access, such as road "turn outs," pedestrian walkways and signals at bus stops where appropriate. New technology that will benefit bus travel such as computerized signal systems, variable message signs, etc. also should be advanced. The Bus Rapid Transit system being studied for the Route 1 corridor in Mercer and Middlesex counties, involving a dedicated busway and bus priority treatments, can serve as a prototype for possible facilities in other areas of the region. Bus Rapid Transit or similar strategies should be pursued in other congested local corridors, especially where a concern exists about connecting to major local developments that are dispersed.

Promote Transit Oriented Development: The region's numerous transit-oriented business districts are assets that should be capitalized upon. Revitalizing these districts and promoting compact mixed-use "Transit Oriented Development" is the goal of NJDOT's Transit Village Program. It has so far designated 14 Transit Villages in northern New Jersey between 1999 and 2003. NJ Transit cooperates with NJDOT on this program. Supporting and expanding this effort must be a priority. This is discussed further in the next chapter.

Transit in the Suburbs: Providing transit services to the suburbs — the majority of the land area in northern New Jersey — is a great challenge due to the low population density and the sprawled nature of most development. Park-and-rides can serve as collector points for suburban commuters. However, the region must do better at serving suburban destinations with transit, particularly the office parks, malls and other destinations that form the region's "edge cities" and attract heavy auto traffic. The region's Transportation Management Associations are taking the lead in exploring innovative approaches including shuttle buses, van pools and subscription bus routes. The efforts of the TMAs in coordination with NJ Transit can offer new transit opportunities to travelers in these less densely developed areas. The NJTPA will seek to support and broaden these efforts, including exploring transportation and land use solutions in keeping with Transit Oriented Development principles. As discussed in this chapter, community shuttles can also play an important role in facilitating access to the transit system

Implementing this very ambitious agenda of projects will be tempered by available funding. The high cost of transit expansions — the portion of the Hudson Bergen Light Rail Line now nearing completion, for instance, will cost $2.2 billion — means some choices and compromises must be made. This is reflected in the RCIS which states that the region should "Expand the system in measured steps based on the ability to attract new riders and achieve cost-effective operations." In practice this will mean that all proposals must undergo careful scrutiny and study — both as part of federally required environmental review process as well as supplemental investigations.

In studying proposals, consideration must be also given to limiting costs through phased implementation. This might involve constructing segments that stand the greatest prospect of attracting riders and serving regional needs while leaving other segments for future consideration based on the performance of the initial investment and additional funding opportunities. The studies also should look at technologies and configurations that can reduce costs, such as the use of self-propelled passenger railcars called diesel multiple units (DMUs).

The result of these studies will be locally preferred alternatives (LPAs) that can be submitted for funding to FTA. In order to qualify for this funding, these LPAs must be adopted as part of this Regional Transportation Plan and meet other FTA "New Start" requirements for funding eligibility. Among the requirements: they must be found to be physically and operationally feasible; shown to generate sufficient ridership and revenue; and result in projected public benefits that will exceed the capital and operating costs.

In general, the NJTPA expects that at least initial operating segments of all the proposals

listed above (and in Appendix I), if found justified and feasible through detailed study, can be implemented within the next twenty five years. The extent and timing of implementation will depend not only on funding but on the trans-Hudson capacity to be provided by THE Tunnel. This capacity will be needed to allow some of the proposed lines to achieve their optimal ridership. In doing so, it will improve their ability to compete with other transit proposals from around the country for FTA funding.

In conjunction with expansions, new and upgraded facilities for supporting the rail network will be needed. This will require rehabilitating stations, building entirely new stations to serve growth areas (such as in the North/South Brunswick area), and providing parking decks and lots to relieve current shortages, among other measures. Opportunities to create local intermodal centers where people can access more than one transit mode and also park their autos and lock up their bicycles should be pursued. In addition, improvements to the Amtrak-owned and operated Northeast Corridor must be completed. This includes the replacement of Portal Bridge over the Hackensack River, a two-track 1910 vintage swing bridge which has become a bottleneck for both Amtrak and NJ Transit causing significant delays. Further details on this and other Amtrak improvements are provided in Appendix I. The NJTPA will work closely with NJ Transit to support continued progress in expanding the rail network to meet growing demand.

Union County Light Rail

This 5.8-mile light rail route would connect downtown Elizabeth with Newark Liberty International Airport. It would use existing freight rail rights-of-way to serve the Jersey Gardens Mall, a new transportation center and the proposed Elizabeth ferry terminal. It would proceed along Kapkowski Road and North Avenue to Newark Liberty International parking lot P1.

It is important to note that this project is a public/private venture undertaken by Union County, Washington Group International, and NJDOT (with NJ Transit acting as NJDOT's agent). It is included in the Regional Transportation Plan (RTP) with the understanding that it will not require federal or state funding.

NJ Transit / Michael Rosenthal

Hoboken Terminal

Bus Priorities

Bus service is the backbone of the region's mass transit, used by almost two-thirds of NJ Transit riders. Bus transit is less expensive to operate and more flexible than new rail lines in addressing the transit market needs of a dispersed development pattern. Strategies and improvements to be pursued by NJTPA and its member agencies to enhance and expand bus services over the next 25 years include the following:

Expand the Exclusive Bus Lane (XBL): The exclusive bus lane on I-495 into the Lincoln Tunnel is by far the busiest and most productive bus lane in the nation, accommodating approximately 1,700 buses and 62,000 commuters each morning. But the XBL has nearly reached its capacity. A study is examining the feasibility and best means of expanding this facility. This expansion will be pursued as part of a multi-modal investment plan if a feasible project emerges from this study. An inbound XBL operating in the afternoon peak period must also be explored to expedite the flow of buses into the Port Authority Bus Terminal to begin the outbound evening bus services.

Address Bus Parking Capacity: The current Port Authority Bus Terminal facility has exceeded its bus parking capacity. Studies are underway to create expanded lay-over parking facilities and staging areas near the Lincoln Tunnel, preferably connected to the current bus terminal. Similarly, bus parking solutions must be examined for lower Manhattan, Hoboken and Exchange Place in Jersey City. Expanding bus service into Manhattan is very dependent on addressing this issue of bus storage and staging.

Improve Bus Access to the George Washington Bridge (GWB): Recent truck security policies on the Fort Lee side of the GWB have increased the already high levels of congestion faced by buses there. An analysis of traffic circulation within the area should be performed to identify potential roadway reconfigurations, operational or bus treatments that would improve bus movement.

Help Buses Bypass Congestion: If bus travel is to remain viable and attractive to travelers, buses must be freed from the increasing congestion on roads throughout the region. In general, buses should be able to operate at posted speed limits at all times — even during peak travel hours. To move towards this goal, the region must support preferential "treatments" for buses including:

- Implementing preferential signalization systems to speed buses through congested highway and roadway locations. This has proven successful in other areas such as Los Angeles.
- Expanding the use of highway shoulders for bus lanes along highly congested routes during peak hours. This will likely require rebuilding highway shoulders to federal standards. (A project to accomplish this along heavily bus-traveled US 9 in Old Bridge is included in the near-term initiatives in the attached Project Index.)
- Providing preferential bus service access to major developments such as Xanadu and Encap in the Meadowlands.

Expand Bus Park-and-Rides: There are many opportunities throughout the region to expand bus park-and-ride capacity. These facilities serve as cost-effective collecting points for commuters, especially in low density suburban areas. Opportunities include: making use of underutilized parking areas at key malls in the region, establishing of mini-bus terminals at these locations; creating new park-and-rides along key highway corridors; and exploring innovative locations and designs for park-and-rides such as their integration into Turnpike exits, as has been proposed at Exit 9, New Brunswick, and near Exit 13A,

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Elizabeth at the proposed Intermodal Transportation Center in the vicinity of Kapkowski Road and North Avenue. Where possible, these should be combined with parking for the railroad system so intermodal centers can be created that provide the opportunity for integrated bus and rail services.

Support Community Shuttles: Community shuttles can play an important role in providing access to the transit system. These small buses can often link residents with rail or bus service during peak commuting hours and then serve other purposes during the day. These purposes can include travel for seniors and residents without cars. In addition, shuttles can promote economic development and tourism by connecting rail and bus stations to parks and hiking areas, lakes and rivers, and historic buildings and districts. Such multi-purpose shuttle services are well-suited to this densely populated region and reduce the demand for auto travel. They can be an important component of Transit Oriented Development and improved transit in the suburbs (see box: Access & Mobility Initiatives: Transit).

Ferries

The NJTPA calls for continued capital support for ferry services in the region. This recognizes their growing importance as a travel alternative for about 35,000 commuters each day. Following the attacks of September 11, 2001, ferry operations also demonstrated their importance in providing flexibility and redundancy to the transit network: ferry services responded to travel demands under emergency circumstances in lower Manhattan and, for months after the tragedy, helped relieve transit crowding as a result of the loss of one PATH line.

Recent financial difficulties, fare increases and declining ridership on some routes have prompted calls for expanding public support to include subsidies for ferry operations. This would help hold down fare increases and insure continued service on marginally profitable routes. However, at least in the near term, funding limitations make such expanded support infeasible. Moreover, limiting public support to capital funding is consistent with long-standing policies relating to key private bus services around the region. Still, the

Freight Vision

The NJTPA recognizes that freight movement is critical to the economy of its member counties and the state of New Jersey, but also generates significant transportation and environmental challenges that become more critical each day. It is the policy of the NJTPA to promote a safe, secure, efficient multi-modal freight transportation system that minimizes the negative impacts of freight transportation and distributes them equitably, while maximizing the positive economic benefits accruing to the region. Furthermore, it is the policy of the NJTPA to take a proactive role in identifying and facilitating multi-modal freight improvements and strategies, innovative approaches, while coordinating effectively with public sector and private sector partners to achieve real and lasting benefit for the region's residents and businesses.

region should explore tax incentives and other non-subsidy approaches to supporting the services in the near- to mid-term. It should also consider operating support over the long term.

Support for capital costs will continue. In the near-term, ferry service enhancements such as improved terminal access are planned for Atlantic Highlands and Highlands in Monmouth County. In addition, a new ferry terminal in Elizabeth, Union County is expected to be completed, as is a facility in Edgewater, Bergen County. Ferry service also is being considered for Perth Amboy and Long Branch. In addition, as part of the reconstruction of Hoboken Terminal, NJ Transit is restoring the station's original ferry slips.

The 2002 Strategy Evaluation study identified eight areas with existing service that should be considered for enhanced ferry services over the life of this plan. This could involve increasing the hours or frequency of service, as well as physical improvements to facilities. Other possible enhancements include better coordination with other transit services to enhance intermodal connections, improved terminals, increased capacity where necessary,

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and the implementation of information systems. The areas recommended for enhanced ferry service are listed in the Strategy Evaluation in Appendix K.

Freight System

During the extensive work done to develop the NJTPA's recent Freight System Performance Assessment Study (Appendix E), a regional vision was developed to guide freight planning and investment. It is a succinct statement of the aims of this plan regarding freight (see box at left).

Possible improvements in the region over the life of this plan include operational improvements that could increase the efficiency of goods movement without significant changes to existing infrastructure. These potentially include changing train schedules, using information technologies to increase or expedite freight flows, and retiming traffic signals on access routes.

In addition, improvements to local access roads and highways connecting to key freight facilities, as well as improvements to rail operations serving maritime facilities, are also warranted. These could include removal of at-grade rail crossings; improvements to turning lanes, turning radii, and pavement; and new dedicated truck or rail access routes.

This plan recognizes the benefits of efficient goods movement by modes other than trucks and calls for supporting this strategy as a regionwide policy. Intermodal freight facilities should be designed to move as much freight as possible from trucks to rail or barge. In particular, improvements should be made in the port's ability to directly transfer ocean-borne cargo to vehicles other than trucks. To accommodate this transfer, rail capacity must be enhanced by double-tracking existing rights-of-way, reactivating short line operations or regional rail lines, and developing new rail rights-of-way. To help accomplish this and other freight strategies, the RCIS calls for allocating about 1 percent of available fund-

Access & Mobility Initiatives: Freight

The NJTPA will work with its partner agencies and the freight industry over the life of this plan to improve the efficiency of freight movement in the region. Two strategies offer particular promise in transforming how and where freight is handled in the region:

Portfields-Freight-Related Brownfields Reuse: The NJTPA and the New Jersey Institute of Technology in 2002 completed a study identifying underutilized brownfield properties in and around the Port district suitable for freight-related use. The Port Authority & the State Economic Development Authority in 2005 adopted a "Portfields" program to facilitate the redevelopment of these properties. They have selected 17 sites that can potentially be developed into port related warehouse/distribution centers. The NJTPA will study transportation access and traffic circulation issues at and near these sites, working with the state and the Port Authority to accomplish their eventual redevelopment. Redevelopment of brownfield (Freight Opportunity) sites fulfills Smart Growth goals by reducing truck trips to and from warehouses in outlying areas, preserving open space by limiting construction on "greenfields" and providing jobs and economic growth in urban areas.

Freight Barges & Ferries: The NJTPA has explored the prospects for expanding the use of waterways for moving freight — both trucks and rail cars — around the metropolitan region and to neighboring areas. This would make use of barges or specially-built freight ferries. Fast freight ferries may be a viable and effective alternative towards meeting cross harbor freight needs as well as service to some northeast coastal port locations. Already, the Port Authority has realized success with a pilot freight barge service to Albany and other locations. Using the metropolitan region's navigable waterways to move freight offers the prospect of reducing truck traffic and congestion — particularly between New York City and New Jersey. It would improve the efficiency of the freight system, providing economic benefits to the entire metropolitan region.

LEGEND

- Liberty Economic Corridor
- Portway
- Portway Extension

Dedicated Freight Projects

- Near-Term
- Mid-Term

Dedicated Freight Rail Lines

- Shared Asset Area
- Norfolk Southern
- CSXT
- Others
- Rail Yards
- Port Facilities

- Passenger Train Lines
- Passenger Train Stations
- Roadways
- Water Features

Map 5-4

Portway Freight Projects & Liberty Economic Corridor

ing to dedicated freight improvements. The RCIS also supports a wide range of projects and studies that will benefit freight movement as a component of the overall transportation system, as discussed below.

Freight-Related Projects in the Region

Many roadway projects not specifically dedicated to freight have a demonstrable impact on improving the flow of goods in our region. Roadway resurfacing, bridge replacement, intersection improvements and other projects all facilitate the flow of trucks on the regional transportation system, and Smart Growth land-use patterns would make moving freight more efficient throughout the region. This section discusses several particularly important freight-related projects and studies underway in the region (see map 5-4).

Portway

A major state and regional initiative to improve the movement of freight in the region is the series of projects known as Portway. It consists of 11 distinct projects that will improve access to and connectivity between the Newark-Elizabeth Air/Seaport Complex, nearby major intermodal rail terminals, trucking and warehousing/ transfer facilities and the regional surface transportation system.

These facilities and their access routes are the front door to global and domestic commerce for New Jersey and the greater metropolitan New York region. The projects are located in the counties of Union, Essex, Hudson and Bergen and the municipalities of Elizabeth, Newark, Bayonne, Jersey City, Kearny, Secaucus, North Bergen, Little Ferry and Ridgefield Park. Phase One of the Portway projects will exceed $1 billion and will be completed within ten years.

Portway Extensions is a set of concept developments that will extend freight infrastructure and multimodal operations of freight traffic beyond Phase One of Portway. Much of its focus lies generally south of Port Newark/Elizabeth where it has identified a number of potential projects such as: a reconstruction of Exit 12 on the NJ Turnpike; extended hours of operation at key warehousing/distribution centers; the establishment of "Inland Ports" served by rail, barge or off-peak truck fleets; and the potential development of "global freight villages" in areas such as Linden. It also includes proposals for improved access to the vicinity of the former military base in Bayonne, if a major port terminal is built there. The NJTPA, working with member implementing agencies, will play a leading role in transportation and land use planning for this initiative.

Regional Rail Improvements

NJTPA will coordinate with its member agencies to support the various Class I and Shortline system rail improvements developed by the PANYNJ, NJDOT, and others. It will also support public/private investments in increasing track capacity (such as doubletracking current single track lines) which will accelerate the movement of trains and thereby reduce waiting times at crossings.

The State of New Jersey has undertaken two joint public/private investment initiatives to begin rail freight capital projects that will increase capacity and improve operations on key rail line segments. The first is an ongoing program called the "State Rail Planning Process," which makes funds available primarily to the New Jersey Shortline railroads. In recent years this program has averaged about $10 million per year, although needed improvements — such as upgrading rail tracks and small bridges to handle the national

standard of 286,000 pound car weights — will surpass this available funding. Shortline railroads are private operators that handle rail traffic on the final route miles to customers on what may originally have been branch lines of Class One railroads.

The second public/private investment initiative is a capital improvement program to upgrade mainline and major yard operations jointly sponsored by NJDOT/Port Authority and Class One rail companies (Norfolk Southern and CSX Transportation). This program has been divided into two phases. Phase One has already been funded by the Port Authority with a fifty/fifty match by the railroads. Phase Two will be funded by NJDOT in a fifty/fifty partnership with the carriers.

Phase One ($50 million-committed):

◆ Chemical Coast 2nd track/TCS, reconfigure PN	$8.2 million
◆ Lehigh Line connecting & double track/TCS	$7.5 million
◆ P&H Line	$2.2 million
◆ Lehigh Line 2nd main track	$18.7 million
◆ Raff Project (Oak Island yard expansion)	$7.7 million
◆ Preliminary engineering/property acquisition for Phase Two	$5.7 million

Phase Two ($82.5 million-estimate, not committed)

- ◆ P&H Line continuing upgrade
- ◆ Port Reading Jct. Connecting siding to Trenton line
- ◆ Marion Connection 2nd Track
- ◆ Waverly Loop-single track
- ◆ Raff Project continuing upgrade
- ◆ Port Reading Secondary TCS and new rail
- ◆ Port Reading Secondary siding extension with switches
- ◆ Chemical Coast 2nd Track (at Bayway)

Beyond these projects, other localized short line rail improvements are being advanced, such as the Staten Island/Rahway Valley Rail Freight Project in Union County.

Liberty Corridor

The Liberty Corridor is a congressionally designated economic development and transportation zone that extends along the I-95 Corridor beginning near I-80 in the north to the port area around Camden in the south. This area, identified on map 5-4, has the East Coast's largest collection of port and rail terminals and the largest warehousing infrastructure in the eastern U.S. It also is the center of New Jersey's industrial base featuring petrochemical and pharmaceutical industries and key higher education research facilities. A Congressional earmark calls for enhanced planning among transportation agencies and universities to build the economic potential of the zone. The NJTPA will work with the earmark recipient – the New Jersey Institute of Technology – as well as other agencies and institutions to identify transportation synergies and ways to improve access to key industries and Portfields sites within the corridor over the span of this plan.

Goethals Bridge

The Goethals Bridge is the largest transportation facility linking the NJTPA region and Staten Island. It carries a substantial percentage of truck traffic, but with six narrow lanes it is substandard for truck operations. The NJTPA supports a proposed project by the Port

Authority of NY&NJ to build a new Goethals Bridge that will increase the capacity and safety of through traffic at this location. A Draft Environmental Impact study is being prepared.

Bayonne Bridge "Air Draft" Improvements

The Bayonne Bridge presents a vertical clearance limitation for large maritime vessels navigating in the Kill van Kull. The NJTPA will work with planning partners to determine the appropriate next steps to deal with this important issue.

Key Future NJTPA Emphasis Areas

The following initiatives will involve the NJTPA as a lead investigator or sponsor.

Addressing Key Freight Locations: The NJTPA's Freight System Performance Assessment Study looked at how various freight-related initiatives could be applied to specific locations in the region. These initial investigations identified locations of particular concern where there are opportunities for physical and operational improvements to enhance the flow of traffic while capturing economic benefits and addressing transportation and community impacts. In the near- to mid-term, the NJTPA will pursue more detailed studies of these five locations, as discussed in Appendix E: :

- NJ 17 Corridor (Bergen County)
- NJ Turnpike Interchange 12/Tremley Point (Union County)
- Interstate 78/NJ 31 (Hunterdon County)
- Manville Yard and former Veterans Administration Supply Depot (Somerset County)
- Newark Liberty Airport and Port Newark/Elizabeth (Essex and Union counties)

The Assessment Study also identified numerous high-volume truck routes, as listed in Chapter 3, "Regional Transportation Needs." The NJTPA will draw upon this work to designate "critical corridors" for trucks moving in and through the region. These corridors will be the focus of special studies and improvement efforts over the life of this plan.

Truck Rest Areas. NJTPA will conduct a study to examine emerging issues related to truck rest stops and support facilities in the region. The study will inventory current truck stop

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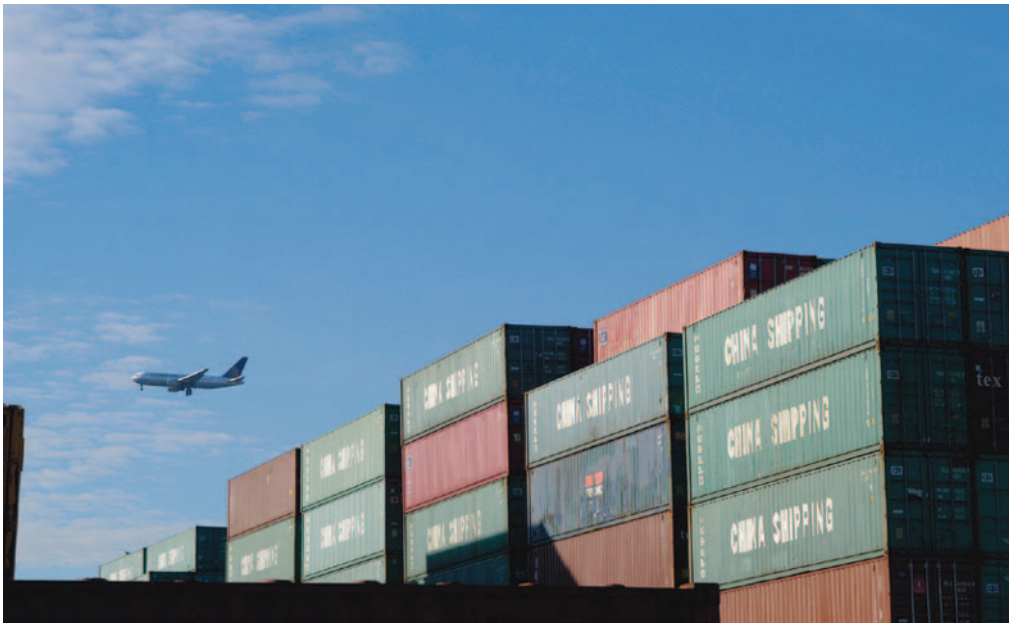

locations and recommend potential new sites for such activities. This study will be conducted in cooperation with neighboring MPOs and NJDOT.

Rail Crossings at Roadways. The NJTPA's Freight System Performance Assessment Study has forecast an increase in rail freight traffic as intermodal and multi-modal traffic increases in the region. This will lead to more frequent train service on most tracks. It will be increasingly important to improve the safety and reliability of key rail lines. The NJTPA will work with its member agencies NJDOT, NJ Transit, and the Port Authority as well as the Class One Railroads to identify key rail crossings for grade separation and/or other possible safety enhancements over the life of this plan. Crossings on lines that are projected to experience capacity constraints over the twenty-five year life of the plan should receive priority for separation or other improvements, unless other safety or security issues need urgent attention.

Cross-harbor Rail Issues. The NJTPA will continue to play an active role in identifying appropriate options that can improve and accommodate increasing freight and passenger flows across the Hudson River, including the use of freight barges and/or ferries (see box: "Access & Mobility Initiatives: Freight" p. 75).

Long Term Multimodal Solutions. The NJTPA will seek to develop long-term multimodal strategies and infrastructure improvements to solve the region's increasing freight congestion, focusing on rail, barge, freight ferries, operations, land use, and other elements of the region's freight network.

Cooperative Freight Strategies

The NJTPA's Freight System Performance Assessment identifies dozens of issues, needs and strategies to address freight in the region. These are listed in Appendix E. Nearly all of them will require close cooperation by the NJTPA with partner agencies and the freight industry. This will be accomplished, in large part, through the forum provided by the NJTPA's Freight Initiatives Committee. Highlighted below are several recommendations based on "Critical Path Action Items" identified in the Assessment that the NJTPA will address over the life of this plan:

Land Use and Economic Development Initiatives

Utilization of Freight Opportunity/Portfield Sites: NJTPA and NJIT have identified currently underutilized brownfield properties throughout the region that are highly suitable for freight-related land uses, by virtue of their size, location, and transportation accessibility. The NJTPA will continue to play a lead, in partnership with state implementing agencies, in identifying and promoting redevelopment of such Freight Opportunity sites, particularly those "portfields" near major freight terminals (see box: "Access & Mobility Initiatives: Freight").

Smart Growth: Building on the Freight Opportunities initiative above, NJTPA will work closely with the NJ Office of Smart Growth and member agencies to formulate goals and strategies to improve the coordination between land use and transportation components of freight movement. The goal is to maximize economic benefit while minimizing transportation investment needs and environmental impacts.

Empty Containers. NJTPA will assist the state, the Port Authority and subregions in seeking better management of empty containers, which have been stored in so-called "container mountains" near the port, limiting the utility of the land they occupy.

Highways and Bridges

Time-shift, Space-shift, and Mode-shift Strategies. NJTPA will take a lead or co-lead role in exploring the potential to reduce highway impacts and infrastructure needs associated with truck operations by promoting off-peak operations, separation of trucks and autos, and the use of alternative modes in lieu of trucking where practical. It will work with local communities to assess the impact of local ordinances regarding hours of operation in industrial zones.

Rail Initiatives

NJ Conrail Shared Assets Area (NJCSAA) Operations. The NJCSAA encompasses most of the key rail lines and terminals in the NJTPA region. Efforts to monitor, maintain dialogue with Class One and Shortline rail operators as well as to improve rail service, accessibility, and marketing to current and potential future rail customers will be jointly undertaken by NJTPA, the state of New Jersey, and the railroads.

Multi-state Rail Corridors. NJTPA will monitor and coordinate planning with the various agencies that have sponsored the Mid Atlantic Rail Operations (MAROPs) initiative. This initiative is has been undertaken by the multi-state I-95 Corridor Coalition. The NJTPA will continue to work with its sister MPOs, the DVRPC and NYMTC to improve the overall movement of rail freight through the region, seeking innovative approaches where possible.

Short-haul Opportunities. NJTPA will take a lead or co-lead role in further exploration of the potential for short-haul rail service.

Ports and Port Access Initiatives

PANYNJ Expansion Program for Marine Terminals, Highway and Rail Access, and Channel Deepening. NJTPA will monitor, inform, and support these ongoing efforts as needed.

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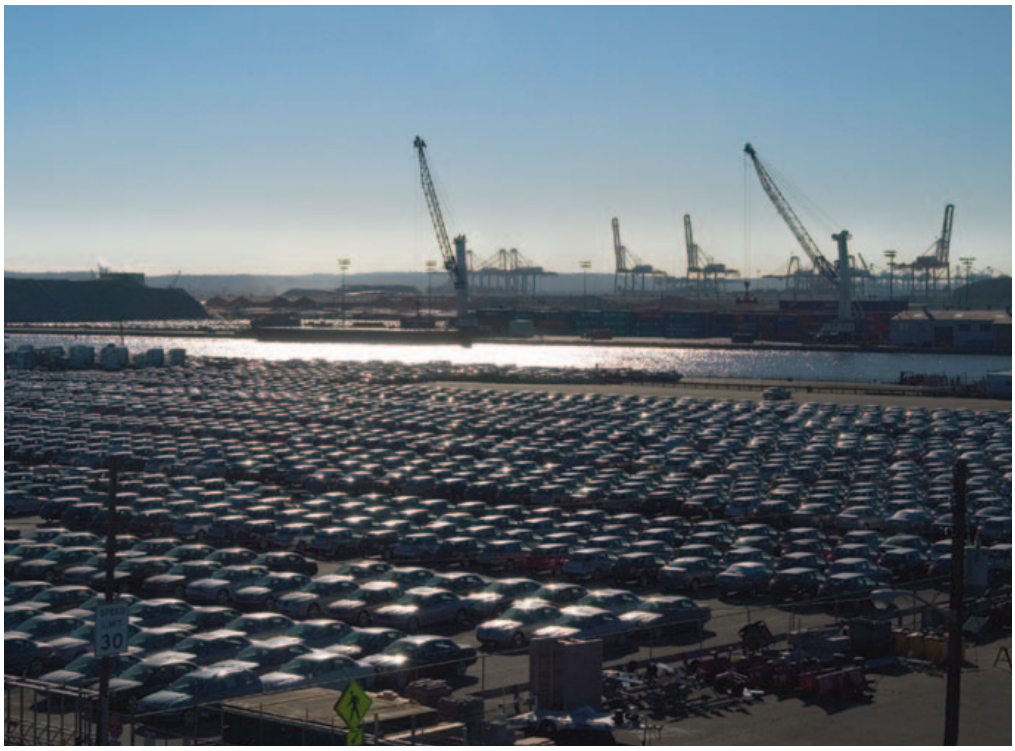

Port Newark-Elizabeth

Kapkowski Road, Portway Phase I Projects, Portway Extensions Program, and Liberty International Transportation Corridor program. NJTPA will facilitate implementation of these needed projects and initiatives.

Innovative maritime strategies. NJTPA will take a lead or co-lead role with the Port Authority and NJDOT in exploring the potential for: inland port development in its region, including the use of marine transportation in cross-harbor/ coastwise short-sea shipping and in-region barge and ferry services (see box "Access & Mobility Initiatives: Freight" p. 75); as well as "Green Port" initiatives to minimize air quality and other environmental impacts of goods movement.

Air Cargo Initiatives

Air cargo related warehouse/distribution facilities. NJTPA will participate in planning for the expansion of these facilities, encouraging the use of Freight Opportunity/Portfield sites in the vicinity of Newark Liberty International Airport.

Safety and Security

Transportation planning and investment in the region must make travel safer and more secure. Over the life of this plan, safety and security measures should, whenever possible, be included in the planning, design and implementation of all projects. The region also will look to increase substantially spending on direct safety improvements. Overall the investment strategy calls for 2.5 percent of available funding to be invested in such improvements, in addition to safety features integrated into other projects.

This plan contains several specific safety improvements to be implemented in the near-term. These range from rockfall mitigation efforts on various routes to signalization improvements to pedestrian safety measures. In all, 10 specific safety improvements are scheduled for the near-term timeframe, while others are specified for the mid-term. These projects are included in the Project Index found at the back of this plan.

In addition, literally dozens of other projects — including bicycle/pedestrian improvements, ITS efforts, roadway enhancements and others — will specifically incorporate safety improvements into their design and implementation.

The NJTPA's Regional Safety Priorities study, discussed in Chapter 3 and included in Appendix F, identified 23 locations for future low-cost, effective safety improvements, which are shown along with other safety projects on map 5-5. These and other safety improvements will be eligible for advancement through the agency's new Local Safety

Access & Mobility Initiatives: Safety

The NJTPA Regional Safety Priorities study (Appendix F) initiated region-wide programs that will work toward solutions to specific issues facing the region. Two are as follows:

Strategies for Addressing Deer-Vehicle Crashes: The NJTPA, working with the counties most affected, will develop a Deer Vehicle Crash coalition to explore ways to reduce deer-vehicle crashes and to launch an education program, modeled on a successful program in Michigan ("Don't Veer for Deer), to educate drivers about safe driving behavior around deer and other large animals.

Strategies for Addressing Older Residents Safety and Mobility Needs: The NJTPA will work with other agencies that meet the needs of older residents to include travel, driving safety and mobility in this service approach. Also, it is recommended that, where possible, roadway improvements incorporate engineering solutions geared toward senior drivers, such as larger and redundant signage, protected left turn signals, etc.


LEGEND
Near-Term Safety Projects
Mid-Term Safety Projects
Recommended Safety Initiatives
Crash-Prone Locations
(Candidates for Future Study)
Interstates/Toll Roads
US Highways
State Highways
County Boundaries
Water Features
Map 5-5
Safety Projects
and Candidates
SUSSEX
PASSAIC
BERGEN
WARREN
MORRIS
ESSEX
HUDSON
UNION
See Detail Area
HUNTERDON
SOMERSET
MIDDLESEX
MONMOUTH
OCEAN
PIP
GSP
Note: In addition to the projects and concepts shown here, dozens of other projects and programs will incorporate safety improvements into their design and implementation.
Detail Area
0 10 20
miles
0 2 4
miles

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program. This program uses federal funds to address safety problems on local and county roads, with a focus on quick, cost-effective solutions that will have a marked impact on safety for drivers, bicyclists and pedestrians.

The need to improve transportation security will also be addressed. Following up on the 2003 Critical Transportation Infrastructure Assessment study that examined post-9/11 issues, the NJTPA will continue to coordinate with state law enforcement and transportation agencies to see that the transportation system can meet emergency demands arising from a terrorist attack, a major natural disaster or infrastructure failure. In particular, achieving multimodal redundancy on the transportation network will be considered in investment decisions. Among the investments that will promote this redundancy will be capital funding for a new trans-Hudson Rail crossing, new ferry terminals, expanded bus park-and-rides and bridge rehabilitations on key highway routes, among others. Critical transportation projects identified through the Assessment study will be considered for priority attention for future project planning and development initiatives. In addition, the region should, if possible, focus resources on preventing terrorist attacks. This can be accomplished through a variety of means, ranging from "low tech" solutions such as passenger education and additional security personnel to advanced surveillance and communications technology.

Support Walking and Bicycling

Access & Mobility 2030 makes an extensive commitment to walking and biking in the NJTPA region, with the goal of making them convenient, safe, efficient and attractive transportation modes — and a viable alternative to cars for short trips. Much of this commitment is made through direct investment in bicycle and pedestrian facilities. In addition, various transportation projects such as bridge replacements and intersection improvements will incorporate features to make walking and biking safer and more attractive travel options in the region. The RCIS also calls for allocating 1.25 percent of available funds to build and redesign facilities for walking and biking.

Pedestrian/bicycling improvements should provide adequate connections to public transit services and other activity centers and should help "calm" traffic in order to reduce auto speeds and improve safety. Pedestrian improvements can involve installing new sidewalks, filling gaps to establish continuously connected sidewalk networks, and reconfigur-

Map 5-6
Existing, Programmed, and Proposed Bicycle Facilities

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ing street grids to create shortcuts. To encourage and enhance bicycling in the region, roadways can be reconfigured to include bike lanes or bikeways. In addition transit hubs can provide enhanced storage for bicycles to encourage riders to arrive at the station via bicycle.

Traffic calming programs in Somerset, Monmouth and other counties have enjoyed strong support from communities for improved streetscaping, curbside parking, tight turning radii at corners, and raised crosswalks. Similar programs could meet with similar success throughout the region.

The NJTPA cooperated with NJDOT and other agencies in the development of a State Bicycle/Pedestrian Master Plan, which was adopted in 2004, and this plan reflects a commitment to that vision. This plan envisions New Jersey as a state where people will choose to walk and bicycle as part of a multimodal transportation system. In addition it advocates that residents and visitors should be able to conveniently walk and bicycle with confidence and a sense of security in every community. The plan stresses the important role that walking and biking can play as routine elements of the transportation and recreation systems, thus supporting active, healthy lifestyles.

The Master Plan calls for safe, convenient, well-planned and well-constructed facilities to encourage walking and biking, thus reducing vehicular trips. It specifically calls for improved access to existing and future transit stations and stops, retail-commercial centers, schools and parks. This plan encourages Smart Growth by calling for revision of local zoning ordinances to permit mixed use and infill development, with higher densities while requiring developers to install quality pedestrian and bicycle improvements. This

Access & Mobility Initiatives: Walking/Biking

Many of the long-range goals for bicycle and pedestrian improvements involve local decisions well beyond the control of the NJTPA. However, the NJTPA recommends the following measures be implemented throughout the region to improve bicycle and pedestrian travel:

- Revision of municipal zoning ordinances to permit more mixed-use and infill development, with higher densities while requiring developers to install quality bicycle and pedestrian improvements.
- Promotion of safe biking and walking through information campaigns to school children, law enforcement agencies and community organizations.
- Incorporation of walking and biking in community planning and redevelopment efforts throughout the region. Planned improvements should conform to the best practices specified by NJDOT.
- Incorporation of sidewalks and bike routes into the transportation network of all urban and suburban communities.
- Improved access to existing and new transit stations and stops, retail/commercial centers, schools and parks.
- Completion of links between residential areas and nearby shopping, employment and recreational centers by towns and counties.

plan also calls for safe walking and biking information campaigns. Finally this plan says that whenever feasible, pedestrian and bicycle improvements should be included in all major highway and transit initiatives. Again, *Access & Mobility 2030* supports all these recommendations.

A major planned project included in the Master Plan is completion of the New Jersey portion of the East Coast Greenway, a 2,600-mile route that combines on-road and off-road facilities linking Maine with Key West, Florida. Conceived as a way to connect cities along the Atlantic Coast, the Greenway is providing local users with new access to destinations in their areas.

The 28-mile trail in the Delaware and Raritan Canal State Park in Somerset and Mercer Counties, built in 1991, was in fact the first section of the East Coast Greenway. NJDOT completed a study of the proposed alternative routes needed to connect the designated end of the Greenway in South Bound Brook to the Hudson River water front in Hudson County. A 65-mile route that will pass through Middlesex, Union, Essex and Hudson Counties was selected. It will connect Trenton to New Brunswick, Newark and Jersey City as well as many communities in other counties across the state. The NJTPA and the NJDOT are committed to supporting the completion of the missing links for the on-road segments identified in the recently completed study and encourage other agencies to provide funding to complete the off-road segments through park lands and on officially vacated rail rights of way.

As part of its commitments to the State Master Plan, the NJTPA in the near-term has scheduled 10 specific bicycle and pedestrian projects for its region (see map 5-6). These include distinct bicycle and pedestrian trails, pedestrian overpasses and other improvements to roads with significant pedestrian and/or bicycle activities.

A similar number of projects have been identified for the mid-term time frame, including major waterfront walkways and other projects. New projects will enter project development each year, with a special emphasis placed on projects within the 90 areas identified in the 2002 Strategy Evaluation that show significant need and promise for investments to promote walking and biking.

Intelligent Transportation Systems

Access & Mobility 2030 calls for integration of Intelligent Transportation Systems (ITS) and improved incident management throughout the NJTPA region. The region has made a tremendous public investment in its roadway network, though facilities in many cases were not designed to handle the volume of traffic they now see. Creative strategies to improve roadway operations will become increasingly important over the next 25 years as travel demand continues to increase.

The Strategy Evaluation Study identified more than 20 highway corridors where smarter operation of the roadway system can preserve existing capacity. These corridors are listed in Appendix K. In 2004, the NJTPA finalized its regional ITS architecture, which will ensure that all regional improvements involving ITS and incident management mesh together seamlessly. A summary of the NJTPA's ITS architecture can be found in Appendix H.

On the region's roadways, the NJTPA will make investments to develop systems that provide real-time information on travel conditions to commuters and freight haulers. This would reduce travel delays and promote the use of less congested roadways or alternative transportation modes. It would entail such strategies as computerizing intersections where traffic signals change in response to traffic demand and traveler information systems that advise drivers about incidents so they may change when, where, or how they travel.

The region also should continue to expand the use of E-ZPass through more high-speed toll plazas and access to major public parking facilities in the region. Standardization of the system used for paying auto-related fees should take place throughout the NJTPA region and beyond.

In addition to information for travelers, the region also should continue to improve the management of incidents on its roadways. Speeding the response and clearance for these

Access & Mobility Initiatives: ITS and Incident Management

Increased Emergency Service Patrols: The state's Emergency Service Patrol is charged with keeping highway lanes clear, reducing congestion and increasing safety for all motorists. In its ten years of existence, the program has grown from only eight trucks patrolling 50 miles of roadway to the current patrol of more than 30 trucks over 230 miles of interstate and state highways. This plan calls for expansion of the patrols to additional miles of roadway. The patrol and its communication methods have been incorporated into the ITS Regional Architecture Plan of the NJTPA.

Smart Technology for Tolls: The use of improved technology for toll collection should continue to be expanded in the region through installation of high-speed E-ZPass toll lanes to reduce congestion and to cut down on accidents at toll plazas.

Apply Advanced Technology to Transit Systems: Technological improvements should be applied to maximize the efficiency, reliability, and convenience of transit systems. Tracking vehicle locations in real-time should help dispatchers respond to incidents and also empower passengers to make informed travel decisions. Ideally, passengers waiting at transit stops could be informed of how long they will have to wait for the next train, bus, or ferry. Expanding telecommunications should be used to disseminate such transit service information over the internet and through other media (e.g., cell phones or variable-message signs). "Smart" electronic farecards can further improve passenger convenience. All PATH stations will soon be accepting MetroCards for fare payment, and this should be viewed as a first step toward smart, integrated fare payment throughout New York and New Jersey.

Bill Wittkop

accidents and breakdowns will reduce delays and save lives. This requires improved communication between operating agencies. Information centers such as the NJDOT Operation Centers and the TRANSCOM incident advisory network can help manage recoveries when traffic incidents occur.

Other strategies would help control the flow of traffic on major regional roadways. For example, controlling access to highways — through approaches such as truck restrictions or ramp metering — helps the existing road network meet changing demands. Ramp metering is designed to control the rate at which vehicles enter a freeway through traffic signals at entrance ramps. Regulating the number of vehicles that may enter a freeway at a given time regulates and reduces traffic congestion on the main road.

On the region's transit network, ITS strategies can benefit transit users by providing better information about travel schedules and delays. In addition, new technology can be used to create intelligent bus stops that inform waiting passengers about bus arrival times.

This plan calls for an integration of fare collection across transit modes. "Smart" electronic fare cards would offer flexibility, cost savings and efficiency for riders. Internet- and telephone-based trip planning services can help potential users make sense of complex transit routes and schedules, and add predictability to transit options. Such services should be expanded throughout the region.

ITS and Incident Management Projects & Programs

During the development of its regional ITS Architecture, the NJTPA identified a wide range of projects and programs that serve to improve ITS and incident management in the region. Several of the projects and programs were identified as "regionally significant." That is, they were deemed to involve multiple agencies and/or have impact throughout the region and, possibly, beyond. Several of these are statewide programs. The list of regionally significant efforts includes:

- Operation of the NJDOT Statewide Transportation Operations Center
- Statewide Evacuation and Coordination Program
- Transit Smart Card
- NJDOT Traveler Information System

- NJDOT Traffic Operations Center (TOC) Central/North/South Regional Traffic Control and Coordination
- Port Authority of New York & New Jersey Port Commerce Electronic Clearance and Processing System
- North Jersey County Emergency Operations Centers (EOCs) Evacuation and Re-entry Management
- North Jersey County EOCs Disaster and Response Management
- NJ Transit Rail Operations Transit Security
- TRANSCOM Regional Architecture Expansion
- TRANSCOM Regional Transportation Information
- PANYNJ Airports/Port Commerce Arterial Surveillance and Traffic Monitoring System

All of these projects and programs will remain critical to ITS in the NJTPA region, and this plan supports their ongoing use and improvement.

In addition, other projects will address ITS issues on a more localized basis. An example of such a project that will be implemented in the mid-term timeframe is the Route 22 Closed Loop System, which adjusts traffic lights in response to roadway conditions, covering nearly seven miles of roadway in Somerset County.

Clean Vehicle Technologies & Alternative Fuels

While ITS focuses on improving the efficiency of the transportation system, technology will increasingly also be employed to improve the efficiency of vehicles using the system. The benefits include less energy consumption and improved air quality. Currently, a statewide Clean Cities program has helped achieve growing use of alternative fuel vehicles by corporations and government agencies that operate large fleets. In addition, NJ Transit is investing in buses using new technologies and alternative fuels. In years to come, hybrid autos, just now making their entry into the auto market, will be widely accepted. This plan encourages these trends and initiatives to lessen the environmental and energy impacts of increasing travel demand in the region.

Chapter 6


Dwight Hiscano

Linking Transportation and Land Use

The NJTPA's commitment to improve how the region manages growth will shape nearly all investments recommended throughout this Regional Transportation Plan. This commitment is made in the Regional Capital Investment Strategy, presented in Chapter 4, which states*: Transportation investments should encourage economic growth while protecting the environment and minimizing sprawl in accordance with the state's Smart Growth plan*. To help fulfill this principle, the RCIS offers guidelines for using transportation investment to encourage sustainable, intelligent land use by focusing development in regional centers and other areas designated for growth. At the same time it urges caution when considering new or expanded transportation infrastructure in lower density and environmentally sensitive areas.

This chapter discusses the relationship between transportation and land use in the region, and outlines how the NJTPA has incorporated Smart Growth planning principles into this plan. It also includes a section discussing the NJTPA's ongoing analysis of environmental justice issues in the region.


Dwight Hiscano

Chester, Morris County

Land Use, Transportation and Sprawl

In New Jersey and much of the nation, massive investment in the interstate and state highway systems in the 1950s and 1960s opened up vast areas for development. Much of this development took the form of haphazard sprawl, with homes and businesses widely spread over the landscape. While the suburban development boom proceeded, urban areas lost population and business activity, and transit networks were pared down as commuter train lines were abandoned and bus routes curtailed. As a result, much of the development scattered into outlying areas came to be served almost exclusively by automobile.

By the 1970's, northern New Jersey and other regions confronted growing negative consequences of this sprawl — the loss of valued open space; local roads overwhelmed by traffic; increased costs for water, sewer and other infrastructure; air pollution compounded by greater auto use; water pollution made worse by run-off from paved surfaces; poverty increasingly concentrated in urban areas; disruptions to wildlife habitats and a host of others.

Later years saw these impacts grow worse and spread to new areas as population increased at an especially rapid rate in several counties in the western and southern parts of the region. In addition, throughout the 1980s and 1990s, new office parks and corporate campuses opened throughout the western and central part of the region rather than in traditional urban employment centers. Much of this development was driven by the efforts of municipal leaders to keep rising property taxes in check through expansion of local tax bases. This has led to development pressure on much of the area's remaining open space, which in turn has led to more urgent calls for Smart Growth — the targeting of development into older urban areas, regional centers, brownfields and other sites with existing infrastructure.

To advance Smart Growth, the State Development and Redevelopment Plan (SDRP) was created under a state law enacted in 1986 and modified over the years. In 2002, a new State Office of Smart Growth was created to implement and update the SDRP (see box "Smart Growth Principles" p. 94).

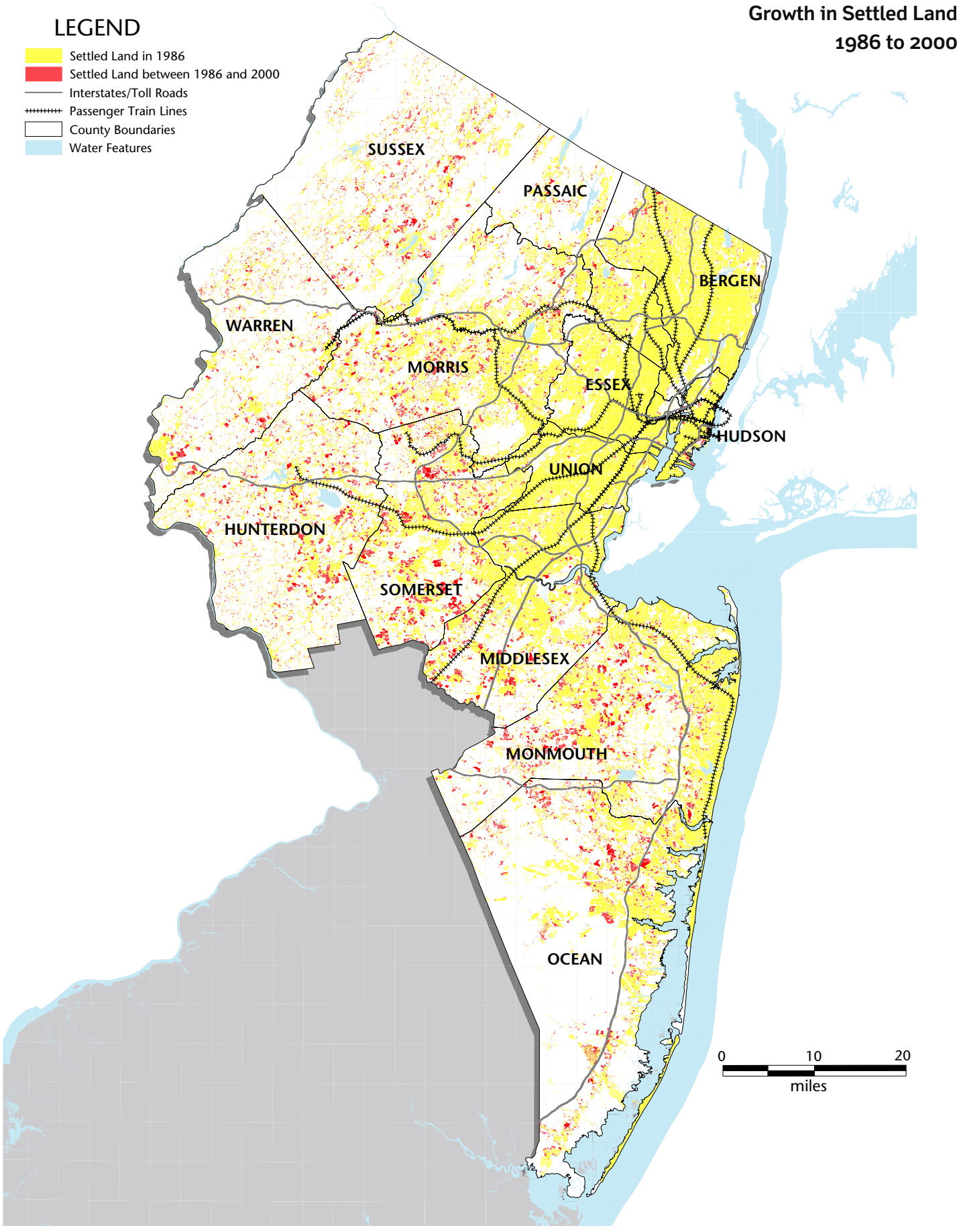
As discussed in more detail later in this chapter, the stakes involved in realizing progress on Smart Growth are steadily increasing. Some forecasts indicate the state will effectively reach full "build out" — that is, all developable land will be used up — within a few decades at current rates of development. By 2030, the NJTPA region is projected to increase by nearly 1.1 million residents and nearly 685,000 jobs from 2005 levels. Much of that growth is projected to occur in the less-developed parts of the region, fueling the cycle of sprawl and putting more pressure on many roads, bridges and transit systems than they were designed to handle.

Land-Use Patterns in the Region

An NJTPA assessment of land-use patterns in the region shows just how far sprawl has marched from the urban core to the rural periphery in recent decades. It shows the ongoing consumption of open space and the accompanying decline of urban centers as major living and activity centers, in spite of recent efforts to redevelop them.

Currently, land used for human settlement accounts for 35 percent of the land in the NJTPA region. Settled land includes all land with the exception of water, wetlands, forests, agricultural land and barren land, such as vacant lots. From 1986 to 2000, the acreage of settled land increased by 16 percent (see map 6-1, next page). Perhaps most significantly,

Map 6-1
Growth in Settled Land
1986 to 2000



New Jersey Smart Growth Principles

The New Jersey Offices of Smart Growth has identified key principles for improving land use in the state:

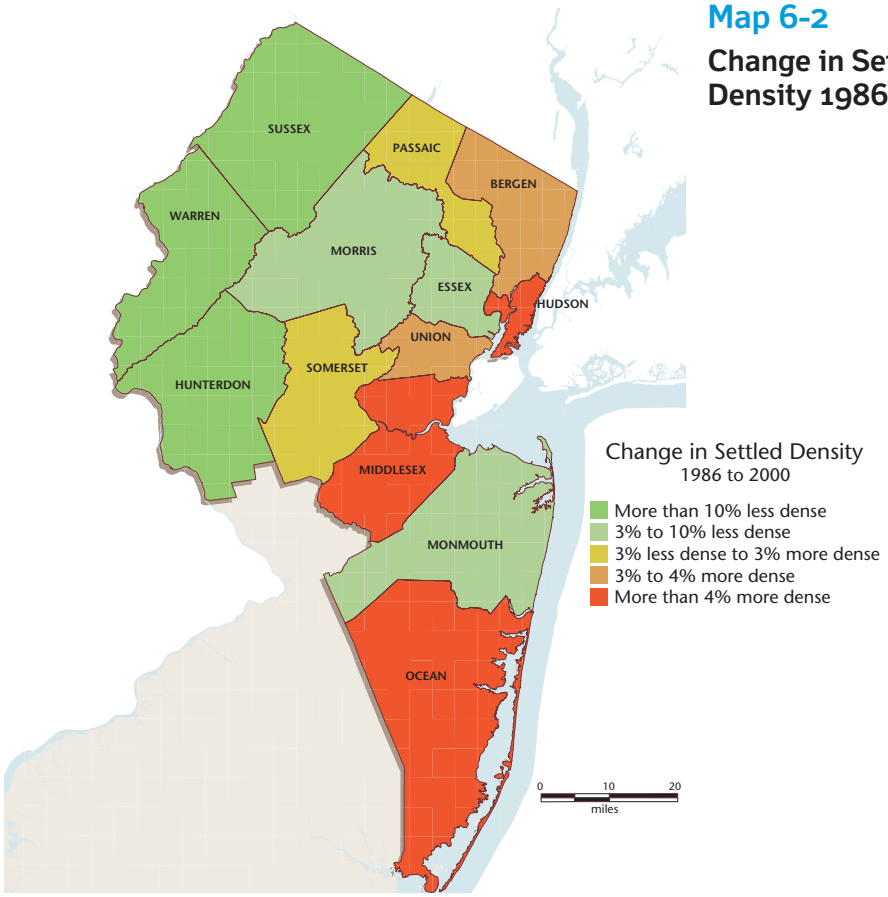
- Mixed land uses
- Compact, clustered community design
- Range of housing choice and opportunity
- Walkable neighborhoods
- Distinctive, attractive communities offering a sense of place
- Open space, farmland, and scenic resource preservation
- Future development strengthened and directed to existing communities using existing infrastructure
- Transportation option variety
- Predictable, fair and cost-effective development decisions
- Community and stakeholder collaboration in development decision-making

the growth in settled land has outpaced population growth. From 1986 to 2000, the average number of residents per acre of settled land declined regionally by 4 percent (see map 6-2, below). In other words, even as population has grown, it has become more spread out. This decline in density is the result of sprawl at the metropolitan periphery and disinvestment in the urban core.

Low-density development occurred particularly rapidly in the region's rural areas. In Hunterdon, Sussex and Warren counties, the acreage of settled land increased by more than 30 percent from 1986 to 2000, while population per acre of settled land declined by more than 10 percent.

Map 6-2

Change in Settled Density 1986 to 2000



An examination of demographic forecasts indicates that these long-standing trends will continue. From 2005 to 2030, the acreage of settled land in the NJTPA region is projected to grow by 30 percent, and the average number of residents per acre of settled land is projected to decline by 10 percent. In other words, the rate at which vacant land is consumed for new development will significantly exceed the rate of population growth. Sprawling, low-density development is projected to continue in many of the region's rural areas. In large portions of Sussex, Warren, Hunterdon, and Monmouth counties, population per acre of settled land will decline by more than 30 percent. Map 6-3 (next page) depicts these trends.

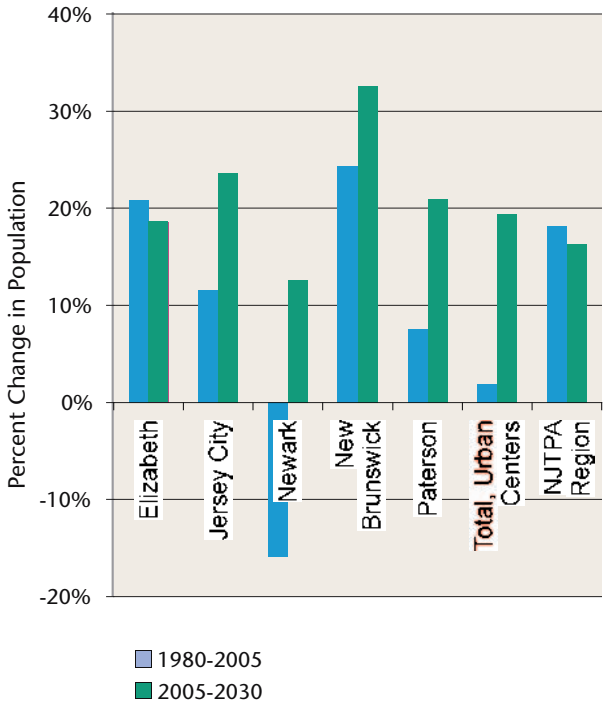
A countervailing trend, however, is that denser development and redevelopment is projected to occur in many of the region's urban areas and mature suburban areas, including areas that are well-served by transit. Population per acre of settled land is projected to increase in large portions of Hudson, Bergen, Essex, Union, and Middlesex counties, and in the shore communities of Ocean County. In many areas along the Northeast Corridor and along the waterfront of Jersey City and Bayonne, population per acre of settled land is projected to increase by 30 percent or more.

In recent years, the region's traditional urban centers have managed to grow, even while more people were settling in the lower-density areas of the region, but growth in urban centers has been mixed (see Figure 6-1). During the 1990s, population in New Brunswick grew by 16 percent, but fell by one percent in Newark. Nevertheless, the region's urban centers performed consistently better in the 1990s than in prior decades. Newark's population, for example, fell by 16 percent in the 1980s, while New Brunswick grew by only one percent during that time. Employment growth in urban centers also has been mixed.

Over the next 25 years the region's urban centers will grow at a faster rate than the region

Figure 6-1

Past and Future Population Growth of Urban Centers in the NJTPA Region



overall (19 percent growth for the centers against regional growth of 16 percent). An additional 160,000 persons are expected to live in the five urban centers.

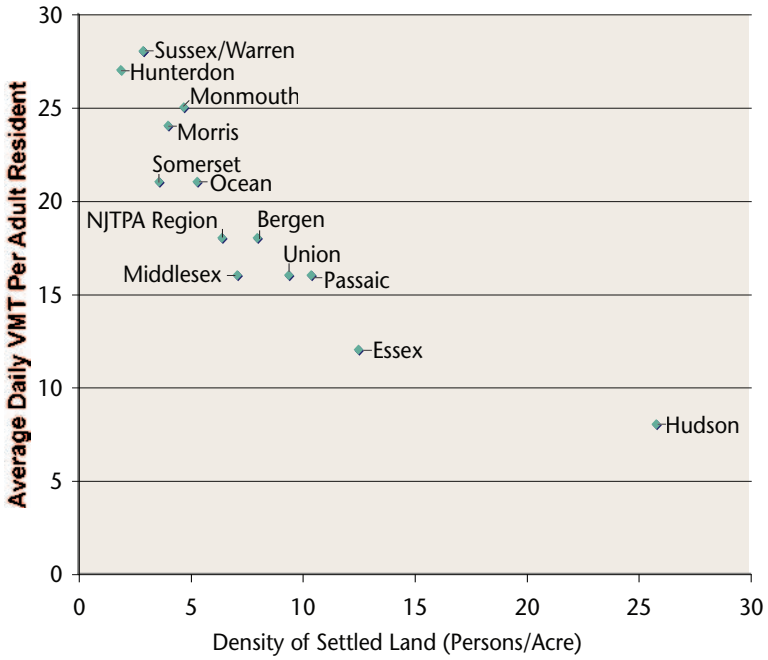
Despite this positive outlook for the region's urban areas, the overall pattern of continued low density of land development represents a continued challenge for the region's transportation system. Low-density development is associated with increased driving (see Figure 6-2). Even though the vast majority of northern New Jersey residents work close to home — with more than half working in their home county and one quarter in an adjacent New Jersey county, according to the 2000 Census — the shift of population and jobs to outlying, low density areas means jobs and other destinations are far apart requiring households in these areas to take more trips over longer distances than those in higher density areas. In Hudson County, where there are 26 residents per acre of settled land, adult residents drive an average of eight miles per day. Meanwhile, in Hunterdon County, where there are two residents per acre of settled land, adult residents drive an average of 27 miles per day.

Adding to the challenge, bus and rail transit services often cannot be operated cost-effectively in areas with low densities of population and employment. Still, there are "activity centers" in some low density areas that can be effectively served by transit including downtown business districts, industrial/office parks, malls and others. As discussed in Chapter 5, NJ Transit and Transportation Management Associations in the region work with companies and communities to develop bus service to such centers.

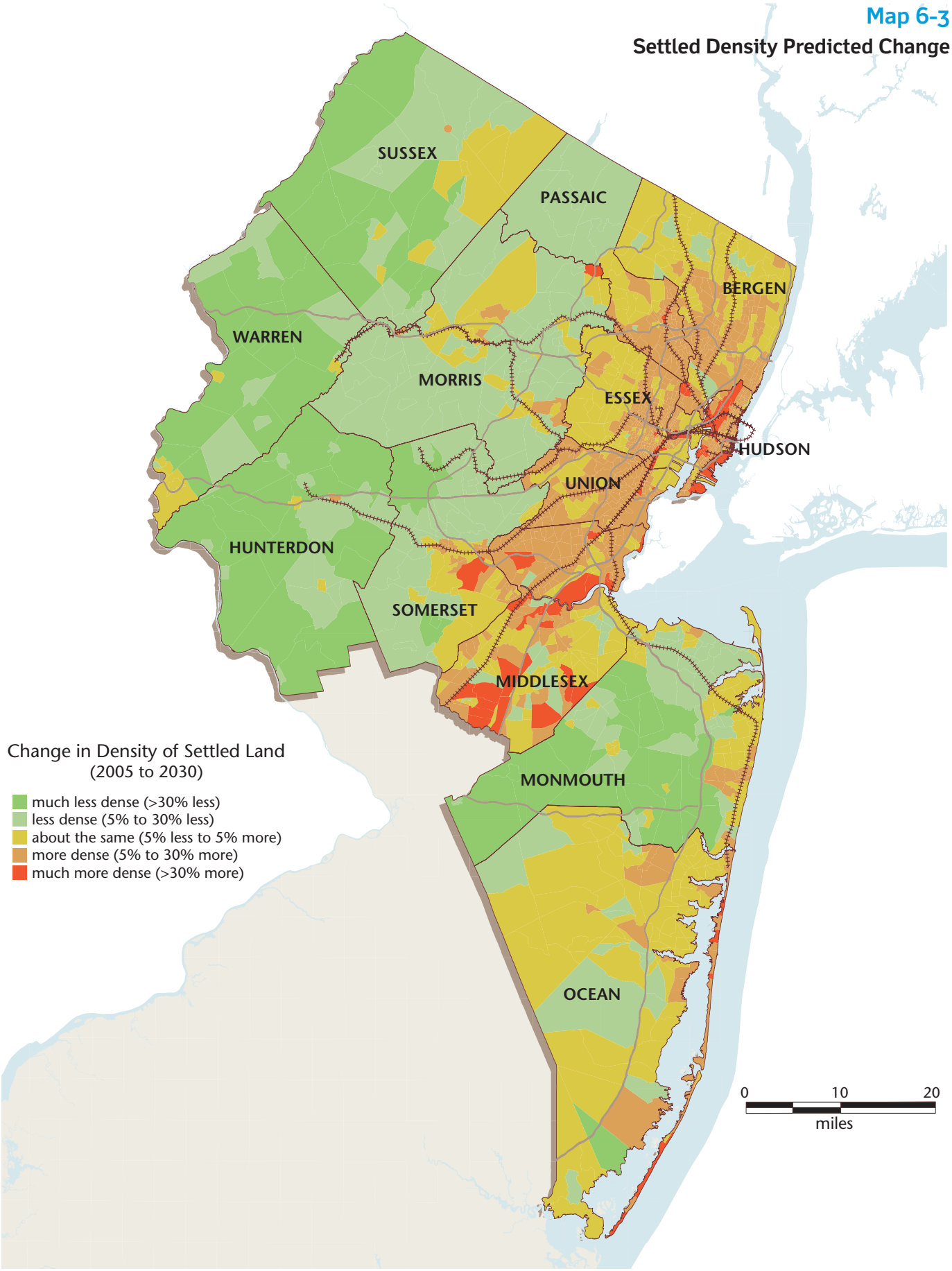
Implementing Smart Growth policies to encourage greater density where possible, as advocated in this plan, will ultimately help achieve a greater balance between auto and transit use in the region.

Figure 6-2

Population Density & Vehicle Miles Traveled (VMT) by County



Map 6-3
Settled Density Predicted Change



Smart Growth — A Solution for Sprawl?

Smart Growth in New Jersey will take the form of compact, mixed-use development and redevelopment in recognized centers and other designated areas, as outlined in the State Development and Redevelopment Plan. In particular development is encouraged near existing infrastructure and public transportation services. The Office of Smart Growth cites several examples of successful Smart Growth planning in the NJTPA region, such as Jersey City, Elizabeth, Hoboken, Red Bank, and Hope. Each of them has encouraged walkable town centers and neighborhoods and taken advantage of mass transit accessibility. These initiatives are examples of how Smart Growth can work in the region.

However, not all such initiatives are met with enthusiasm. State laws and their accompanying regulations to advance Smart Growth often are controversial and seen as incursions on local home rule and private property rights. As a regional planning agency with a Board that contains representatives of all the region's counties, the NJTPA is uniquely positioned to promote Smart Growth. Like other transportation agencies in the region, however, the NJTPA has no authority over land use decisions but has a leadership role in providing accessibility and mobility options in ways that discourage sprawl and promote compact development. The following sections highlights how this plan will advance Smart Growth in the region. Map 6-4 indicates projects with particular relevance to Smart Growth, such as project corridors with complimentary TMA strategies, Transit Villages, and more.

Integrating Smart Growth into the Planning Process

This plan fully integrates Smart Growth principles into the planning process used to identify, prioritize and implement specific improvement projects to meet the region's needs

Sparta, Sussex County

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LEGEND
Transit Villages
Integrated Transportation-Land Use Studies
Preservation Areas
Interstates/Toll Roads
US Highways
State Highways
Passenger Train Lines
County Boundaries
Water Features
Map 6-4
Smart Growth Initiatives
Highlands Preservation Area
SUSSEX
PASSAIC
BERGEN
WARREN
MORRIS
ESSEX
Hackensack Meadowlands
HUDSON
UNION
HUNTERDON
SOMERSET
MIDDLESEX
MONMOUTH
OCEAN
Pinelands Preservation Area
0
10
20
miles

over the next 25 years. The North Jersey Strategy Evaluation — the technical analysis that forms this plan's foundation as discussed in Chapter 3 — incorporated Smart Growth concepts in several ways. It established performance goals for the region's transportation system based on area types consistent with the planning areas set out in the State Development and Redevelopment Plan. For example, it was expected — and accepted — that residents of urban areas should have greater access to jobs and other opportunities than rural residents, while rural roads should have less congestion than those in busy urban areas. In addition, performance measures focused on accessibility, a key aspect of Smart Growth, which encourages the development of housing, employment, retail, recreational, and educational opportunities in close proximity to one another.

Thus, the technical analysis used to examine transportation needs and recommend strategies in the region incorporated key Smart Growth principles. To follow-up and refine these needs and strategies, the NJTPA is pursuing a variety of study and project development activities that will likewise incorporate and seek to advance Smart Growth principles.

In particular, the NJTPA recently completed a Strategy Refinement effort to further investigate and assess strategies in selected locations with the goal of developing concepts for future improvement projects. In the spirit of Smart Growth, this study explicitly connected transportation and land use, encouraging an understanding of how transportation serves particular places and markets in the region. As listed in Chapter 5 (and detailed in Appendix K), many of the strategies being recommended involve transit, walking/biking and intermodal improvements that will help meet Smart Growth goals.

In addition, there are several integrated land-use/transportation corridor studies currently underway or planned for the near future in the region that will address local needs identified in the Strategy Evaluation. These studies will approach significant transportation needs in the region through a comprehensive approach that examines local land use patterns and the demands they create on the transportation system. These studies are focusing especially on regional facilities in growth areas where transportation infrastructure may not be able to handle the growth expected. These studies include:

- Interstate 78 Transit Corridor Study, Somerset, Hunterdon and Warren counties
- Route 31/Flemington Circle in Flemington and Raritan Township, Hunterdon County
- Interstate 78/County Route 523 Interchange, Tewksbury, Hunterdon County
- Smart Growth Study, Manalapan, Monmouth County
- Route 9 Corridor Study, Various Municipalities over a 30-mile stretch, Ocean County from South Toms River to Tuckerton
- Route 70, Duquesne Boulevard to Route 88, Brick, Ocean County
- Route 22 Sustainable Corridor Study, Bridgewater, Somerset County
- Route 57, Various Municipalities over a 21-mile stretch, Warren County from Phillisburg to Hackettstown
- Rt. 440, Bayside Redevelopment, Jersey City from Rte 1 & 9 to Bayonne
- Rt. 17 Integrated Land use/Transportation Study from Paterson Plank Road to the Garden State Parkway in Paramus
- Rt. 9 Lakewood to Dover Integrated Land Use/Transportation Study, from Route 88 in Lakewood to Route 571 in Toms River
- Route 1 Regional Smart Growth Strategy, from Trenton to New Brunswick passing through 15 municipalities in 3 counties

The I-78 Corridor Transit Study

The NJTPA is the lead agency for an integrated transportation and land use study of one of the region's most heavily traveled corridors. The I-78 Corridor Transit Study will assess the need, impact and feasibility of various transit strategies along the I-78 Corridor between the region's Somerset County and Lehigh County, Pennsylvania. The study ultimately will recommend transportation improvements, particularly transit improvements, which are needed to support the sustainability of the corridor and the region. The recommendations will include new and expanded park and ride facilities, bus service enhancements, and related needed highway improvements. The study will also provide a basis for a more extensive and detailed planning and environmental assessment of the possible extension of the Raritan Valley Line between High Bridge and Phillipsburg.

In addition to NJDOT and member counties, the NJTPA is working closely with NJ Transit, the Lehigh Valley Regional Planning Commission (the MPO for the Allentown area), PennDOT and local Transportation Management Associations.

Beyond these corridor-wide studies, the NJTPA subregions also are increasingly focusing on Smart Growth-related efforts in their planning. The NJTPA Subregional Studies program annually funds such work, much of which directly promotes Smart Growth strategies such as multimodalism, bicycle/pedestrian travel, transit-oriented development, steering and controlling growth, etc.

The results of many of these study and planning efforts are project concepts that will advance through the "project pipeline" to become candidates for funding through the NJTPA Transportation Improvement Program (TIP). To evaluate candidate projects for funding, the NJTPA uses a scoring system that ranks projects according to a variety of criteria, a number of which directly reflect Smart Growth principles. For instance, extra points are awarded to projects supporting access to designated centers or contributing to the redevelopment of urban brownfield sites. Highly scoring projects receive priority for funding.

Future modifications of the prioritization criteria will be explored to score projects on additional Smart Growth-related measures as well as to insure the integration and consistency of local plans with the state plan and related growth management legislation.

Thus, the planning process overseen by the NJTPA uses a variety of mechanisms to see that transportation investments reflect the commitment to Smart Growth made in this plan. These investments will increasingly focus on needs in designated centers and growth areas, brownfields, urban areas, older suburbs and other places with appropriate infrastructure in place.

Transit Oriented Development

The NJTPA also supports Transit Oriented Development (TOD), another tool that integrates land-use and transportation planning in an effort to reduce sprawl and promote more compact development in areas with existing transportation infrastructure.

NJDOT oversees the region's TOD efforts to promote compact, pedestrian-friendly development within walking distance of existing transit stations through its Transit Village Initiative. In fact, this "new" idea actually reflects historic development patterns. In the late 19th and early 20th centuries, town centers thrived around New Jersey's railroad stations. The Transit Village Initiative aims to revitalize these historic centers. It also aims to provide more housing and commercial development within walking distance of transit

South Orange, Essex County

NJ Transit/Michael Rosenthal

stations, thereby allowing residents to access transit without relying on crowded park-and-ride facilities.

Municipalities that have demonstrated a strong commitment to revitalizing and redeveloping the area around their transit facilities can be designated Transit Villages, making them eligible to receive priority for state redevelopment grants and to receive special assistance from 10 state agencies involved in transportation and development. There are currently 16 designated Transit Villages in the state. Thirteen are in the NJTPA region: Belmar, Bloomfield, Bound Brook, Cranford, Jersey City (Journal Square area), Matawan, Metuchen, Morristown, New Brunswick, Rahway, Rutherford, South Amboy, and South Orange.

Transit Villages have proved successful, drawing a variety of both residential and commercial development. The region will pursue an expanded and ambitious program of transit-oriented development. There are more than 100 commuter rail stations in the region, as well as major bus facilities and PATH and light rail stations. Any of these could potentially serve as the focus for transit-oriented development. A prolonged effort over the next 25 years to make the neighborhoods surrounding the region's transit facilities desirable locations for housing and commercial development will do much to combat sprawl and create a more efficient regional transportation system.

Goods Movement and Brownfields Redevelopment

In the area of goods movement, as discussed in Chapter 5, this plan includes initiatives to encourage freight-related development in the region's brownfield sites in and around the port, rather than in undeveloped "greenfields" in areas such as Exit 8A of the New Jersey Turnpike in Middlesex County and even further into the region's periphery. The NJTPA will study transportation access and traffic circulation issues at and near 17 sites identified as part of the current "Portfields" program being pursued by the Port Authority & the State Economic Development Authority. Working with the state and the Port Authority, the NJTPA will identify transportation investments and policies to accomplish their eventual redevelopment for freight related uses. Such redevelopment of brownfield sites fulfills Smart Growth goals by realizing industrial development in the region's urban core, bring much needed jobs to residents there. At the same time, it limits the growth of truck travel on the regional transportation network by keeping freight-related activity close to the port.

Highlands, Pinelands and Meadowlands

This plan supports efforts to protect and manage growth in districts with particularly sensitive natural features or environments. Land use in both the Pinelands in the southern part of the region and the Meadowlands in the northeast are managed by commissions created by state legislation to insure their preservation. In the last year, similar legislation was approved to manage growth in the Highlands, in the northwest. The intent was to protect open space and particularly the vital water supplies for much of northern New Jersey. All these regulatory initiatives seek to balance desired growth with the capacity of the environment to sustain it. The NJTPA will coordinate its planning process to support growth management in these areas.

Demand Management & Complementary Strategies

While Smart Growth initiatives will help limit future sprawl, it is expected that considerable additional sprawl development will occur throughout the region, particularly in the near term. The NJTPA must be prepared to address the negative transportation impacts of this new development which will only compound existing problems.

One key approach endorsed by this plan is the implementation of demand management strategies in appropriate settings to help encourage fewer motor vehicle trips, especially those involving single-occupancy vehicles. In particular, the RCIS calls for the continued allocation of funds for county-based Transportation Management Associations (TMAs), which often partner with businesses to advance a variety of transportation policies — many involving demand management — consistent with Smart Growth. These include: promoting compressed work weeks, flex time and telecommuting; matching potential carpoolers; subsidizing vanpools; promoting transit use; providing guaranteed rides home for those who have to work late or leave early unexpectedly; and offering cash to employees in lieu of parking privileges.

The NJTPA also recognizes that while every effort should be made to avoid road projects that encourage sprawl development, inevitably strategic expansions in road capacity sometimes will be warranted. In implementing major road projects the NJTPA will look to implement "complementary" strategies — such as shuttle buses, pedestrian walkways and bicycle paths — in conjunction with major roadway projects to limit their sprawl inducing impacts. TMAs will also be enlisted to implement complementary strategies in conjunction with highway improvement projects. This will occur in several locations, including:

Bill Wittkop

- Implementation of a circulator bus shuttle service around Paterson in conjunction with capacity improvements on the Interstate 80 corridor.
- Creation of a Route 10 shuttle service serving several major employers in Morris County as part of proposed improvements to the route.
- Development of a circulator shuttle between Raritan Borough, Bridgewater and Somerville in Somerset County to complement improvements along Route 22.

"Retrofitting" existing transportation networks and neighborhoods to better fulfill Smart Growth goals is another approach to addressing the negative impacts of sprawl. For instance, the NJTPA has sponsored subregional studies investigating the redevelopment of "grayfields" — including failed shopping centers and commercial areas in older suburbs — to create mixed use development accessible by transit. The NJTPA will encourage similar efforts as part of its commitments in this plan.

Transportation & Its Impacts on Communities — Environmental Justice

Another aspect of the relationship of land use and transportation is how the benefits and burdens of transportation investments are distributed among the region's communities. The federal government calls on the NJTPA to demonstrate that the transportation system is proportionally serving all sectors of the population according to their needs — a principle called Environmental Justice. While measuring the benefits and burdens of transportation projects is difficult, the NJTPA is conducting an ongoing analysis of the region that puts a particular emphasis on the region's minority, low-income, elderly and mobility-impaired residents, hereafter referred to as Environmental Justice (or EJ) populations.

Thus far, the NJTPA has identified the magnitudes and locations of EJ populations, evaluated trends in these populations, and begun to consider transportation issues relevant to these populations. In addition, the NJTPA has examined the distribution of road and bridge investments in the region, comparing the levels of investment in EJ communities with the rest of the region.

The two most significant results of this analysis are:

- EJ populations in the region have grown substantially in recent years.
- Regional road and bridge investment in recent years has been slightly greater in EJ communities than in other parts of the region.

The results of this work and its implications are discussed in further detail below.

EJ Populations in the Region

Between 1990 and 2000, the NJTPA regional population expanded by 9.7 percent, from 5.8 million to 6.3 million persons. During that period, EJ populations increased at a substantially higher rate in three out of four categories (minorities, low-income and mobility-impaired persons).

The region's minority population increased to nearly 36 percent of the population in 2000. The minority population grew 30 percent, three times the rate of the total population. In 2000, the low-income population of the NJTPA region totaled 523,500, making them 8.3 percent of the region's total population. The low-income population also increased substantially faster than the total population, at a rate of 25 percent between 1990 and 2000. Persons over the age of 65 numbered close to 840,000 in the NJTPA

NJ Transit / Michael Rosenthal

region in 2000, or 13 percent of the total population. The number of people 65 or older increased 7.5 percent between 1990 and 2000. It is critical to note, though, that this trend will increase dramatically when the Baby Boom generation starts to reach the age of 65 after 2010, as indicated in Chapter 2.

The increase in the number of mobility-impaired people in the region from 1990 to 2000 was less clear, as the US Census changed the way that group was counted. According to the 2000 Census, there were nearly 440,000 mobility-impaired persons in the NJTPA region in 2000, accounting for 7 percent of the region's total population.

In the future, the minority and elderly populations can be expected to increase rapidly as

Job Access & Reverse Commute

Assisting welfare recipients and other low income persons in accessing jobs and employment related services is the focus of the Federal Transit Administration's Job Access and Reverse Commute (JARC) grant program. Localities receive funding through JARC to developing transportation services such as shuttles, vanpools, new bus routes, connector services to mass transit, and guaranteed ride home programs. The NJTPA works closely with NJ Transit to select and monitor JARC projects. In addition, the NJTPA has developed a plan to guide where transportation services are most needed. By January of 2006 seventeen JARC services will operate in northern New Jersey. Examples include:

- The Essex Night Owl is a demand responsive feeder service that provides transportation to low-income residents of Newark, East Orange, Orange and Irvington to and from Newark Penn Station during overnight hours when NJ Transit bus service is not available.
- The LINK, managed by the Hunterdon County Department of Human Services, enhances bus routes and moves people in, around, and out of the county in a cost effective manner to help clients/workers get to and from jobs in a timely manner.
- Meadowlink operates a shuttle which provides access to entry-level employment for residents of Jersey City to the Federal Reserve Bank in East Rutherford and the Bank of New York in Lodi.
- Ocean County runs a modified fixed bus route that serves the barrier island communities of Seaside Heights, Lavallette, Ortley Beach and Seaside Park by connecting clients to employment opportunities along the Route 37 corridor in Dover Township.
- Warren County offers a shuttle service along the Route 57 corridor accessing employment opportunities along the corridor and enabling county residents to transfer onto other public transportation systems.

a proportion of the regional population. The population in poverty will vary with the overall regional economy. The mobility-impaired population can be expected to increase in tandem with the elderly population.

Distribution of Highway and Bridge Investments

The NJTPA's analysis also looked at the distribution of roadway transportation investments in the region. The key finding of this examination was that road and bridge investment in recent years has been slightly in favor of communities with substantial EJ populations. This was true of projects being built as well as with those in earlier stages of project development during fiscal years 2003, 2004 and 2005.

The fact that EJ districts receive a majority of TIP highway and bridge funding is likely due to two factors. First, EJ populations tend to be concentrated in older communities with extensive transportation infrastructure needs, including repair and maintenance needs. Second, the region's largest projects are located in these areas. Further study would be needed to confirm these assumptions.

Travel Behavior of EJ Populations

The analysis found several patterns in the travel behavior of EJ populations. For example, minority and low-income residents are much more likely to travel by foot than the rest of the population. Buses also are the most widely used form of transit for minority and low-income residents of the region. In addition, travel times for minority and low-income residents of the region tend to be longer, regardless of the mode of transportation. This may be explained by the greater congestion and higher transit use in many of the areas with the greatest concentration of these residents, namely older cities and inner suburbs. Finally, elderly residents of the region use public transit very little and therefore are highly dependent on auto travel.

Paterson, Passaic County

Bill Wittkop

Policy Implications

The analysis of EJ populations in the region does point toward policies that could be implemented to improve transportation services in EJ communities.

Perhaps most significant is the ongoing importance of the Job Access-Reverse Commute (JARC) program, which will continue to play an important role in providing transportation to minority and low-income populations (see box: "Job Acccess & Reverse Commute").

The prevalence of walking in minority and low-income communities indicates that improvements to pedestrian safety would benefit these areas. The NJTPA's Development of Regional Safety Priorities project examined many of the site-specific safety issues relevant to EJ communities throughout the region and recommended safety improvements at several locations.

EJ populations tend to live in areas where travel in general is slower than the rest of the region. Measures that address traffic congestion, especially at the local level, may benefit EJ communities. Improvements in local travel speeds might be enhanced, for example, by timing and coordinating traffic signals. However, increasing speeds might also negatively impact pedestrian safety or otherwise adversely affect community character. These needs must be carefully balanced.

Older people who lose access to cars (either as drivers or riders) require alternative means of transportation. The location and accessibility of transit facilities for the elderly need to be considered in developing initiatives to improve transportation for the elderly population. Land use design for elder communities also should be oriented to walking and transit use whenever possible.

The transportation needs of the mobility-impaired population, which is rapidly growing in numbers, need to be further studied. Currently, county-run paratransit operations do much to meet the needs of this population, but may require expansion to keep up with this demand as the population ages.

The reliability, convenience and cost of bus service and the potential for additional public transit investment targeted to EJ communities should be evaluated. This evaluation could lead to the development of measures to better address the transit needs of EJ populations.

Finally, in order to ensure that investments continue to be proportionally distributed in the region between EJ and non-EJ communities, the NJTPA will work to see that projects currently in development are moved forward as appropriate to be sure that improvements are evenly distributed.

Chapter 7

Financing Regional Transportation

Dwight Hiscano

This plan recommends a host of transportation improvement projects, large and small, at locations around the region as well as a variety of broader initiatives — studies of needs along congested corridors, research into innovative strategies and technologies and changes in land use and other policies that affect transportation, among them. The funding for all these recommendations will come principally from the state and federal government.

However, because needs will outstrip resources for the foreseeable future, the NJTPA must continue to establish funding priorities for its region and carefully manage the expenditure of available resources. The Regional Capital Investment Strategy (RCIS) presented in Chapter 4 includes guidelines for how available funding should be allocated among various transportation needs in the region.

Successfully implementing the RCIS will depend on realizing increases in funding for transportation over the next 25 years at both the state and federal levels. Implementing tax and other financing measures to provide the needed increases will be a challenge. But it is a challenge that has been met in past decades and one that will insure continued progress on the state's aging and heavily used transportation system.

Dwight Hiscano

Route 10, Essex County

This chapter presents forecasts of future funding anticipated to be available to meet regional needs and discusses key transportation funding issues facing the region. It demonstrates that, in keeping with federal requirements, this plan is "fiscally constrained," meaning that funding can reasonably be expected to be available to implement the planned projects and recommendations it identifies. This chapter draws upon separate analyses found in Appendices I and J. All funding amounts reported in this chapter are in 2004 constant dollars.

Revenue Assumptions and Projections

The NJTPA worked with NJDOT and NJ Transit to assess long term financing needs and make assumptions about future transportation funding for northern New Jersey. These assumptions, in turn, yielded revenue projections through 2030. The NJTPA region currently has available approximately $2 billion in funding for transportation purposes each year — normally split about evenly between state and federal sources. This funding is forecast to increase about 56 percent to an average of $3.3 billion per year. To achieve this overall increase over the next 25 years, state funding is assumed to increase substantially (85 percent) and federal funding modestly (25 percent). Further details about the rationale for these increases is provided below and in Appendix J.

The larger increase in state funding compared to federal funding (85 to 25 percent) reflects an expectation that New Jersey will not be able to depend on heavy infusions of federal funds to address its future needs. The state will increasingly have to take on more of the burden of supporting transportation. To do so, the state — and in particular the Governor and the Legislature — will face significant challenges. They first must address an immediate crisis in state funding in which all available state funding will be consumed by debt service by FY 2007. Failure to address the crisis would, within a short time, leave New Jersey in a position of being unable to ensure safe and reliable travel on one of the most heavily traveled transportation networks in the nation. The NJTPA Board has passed resolutions urging state action on the crisis, including implementing new mechanisms for fiscal accountability, dedicating gas taxes to the transportation system and expanding aid to counties and towns that must address growing needs on the transportation network.

Second, in conjunction with addressing the crisis, the state must provide long-term financing for a robust program of maintaining and improving the transportation system as called for in this plan. Without it, this plan's vision for a strengthened, growing region would likewise be at risk. The RCIS underpinning this plan assumes that future funding will be enough to not only address the region's top priority of maintaining existing infrastructure in a state of good repair but also to support a wide range of enhancements and expansions to the system — improved intersections, expanded rail service, limited road widenings, etc.

If funding falls substantially short of the levels assumed, however, a greater share of funding will have to be devoted to maintaining existing infrastructure before any funding can be allocated to enhancing or improving the system. In effect, as funding drops the region is left in a more defensive mode, just keeping existing facilities safe and functional while doing less to support economic growth, provide travel alternatives, ease congestion, address transit crowding or cope with other needs.

The scenario testing performed in preparing the RCIS (described in Chapter 4 and detailed in Appendix D) provided some insights into the stakes involved. A future scenario that maintained investment at current levels was found to substantially erode transportation system performance over the life of the plan. This includes leaving region's residents with

Dwight Hiscano

10-20 percent lower accessibility to jobs, 10 percent greater traffic delay from roadway incidents as well as less sustainable land development patterns, and poorer quality of life overall than this plan anticipates can be achieved. The NJTPA, through the financial assumptions in this plan, has rejected such a pessimistic scenario.

State Funding

As noted, the state portion of funding, (about $1 billion of the $2 billion available each year) is now in jeopardy because of the likelihood that all available state funding will be consumed by debt service by FY 2007. As a starting point for developing projections of future funding, summarized below, NJTPA, NJDOT and NJ Transit agreed that the state legislature and administration can be expected to resolve the funding crisis through measures to raise additional funding for transportation. This expectation is based on the state's long history of taking responsible action to meet transportation needs, including the original establishment of the NJ Transportation Trust Fund in 1984 and its subsequent reauthorizations in 1988, 1995 and 2000.

However, this plan goes beyond assuming just a minimal, short-term "fix" by the state legislature and administration to address the crisis and restore existing levels of state funding. Over the next 25 years this plan assumes that the state legislature and governor will increase state funding for transportation by 85 percent. The increase will yield a total of $49.24 billion to the NJTPA region over 25 years compared to $26.64 billion that could be expected from current state funding. Averaged over the period, yearly state funding to the NJTPA region will rise from the current average of $1.07 billion per year to $1.97 billion.

While an 85 percent increase over 25 years is substantial, it appears reasonable by historical standards: over the last 17 years (since 1988) state funding has increased 108 percent. In 1988, the state implemented a 2.5 cent increase in the motor fuels tax (to 10.5 cents/gallon) and a 4.5 cent increase in the portion of the tax dedicated to the state's Transportation Trust Fund (to a total of 7 cents).

This plan assumes that the future increase of 85 percent in state funding will be realized through adoption of additional revenue measures by the state legislature and administration as well as more conservative and responsible debt financing through the state Transportation Trust Fund that will avoid any recurrence of the current crisis. The assumed increase will be accomplished in two phases:

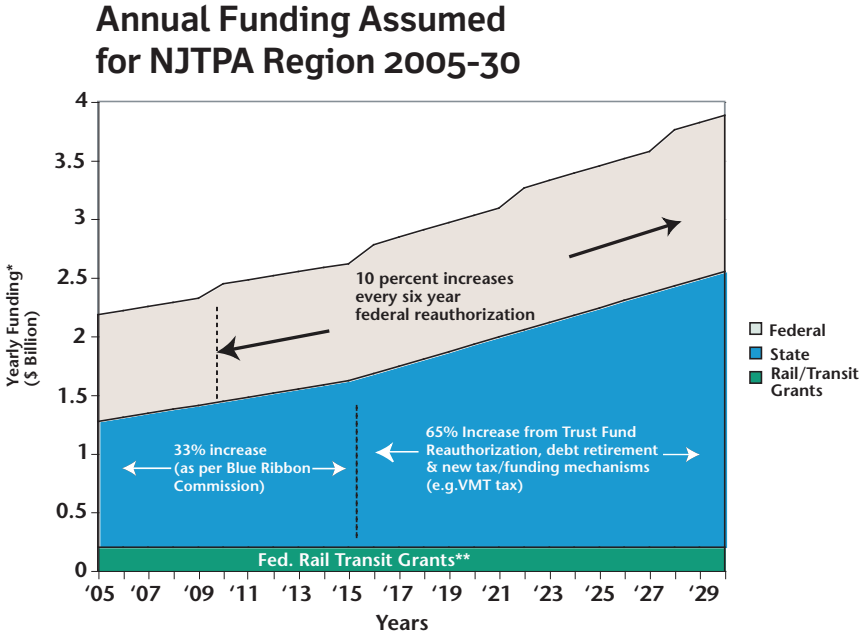
- An increase in state funding that will average 33 percent over the next 10 years (from $1.07 billion to $1.42 billion per year), achieved through one or more legislative enactments, in keeping with the recommendations of the Blue Ribbon Commission. The Commission in November 2003 recommended a 33 percent increase in funding through a minimum 12.5 cents increase in the gas tax (with dedication exclusively for transportation purposes). Given that debt financing has continued since the Commission issued its report, an increase of more than 12.5 cents and/or the addition of other revenue measures may now be required to achieve the recommended increase;
- Another 65 percent increase in the 2016-2030 period (from $1.42 million to $2.34 billion per year) as a result of additional raises in the gas tax, partial retirement of current debt and, as discussed later in this chapter, new funding mechanisms (such as congestion pricing and/or possible mileage-based tax) which will be needed to offset gas taxes lost to more efficient auto technologies and/or alternative fuels;

The above increases will include or be augmented by funding from other non-federal sources including contributions from the Port Authority of NY & NJ for specific projects, voter-approved Bridge Bond Acts, transit lease agreements, etc.

Achieving these increases, it must be emphasized, will require measures to increase transportation funding every few years, principally, in conjunction with reauthorizations of the state Transportation Trust Fund. It is appropriate to view these increases as investments in the state's economy and quality of life which the transportation system is so vital in supporting. State elected officials and citizens have recognized this in the past through approval of the 1988 revenue measures noted above and, most recently, with approval of the 1999 Bridge Bond Act (which raised $500 million).

Federal Funding

Much of the above discussion on the need for reasonable increases in funding over the



* Constant 2004 dollars (inflation not taken into account)

** Project specific grants assumed to total $3.75 billion (shown as $150 million per year)

next 25 years also applies to federal transportation funding. However, over the past two decades Congress has increased funding only modestly (14 percent over the last 10 years). In addition, New Jersey has seen a declining share of funds available nationwide for transportation. For this reason, this plan assumes that federal funding to the state (excluding rail transit expansion grants discussed below) will increase only moderately, by 25 percent, over the next 25 years.

Still, it must be noted that the federal transportation reauthorization just signed into law in August 2005, may provide the state with substantial increases in certain categories of funding. An exact accounting is not yet available. As a result, this plan continues to take a conservative approach to future federal funding, assuming a 2 percent increase for the next five years, and a 10 percent increase for each 6-year reauthorization thereafter — for a total 25 percent increase through 2030. This will yield $28.48 billion in federal funding to the region over 25 years compared to $22.79 billion that could be expected from current federal funding. Averaged over the period, yearly federal funding to the NJTPA region will rise from $912 million per year to $1.14 billion per year. A portion of this funding will be used for the repayment of GARVEE bonds which is discussed later in this chapter.

In terms of federal rail transit grants (Full Funding Grant Agreements), it is assumed that $3.75 billion will be received for transit expansion projects (including THE tunnel) over 25 years. This is an average of $150 million per year compared to the $101- $130 million received in the past three years. This federal funding will be matched by an expected $8.25 billion in state/non-federal funding, for a total of $12 billion for new transit expansion projects through 2030.

Total Funding

Overall, revenue projections based on the above assumptions foresee that over the next 25 years the northern New Jersey region will realize $81.48 billion in transportation funding. This represents a 56 percent increase over the $52.38 billion that could be expected over 25 years from current average state and federal funding received each year. The chart at left depicts, in simplified form, the assumptions made about annual state and federal funding projected to be received by the NJTPA region between 2005 and 2030.

Expenditures

The $81.48 billion the NJTPA is projecting to be available from state and federal sources will provide the principal means to implement this plan over the next 25 years. Combined with new financing mechanisms and policies identified later in this chapter -- in particular, providing needed funding for NJ Transit and NJDOT operations and augmenting support for freight infrastructure -- the projected funding will be sufficient to undertake all projects and programs identified in this plan as well as support transportation investments over the long term. The following table summarizes the envisioned expenditures. It shows reasonably expected revenues divided among six investment categories according to the guidelines in the Regional Capital Investment Strategy (RCIS) as discussed in Chapter 4.

As indicated, of the $81.48 billion available over the next 25 years, roughly $20 billion will go to projects and programs already committed for funding in the near- to long-term, leaving about $61 billion for future projects and programs. This $20 in committed expenditures includes all projects and programs in NJTPA's TIP and the 70 projects in PDWP for which costs can be determined (that is, projects that have reached the "preliminary design" phase of work). The $61 billion in remaining funding will be expended on two

Investment Category [1]	Estimated Revenues, 2006-2030, Allocated According to RCIS Guidelines		Forecast of Expenditures (Millions of $) Committed Near-Term (2006-10)[2]	Committed Mid-Term (2011-20)[3]	Committed Long-Term (2021-30)[4s]	Remaining
	Percent	*Amount*				
Bridges	15%	$12,410	$1,735	$1,405	$139	$9,131
Road Preservation & Enhancement	20%	$16,711	$2,102	$1,515	$885	$12,209
Road Expansion	2%	$1,489	$571	$418	$97	$403
Transit Preservation & Enhancement	40%	$33,340	$2,412	$545	$606	$29,778
Transit Expansion	16%	$12,070	$1,781	$5,253	$158	$4,878
Freight, ITS, TDM, Safety, Bike/Ped	7%	$5,460	$584	$417	$136	$4,324
TOTAL Expenditures*	**100%**	**$81,480**	**$9,185**	**$9,552**	**$2,021**	**$60,722**

1. Aggregations of the 12 RCIS categories.
2. Sum of FY 2006-2008 TIP projects and programs that will be completed by 2010.
3. TIP projects completed after 2010 plus FY 2006 PDWP projects expected to be completed by 2020; assumes completion of THE (ARC) project. Includes TIP programs for the FY 2006-2010 period assumed to continue during 2011-2020, with a growth factor of 1 % per year.
4. FY 2006 PDWP projects expected to be completed after 2020. Includes TIP programs for the FY 2006-2010 period assumed to continue during 2021-2030, with a growth factor of 1 % per year.

Bound Brook, Somerset County

Ron Tindall

categories of projects/programs: 1) the 65 projects in the PDWP that still must undergo detailed study (these projects are mostly at the "concept development" and "feasibility assessment" phases of work when the project scope and costs are yet to be determined); and 2) projects and programs that will emerge from future studies undertaken over the long term as a follow-up to strategies and policy initiatives recommended in this plan.

The $61 billion available in future funding amounts to roughly triple the cost of the currently identified $20 billion complement of expenditures and therefore will provide sufficient funding to address all foreseeable future project and program needs.

These future expenditures will follow the guidelines presented in the RCIS, with roughly 60 percent devoted to preserving and enhancing the region's existing road, bridge and transit infrastructure. Most expenditures for new capacity expansions will be directed to the transit system which will receive 16 percent of funding for this purpose while road expansions will limited to 2 percent of available funding. As indicated in the Transit Investment Analysis, Appendix I, of the $12 billion available for transit expansions, $6 billion will be allocated to the new trans-Hudson tunnel and the remaining $6 billion to the various rail transit expansion proposals being studied. Allocations of funding to particular rail proposals will depend on assessments of their feasibility, ridership, cost effectiveness, etc. and their success in garnering federal "new start" transit funding. As indicated in the revenue section above, it is expected that such "new start" funding to the region will total $3.75 billion over 25 years; the remaining $8.25 billion in expected transit expansion expenditures will be provided by state and other non-federal sources.

Operating Costs

Achieving the expenditures outlined above will depend not only on gaining the needed capital funding from state and federal sources but achieving needed on-going operating support for the state's implementing agencies, NJDOT and NJ Transit. Operating funds pay for a variety of services such as snow removal, pothole filling, the operation of transit bus routes and trains as well as preventive maintenance and routine repairs on roads and bridges. In addition, operating funds support agency "overhead," including administrative and technical work. Both agencies, depend on appropriations from the state legislature for a large share of their operating support.

NJDOT has faced continued cut-backs in appropriations for operating support. According to the Blue Ribbon Commission report issued in 2003, this included a large drop in personnel devoted to on-going road maintenance which has "come at a real cost to the quality of New Jersey's transportation network." In particular, some work which had been performed on a regular schedule — such as inspections and maintenance of drainage, lighting and roadside vegetation — is now performed only in response to complaints or incidents. This can compromise safety and lead to higher capital costs in the long term as the lack of adequate preventative maintenance can result in major structural damage. *This plan calls for the New Jersey Legislature to increase operating support for NJDOT based on a thorough evaluation of the optimum level of staffing needed to address ongoing needs on the state's heavily used transportation network*.

NJ Transit is one of the most efficiently operated public transit agencies nationwide, supporting nearly 50 percent of its day-to-day operating costs though fares and other revenues. The rest is made up by yearly appropriations from the state government. This subsidy is based on a recognition that encouraging transit ridership is an effective means to achieve a host of social, economic and environmental benefits. The subsidies keep fares at reasonable levels and make transit competitive with auto travel for many types of trips.

Oak Island Rail Yard, Newark

Bill Witkop

Despite the long-standing recognition of the benefits of transit, in recent years, government operating support for transit services has not kept pace with needs. To help close the funding gap, NJ Transit raised fares in July 2005 by an average of 9.9 percent. A prior fare increase in 2001 had raised fares by an average of 10 percent (fares in the previous ten years had remained stable). Still, NJ Transit is diverting over $300 million annually from its capital funding to support operations — a practice that detracts from the agency's ability to meet capital needs for maintaining and improving the transit infrastructure and vehicles.

The lack of adequate operating funding is a growing problem for NJ Transit. Continual cost-cutting, for instance, leaves the agency with fewer staff and other resources to meet the needs of its growing customer base. It also limits its ability to expand services including new bus routes and rail lines that impose additional operating expenses especially during start-up periods. Uncertainty about the level of appropriations to be received for operations each year prevents NJ Transit from efficiently budgeting the funding it does receive.

Aside from concerns about operating funds, the agency must consider the often monumental capital costs involved in pursuing system expansions, particularly on the rail network. The Hudson Bergen Light Rail Line, for instance, cost $2.2 billion for the first two segments now nearing completion. Commitments of scarce funding to such proposed expansions must be balanced against other capital funding needs. In particular, NJ Transit faces mounting costs — which now consume more than half available capital funds — to maintain its existing system. It must also provide service and facility upgrades on this core system to keep pace with growing demand. Added spending is required to comply with a host of mandates, notably addressing post-9/11 concerns for improved security and upgrading facilities to comply with the Americans with Disabilities Act. In sum, decisions about future transit services in the region must be made with primary concern for NJ Transit's financial "bottom-line" — that is, its ability to sustain and grow its "business" in line with available finances.

Without additional funding for operations the agency could see many of its plans threat-

ened. *Only with substantial increases in operating funding provided by the state on a continuing basis can the agency curtail its use of capital dollars for operations.* Indeed over the long term it appears that mechanisms for insuring a stable source of funding for transit are required.

A large number of transit systems across the nation are financed with dedicated funding — including a portion of sales or gas taxes. At the federal level, a mass transit account of the federal Transportation Trust Fund receives roughly 3 cents of the 18.5 cents per gallon federal gas tax. *This plan recommends that the New Jersey Legislature consider similar approaches to establish a stable funding mechanism for transit operations that will yield sufficient operating revenues to support transit operations.*

Innovative Funding

Over the next 25 years this plan foresees the need for the use of innovative finance techniques to supplement state and federal funding or leverage this funding to better address regional needs.

In the period 2015-2030, this plan assumes that new funding mechanisms will have to be employed by the state — and possibly the federal government — to reduce reliance on the gas tax as the principal mechanism for infrastructure funding. Specifically, the likelihood of dramatically increased gas mileage from growing use of hybrid vehicles, the advent of hydrogen powered vehicles and other innovations will mean that gas taxes will yield less and less revenue to the state. There is little doubt that the state will not only have to increase gas taxes but replace or supplement gas taxes with new taxing mechanisms. One prospect, now being experimented with in Oregon, is a tax on miles driven, making use of on-board GPS technologies. In one such system, mileage data is electronically transmitted from the vehicle to the gas pump to create custom add-on taxes for each customer based on their mileage since their last fill-up. Use of GPS technologies, allows out-of-state mileage to be excluded from taxes. It also potentially allows higher taxes to be charged for the use of certain roads or for travel during peak periods over heavily used routes. The latter "congestion pricing" approach is seen by many economists and others as a means to achieve more efficient use of limited roadway capacity.

While other technologies may be employed — or other revenue sources found — the shift to new revenue raising mechanisms beyond the gas tax will provide an opportunity to increase the funding available for infrastructure rehabilitation. *Thus this plan calls upon the state to investigate new long-term state funding mechanisms for transportation based on the inevitable need to reduce reliance on gas taxes as currently administered. In doing so, priority should be placed on achieving congestion pricing where feasible to encourage efficient use of the roadway network.*

This plan also calls for limited use of use of Grant Anticipation Revenue Vehicles or GARVEE bonds to finance key major projects, particularly high-cost bridges, a number of which will be advanced in the initial years of this plan. GARVEE bonds, authorized by federal law, will be used for major projects whose costs are so large that they would crowd out other needed projects if funded over one or two years. The bonds provide the needed funding up-front to be paid back over a 10 or 12 year period with future federal allocations. Although GARVEE funding requires the assumption of some debt over time, the cost of debt service should be more than offset by avoidance of the cost of delay, recurring expenditures for maintenance and the possible increase in construction contract costs. Use of GARVEE financing will require a contingency funding plan should the

GARVEE bonds not be sold as anticipated. *Thus, this plan thus calls for the use of GARVEE funding for specific major projects, on a limited basis, where need for such funding has been fully investigated and shown to be warranted.*

Beginning in FY 2006, GARVEE bonds will be used to finance three projects in the State of New Jersey. The first project is scheduled in FY 2006 for the Route 52 Contract A in the SJTPO region. The Route 139 Contract 3 in the NJTPA region is scheduled for FY 2007 while the Route 52 Contract B is planned for FY 2008. The Route 52 Contract A was selected as the first project for GARVEE funding because of the poor condition of the four bridges on the causeway and the continual emergency repairs needed due to large pieces of concrete falling from the structures. Use of the GARVEE mechanism will enable these important projects to go forward without a major impact on the use of federal funding in any one year and without a massive dislocation in the normal share of federal funding available in each of three MPO areas in the state. As stated above, the GARVEE funding requires the assumption of some debt over 10 to 12 years, but it will be well under 10 percent of New Jersey's expected annual federal funding.

This plan also foresees the need for new and/or innovative funding mechanisms to improve freight related infrastructure in the region. Improved freight related infrastructure — such as the Portway project for linking the port, rail terminals and major highways and new or redesigned Turnpike interchanges — are already underway or planned. However, fully accommodating the projected dramatic increases in freight traffic over the next 25 years will require major additional projects — including possible Portway Extensions, as recently studied — that are likely to present great funding challenges for existing revenue sources.

Methods of raising revenue from freight activity itself for the needed infrastructure must be explored. The methods must be crafted to not overly burden the freight industry and harm the region's competitiveness. Moreover, where possible this revenue raising should support public/private partnerships and involve close consultation with the freight industry to determine project priorities and timing. Among other approaches, revenues could be raised from container tipping or lift fees at major terminals (port and rail) or tolls from freight-only facilities (such as a future portion of Portway or special highway ramps). These funds would underwrite freight project bonds and would be dedicated to infrastructure benefiting the access or flow of freight in order to pass legal review. *Thus, this plan calls for exploring innovative finance mechanisms tapping the growth of freight traffic in the region to help underwrite needed improvements in freight related infrastructure.*

Other Funding for Transportation

The state and federal investments in transportation discussed in this chapter are supplemented by additional investments by a number of transportation authorities in the region — principally, the Port Authority of New York & New Jersey, New Jersey Turnpike Authority and Delaware River Joint Toll Bridge Commission. Their investments will continue over the life of this plan. Key projects planned by the authorities are included in the Project Index. The jurisdiction of these authorities is as follows:

Port Authority of New York & New Jersey: Key facilities operated by the PANY&NJ include Newark Liberty International Airport; Teterboro Airport; the PATH rail system; the Port complex in Newark and Elizabeth; and major interstate New York-New Jersey crossings—Outerbridge Crossing, Goethals Bridge, Bayonne Bridge, Holland and Lincoln tunnels, and the George Washington Bridge. The agency has built passenger ferry facilities, maintains roadways within its facilities and contributes to other key infrastructure ele-

Dwight Hiscano

Route 57, Warren County

ments that access its facilities and aid the movement of goods and people throughout the region. Details of future investment strategies are provided in the *2005-2014 Port Authority Plan: A Vision for the Region.*

New Jersey Turnpike: Legislation to combine the New Jersey Turnpike Authority (NJT) with the Garden State Parkway Authority (GSP) was signed in 2003. The Authority operates and maintains both of these tolled highways. The Turnpike is 146 miles (56 miles in the NJTPA region) and includes 27 interchanges, nearly 500 bridges and 12 service areas. The Garden State Parkway is 173 miles (121 miles within the NJTPA region) and includes 90 interchanges, approximately 300 entrance and exit ramps and nearly 500 bridges.

Delaware River Joint Toll Bridge Commission: Maintains and operates seven toll bridges over the Delaware river, stretching 139 miles from northern Burlington County, New Jersey and Bucks County, Pennsylvania northward to the New York State Line.

The private sector also makes substantial investments that enhance the regional transportation system. In particular, developers are frequently called upon to construct local streets as part of the development process and often will construct or improve county or state facilities impacted by their developments. Also, private operators of ferries and bus lines help supplement or offer alternatives to public transit operators. In the freight sector, private companies are engaged in nearly every aspect of goods movement including private port operations, trucking companies, rail lines and brokering/forwarding firms. All these private operations depend on government-supported infrastructure investments. *As a result, this plan calls for continued cooperation and coordination by the NJTPA with private sector interests, as well as the region's transportation authorities, in it's year-to-year investments of state and federal funding.*

Chapter 8

Performance-Based Planning

Dwight Hiscano

This Regional Transportation Plan is a plan of action. It looks to the future, but by necessity is rooted in a public dialogue about where we have been, how we are doing, and what we can make better. This is performance-based planning. In implementing this plan and in preparing for future plan updates, the NJTPA will continue to pursue performance-based planning. This planning is built around the NJTPA's six goals for regional transportation:

- Protect and improve the quality of natural ecosystems and the human environment;
- Provide affordable, accessible and dynamic transportation systems responsive to current and future customers;
- Retain and increase economic activity and competitiveness;
- Enhance system coordination, efficiency, and intermodal connectivity;
- Maintain a safe and reliable transportation system in a state of good repair; and
- Select transportation investments that support the coordination of land use with transportation systems.

Star-Ledger

Route 287, Middlesex County

The NJTPA goals describe an optimistic vision for the region's future, and performance measures are used to quantify what those goals mean and assess our progress. Performance measures are a thread that connects each step in a systematic and cyclical process. Steps in this process can be summarized as follows:

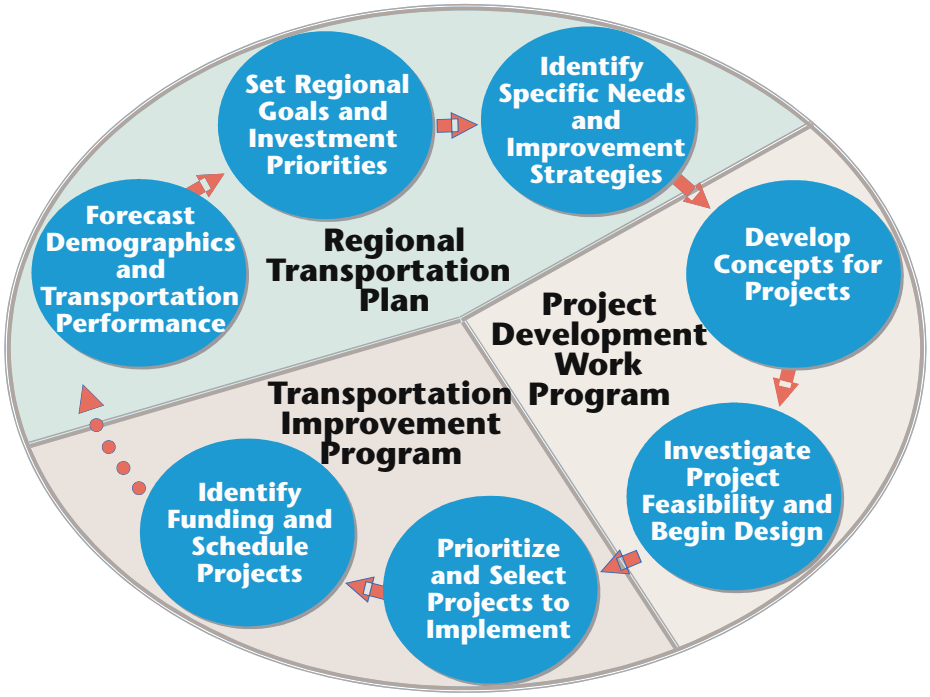
Monitor and Forecast Demographics and Transportation Performance: Gathering the best available data from partner agencies and other sources and running complex computer models, the NJTPA analyzes the region's past, present and future. Measures are used to assess where population, employment and other activity will grow, how the transportation system will provide service, and what broader outcomes can be expected. The results of this part of the process can be seen in Chapters 2 and 3 of this plan.

Set Regional Goals and Investment Priorities: The six broad goals established by the NJTPA relate to transportation service, environmental protection, sustainable economic growth, and other public values. Performance indicators are used to evaluate progress toward reaching these goals. They played an instrumental role in formulating the Regional Capital Investment Strategy that will deliver measurable regional benefits.

Identify Specific Needs and Improvement Strategies: The NJTPA and partner agencies such as NJDOT and NJ Transit use management systems to target areas around the region with specific needs and to begin to examine potential solutions. The NJTPA's Strategy Evaluation, ITS, freight and safety studies exemplify this approach, using goal-oriented measures to look at performance from place to place.

Develop Concepts for Projects: Building on identified needs and priority strategies, the NJTPA and partner agencies refine our understanding of real-world issues and conceptualize possible improvements. These studies are based on tangible data and

The NJTPA Planning Cycle



Dwight Hiscano

consistent performance measures to demonstrate that project candidates are worth implementing.

Investigate Project Feasibility and Begin Design: Project sponsors (implementing agencies) develop selected project candidates in the specific context where they would be implemented, examining physical, community and environmental features. The anticipated impacts of projects continue to be quantified and evaluated using performance measures.

Prioritize and Select Projects to Implement: With a pool of feasible and beneficial project candidates to choose from, the NJTPA determines which warrant allocations of limited funding. It does this by using the best available data to apply performance criteria on a project-by-project basis to set priorities. The criteria directly relate back to goals, investment policy and measures used throughout the planning process.

Identify Funding and Schedule Projects: Scheduling projects within the NJTPA Transportation Improvement Program completes the cycle, but also sets the stage for continued planning. Financial realities must always be considered in creating long range plans and funding projects from year-to-year.

Monitor and Forecast Demographics and Transportation Performance: As the cycle repeats, the NJTPA continues to gather data and apply performance measures to understand how the region is progressing and can be best served. The specific performance impacts of implemented projects — as much as they can be disentangled from other factors — are also to be tracked, so we can continue to learn from our accomplishments, fine-tune improvements, and correct for unintended consequences in the future.

Beyond the creation of this plan, the NJTPA will continue to use performance measures to analyze planning issues and to support collaborative decision-making. As part of its dynamic process, the NJTPA will again set goals and use measures to support a regional

vision, to guide the development of future plans and to make sure that transportation planning is connected to broad societal benefits: quality of life, environmental preservation, sustainable economic growth, equity, safety — and accessibility and mobility.

Project Index

The following Project Index contains current projects and future candidate projects that have been identified through the metropolitan planning process in Northern New Jersey and whose costs can be accommodated based on the 25 year funding assumptions as set forth in Chapter 7. This list does not include routine maintenance projects such as resurfacing, milling and repaving; drainage and traffic signal repair or replacement; and other similar projects. Also included in the Index are potential transit expansions that are under study.

The index arrays projects and candidate projects by the county in which they are located. They are further arrayed by Highway/Bridges; Transit and Authority categories as well as by timeframe. Near-term projects are scheduled to be completed within the next five years while mid-term projects and candidate projects are estimated to be completed in a 5-15 year timeframe. DBNUM designations refer to distinct database numbers assigned to all projects and candidate projects that allow them to be electronically tracked.

The index also includes the appropriate Regional Capital Investment Strategy (RCIS) category for each project. Twelve investment categories were addressed in the RCIS, grouped within the eight principles described in Chapter 4. See Appendix D for further information on the RCIS. Finally, for projects specifically addressing accessibility, mobility or congestion, one or more of the 24 location-specific strategies identified in the North Jersey Strategy Evaluation study are specified. The complete set of identified strategies is discussed in Chapter 3 and provided in Appendix K.

Sean Vroom

Mantoloking Bridge, Ocean County

Bergen

Highway/Bridges

Near-Term

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID
Rte. 17 Sec. Essex Street Bridge (3) Mile posts: 9.90 - 10.40	9105	Bridges	22
Rte. 17 Sec. NYS&W Bridge Mile post: 10.90	94057	Bridges	
Rte. 5 Sec. Bridges, Palisades Park Mile posts: 0.38 - 0.90	98353	Bridges	
Rte. 1&9 Sec. NYS&W RR Bridge (23) Mile posts: 60.56 - 61.10	9240	Bridges	
Rte. 93 Sec. Leonia Boro, Drainage Improvements Mile posts: 1.70 - 2.60	93179	Road Preservation	
Rte. 5 Sec. Bergen County, Drainage Improvements Mile posts: 2.17 - 3.15	94032	Road Preservation	
Rte. 287 Sec. Truck Weigh Station, Bergen County Mile posts: To be determined	858	Road Preservation	
Rte. 17 Sec. Railroad Avenue, Drainage Improvements Mile post: 4.93	93174	Road Preservation	
Rte. 1&9 Sec. Secaucus Road to Broad Avenue (28) Mile posts: 56.80 - 63.00	X207	Road Preservation	21
Rte. 17 Sec. Bergen County Intersection Improvements Mile posts: 1.66 - 8.34	04326D	Road Enhancement	21
Rte. 120 Sec. Paterson Plank Road from Route 17 to Murray Hill Boulevard) Mile posts: 1.58 - 2.60 -	04326B	Road Enhancement	21
Rte. 3 Sec. Route 120 Southbound to Route 3 Eastbound Ramp Mile post: 8.0	04326A	Road Enhancement	21
Rte. 80 Sec. Rochelle Park/Saddle Brook, Noise Walls Mile posts: 63.30 - 63.60	00370A	Road Enhancement	21
Market Street/Essex Street/Rochelle Avenue	98546	Road Enhancement	21
Rte. 80 Sec. Elmwood Park, Noise Walls Mile posts: 60.50 - 62.00	00370	Road Enhancement	21
Rte. 46 Sec. Fifth Street/Jefferson Avenue Mile post: 65.60	93279	Road Enhancement	21
Rte. 46 Sec. Main Street, Lodi Mile posts: 66.65 - 66.66	93281	Road Enhancement	21
Rte. 46 Sec. Little Ferry Circle, Operational and Safety Improvements Mile posts: 69.90 - 70.10	93287	Road Enhancement	21
Rte. 9W Sec. Improvements at I-95/Rt. 4 Mile posts: 0.1 - 0.16	95013	Road Enhancement	21
Electrical Load Center Replacement - North	04324	Safety	

Mid-Term

Rte. 4 Sec. Margaret Street Bridge Mile post: 7.37	95106	Bridges	
Rte. 4 Sec. Jones Road Bridge Mile post: 9.65	94064	Bridges	
Rte. 17 Sec. Central Avenue Bridge, Rochelle Park Mile post: 10.90	94056	Bridges	
Rte. 4 Sec. Webster Avenue Bridge Mile post: 8.21	94028	Bridges	
Rte. 4 Sec. Broad Avenue Bridge Mile post: 9.32	94026	Bridges	
Rte. 4 Sec. Teaneck Road Bridge Mile posts: 7.61 - 7.64	93134	Bridges	
Rte. 4 Sec. Lafayette Avenue Bridge Mile post: 8.52	94027	Bridges	23
Rte. 4 Sec. South Dean Street Bridge Mile posts: 8.85 - 8.97	93130	Bridges	
Rte. 4 Sec. Windsor Road/Palisades Avenue/Conrail Bridge (12) Mile posts: 6.90 7.20	9143	Bridges	
Rte. 3 Sec. Passaic River Crossing Mile posts: 3.83 - 6.36	799	Bridges	22
Rte. 4 Sec. Hackensack River Bridge Mile posts: 5.70 - 6.10	02346	Bridges	21
Rte. 4 Sec. Flat Rock Brook Bridge Mile post: 9.55	93136	Bridges	
Rte. 4 Sec. Jones Road, Drainage Improvements Mile post: 9.70	93183	Road Preservation	
Rte. 4 Sec. Corridor, Hackensack River to Fort Lee Mile posts: 6.10 - 10.80	065	Road Enhancement	23
Rte. 17 Sec. Route 120 (Paterson Plank Road) to Garden State Parkway Mile posts: 5.76 - 13.60	103A	Road Enhancement	23
Route 17 at Passaic Street, Roadway Improvements	NS9601	Road Enhancement	21
Rte. 67 Sec. Main Street Mile post: 1.10	98494	Safety	
Rte. 287 Sec. Glaser's Pond, Long-term Drainage Improvemt Mile posts: 67.00 -68.00	02399	Other	

NJ Transit

Near-Term

Meadowlands Sports Complex	T509	Transit Expansion	12

Projects under Study

Extension of HBLRT from North Bergen to Rutherford/East Rutherford area		Transit Expansion	12
Northern Branch Line		Transit Expansion	12
West Shore Region Line		Transit Expansion	12
Passaic/Bergen NYS&W Project		Transit Expansion	12
New York Susquehanna & Western Railroad		Transit Expansion	12

Authority Projects

Near-Term

NJ Turnpike Authority-Turnpike Interchange Improvements for the Meadowlands Xanadu Redevelopment	TPK0402	Road Enhancement	21
NJ-Meadowland Commission/ Private Developer-Rt. 120 and NJ Turnpike Western Spur Sports Complex Ramps	SAMP43	Road Enhancement	21
PANY/NJ- Palisades Interstate Parking Connector Ramp	CB04-161	Road Enhancement	21
PANY/NJ-E-Z Flow Toll Plaza Program - GWB Upper Level	CB04-205	ITS	19

Mid-Term

NJ-Meadowland Commission-EnCap's Meadowlands Golf Resort Village	NJMC-1	Other	

Essex

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID

Highway/Bridges

Near-Term

Clifton Avenue/Nesbitt Street Bridges over Morristown Line	98523	Bridges	
Rte. 1&9 Sec. Haynes Avenue Bridges and Operational Improvements Mile posts: 46.70 - 47.70	94047	Bridges	
Newark, NJT Morristown Line Bridges	02344	Bridges	
Bloomfield Avenue Bridge over Montclair Line	98342	Bridges	
Rte. 280 Sec. Eastbound over Morristown-Erie Railroad Mile post: 4.27	05394	Bridges	
Bloomfield Avenue Bridge over Branch Brook Park Road	NS0013	Bridges	
Rte. 1&9 Sec. Pulaski Skyway, Bridge Painting Mile posts: 51.52-52.18; 53.17-55.87	04322	Bridges	
Rte. 1&9 Sec. Pulaski Skyway, Deck Rehabilitation Mile posts: 51.52-52.18; 53.17-55.87	03356	Bridges	
Rte. 280 Sec. Passaic River Bridge (AKA Stickel Bridge), rehabilitation Mile posts: 14.42 - 14.60	00358	Bridges	21
Rte. 22 Sec. Weequahic Park Drainage Improvements Mile posts: 58.20 - 59.30	02408	Road Preservation	
EWR Southern Access Roadway	94047A	Road Preservation	
Rte. 78 Sec. Union/Essex Rehabilitation, Springfield Avenue to Route 1&9 Mile posts: 51.4 - 58.5	00373	Road Preservation	
Rte. 24 Sec. I-287 Interchange to West of Route 124 Interchange, Resurfacing Mile posts: 0 - 6.8	04382	Road Preservation	
Newark Circulation Improvements	02380	Road Enhancement	21
Central Avenue, Roadway Resurfacing and Improvements	N0409	Road Enhancement	21
Rte. 21 Sec. Newark Needs Analysis, Murray Street to Edison Place Mile posts: 1.20 - 2.25	99381	Road Enhancement	21
Rte. 280 Sec. Garden State Parkway, Interchange 145 Mile posts: 11.48 - 12.39	05311	Road Enhancement	21
Rte. 46 Sec. Plymouth Street/Clinton Road (52) Mile posts: 52.12 - 53.10 Rte. 159	9113	Road Enhancement	21
Rte. 80 Sec. Two Bridges Road Interchange Mile posts: 52.4 - 52.6	9233B5	Road Enhancement	23
Rte. 21 Sec. TSM 6, Contract 3 - I-280 to Passaic Street Mile posts: 3.40 - 4.20	722B	Road Enhancement	21
Rte. 46 Sec. Hollywood Avenue Mile post: 53.90	9111B	Road Enhancement	21
Rte. 21 Sec. Mulberry Street, Long-term Intersection Improvements Mile posts: 1.41-1.70	99381C	Road Enhancement	

Delancy Avenue, Avenue I to Avenue P	NS0504	Road Enhancement	21
University Heights Connector (AKA I-280, Downtown Connector, Phase II)	824A	Road Enhancement	21
Rte. 46 Sec. Passaic Avenue to Willowbrook Mall Mile posts: 54.96 - 55.56	9233B3	Road Enhancement	23
Rte.80 Sec. Noise Barriers, Par-Troy Hill to Fairfield, Baldwin Rd to Passaic River Mile posts: 44.34 - 53.13	94004	Road Enhancement	21
McClellan Street Underpass	NS9812	Road Enhancement	21
CARGOMATE	HP01015	Freight	18
Rte.21 Sec. VMS/ITS Feasibility Assessment Study Mile posts: 0.60 - 2.15	99381B	ITS	19
Rte.10 Sec. Rockfall Mitigation, Vicinity of Summit Street Mile post: 22.20	01366	Safety	
Rte.21 Fwy Sec. Park Avenue Interchange, Safety Improvements Mile posts: 7.70 - 8.40	93221B	Safety	21
Rte. 21 Sec. Newark Arena Pedestrian Access Study Mile posts: 2.00 - 2.21	98540A	Bike/Ped	15
Rte. 21 Sec. Hamilton Street Bridge over Route 21 Mile post: 2.10	99381A	Bike/Ped	16

Mid-Term

Rte. 21 Sec. Southbound Viaduct Chester Avenue (8) Mile posts: 4.30 - 4.70	9145	Bridges	
Two Bridges Road Bridge and West Belt Extension	NS9801	Bridges	21
Berkeley Avenue Bridge	NS9810	Bridges	
Rte. CR 510 Sec. South Orange Avenue Traffic, operational and roadway improvements Mile posts: 22.10 - 23.52	NS0102	Road Enhancement	21
Rte. 280 Sec. Nesbitt Street to Harrison Avenue, operational improvements Mile posts: 13.80 - 15.20	00314	Road Enhancement	21
Rte. 22 Sec. East of Hilldale Place/Broad Street to Park Road; CSX to Meeker	658F	Road Enhancement	21
Avenue Mile posts: 58.1 - 59.33			
Rte. 23 Sec. Long-term Interchange Improvements Mile posts: 23: 5.1-5.7; 80: 52.8-53.75 Rte. 80	9233B6	Road Enhancement	21
Eisenhower Parkway	011	Road Expansion	24
Portway, Passaic River Crossing	97005D	Freight	24
Rte. 21 Sec. Newark Waterfront Community Access Mile post: 4.1	98540	Bike/Ped	16
Rte. 1&9T Sec. Pedestrian Improvements Mile posts: 0 - 2.3	01347	Bike/Ped	16

NJ Transit

Near-Term

Newark Broad Street Station Improvements and Service Expansion	T507	Transit Enhancement	8
Newark City Subway Downtown Extension	T28	Transit Expansion	12

Projects under Study

Newark-Elizabeth Rail Link MOS2		Transit Expansion	12

Authority Projects

Near-Term

PANY/NJ- New Jersey Turnpike Exit 14 Ingress and Egress-$15.8 million	CP05-098	Road Enhancement	21
Garden State Parkway- Interchange 145 Ramp Improvements (I-280)	GSP087	Road Enhancement	21
PANY/NJ-Fleet Modernization Program	CR02-345	Transit Preservation	

Hudson

Highway/Bridges

Near-Term

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID
Rte. 1&9 Sec. Pulaski Skyway, Deck Rehabilitation Mile posts: 51.52-52.18; 53.17-55.87	03356	Bridges	
Rte. 1&9 Sec. NYS&W RR Bridge (23) Mile posts: 60.56 - 61.10	9240	Bridges	
Rte. 1&9T Sec. St. Paul's Avenue/Conrail Bridge (25) Mile posts: 1&9T: 3.60 - 4.20; 1&9: 54.60 - 55.00	051	Bridges	
Rte. 139 Sec. Contract 2 (12th Street Viaduct, 14th Street Viaduct) Mile posts: 1.02 - 1.45	053B	Bridges	
69th Street Bridge	02311	Bridges	
14th Street Viaduct	NS0311	Bridges	
Rte. 139 Sec. Traffic Mitigation Mile posts: N/A	053D	Bridges	10
Rte. 139 Sec. Contract 3 (Hoboken and Conrail Viaducts) Mile posts: 1.30 - 1.65	053C	Bridges	
Rte. 1&9 Sec. Pulaski Skyway, Bridge Painting Mile posts: 51.52-52.18; 53.17-55.87	04322	Bridges	
Rte. 1&9 Sec. Secaucus Road to Broad Avenue (28) Mile posts: 56.80 - 63.00	X207	Road Preservation	21
Baldwin Avenue, Intersection Improvements	98551	Road Enhancement	21
JFK Boulevard, Section X1V, 18th Street to 67th Street	N0406	Road Enhancement	21
North Sinatra Drive	04388	Road Expansion	21
Union City Intermodal Facility, Bergenline Avenue	98549	Transit Enhancement	14
Portway/Fish House Road/Pennsylvania Avenue	97005B	Freight	22
Portway/New Road, St. Paul's Avenue to Secaucus Road	97005C	Freight	24
Hudson River Waterfront Walkway	HP01012	Bike/Ped	16
Rte. 440 Sec. Jersey City Bicycle/Pedestrian Improvements Mile posts: 440: 21.56 - 23.28; 1&9T: 2.21 - 2.76 Rte. 1&9T	01318	Bike/Ped	15

Mid-Term

Rte. 7 Sec. Hackensack River Bridge (Wittpen Bridge) (2) Mile posts: 0.00 - 0.60	075	Bridges	22
Bergen Arches through Jersey City Palisades	98537	Bridges	24
Secaucus Connector	98552	Road Enhancement	24
Rte. 280 Sec. Harrison Township Operational Improvements Mile posts: 14.92 - 16.00	04305	Road Enhancement	21
Rte. 280 Sec. Nesbitt Street to Harrison Avenue, operational improvements Mile posts: 13.80 - 15.20	00314	Road Enhancement	21
Rte. 1&9 Sec. County Road Mile posts: 55.10 - 55.40	99380	Road Enhancement	21
Portway, Passaic River Crossing	97005D	Freight	24
East Coast Greenway, Belleville Pike/Route 7	04327A	Bike/Ped	15
JFK Boulevard/32nd Street Pedestrian Crossing	NS0103	Bike/Ped	16
Rte. 1&9T Sec. Pedestrian Improvements Mile posts: 0 - 2.3	01347	Bike/Ped	16

NJ Transit

Near-Term

Hudson/Bergen LRT System MOS I	T87	Transit Expansion	12
Hudson/Bergen LRT System MOS II	T89	Transit Expansion	12

Mid-Term

Access to Region's Core (ARC) THE Tunnel	T97	Transit Expansion	12

Projects under Study

Hudson-Bergen Light Rail 8th Street Bayonne Extension		Transit Expansion	12
Extension of HBLRT from North Bergen to Rutherford/East Rutherford area		Transit Expansion	12

Authority Projects

Near-Term

NJ Turnpike Authority-New County Road Grade Separation Project	TPK0401	Bridges	
NJ Turnpike Authority-Rte. 95 Sec. Secaucus Interchange	TPK112	Road Expansion	
PANY/NJ-Fleet Modernization Program	CR02-345	Transit Preservation	23
PANY/NJ-Hoboken Permanent Ferry Terminal	CH02-006	Transit Enhancement	9

Mid-Term

NJ-Meadowland Commission-Secaucus Transit Village Redevelopment Plan	NJMC-2	Road Expansion	23
AMTRAK Replacement of the Portal Bridge		Transit Expansion	8

Hunterdon

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID

Highway/Bridges

Near-Term

Stanton Station Road Bridge over South Branch of Raritan River	NS0501	Bridges	
Rockafellows Mill Road Bridge over South Branch of Raritan River (RQ-164)	NS0105	Bridges	
Rte. 31 Sec. Raritan Valley Line Bridge Replacement and Operational Improvements (8P) Mile posts: 37.40 - 39.40	9102	Road Preservation	
Rte. 22 Sec. Rockaway Creek, Drainage Improvements Mile post: 24.80	98404	Road Preservation	
Rte. 22 Sec. Mullen Road, Drainage Improvements Mile posts: 26.8 - 26.9	93159	Road Preservation	
Rte. 29 Sec. West Amwell Twp., Drainage (Sheet Flow) Mile posts: 17.15 - 18.20	93166	Road Preservation	
Rte. 31 Sec. Spruce Run Stream Erosion Mile posts: 36.90 - 37.50	02405	Road Preservation	
Rte. 29 Sec. Main Street, Lambertville Mile posts: 18.60 - 19.50	97016	Road Preservation	
Rte. 78 Sec. Interchange 15 Vicinity, Interim Improvements Mile posts: 13.00 - 16.50	9137A	Road Enhancement	21
Rte. CR 519 Sec. Milford-Warren Glen Road Mile posts: 18.29 - 23.43	NS9703	Road Enhancement	21
Rte. 78 Sec. Pittstown Road (Exit 15), Interchange Improvements Mile posts: 16.06 - 16.10 Rte. CR 513	NS0309	Road Enhancement	22
Rte. 202 Sec. Case Boulevard, Intersection Improvements Mile posts: 12.68 - 13.15	403A1	Road Enhancement	21
Rte. 29 Sec. Guiderail, North of Scudder Falls Bridge to Frenchtown Mile posts: 9.67 34.76	00362C	Safety	
Rte. 29 Sec. West Amwell/Lambertville Rockfall Mitigation Mile posts: 17.30 - 18.06	00362G	Safety	
Rte. 29 Sec. Lambertville Gateways Mile posts: 18.20 - 19.90 Rte. 179	00362A	Bike/Ped	16

Mid-Term

Reformatory Road Bridge (C-88) over Beaver Brook	NS0010	Bridges	
Rte. CR 602 Sec. Wertsville Road Bridge (E-166) over Back Brook Mile post: 1.05	NS9907	Bridges	
Rte. CR 579 Sec. Church Street Bridge Mile post: 36.71	NS9806	Bridges	
Rosemont-Raven Rock Road Bridge over Lockatong Creek	NS0209	Bridges	
Rte. CR 602 Sec. Wertsville Road Bridge (E-174) over Tributary of Back Brook Mile post: 0.96	NS9906	Bridges	
White Bridge Road Bridge	NS9805	Bridges	23
Rte. 78 Sec. Oldwick Road Interchange, potential improvements Mile posts: 24.80 - 25.20 Rte. CR 523	9341	Road Enhancement	21
Rte. 31 Sec. Flemington Circle Elimination Mile posts: Rt. 31: 22.21; Rt. 202: 10.40 11.91 Rte. 202	403B	Road Enhancement	22
Rte. 78 Sec. Cokesbury Road Interchange Mile posts: 20.78 Rte. CR 639	9355	Road Enhancement	21
Rte. 78 Sec. Interchange Study at Route 31 Mile posts: Rt. 78: 16.5 - 17.7; Rt. 31: 31.70 - 33.50 Rte. 31	93141	Road Enhancement	22
Rte. 31 Sec. Flemington Area Congestion Mitigation Mile posts: 22.02 - 25.30	403A	Road Expansion	24
Multi-modal Transportation Center, Hunterdon County	95052	Transit Expansion	14
Rte. 12 Sec. Hunterdon County Bicycle Improvements Mile posts: 0 - 11.70	01375	Bike/Ped	15
Rte. 31 Sec. Corridor, I-78 to Route 46 Mile posts: 31.90 - 48.93	9354	Other	22

NJ Transit

Projects under Study

Extension of Raritan Valley Line to Phillipsburg	Transit Expansion	12

Authority Projects

Near-Term

Delaware River Joint Toll Bridge Commission (DRJTBC): US 202 @ New Hope-Lambertville	Bridge Rehabilitation
DRJTBC: Bridge Street @ New Hope-Lambertville	Renovations
DRJTBC: Centre Bridge-Stockton	Rehabilitation
DRJTBC: Pedestrian Bridge @ Lumberville-Raven Rock	Bridge Rehabilitation
DRJTBC: Unlerstown-Frenchtown	Bridge Rehabilitation

Middlesex

Highway/Bridges

Near-Term

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID
Rte. 1&9 Sec. Production Way to E. Lincoln Ave. (1K 3M) Mile posts: 37.99 - 39.74	048	Bridges	21
Rte. 27 Sec. South Plainfield Branch (Lake Avenue Bridge) Mile posts: 21.55 - 21.61	95102	Bridges	21
Rte. CR 683 Sec. Schalks Station Road Bridge Mile post: 0.70	00321	Bridges	
Rte. 27 Sec. Six Mile Run Bridge (3E) Mile posts: 11.45 - 11.65	146	Bridges	
Rte. 27 Sec. Conrail Port Reading Branch Bridge (6L) Mile posts: 22.75 - 23.10	93132	Bridges	
Rte. 9 Sec. Green Street Interchange Mile posts: 135.40 - 136.20	95115	Road Preservation	21
Rte. 440 Sec. Southbound, I-95 (NJ Tpk) Interchange to South of Kreil Ave, Resurfacing Mile posts: 0 - 3.8	05330	Road Preservation	
Rte. 35 Sec. Matawan Creek to Laurence Harbor Parkway Mile posts: 44.22 - 46.44	177A	Road Preservation	
Rte. 9 Sec. Jake Brown Road, Drainage Improvements Mile post: 125.30	93251	Road Preservation	
Rte. 1 Sec. Loring Avenue, Drainage Improvements Mile posts: 28.80 - 29.00	93246	Road Preservation	
Rte. 35 Sec. Heards Brook, Drainage Improvements Mile posts: 55.28; 59.60	01350	Road Preservation	
Rte. 34 Sec. Amboy Road/Morristown Road (5) Mile posts: 24.60 - 24.80	9227	Road Enhancement	21
Rte. 1 Sec. South of Pierson Avenue to North of Garden State Parkway (7L) Mile posts: 31.86 - 34.78	047	Road Enhancement	22
Rte. 130 Sec. Rennaissance Boulevard to Adams Lane (16) Mile posts: 80.75 - 81.52	9155	Road Enhancement	21
Rte. 1 Sec. North of Ryders Lane to south of Milltown Road (6V) Mile posts: 25.60 25.80	9239	Road Enhancement	21
Rte. 18 Sec. Interchange of CRs 516/527 Mile posts: 34.00 - 34.50	9394	Road Enhancement	22
Rte. 18 Sec. Route 1 to Northeast Corridor Amtrak Line north of Route 27 (2F 7E 11H) Mile posts: 40.60 - 42.52	108	Road Enhancement	22
Rte. 27 Sec. Wood Avenue Mile posts: 23.97 - 24.63	93227C	Road Enhancement	23
Rte. 1 Sec. Penns Neck Mile posts: 11.10 - 12.10 Rte. CR 571	031	Road Enhancement	21
Rte. 1&9 Sec. Interchange, South of interchange to Tappan Street Mile posts: 35.80 36.80 Rte. 35	046B	Road Enhancement	21
Rte. 27 Sec. Oak Tree Road/Green Street, Intersection Improvements Mile posts: 25.00 - 25.20	93227B	Road Enhancement	21
Carteret Industrial Road	98547	Road Enhancement	23
Rte. 27 Sec. Renaissance 2000, Bennetts Lane to Somerset Street Mile posts: 13.10 - 15.17	97079	Road Enhancement	22, 23
Rte. 440 Sec. High Street Connector Mile posts: 3.90 - 4.20	99379	Road Expansion	23
Rte. 18 Ext. Sec. Hoes Lane Extension to I-287 (3A) Mile posts: 45.59 - 47.79	115B	Road Expansion	23
Rte. 9 Sec. Bus Shoulder Use and Pedestrian Improvements Mile posts: 122.40 - 126.60	03320	TDM	16
Rte. 18 Sec. Raritan Riverfront Multipurpose Trail Mile posts: 42.20 - 43.80	03349	Bike/Ped	15
New Brunswick Bikeway	NS0301	Bike/Ped	15
Rte. 1 Sec. Utility Corridor Trail Mile posts: 32.49 - 35.10	97078A	Bike/Ped	16

Mid-Term

Rte. 287 Sec. Old New Brunswick Road Bridge over I-287 Mile posts: 7.70	04329	Bridges	
Rte. 9 Sec. Abandoned Railroad ROW Bridge (25D) Mile posts: 129.99 Rte. 35	9242	Bridges	
Rte. 9 Sec. Conrail Bridge Mile posts: 130.22 Rte. 35	95113	Bridges	
Rte. 18 Sec. Route 1 to Edgeboro road, proposed operational improvements Mile posts: 39.58 - 40.61	X221B	Road Enhancement	22
Rte. 287 Sec. Lincoln Highway, Interchange Improvements Mile posts: Rt 287: 2-2.5; Rt 27: 20.5-21.0 Rte. 27	04331	Road Enhancement	21
Rte. 287 Sec. Middlesex/Somerset, Raritan River Crossing Needs Analysis Mile posts: 8.0 - 11.49	9169	Road Enhancement	23
Rte. 287 Sec. South Washington Avenue, Interchange Improvements Mile posts: 6.40 04330		Road Enhancement	21
Rte. CR 665			
Rte. 9 Sec. Raritan River Crossing Study Mile posts: N/A Rte. 35	079	Road Enhancement	21
Rte. 18 Sec. Edgeboro Road Mile posts: 38.89 Rte. CR 527	X221C	Road Enhancement	21
Millstone Valley Scenic Byway	04334	Road Enhancement	15, 16
Rte. 18 Sec. Route 1 Interchange Ramp Improvements Mile posts: 40.61 Rte. 1	X221A	Road Enhancement	21
Rte. CR 615,673 Sec. Bordentown Avenue/Ernston Road, Intersection Improvements Mile posts: 21.77 - 22.03	NS9705	Road Enhancement	21
Rte. 1 Sec. Middlesex County Corridor Study Mile posts: 12.80 - 21.50	93146	Road Enhancement	23
Helen Street, Antonett Street to Metuchen Road	NS9610	Road Expansion	24
Rte. 35 Sec. Perth Amboy Ferry/Park and Ride Facility Mile post: 52.20	04304	Transit Expansion	13
East Coast Greenway, Middlesex/Union Counties	04327B	Bike/Ped	15

Authority Projects

Near-Term

Garden State Parkway- Driscoll Bridge Rehabilitation and Widening (GSP over the Raritan River)	GSP061	Bridges	
NJ Turnpike Authority-Turnpike Widening, Interchange 6 to Interchange 8A	TPK0501	Road Expansion	23
NJ Turnpike Authority-Turnpike Interchange 12 Improvements	TPK0207	Road Expansion	23

Mid-Term

PANY/NJ- Outerbridge Crossing Deck Rehabilitation.	CB08-052	Bridges	
NJ Turnpike Authority-Rte. 92 Sec. New Roadway	TPK111	Road Expansion	24

NJ Transit

Projects under Study

Monmouth-Ocean-Middlesex Rail Line		Transit Expansion	12
Central New Jersey Route 1 Bus Rapid Transit Alternatives Analysis		Transit Expansion	12

Monmouth

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID

Highway/Bridges

Near-Term

Rte. 36 Sec. Flat Creek, Drainage Improvements Mile posts: 22.60	93236	Bridges	
Rte. 35 Sec. Manasquan River Bridge Rehabilitation Mile posts: 14.30 - 14.80	9229	Bridges	
Rte. 70 Sec. Manasquan River Bridge (4) Mile post: 58.45	428A	Bridges	
Park Avenue Bridge, Monmouth County, over North Jersey Coast Line	98524	Bridges	
Rte. 36 Sec. Highlands Bridge over Shrewsbury River Mile posts: 11.50 - 11.75	185	Bridges	
Rte. 195 Sec. Route 9 Interchange to Route 34 Interchange, Resurfacing Mile posts: 27.20 - 34.17	05332	Road Preservation	
Rte. 36 Sec. Long Branch Drainage Improvements Mile posts: 4.40 - 5.50	93241	Road Preservation	
Rte. 36 Sec. Many Mind Creek/Wagner Creek, Drainage Improvements Mile posts: 15.50; 16.20	93252	Road Preservation	

Rte. 35 Sec. Matawan Creek to Laurence Harbor Parkway Mile posts: 44.22 - 46.44	177A	Road Preservation	
Rte. 33 Bus. Sec. Halls Mill Road/Kozloski Road Mile post: 29.35	174E	Road Enhancement	21
Freehold Roadway Improvements	HP01006	Road Enhancement	21
Rte. 9 Sec. Robertsville Road Intersection Improvements Mile posts: 120.88 Rte. CR 520	98511	Road Enhancement	21
Rte. 35 Sec. Eatontown Mile posts: Rt. 35: 29.00 - 29.65; Rt. 36: 1.27 - 2.20 Rte. 36	95062	Road Enhancement	21
Rte. 9 Sec. Pond Road/Craig Road Mile post: 116.20	97071	Road Enhancement	21
Rte. 34 Sec. Colts Neck, intersection improvements Mile posts: 12.90 - 13.60 Rte. CR 537	96040	Road Enhancement	21
Rte. 35 Sec. Red Bank Northern Gateway Operational Improvements Mile posts: 33.79 - 34.20	97081A	Road Enhancement	21
Halls Mill Road	HP01002	Road Enhancement	21
Rte. 71 Sec. Wyckoff Road Mile posts: 15.78 Rte. CR 547	HP01001	Road Enhancement	21
Rte. 35 Sec. Rail Crossing Operational Improvements, Red Bank/Shrewsbury Mile posts: 32.85 - 33.00	97081C	Road Enhancement	21
School Road East	HP01009	Road Enhancement	21
Atlantic Highlands Ferry	03354	Transit Enhancement	13
Highlands Ferry	03353	Transit Enhancement	13
Ocean Avenue, Monmouth, Streetscape	02361	Bike/Ped	16
Allaire Airport	00305	Other	

Mid-Term

Sunset Avenue over Deal Lake (O-10)	NS0106	Bridges	
Rte. CR 10 Sec. West Front Street Bridge (S-17) over Swimming River Mile posts: 0.1 - 0.2	NS0006	Bridges	
Rte. CR 8A Sec. Monmouth County Bridge S-31(AKA Bingham Avenue Bridge) over Navesink River Mile posts: N/A	NS9603	Bridges	
County Route 6 Bridge	NS9811	Bridges	
Monmouth County Bridges W7, W8, W9 over Glimmer Glass and Debbie's Creek	NS9306	Bridges	
Rte. CR 520 Sec. Rumson Road over the Shrewsbury River Mile posts: 22.31	NS9706	Bridges	
Manalapan Smart Growth Study	05306	Road Enhancement	1
Rte. 35 Sec. Eatontown/Shrewsbury Operational Improvements Mile posts: 29.65 - 32.75	98539	Road Enhancement	23
Rte. CR 537 Sec. CR 537 Corridor, Section A, NJ Rt. 33 Business and Gravel Hill Road Mile posts: 48.93 - 51.56	NS0403	Road Enhancement	22

Authority Projects

Near-Term

Garden State Parkway-GSP Interchange 98 Improvements (Route 138)	GSP0501	Road Enhancement	22

NJ Transit

Projects under Study

Monmouth-Ocean-Middlesex Rail Line	Transit Expansion	12

Morris

Highway/Bridges

Near-Term

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID
South Salem Street Bridge over NJT Morristown Line	98340	Bridges	
Green Pond Road Bridge over Hibernia Brook	NS0008	Bridges	
Paterson Hamburg Turnpike Over Pequannock River	N9910	Bridges	
Inamere Road Bridge over Whippany River	NS0007	Bridges	
Troy Road over Whippany River	02366	Bridges	
Rte. CR 513 Sec. Prospect Street Bridge over Morristown Line Mile post: 41.09	98528	Bridges	
Rte. 46 Sec. Rockaway River; NJ TRANSIT Bridges (7L 8K) Mile posts: 37.90 - 38.30	224	Bridges	
Openaki Road Bridge	NS9802	Bridges	21
Eden Lane Bridge over Whippany River	NS9908	Bridges	
Rte. 80 Sec. Parsippany-Troy Hills Roadway Improvement Mile posts: Route 80: 41.50 - 45.60; Route 287: 41.50 - 41.80	00371B	Road Preservation	
Rte. 80 Sec. Eastbound, West of CR 631 to West of Fox Road, Resurfacing Mile posts: 28.50 - 41.00	05320	Road Preservation	
Rte. 10 Sec. Parsippany Road, Drainage Improvements Mile posts: 14.20 Rte. CR	98398	Road Preservation	
Rte. 183 Sec. NJ TRANSIT Bridge/Netcong Circle Mile posts: Rt. 183: 0.37 - 0.69;	95077	Road Preservation	
Rt. 46: 30.20 - 30.57 Rte. 46			
Rte. 24 Sec. I-287 Interchange to West of Route 124 Interchange, Resurfacing Mile posts: 0 - 6.8	04382	Road Preservation	
Rte. 202 Sec. Somerset/Morris Drainage Improvements (3 locations) Mile posts: 32.95; 36.50; 43.20	93164A1	Road Preservation	
Rte. 181 Sec. John Street, Drainage Improvements Mile posts: 0.7 - 0.9	98405	Road Preservation	
Rte. 80 Sec. Westbound, West of CR 631 to West of Route 202, Resurfacing Mile posts: 28.50 - 41.00	05319	Road Preservation	
Rte. 10 Sec. Powder Mill Road Mile posts: 9-55 - 10.04	00344	Road Enhancement	21
Rte. 80 Sec. Noise Barriers, Par-Troy Hills to Fairfield, Baldwin Rd to Passaic River Mile posts: 44.34 - 53.13	94004	Road Enhancement	21
Rte. 10 Sec. Commerce Boulevard Improvements Mile posts: 0.10 - 0.91	089A1	Road Enhancement	21
Rte. 10 Sec. Route 10/53 Interchange (2L 3J) Mile posts: 10.40 - 10.90 Rte. 53	089	Road Enhancement	
Rte. 46 Sec. Main Street, Netcong Mile post: 29.95	97115	Road Enhancement	21
Rte. 206 Sec. Main Street, Chester, intersection improvements Mile posts: 86.40 -	94044	Road Enhancement	21
87.40 Rte. CR 513			
Rte. 10 Sec. Intersection Improvements at Route 202 Mile posts: 11.35 - 11.40 Rte. 202	98338C	Road Enhancement	21
Rte. 80 Sec. I-80/I-287 Safety Improvement Mile posts: Route 80: 43.56 - 43.76;	00371A	Safety	
Route 287: 41.5 - 42.5 Rte. 287			
Rte. 80 Sec. Rockfall Mitigation, Vicinity of Change Bridge Road Mile posts: 47.70	05349	Safety	
Rte. 80 Sec. Roxbury Township, Rockfall Mitigation Mile posts: 29.30 - 29.50	01362	Safety	
NY Susquehanna and Western Rail Line Bicycle/Pedestrian Path	NS9803	Bike/Ped	15
Rte. 46 Sec. Franklin Road Pedestrian Improvements Mile posts: 42.30 - 42.70	99300	Bike/Ped	16
Rte. 124 Sec. Madison Streetscape, Kings Road, Alexander Avenue, Green Village Road Mile posts: 4.30 - 5.00	01338	Bike/Ped	14
Hackettstown Remediation	98322	Other	

Mid-Term

Two Bridges Road Bridge and West Belt Extension	NS9801	Bridges	21
Middle Valley Road Bridge over South Branch of Raritan River	NS0503	Bridges	
Rte. CR 631 Sec. Landing Road Bridge Over Morristown Line Mile post: 1.37	NS9708	Bridges	
Berkshire Valley Road Bridge over Rockaway River	NS0206	Bridges	
Newburgh Road Bridge over Musconetcong River	NS9909	Bridges	
Waterloo Road over Musconetcong River	NS0107	Bridges	
Rte. 10 Sec. West of Route 202 Mile posts: 10.70 - 11.35	98338B	Road Enhancement	23
Rte. 10 Sec. Jefferson Road Mile post: 13.28	00312	Road Enhancement	21
Rte. CR 617 Sec. Sussex Turnpike Mile posts: 5.09 - 9.39	L070	Road Enhancement	23

Rte. 80 Sec. Interchange Mile posts: 33.80 - 34.15 Rte. 15	93139	Road Enhancement	23
Rte. 57 Sec. Hackettstown Mobility Improvements Study Mile posts: N/A Rte.	9237	Road Enhancement	22
Long Valley Safety Project	NP0301	Road Enhancement	24
Eisenhower Parkway	011	Road Expansion	24
Rte. 202 Sec. Speedwell Avenue, Morristown Mile posts: 44.90 - 45.10	98490	Safety	21
Rockaway River Greenway	03348	Bike/Ped	15

NJ Transit

Projects under Study

New York Susquehanna & Western Railroad		Transit Expansion	12
Lackawanna Cutoff		Transit Expansion	12

Ocean

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID

Highway/Bridges

Near-Term

Rte. 35 Sec. Manasquan River Bridge Rehabilitation Mile posts: 14.30 - 14.80	9229	Bridges	
Rte. 9 Sec. Westecunk Creek Bridge (34) Mile posts: 65.83 - 65.99	94022	Bridges	
Rte. 70 Sec. Manasquan River Bridge (4) Mile post: 58.45	428A	Bridges	
Rte. 72 Sec. Manahawkin Bay Bridges Mile posts: 26.70 - 27.10	00357	Bridges	
Rte. 70 Sec. West of Center Street to West of CR 571 (Ridgeway Road), Resurfacing Mile posts: 44.30 - 46.70	05328	Road Preservation	
Rte. 9 Sec. Bay Avenue/Cedar Street, Drainage Improvements Mile posts: 75.00 - 75.40	96019	Road Preservation	
Rte. 35 Sec. Restoration, Dover Twp. to Mantoloking (MP 4-9) Mile posts: 4.00 - 9.00	9147C	Road Preservation	
Rte. 9 Sec. West Creek, Drainage Improvements Mile post: 65.65	96017	Road Preservation	
Rte. 35 Sec. Restoration, Mantoloking to Point Pleasant (MP 9 - 12.5) Mile posts: 9.00 - 12.50	9147D	Road Preservation	
Rte. 35 Sec. Restoration, Berkley Twp. to Dover Twp. (MP 0-4) Mile posts: 0 - 4.0	9147A	Road Preservation	
Rte. 9 Sec. Pohatcong Lake Dam Mile post: 62.59	93270	Road Preservation	
Rte. 166 Sec. Dover Twp., Highland Parkway to Old Freehold Road, operational improvements Mile posts: Rt. 166: 1.85 - 2.25; Rt. 37: 6.5 to 6.9	9028	Road Enhancement	23
Rte. 70 Sec. Massachusetts Avenue, Intersection Improvements Mile post: 49.20	96048	Road Enhancement	21
Rte. CR 637			
Rte. 72 Sec. East Road Mile posts: 21.69 - 22.99	94071A	Road Enhancement	21
Rte. CR 554 Sec. Garden State Parkway, Interchange 67, at Bay Avenue Mile post: 67.81	NS0210	Road Enhancement	21
Rte. 9 Sec. Lacey Road Intersection Improvements Mile post: 81.65	97080A	Road Enhancement	21
Rte. 72 Sec. Ship Bottom Mile posts: 28.20 - 28.74	93265	Road Enhancement	22

Mid-Term

Rte. 9 Sec. Corridor Study Mile posts: Rt. 9: 59.90 - 90.90 Rte. GSP	97080	Road Enhancement	23
Rte. 88 Sec. Lakewood to Point Pleasant Boro Congestion Location Mile post: 0	98429	Road Enhancement	22
Rte. 70 Sec. Duquesne Boulevard to Route 88, Operational Improvements Mile posts: 53.79 - 55.13	05383	Road Enhancement	21
Rte. 70 Sec. Beckerville Road to Route 9 Mile posts: 40.18 - 49.90	97077	Road Enhancement	22
Garden State Parkway Interchange 91 Improvements and Burt Tavern Road	NS0414	Road Enhancement	22
Rte. 9 Sec. Lakewood/Dover, Indian Head Road to Main Street (Route 88) Mile posts: 94.80 - 101.60	076	Road Expansion	23
Ocean County Bicycle Trail, Toms River to Barnegat	02375	Bike/Ped	15

Authority Projects

Near-Term

Garden State Parkway- GSP Interchange 67 Improvements (Bay Avenue)	GSP9704	Road Enhancement	22

Garden State Parkway- GSP Interchange 88 Improvements (Route 70)	GSP030	Road Enhancement	22
Garden State Parkway-GSP Interchange 69 Improvements (West Mills/Waretown	GSP9802	Road Enhancement	22
Garden State Parkway-Roadway Widening 63-80	GSP133	Road Expansion	23

Mid-Term

Garden State Parkway- Interchange 91 Mass Transit improvements (Burnt Tavern Rd)	GSP098	Road Enhancement	22
Garden State Parkway-GSP Interchange 83 Improvements (Indian Head Road)	GSP138	Road Enhancement	22

NJ Transit

Projects under Study

Monmouth-Ocean-Middlesex Rail Line		Transit Expansion	12

Passaic

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID

Highway/Bridges

Near-Term

Paterson Hamburg Turnpike Over Pequannock River	N9910	Bridges	
Hillery Street Bridge over Passaic River	NS9710	Bridges	
Fifth Avenue Bridge (AKA Fair Lawn Avenue Bridge) over Passaic River	NS9606	Bridges	
Barclay Street Viaduct	NS9807	Bridges	
Rte. CR 702 Sec. Hazel Street Reconstruction Mile posts: 0 - 0.66	NS9310	Road Enhancement	21
Rte. 46 Sec. Union Boulevard, Interchange Improvements (12K 13E 1E) Mile posts: 57.50 - 57.80 Rte. 62/CR 646	9117	Road Enhancement	22
Rte. 46 Sec. Passaic Avenue to Willowbrook Mall Mile posts: 54.96 - 55.56	9233B3	Road Enhancement	23
Rte. 80 Sec. Noise Barriers, Par-Troy Hills to Fairfield, Baldwin Rd to Passaic River Mile posts: 44.34 - 53.13	94004	Road Enhancement	21
Rte. CR 620,631 Sec. Clove Road/Long Hill Road Improvements Mile posts: 0 - 0.85	NS0412	Road Enhancement	22
Rte. 46 Sec. Route 23 & 80 Interchange Improvements (43) Mile posts: 55.80 - 56.70 Rte. 80/23	9116	Road Expansion	24
Electrical Load Center Replacement - North	04324	Safety	
NY Susquehanna and Western Rail Line Bicycle/Pedestrian Path	NS9803	Bike/Ped	15

Mid-Term

Rte. 3 Sec. Passaic River Crossing Mile posts: 3.83 - 6.36	799	Bridges	22
Two Bridges Road Bridge and West Belt Extension	NS9801	Bridges	21
Eighth Street Bridge	NS0109	Bridges	
West Brook Road Bridge over Wanaque Reservoir	NS9607	Bridges	
Rte. 46 Sec. Broad Street Bridge Replacement and Operational Improvements Mile posts: 60.94 - 61.47	98364	Bridges	
Rte. 3 Sec. Valley Road and Notch/Rifle Camp Road Interchange Mile posts: Rt. 3: 0 - 0.50; Rt. 46: 59.2 - 60.3 Rte. 46	059	Road Enhancement	22
Rte. 23 Sec. Long-term Interchange Improvements Mile posts: 23: 5.1-5.7; 80: 52.8-53.75 Rte. 80	9233B6	Road Enhancement	21
Rte. 46 Sec. I-80 Connector Mile posts: N/A Rte. 23	9233B4	Road Expansion	24
Rte. 21 Fwy Sec. Route 3 Interchange, Safety Improvements Mile post: 9.10	93221A	Safety	21

NJ Transit

Projects under Study

Passaic/Bergen NYS&W Project		Transit Expansion	12

Somerset

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID

Highway/Bridges

Near-Term

Rte. 206 Sec. CSX Bridge Replacement Mile posts: 62.3 - 62.9	94059	Bridges	
Geraud Avenue Bridge over Green Brook	NS9904	Bridges	
Rte. CR 533 Sec. South Main Street/Finderne Avenue Bridge over Raritan River Mile posts: 29.19 - 29.26	NS0003	Bridges	
Rte. 206 Sec. Crusers Brook Bridge (41) Mile post: 61.80	94060	Bridges	
Rte. 202 Sec. Mine Brook Bridge Replacement Mile posts: 35.39 - 35.44	98349	Bridges	
Duer Street Bridge over Green Brook	NS0208	Bridges	
Amwell Road Bridge over Neshanic River	L002	Bridges	
Rte. CR 606 Sec. Studdiford Drive Bridge over South Branch of Raritan River, Replacement Mile post: 0.03	NS0411	Bridges	
Rte. 27 Sec. Six Mile Run Bridge (3E) Mile posts: 11.45 - 11.65	146	Bridges	
Rte. CR 667 Sec. Elm Street Bridge over South Branch of Raritan River Mile posts:	NS0207	Bridges	
Rte. 202 Sec. Somerset/Morris Drainage Improvements (3 locations) Mile posts: 32.95; 36.50; 43.20	93164A1	Road Preservation	
Rte. 22 Sec. Crab Brook, Drainage Improvements Mile post: 45.25	93151	Road Preservation	
Rte. 27 Sec. Renaissance 2000, Bennetts Lane to Somerset Street Mile posts: 13.10 - 15.17	97079	Road Enhancement	22
Rte. 22 Sec. Chimney Rock Road Interchange Improvements Mile post: 37.13	98542	Road Enhancement	21
Rte. 22 Sec. Sustainable Corridor Short-term projects Mile posts: 33.88 - 37.14	03319	Road Enhancement	21
Rte. 22 Sec. Park Avenue/Bonnie Burn Road Mile posts: 47.15 - 47.55	9189	Road Enhancement	21
Rte. 206 Sec. Old Somerville Road to Brown Avenue (15N) Mile posts: 66.20 - 68.40	780	Road Expansion	23
Rte. 22 Sec. Sidewalk Improvements, Somerset County Mile posts: 42.93 - 44.73; 46.60 - 44.73	03317D	Safety	16
Rte. 202/206 Sec. Pedestrian Overpass, Bridgewater Township Mile posts: 24.45 - 24.75	03355	Bike/Ped	16
Rte. 206 Sec. Wetland Preservation, Somerset Mile posts: N/A	02348	Other	

Mid-Term

Rte. CR 567 Sec. Old York Road, Roadway Realignment and Bridge Replacement Mile posts: 6.00 - 6.10	NS0506	Road Preservation	
Rte. 22 Sec. Sustainable Corridor Long-term Improvements Mile posts: 33.88 - 37.14	03318	Road Enhancement	21
Rte. 287 Sec. Middlesex/Somerset, Raritan River Crossing Needs Analysis Mile posts: 8.0 - 11.49	9169	Road Enhancement	23
Rte. 202 Sec. Intersection Improvements Mile posts: 29.10 - 30.30 Rte. 206	93121A	Road Enhancement	21
Rte. 78 Sec. Noise Barriers, Somerset County, I-287 to Plainfield Avenue Mile posts: 31.00 - 42.70	94009	Road Enhancement	21
Millstone Valley Scenic Byway	04334	Road Enhancement	15, 16
Rte. 206 Bypass Sec. Belle Mead-Griggstown Road to Old Somerville Road (14A 15A) Mile posts: 62.20 - 66.30	779	Road Expansion	24
Rte. 22 Sec. ITS Closed Loop System, Somerset County Mile posts: 40.04 - 46.98	03317E	ITS	20
Rte. 78 Sec. Interchange at I-78 and I-287, Safety Improvements Mile posts: Rt. 78: 29.0-31.3; Rt. 287: 20.9-22.4 Rte. 287	04389	Safety	21

NJ Transit

Projects under Study

West Trenton Line	Transit Expansion	12
Passaic/Bergen NYS&W Project	Transit Expansion	12

Sussex

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID

Highway/Bridges

Near-Term

West Mountain Road Bridge (AKA Bridge Q-25)	L090	Bridges	
Sparta Stanhope Road Bridge (Sussex County Bridge K-07) over Lackawanna Cutoff	L001	Bridges	
Rte. 206 Sec. Waterloo/Brookwood Roads Mile posts: 98.38 - 99.70 Rte. CR 604	407A	Road Preservation	
Rte. 23 Sec. Hardyston Twp., Silver Grove Road to Holland Mountain Road Mile posts: 26.80 - 31.80	96039	Road Preservation	21
Rte. 181 Sec. Green Road, Drainage Improvements Mile posts: 2.40	98402	Road Preservation	21
Rte. 94 Sec. Hardyston/Vernon Township, Drainage Improvements Mile post: 36.60; 41.10 - 41.35	98399	Road Preservation	
Rte. 23 Sec. Sussex Borough Realignment & Papakating Creek Bridge Mile posts: 38.98 - 40.18	9044	Road Enhancement	22
Rte. 23 Sec. Linwood Avenue to Walkill Avenue (7D 8C) Mile posts: Rt 23: 35.37-35.56; Rt. 94: 35.51-35.71 Rte. 94	8919	Road Enhancement	21
Newton-Sparta Road, safety and operational improvements (CR 621 to Rt. 181)	NS0112	Road Enhancement	21
Rte. CR 515 Sec. County Route 515, Vernon Township, Phases II, III, IV Mile posts: 6.00 - 8.00	NS0002	Road Enhancement	23
Rte. 94 Sec. Sand Hill Road, Intersection Improvements Mile post: 40.18	02400	Road Enhancement	21
Rte. 15 Sec. Wilson Drive and White Lake Road, Intersection Improvements Mile posts: 15.40 - 15.50	97120P	Road Enhancement	21
Rte. 15 Sec. Blue Heron Road Park and Ride and Intersection Improvements Mile posts: 10.20 - 10.70	97120C	TDM	21

Mid-Term

Rte. CR 653 Sec. County Route 653, Sussex County Mile posts: 0 - 7.25	NS0202	Road Enhancement	22
Rte. 15 Sec. Corridor, Sussex County, Route 46 to Route 206 Mile posts: 0 - 19.20	97120	Road Enhancement	23
Rte. CR 605 Sec. Sussex County Route 605 Connector Mile posts: N/A	NS9911	Road Enhancement	24
Rte. CR 517 Sec. Route 23 to Route 94 Mile posts: 42.54 - 46.45	NS0505	Road Enhancement	22
Rte. 15 Sec. Sparta/Lafayette Area Improvements Mile posts: 16.61 - 19.53	97120A	Road Expansion	23

NJ Transit

Projects under Study

New York Susquehanna & Western Railroad		Transit Expansion	12
Lackawanna Cutoff		Transit Expansion	12

Authority Projects

Near-Term

Delaware River Joint Toll Bridge Commission: US 206 @ Milford-Montague		Bridge Rehabilitation	

Union

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID

Highway/Bridges

Near-Term

Rte. 1&9 Sec. Magnolia Avenue Bridge (6) Mile posts: 44.65 - 44.75	049	Bridges	
Rte. 1&9 Sec. Production Way to East Lincoln Avenue (1K 3M) Mile posts: 37.99 - 39.74	048	Bridges	21
Rte. 22 Sec. Liberty Avenue & Conrail Bridge Mile post: 57.30	95116	Bridges	
Geraud Avenue Bridge over Green Brook	NS9904	Bridges	

South First Street Bridge over Elizabeth River	NS9313	Bridges	
Duer Street Bridge over Green Brook	NS0208	Bridges	
Rte. 1&9 Sec. Elizabeth River Bridge (4T) Mile post: 44.00	043	Bridges	
Rte. 82 Sec. Rahway River Bridge Mile post: 0.38	94019	Bridges	
Rte. CR 512 Sec. Springfield Avenue Bridge over Morristown Line Mile post: RR: 20.34	98527	Bridges	
Rte. 22 Sec. Madison Avenue, Drainage Improvements Mile posts: 54.40 - 54.80	98418	Road Preservation	
Rte. 78 Sec. Union/Essex Rehabilitation, Springfield Avenue to Route 1&9 Mile posts: 51.4 - 58.5	00373	Road Preservation	
Rte. 22 Sec. Mountainside Boro, Drainage Improvements Mile posts: 50.10 - 50.80	96032	Road Preservation	
Rte. 22 Sec. Vicinity of Vaux Hall Road to West of Bloy Street Mile post: 56.15 -	658B	Road Preservation	
Rte. 22 Sec. Michigan Avenue, Drainage Improvements Mile post: 53.87	93210	Road Preservation	
Rte. 22 Sec. Mountain Avenue, Drainage Improvements Mile post: 51.60	93211	Road Preservation	
Rte. 82 Sec. Union County Streetscape and Intersection Improvements Mile posts: 2.30 - 5.00	95029	Road Enhancement	21
Rte. 78 Sec. Diamond Hill Road Interchange Mile posts: 44.00 Rte. CR 655	9141	Road Enhancement	21
Kapkowski Road, North Avenue and Trumbull Street	9324	Road Expansion	23
Elizabeth Ferry Project	HP01016	Transit Expansion	14
CARGOMATE	HP01015	Freight	18
Springfield Avenue Pedestrian Improvements, Summit	01346	Bike/Ped	16

Mid-Term

Morris Avenue Bridge over Morristown Line	93259	Bridges	
Gordon Street over "Out of Service" Conrail Branch, Replacement	NS0408	Bridges	
Rte. 22 Sec. Hilldale Place/Broad Street Mile posts: 58.00 - 58.10	658E	Bridges	21
Rte. 22 Sec. Garden State Parkway/Route 82 Interchange Improvements Mile posts: 55.30 - 55.90	658A	Road Preservation	21
Rte. 22 Sec. Bloy Street to Liberty Avenue Mile posts: 56.90 - 57.30	658C	Road Preservation	21
Rte. 22 Sec. East of Hilldale Place/Broad Street to Park Road; CSX to Meeker Avenue Mile posts: 58.1 - 59.33	658F	Road Enhancement	
Rte. 78 Sec. Noise Barriers, Somerset County, I-287 to Plainfield Avenue Mile posts: 31.00 - 42.70	94009	Road Enhancement	21
Tremley Point Access Local Roadway Improvements	9324A	Road Enhancement	21
Rte. 22 Sec. Liberty Avenue to Hillside Place/Broad Street Mile posts: 57.30 - 58.12	658D	Road Enhancement	21
East Coast Greenway, Middlesex/Union Counties	04327B	Bike/Ped	15
Rte. 22 Sec. Pedestrian Improvements, Union/Springfield Townships Mile posts: 51.60 - 56.51	02374	Bike/Ped	16

NJ Transit

Mid-Term

NERL Elizabeth Segment	T28A	Transit Expansion	12

Projects under Study

Newark-Elizabeth Rail Link MOS2		Transit Expansion	12
Union Cross-County connection		Transit Expansion	12

Authority Projects

Near-Term

PANY/NJ-Goethals Bridge Deck Rehabilitation	CB07-088	Bridges	
PANY/NJ-Southern Access Roads – Newark Liberty Airport	CA44-007	Road Enhancement	23
NJ Turnpike Authority-Turnpike Interchange 12 Improvements	TPK0207	Road Expansion	23
PANY/NJ-Corbin Street Intermodal Facility—Phase IA/B	CP05-073	Freight	18
PANY/NJ- McLester Street Dual Lead Track	CP08-115	Freight	17

Mid-Term

Garden State Parkway-GSP Interchange 142 Improvements (I-78)	GSP140	Road Expansion	23
PANY/NJ-Goethals Bridge Modernization	CB07-103	Road Expansion	23

Warren

PROJECT NAME	DBNUM	RCIS Categories	Strategy ID

Highway/Bridges

Near-Term

Rte. 57 Sec. Merill's Creek Bridge (1B) Mile posts: 2.54 - 2.84	9107	Bridges	
Cemetery Road Bridge over Pequest River	NS9314	Bridges	
Rte. 94 Sec. Yard's Creek Bridge Mile posts: 3.00 - 3.20	9371	Bridges	
Rte. CR 623 Sec. Brass Castle Road Bridge over Pohatcong Creek Mile posts: N/A	NS9905	Bridges	
Rte. 80 Sec. Truck Weigh Station, Eastbound, Knowlton Township Mile posts: 1.55 - 2.75	285A	Road Preservation	
Warren County, Highway Safety Improvements	N0101	Road Enhancement	
Rte. 57 Sec. Corridor Scenic Preservation Mile posts: 0 - 21.10	97062A	Road Enhancement	
Rte. 57 Sec. County Route 519 Intersection Improvement Mile posts: 1.30 - 1.70	97062B	Road Enhancement	21
Rte. CR 519			
Rte. 22 Sec. Belvidere Road Vicinity to I-78 Mile posts: 3.20 - 5.07	9136	Road Enhancement	21
Rte. 57 Sec. Washington Borough Roadway Improvements Mile posts: Rt 57: 10.30 - 11.10; Rt 31: 42.65 - 42.95	97062D	Road Enhancement	21
Rte. 80 Sec. Rockfall Mitigation, Allamuchy Township Mile post: 21.90	05348	Safety	
Rte. 46 Sec. Rockfall Mitigation, Knowlton Twp. Mile posts: 1.40 - 2.40	05347	Safety	
Rte. 80 Sec. Rockfall Mitigation, Eastbound Allamuchy and Frelinghuysen Townships Mile posts: 15.50 - 15.70	05346	Safety	

Mid-Term

Rte. 57 Sec. Hackettstown Mobility Improvements Study Mile posts: N/A Rte.	9237	Road Enhancement	23
Rte. 57 Sec. Corridor Improvements Mile posts: 0.00 - 21.10	97062	Road Enhancement	19
Rte. 31 Sec. Corridor, I-78 to Route 46 Mile posts: 31.90 - 48.93	9354	Other	22
Delaware Water Gap Visitors Center	98476	Other	

NJ Transit

Projects under Study

Lackawanna Cutoff	Transit Expansion	12
Extension of Raritan Valley Line to Phillipsburg	Transit Expansion	12

Authority Projects

Near-Term

Del. River Joint Toll Bridge Commission (DRJTBC): I-78 Bridge over Del. River	Road Rehabilitation
DRJTBC: US 22 @ Easton/Phillipsburg line	Sign Structures & Signage
DRJTBC: US 46 @ Portland-Columbia line	Bridge Rehabilitation
DRJTBC: Interstate 80 Delaware Water Gap	Bridge Improvements
DRJTBC: Northampton Street @ Phillipsburg	Bridge Rehabilitation
DRJTBC: Riegelsville Bridge @ Riegelsville	Bridge Rehabilitation
DRJTBC: Riverton-Belvedere Bridge @Belvedere	Bridge Rehabilitation
DRJTBC: Portland-Columbia Pedestrian Bridge	Bridge Improvements

Ongoing Programs

PROGRAM NAME	DBNUM

Highway/Bridge Programs

Near-Term

Public Lands Highways Discretionary Program	01344
Baseline Document Update	03308
Traffic Operations Center (North)	X99
Transit Village Program	01316
Quality Assurance	00351
Rail Grade Crossing Technologies, Demonstration Project	01328A
Maritime Transportation System	01309
National Boating Infrastructure Grant Program	01342
New Technology and Products Evaluation and Implementation	01304
Train Preemption for Traffic Signals - North II	02354
Congestion Relief, Operational Improvements (Fast Move Program)	02378
Congestion Relief, Intelligent Transportation System Improvements (Smart Move	02379
STAR: Station Revitalization Program	02381
Transportation and Community System Preservation Program	02393
Bridge Deck Preservation Program	03304
Culvert Inspection Program, State-owned Structures	99322
Dams, Betterments	01335
Bridge Inspection, State NBIS Bridges	X07A
Unanticipated Design, Right of Way and Construction Expenses, State	X11
Transportation Enhancements	X107
Design, Emerging Projects	X106
Underground Exploration for Utility Facilities	X101
Program implementation costs, NJDOT	X10
Ecotourism Grants	01312
Bridge Inspection, Local Bridges	X07E
Environmental Document Development	03309
Local CMAQ Initiatives	X065
Resurfacing Program	X03E
Restriping Program	X03A
Airport Safety Fund	X02
TRANSCOM/Project Funding	00376
Ferry Program	00377
Bridge Painting, Federal	X08
Orphan Bridge Emergency Repairs	99372
Intelligent Transportation Systems	03305
Bridge Scour	98316
Professional Auditing Services	98319
Intersection Improvement Program	98333
Project Development, Preliminary Design	99321
Homeland Security	05350
Recreational Trails Program	99409
Real-time Traveler Information	05343
Survey Program, National Highway System	99367
Safe Streets to Schools Program	99358
Bicycle Projects, Local System	99357
Equipment, Over-age Reduction Program	99331
Resurfacing, Interstate Fast Track Program	99327A
Culvert Inspection Program, Locally-owned Structures	99322A
NJTPA, Future Projects	N063
Construction Program IT System	05304
Cross Median Crash Prevention Program	03316
Bridge Safety Program	03344
Asbestos Surveys and Abatements	04311

Safe Corridors Program	04313
Local Safety Program	04314
Bridge, Emergency Repair	98315
Equipment (Safety-Related Equipment)	04332
TRANSCOM Membership	X125
Transportation Security Iniatives	05337
Transportation Security Initiatives—Waterside Port Monitoring	05338
Right of Way Database/Document Management System	05339
Right of Way Full-Service Consultant Term Agreements	05340
Project Enhancements	05341
Design, Geotechnical Engineering Tasks	05342
Traffic Signal Timing and Optimization	04320
Metropolitan Planning	X30A
Advance Acquisition of Right of Way	X12
Local County Aid, NJTPA	X41B1
Signs Program, Statewide	X39
Rail-Highway Grade Crossing Program, Federal	X35A1
Rail-Highway Grade Crossing Program, State	X35A
TMA-NJTPA	X43K
Project Development, Feasibility Assessment	X32
Traffic Signal Replacement	X47
Planning and Research, Federal-Aid	X30
Physical Plant	X29
Park and Ride/Transportation Demand Management Program	X28B
Training and Employee Development	X244
Accident Reduction Program	X242
Electrical Facilities	X241
Freight Program	X34
Betterments, Bridge Preservation	X72A
Local Municipal Aid, Urban Aid	X98Z
Local Municipal Aid, NJTPA	X98B1
Traffic Operations Center (South)	X82
NJTPA Project Development	X80A
Environmental Investigations	X75
Transportation Demand Management Program Support	X43
Betterments, Roadway Preservation	X72B
Traffic Signal Relamping	X237
Bridge Management System	X70
Pavement Management System	X69
Safety Management System	X68
Traffic Monitoring Systems	X66
Adopt-A-Highway Program	X62
Interstate Pavement Preservation	X51
Betterments, Safety	X72C
Electrical and Signal Safety Engineering Program	X147
Sign Structure Repair Program	X239A
Drainage Rehabilitation, Federal	X154D
Drainage Rehabilitation and Maintenance, State	X154
Access Management	X153
Interstate Service Facilities	X151
Local Aid for Centers of Place	X161
Equipment (Vehicles & Construction Equipment)	X15
Access Permit Application Review	X166
Regional Action Program	X144
DBE Supportive Services Program	X142
Planning and Research, State	X140
Legal Costs for Right of Way Condemnation	X137
Pre-Apprenticeship Training Program for Minorities and Females	X135
University Transportation Research Technology	X126
State Police Enforcement and Safety Services	X150
Maintenance Management System	X196

Emergency Response Operations	X120
Historic Bridge Preservation Program	X236
Motor Vehicle Crash Record Processing	X233
Statewide Incident Management Program	X230
Good Neighbor Landscaping	X200A
Solid and Hazardous Waste Cleanup, Reduction and Disposal	X160
Disadvantaged Business Enterprise	X197
Sign Structure Inspection Program	X239
Smart Growth Initiatives	X186A
Local Aid, Discretionary	X186
Bicycle & Pedestrian Facilities/Accommodations	X185
Utility Reconnaissance and Relocation	X182
Emergency Service Patrol	X181
Construction Inspection	X180
Youth Employment and TRAC Programs	X199

Transit Programs

Near-Term

Other Rail Station/Terminal Improvements	T55
Major Bridge Program	T501
Locomotive Overhaul	T53E
Railroad Associated Capital Maintenance	T33
Rail Capital Maintenance	T34
Rail Support Facilities, Equipment and Capacity Imrovements	T37
Preventive Maintenance-Rail	T39
Track Program	T42
AMTRAK Agreements	T44
Transit Rail Initiatives	T300
Technology Improvements	T500
Transit Enhancements	T210
Operating Assistance Start-Up New Transit Services	T505
Security Improvements	T508
Rail Fleet Overhaul	T53G
PSNY Improvements	T64
Capital Program Implementation	T68
ADA—Vans	T70
Study and Development	T88
Bus Maintenance Facilities	T93
Signals and Communications/Electric Traction Systems	T50
Miscellaneous	T122
Bus Passenger Facilities/Park and Ride	T06
Bus Support Facilities and Equipment	T08
Bus Vehicle and Facility Maintenance/Capital Maintenance	T09
Private Carrier Equipment Program	T106
Bus Acquisition Program	T111
Rail Rolling Stock Procurement	T112
Rail Park and Ride	T117
Building Capital Leases	T32
Physical Plant	T121
Bridge and Tunnel Rehabilitation	T05
Claims support	T13
Preventive Maintenance-Bus	T135
ADA—Platforms/Stations	T143
Section 5310 Program	T150
Section 5311 Program	T151
Environmental Compliance	T16
Job Access and Reverse Commute Program	T199
Immediate Action Program	T20
Small/Special Services Program	T120

Acronyms

The following acronyms appear in *Access & Mobility 2030*:

ARC – Access to the Region's Core

DMU – Diesel Multiple Unit

DVRPC – Delaware Valley Regional Planning Authority

EJ – Environmental Justice

EOC – Emergency Operations Center

FTA – Federal Transit Administration

GARVEE – Grant Anticipation Revenue Vehicles

GPS – Global Positioning Systems

GSP – Garden State Parkway

GWB – George Washington Bridge

HBLR – Hudson Bergen Light Rail

ITS – Intelligent Transportation Systems

JARC – Job Access/Reverse Commute

MAROPs – Mid-Atlantic Rail Operations

MOM – Monmouth-Ocean-Middlesex

MPO – Metropolitan Planning Organization

MTA – Metropolitan Transit Authority

NEPA- National Environmental Policy Act

NERL – Newark-Elizabeth Rail Link

NJCSAA – New Jersey Conrail Shared Assets Area

NJDOT – New Jersey Department of Transportation

NJIT – New Jersey Institute of Technology

NS – Norfolk Southern

NYMTC – New York Metropolitan Transportation Comission

NYS&W – New York Susquehanna & Western

P&H – Pennsylvania & Hudson

PANYNJ – Port Authority of New York & New Jersey

PDWP – Project Development Work Program

PIDN – Port Inland Distribution Network

PN – Port Newark

RCIS – Regional Capital Investment Strategy

RTP – Regional Transportation Plan

RVL – Raritan Valley Line

SDRP – State Development and Redevelopment Plan

TCS – Track Control System

TDM – Transportation Demand Management

TEA-21 – Transportation Equity Act for the 21st Century

THE Tunnel – Trans-Hudson Express Tunnel

TIP – Transportation Improvement Program

TMA – Transportation Demand Management

TOC – Traffic Operations Center

TOD – Transit-Oriented Development

VMT – Vehicle Miles Traveled

XBL – Exclusive Bus Lane