

NYMTC Regional Freight Plan Update 2015-2040 Interim Plan

Task 1.1 Resource Scan Summary

PREPARED BY

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technical memorandum

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Resource Scan Summary

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1.0 Introduction

The following resource scan reviews and summarizes the approach, methods, and findings of previous research efforts related to freight planning in the New York Metropolitan Transportation Council (NYMTC) region. Some of the documents are recent, while others are more than a decade old. For older documents, the presentation of key themes and findings is given priority over statistical information. Some reports deal exclusively with freight issues, while others treat freight as one of many topics or mention freight issues intermittently throughout the text. In the latter case, the key points related to freight activity are highlighted. The scan is not intended to comprehensively summarize every study, but rather to highlight findings within documents that have the most direct relevance to the freight issues currently under examination by NYMTC.

In the document summary, “Data Sources” refers primarily to databases of publically available information or datasets assembled through the research effort. It does not include references to academic works or other secondary sources.

The documents reveal a number of recurrent themes that the NYMTC region has been grappling with for many years, such as the following:

- The predominance of trucking for freight deliveries;
- The lack of rail infrastructure east of the Hudson;
- A lack of available funding for dredge disposal;
- Clearance issues for delivery vehicles;
- Competition and priority for passenger rail services in the use of the rail infrastructure; and
- Fragmentation and lack of supporting infrastructure for rail.

Each report section begins with an outline of basic information – the title of the report, who it was prepared for and by, its publication date, and when it was accessed by the consultant team for review. This outline is followed by a narrative description of technical approach, including data and analytical methodology, and a summary of relevant findings. Key graphics and tables are included, where appropriate, using their original reference numbers from the reports.

The reports are listed in order by type of report, and in chronological order (oldest to newest) within each report category. Categories are multistate and state/regional.

LIST OF STUDIES

Report Title	Sponsoring Agency	Publication Year
Multistate Plans and Studies		
Mid-Atlantic Rail Operations Study Summary Report	I-95 Corridor Coalition	2002
Investing in Mobility: Freight Transport in the Hudson Region	JAM Kaplan Fund, New York Community Trust, and the Surdna Foundation, Inc.	2004
Comprehensive Port Improvement Program	Port Authority of New York/New Jersey (PANYNJ)	2005
PANYNJ Bi-State Domestic Freight Ferries Study	PANYNJ	2006
National Rail Freight Infrastructure Capacity and Investment Study	Association of American Railroads	2007
Northeast Rail Operations Study (NEROps) Phase I Final Report	I-95 Corridor Coalition	2007
Northeast Rail Operations Study, Phase II Summary of Potential Rail Improvement Projects Technical Memorandum 1	I-95 Corridor Coalition	2009
Mid-Atlantic Rail Operations Phase II Study Summary	I-95 Corridor Coalition	2009
NYMTC Multistate Truck Stop Inventory and Assessment Study	NYMTC	2009
2040 Freight Industry-Level Forecasts	NJTPA	2012
The Future Needs Us	Norfolk Southern	2012
Cross Harbor Freight Program	PANYNJ and Federal Highway Administration (FHWA)	ongoing
Statewide/Regional Plans and Studies		
Intermodal Freight Movement Opportunities for Long Island	New York State Department of Transportation (NYSDOT), Suffolk County, Nassau County, MTA Long Island Rail Road, New York and Atlantic Railroad, NYC Economic Development Corporation	1999
Freight Facilities and System Inventory in the New York Metropolitan Region	NYMTC	2000
Truck Terminals and Warehouses Survey Results	NYMTC	2001
Rail Freight Yard Requirements Land Assessment for the East of Hudson Area	NYMTC	2003

Report Title	Sponsoring Agency	Publication Year
Hunts Point Waterborne Freight Assessment Opportunities to Meet the Community's Freight Transportation Needs through Waterborne Strategies	NYMTC	2004
NJTPA Freight System Performance Assessment	NJTPA	2005
Strategies for a New Age: New York State's Transportation Master Plan for 2030	NYSDOT	2006
Rockland County Truck Movement Study	Rockland County Department of Highways	2007
New Jersey Comprehensive Statewide Freight Plan	New Jersey DOT	2007
New York State Rail Plan 2009	NYSDOT	2009
NYMTC Regional Transportation Plan	NYMTC	2009
Plan 2035: Regional Transportation Plan for Northern New Jersey	NJTPA	2009
MTA Capital Program 2010-2014	Metropolitan Transportation Authority	2010
Integrative Freight Demand Management in the New York City Metropolitan Area	U.S. DOT	2010
Vision 2020: New York City Comprehensive Waterfront Plan	New York State Department of State	2011
A New Economy for A New Long Island	New York Governor Andrew Cuomo	2011
Feasibility of Freight Villages in the NYMTC Region: Task 6 – Site Impact Assessment	NYMTC/University Transportation Research Center Region 2	2011
2011 South Western Region Long-Range Transportation Plan	South Western Region Metropolitan Planning Organization (MPO)	2011
PlaNYC	New York City Government	2011
New York City Regional Economic Development Council Strategic Plan	NYSDOT	2011
Mid-Hudson Region Economic Development Council Strategic Plan	Governor Andrew Cuomo	2011
Tappan Zee Hudson River Crossing DEIS	U.S. Environmental Protection Agency (EPA)	2012
Empire State Development Corporation Small Business Dredge Needs Port of New York Study	Empire State Development Corporation	2012

2.0 Resource Scans

MID-ATLANTIC RAIL OPERATIONS STUDY SUMMARY REPORT

Title	Mid-Atlantic Rail Operations Study Summary Report
Prepared for:	I-95 Corridor Coalition
Prepared by:	Cambridge Systematics, Inc., Parsons Brinckerhoff Quade and Douglas, Inc.
Date:	April 2002
Accessed:	December 5, 2012 from www.i95coalition.org

Summary of the Technical Approach

Uses Highway Performance Monitoring System (HPMS) data to describe the condition of the I-95 corridor and parallel corridors. Uses Highway Economic Requirement System (HERS) to estimate cost of delay for commercial vehicles. Inventories near-term, medium-term, and long-term projects.

Data Sources: HPMS, Virginia DOT, Texas Transportation Institute (TTI) Urban Mobility Report, Amtrak, CSX and NS, TRANSEARCH, Federal Highway Administration (FHWA) Freight Analysis Framework (FAF), FHWA HERS.

Analysis Methods: Estimates the benefits from eliminating chokepoints on the rail network, including benefits to the public.

Summary of Key Relevant Findings

The Mid-Atlantic rail network is constrained by significant chokepoints that must be eased if the region's increasing demand for passenger and freight movement is to be met. The Mid-Atlantic Rail Operations Study proposes a \$6.2 billion, 20-year investment program aimed at addressing 71 infrastructure and information system improvements. Investments in the Mid-Atlantic region must be matched with other investments in the Northeast, particularly East of the Hudson.

The critical chokepoints include:

- Antiquated and undersized bridges and tunnels;
- Bridges over the Gunpowder, Susquehanna, and Bush Rivers;
- The Union Tunnels and the Baltimore and Potomac Tunnel require major rehabilitation because of deterioration and lack of vertical clearance;
- Replacement of the CSX Howard Street Tunnel in Baltimore;

- The Virginia Avenue Tunnel in Washington, D.C. requires double-stack clearance;
- Increased bridge capacity crossing the Potomac River between Virginia and Washington, D.C., is needed;
- Lack of capacity on critical segments of freight and passenger lines;
- Inadequate vertical clearances for double-stack container traffic on freight mainlines;
- Inadequate connections between rail lines;
- Congested grade crossings, stations, and terminals; and
- Outmoded and inadequate information and control systems.

INVESTING IN MOBILITY: FREIGHT TRANSPORT IN THE HUDSON REGION

Title	Investing in Mobility: Freight Transport in the Hudson Region
Prepared for:	JAM Kaplan Fund, New York Community Trust, and the Surdna Foundation, Inc.
Prepared by:	Environmental Defense Fund, the East of Hudson Rail Freight Operations Task Force
Date:	2004
Accessed:	11/20/2012, CD

Summary of the Technical Approach

Estimates impacts of additional freight congestion in the New York area into the future by characterizing the current freight profile and constraints. Proposes investments that would enhance the multimodal aspect of freight movement and, thereby, make it more environmentally sustainable.

Data Sources: NYCEDC Cross Harbor Freight Movement Project Commodity Flow Analysis, NYMTC Regional Freight Plan, TTI, 2000 Urban Mobility Study, The Official Railway Equipment Register, Volume 117, Number 4, April 2002, New Jersey Express Rail web site.

Analysis Methods: Uses a number of sources to inventory major rail infrastructure within the region as it existed in 2004. Analysis of freight and passenger users and operators and major choke points. An assessment of the rail infrastructure both east and west of the Hudson, including corridors and terminals. An assessment of height and weight restrictions east and west of the Hudson.

Summary of Key Relevant Findings

The report estimates that in 2004 congestion cost the New York City region \$7.66 billion annually in wasted fuel and lost work time.

The report notes that the New York City region handled about \$1.44 trillion worth of freight per year. Truck transport handled around 80 percent of regional goods by value, while rail handled only 6 percent, which is two and one-half times smaller than the national average.

The metropolitan area is divided into the East-of-Hudson and West-of-Hudson subregions. West-of-Hudson includes northern New Jersey and parts of downstate New York. East-of-Hudson includes New York City, the lower Hudson Valley east of the river, Long Island, and Connecticut. Through comparisons with rail infrastructure West of the Hudson, the report argues that rail service east of the Hudson is severely disadvantaged due to deficiencies in infrastructure east of the Hudson that make the lines unable to handle many types of loads.

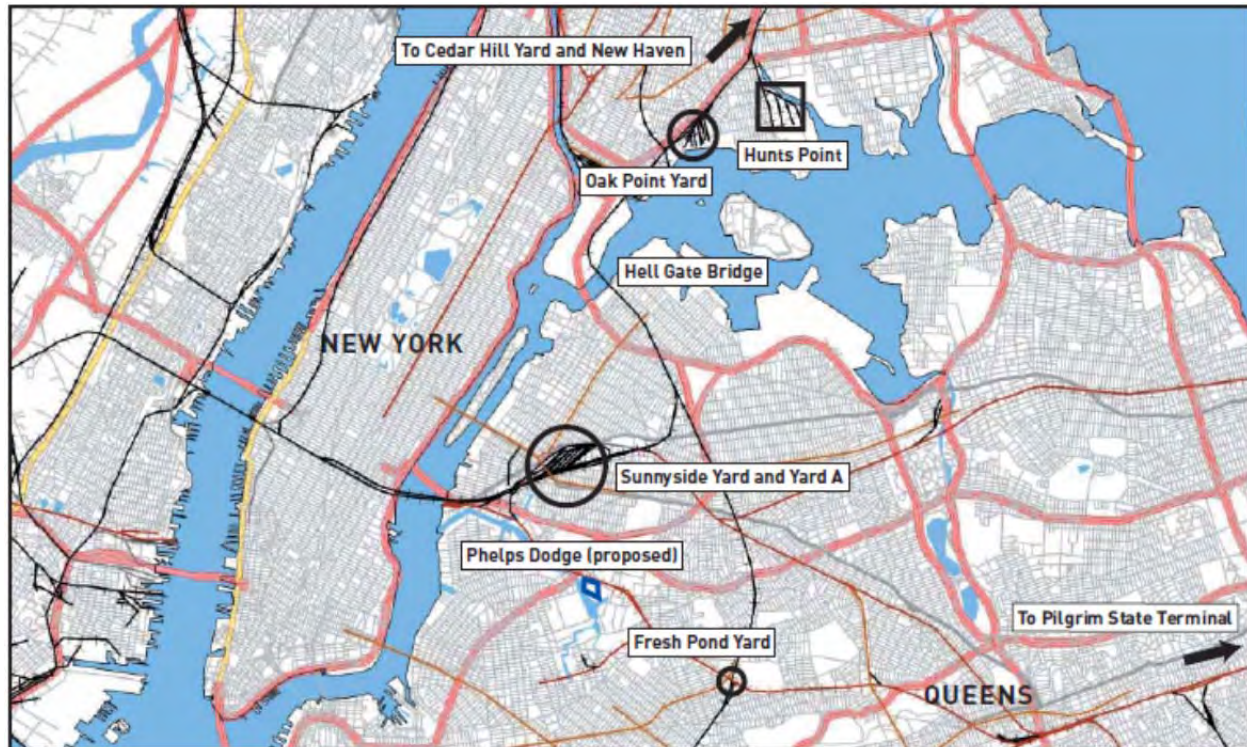
The report further argues that the system east of the river is not as well connected to the national rail network due to clearance and track weight limits, deficiencies in yard space and intermodal facilities. The report attributes many of the issues to shared use of track with passenger services. Railroads do not have the clearance required to take full advantage of economies of scale within the region.

Figure 1.1 shows the location of some of the existing and proposed intermodal facilities east of the Hudson River.

After assessing the deficiencies in the infrastructure, the report presents the following six criteria that should be used to prioritize future freight mobility investments:

1. Which investments best reduce congestion on the region's roadways?
2. Does the investment have minimal land use impacts? How does it change the quality of life of the surrounding communities and ecosystems?
3. Which investment leads to the biggest gains in air quality and the reduction of fossil fuel consumption?
4. Which project does the most to strengthen the economy and provide jobs?
5. How expensive is the proposal? What are the operating and capital expenses?
6. Will the project improve security in downstate New York and the greater metropolitan area?

Figure 2.1 Intermodal Facilities East of the Hudson



Chapter 4 of the report highlights advances in rail technology that may make the operations such as short-haul movements more practical in the New York area, including several European initiatives that attempt to overcome similar challenges to height restrictions and competition with passenger rail.

In Chapter 5, a number of long-term investments is proposed; some of which have been studied or completed, and others which were subsequently dropped since the report's publication. These included:

1. A new cross harbor freight tunnel with two possible alignments: from Staten Island to Brooklyn and from New Jersey to Brooklyn;
2. The revitalization of a cross harbor float system for both bulk and intermodal cargo;
3. Trailer-on-flatcar (TOFC) and double-stack clearance on East-of-Hudson freight rail corridors;
4. Building a third track on the LIRR main line; and
5. Reactivating the Staten Island railroad (subsequently accomplished).

CPIP CONSORTIUM PORT OF NEW YORK AND NEW JERSEY COMPREHENSIVE PORT IMPROVEMENT PLAN

Title	CPIP Consortium Port of New York and New Jersey Comprehensive Port Improvement Plan
Prepared for:	PANYNJ
Prepared by:	Halcrow with Gannett Fleming and MDS Transmodal, Duncan Maritime, Moffatt & Nichol Engineers, Zetlin Strategic Communications, Hirani Engineering
Date:	September 2005
Accessed:	December 10, 2012 from www.panynj.gov/about/pdf/cpip/V1_Plan.pdf

Summary of the Technical Approach

The study was divided into three components:

1. Forecasting Cargo Demand;
2. Examining the capacity of existing port, highway, and rail infrastructure; and
3. Developing terminal and landside transportation improvements.

Data Sources: PANYNJ, NYMTC Freight Plan, Transportation Equity Act for the 21st Century (TEA-21).

Analysis Methods: The study forecast port demand by forecasting overall U.S. trade, the share of trade that would be handled by the Port and competing ports, adjusted to account for changes in Port accessibility and other factors relative to competing ports, and assigning the proportion of total Port throughput to be handled by the baseline cargo terminals. The study ran scenarios in which the Port's channels were deepened, and this deepening was accompanied by parallel deepening at competitor facilities. The study examined all vessel types, but paid particular attention to container ships. Demand was projected through the year 2060. Demand for equipment and land was estimated for this horizon.

Summary of Key Relevant Findings

Estimated demand for 2060 for containers was estimated to be 11.3 million twenty-foot equivalent units (TEU). In 2011, the total was 5.5 million. Available land was projected to be sufficient to meet forecast demand without the need for major aquatic or wetland fill projects, although the way the land currently is utilized would require modification. The report set a target of 33 percent inland mode share by rail by 2020; up from 14 percent in 2005. It developed a strategy to provide revenue support to the railroads to achieve this goal. The report concluded that the opportunities for successful diversion to barges were possible, but limited.

The analysis projected the future role of port truck trips on the average network through 2060, and which corridors would be most strongly impacted by additional truck traffic. Of the four scenario options evaluated, no particular plan had an overall significant advantage. There will be little impact of Port-related trucks on the regional highway network and on individual corridors assuming implementation of the minor improvements shown in Table 2.1.

The report projects that the ExpressRail, Port Newark, and Howland Hook (now New York Container Terminal) facilities will be able to handle all of the future container volume to 2060 with only minor improvements.

Table 2.1 Summary of Proposed Highway Improvements

Project Type	Description	Number of Projects		Total Estimated Costs	
		2020	2060	2020	2060
Intersection Signalization Improvements	Installing signals at unsignalized intersections	22	6	\$6,600,000	\$1,800,000
	Implementing timing changes or new controllers at existing signalized intersections				
Intersection Approach Roadway Widening	Widening intersection approach/ departure roadways for additional turn or thru lanes	6	4	\$7,200,000	\$4,800,000
Roadway Widening	Constructing additional travel lanes on mainline roadway segments	14	4	\$54,874,800	\$15,120,000
Interchange Ramp Modifications	Modifying or constructing new ramps at existing grade-separated interchanges	3	1	\$3,340,000	\$1,050,000
Grade-Separated Structure Widening	Bridge widening to provide additional travel lanes for roadway segments on structure	3	0	\$3,024,000	\$0

BI-STATE DOMESTIC FREIGHT FERRIES STUDY

Title	Bi-State Domestic Freight Ferries Study
Prepared for:	PANYNJ
Prepared by:	NYU Wagner Rudin Center for Transportation Policy and Management with Rutgers University
Date:	September 2006
Accessed:	http://wagner.nyu.edu/rudincenter/files/domesticFreightFerries.pdf ; 12/10/12

Summary of the Technical Approach

The study examines factors that have led to successful deployment of freight ferry markets in different locations. It avoids specific route recommendations. Four potential niche markets in the New York metropolitan region were identified:

1. Hazardous materials (HAZMAT);
2. Overweight and overdimensional vehicles;
3. Construction materials and equipment; and
4. Air cargo movements to and from John F. Kennedy International Airport JFK.

Data Sources: Metropolitan Transportation Authority (MTA), 2005-2009 Proposed Capital Program, Federal Transit Administration and MTA, Second Avenue Subway: Final Environmental Impact Statement, John F. Kennedy International Airport Air Cargo Truck Movement Study, state DOT web sites, phone and in-person interviews.

Analysis Methods: Compares the proposed service for the New York area to other successful and unsuccessful ferry ventures around the country.

Summary of Key Relevant Findings

According to the study, the movement of specialized cargo types, such as project cargoes, HAZMAT, and oversized RO/RO shipments, offer the greatest potential for economic viability.

- Congestion in the City has not yet reached the point where congestion avoidance alone is a sufficient rationale to divert to ferry use;
- Several policy issues, such as the Jones Act and the Harbor Maintenance tax, impede the ability of the project to be realized; and
- The principal financial assistance might come from the Federal Ship Financing Program.

NATIONAL RAIL FREIGHT INFRASTRUCTURE CAPACITY AND INVESTMENT STUDY

Title	National Rail Freight Infrastructure Capacity and Investment Study
Prepared for:	Association of American Railroads (AAR) at the request of the National Surface Transportation Policy and Revenue Study Commission
Prepared by:	Cambridge Systematics, Inc.
Date:	September 2007
Accessed:	November 29, 2012, from http://www.aar.org/InCongress/InfrastructureTaxIncentive/-/media/AAR/Files/natl_freight_capacity_study.ashx

Summary of the Technical Approach

The study focuses on 52,000 miles of rail freight corridors, which constitute approximately one-third of all continental U.S. rail freight miles, and are expected to absorb the majority of the forecast traffic and nearly all of the investment to expand capacity. The study assumes no shift in modal tonnage shares among rail, truck, and water beyond those projected by the U.S. DOT.

The study addresses two major rail freight infrastructure elements:

5. Line expansion:

- a. Upgrades to the Class I railroad system mainline tracks and signal control systems;
- b. Improvements to rail bridges and tunnels;
- c. Upgrades to Class I railroad secondary mainlines and branch lines to accommodate 286,000-pound freight cars; and
- d. Upgrades to short-line and regional railroad tracks and bridges to accommodate 286,000-pound freight cars.

6. Facility expansion:

- a. Expansion of carload terminals, intermodal yards, and international gateway facilities owned by railroads; and
- b. Expansion of Class I railroad service and support facilities, such as fueling stations and maintenance facilities.

Data Sources: The FHWA, *Highway Statistics*, AAR and Annual Report Form R-1, *State of Logistics Report*, Council of Supply Chain Management Professionals, 2006, Class I railroad data, Uniform Rail Costing System, American Short-Line and Regional Railroad Association (ASLRRRA).

Analysis Methods

The study examines the cost of designing and constructing improvements, such as line expansion, line upgrades, and facility expansion.

This study estimates rail line capacity and investment requirements by:

- Dividing the continental U.S. Class I railroad network into primary corridors;
- Establishing current corridor volume in freight and passenger trains per day for each primary corridor, based on 2005 Surface Transportation Board Carload Waybill data;
- Estimating current corridor capacity in trains per day for each primary corridor;
- Comparing current corridor volume to current corridor capacity;
- Estimating future corridor volume in trains per day, using U.S. DOT's Freight Analysis Framework (FAF) Version 2.2 forecasts of rail freight demand in 2035 by type of commodity, and by the origin and destinations of shipments moving within the U.S. and through international land and port gateways; and
- Comparing the future corridor volume to current corridor capacity.

Summary of Key Relevant Findings

- The investment in the continental U.S. rail network required to allow the freight railroads to meet the U.S. DOT's projected demand for rail freight transportation is \$148 billion (in 2007 dollars).
- Without improvements, 30 percent of the rail miles in the primary corridors will be operating above capacity, causing additional freight to shift to the highway system.
- Between 2005 and 2007, Class I freight railroad capital expenditures for infrastructure expansion averaged \$1.5 billion per year. To meet the U.S. DOT's forecast demand for 2035, the Class I freight railroads must invest \$135 billion over the next 28 years or about \$4.8 billion per year.
- Due to productivity gains, the gap between the Class I's projected investment and needed investment to maintain the needed level of service is \$1.4 billion per year to be funded from railroad investment tax incentives, public-private partnerships, or other sources.

NORTHEAST RAIL OPERATIONS STUDY (NEROPS) PHASE I FINAL REPORT

Title	Northeast Rail Operations Study (NEROps) Phase I Final Report
Prepared for:	I-95 Corridor Coalition
Prepared by:	Cambridge Systematics, Inc.
Date:	June 2007
Accessed:	November 30, 2012 from http://www.i95coalition.org/i95/Portals/0/Public_Files/p.m./reports/_NEROps-Final-Report_COMPLETE_071607.pdf

Summary of Technical Approach

The study describes the various rail stakeholders in the region and how they interact at both the operational and policy levels. It describes the trends that have influenced how the rail system in the region has evolved, and how it is operated and maintained. The study identifies and describes physical, operational, and institutional issues, chokepoints, and constraints that, individually or collectively, impact the efficiency of the rail system in the region. It provides recommendations to the northeastern states and the I-95 Corridor Coalition for addressing freight and passenger rail issues.

Data Sources: The study relies on data from the AAR, FHWA FAF, American Association of State Highway and Transportation Officials (AASHTO), Amtrak, Bureau of Labor Statistics (BLS), Northeast Commuter Railroads, Cross Harbor Study.

Summary of Key Relevant Findings

The report developed a set of recommendations for the seven NEROps states to improve understanding of operations along the corridor, as well as areas where the I-95 Corridor Coalition should provide support. Some of the recommendations that are still potentially relevant to NYMTC include ensuring that all transportation agencies establish an official rail point-of-contact; establish private sector advisory committees to identify rail needs and discuss potential solutions; increase direct coordination with Amtrak; invest in detailed commodity flow data and regional economic impact tools and models that can be used by the Coalition and its member agencies to more effectively quantify and articulate the public benefits of rail investments; and develop a gap analysis to be utilized as a base map with which to approach regional stakeholders in order to develop a consensus-based list of potential regional rail improvements.

NORTHEAST RAIL OPERATIONS STUDY, PHASE II SUMMARY OF POTENTIAL RAIL IMPROVEMENT PROJECTS TECHNICAL MEMORANDUM 1

Title	Northeast Rail Operations Study, Phase II Summary of Potential Rail Improvement Projects Technical Memorandum 1
Prepared for:	I-95 Corridor Coalition
Prepared by:	Cambridge Systematics, Inc.
Date:	August 2009
Accessed:	December 12, 2012 from http://www.i95coalition.org/i95/Portals/0/Public_Files/p.m./reports/NEROps%20-%20Tech%20Memo%201.pdf

Summary of the Technical Approach

Projects underway, programmed, planned, or which are part of a long-term “vision” are plotted at the corridor or corridor segment level in colors according to the objective of the project. Potential improvements on Amtrak and commuter rail corridors are identified and described.

Data Sources: DOT interview and meeting notes, state rail plans.

Analysis Methods: Recent state rail plans were reviewed. The project team met with planning, freight and/or rail staff at each state DOT in the Northeast Region. The projects identified by DOT staff at these meetings were plotted on a map of the regional rail network and included as potential improvement projects. The remaining sections of the document outline the present regional rail network, and identify the preliminary list of potential rail improvement projects.

Summary of Key Relevant Findings

A number of key improvements for the commuter rail systems, Class I, and short-line freight railroads was identified. Projects were sorted by type and by segment. Several of the improvements recommended for commuter rail enhancement would also potentially benefit freight on shared corridors. For example, the Amtrak utilized line between New Haven and the Massachusetts border is proposed to be upgraded to permit a 286,000-pound weight limit on the rail. Another Amtrak project would upgrade four miles of track and under-grade bridges to permit 286,000-pound freight cars between New Rochelle and Pelham. Tables 2.2 and 2.3 below describe the major proposed improvements for freight railroads.

Table 2.2 Proposed Projects on Norfolk Southern Primary Corridors (NS), Including Canadian Pacific (CPR), Pan Am Railways (PAR), and Pan Am Southern (PAS)

Rail Line	Segment	Project Description
CPR	Rouses Point	Main line congestion relief at Rouses Point due to U.S. Customs border inspections
CPR	Ballston Spa to Saratoga Springs	Add second main line track on south approach to Saratoga Springs yard and passenger station
CPR	Schenectady to Rouses Point	Track rehabilitation to increase passenger and freight operating speeds
CRP	Binghamton to Mohawk	Add sidings
CPR	Mohawk to Mechanicville	Add sidings
CPR	Binghamton	Construct runaround track to bypass Binghamton Yard
CPR	Capital District	Restore Sand Bank Track and Wye track as controlled points, construct 2 overhead bridges (bypasses Mechanicville, Kenwood, & Selkirk yards)
NS	Binghamton to Waverly	Single-track current double-track segment, add traffic control and passing signs at Johnson City and Owego, increase speed rating
NS	Letchworth Gorge	Rebuild Portage Bridge
PAS	Mechanicville	Develop intermodal terminal and automotive unloading facility at Mechanicville
PAS	Mechanicville to Hoosick Jct.	Develop passing sidings between Mechanicville and Hoosick Junction
PAS	Mechanicville to MA Border	Eliminate vertical constraints to establish full domestic double-stack clearance
PAS	NY Border to Ayer	Eliminate vertical constraints to establish full domestic double-stack clearance
PAR	Ayer to N H Border	Track and bridge upgrades to permit 286K
MBTA/PAR	Haverhill	Rehabilitation of the Merrimack River Bridge
PAR	Main Line in New Hampshire	Double-track main line, upgrade signals, track and bridge upgrades to permit 286K
PAR	NH Border to Portland	Track and bridge upgrades to permit 286K, signal upgrades, add/extend sidings
PAR	Portland to Danville	Track and bridge upgrades to permit 286K
PAR/SLR	Danville	Improve interchange between PAR & SL&A at Danville

Table 2.3 Proposed Projects on the CSX Network

Rail Line	Segment	Project Description
CSXT	Hoffmans	Track and signal improvements, and reconfiguration of CP-169 junction
CSXT	Colonie	Construct a 10,000-foot siding at a location between Albany and Schenectady
CSXT	Syracuse	Upgrade 4 miles of track from 30 mph to 50 mph, and eliminate 251 West operation
CSXT	Syracuse	Upgrade crossover and restore fully controlled main line track #4 on the east approach to DeWitt Yard
CSXT	Stuyvesant	Extend existing freight track to create an effective third track
CSXT	River Subdivision	Add or upgrade passing sidings at Athens, Catskill, Haverstraw, Kingston, and Mt. Marion
CSXT	Selkirk Subdivision	Build 5.4-mile track bypass at Selkirk
CSXT	Oak Point, Bronx	Construct runaround track along Bronx River/Oak Point Yard
CSXT	Berkshire Subdivision	Eliminate vertical constraints to establish full domestic double-stack clearance
CSXT	River Subdivision	Add track to fill in “gaps,” such that the entire subdivision has two main tracks
CSXT	Buffalo	Construct second C P Draw Bridge
CSX-Amtrak	Schenectady to Buffalo	Install third main line track for 110 mph passenger train track speed
CSX-Amtrak	LAB to Hoffmans	Install second main line track for 110 mph passenger train track speed
CSX-Amtrak	Savannah	Replace Savannah River Bridge
CSX-Amtrak	Hudson Subdiv. (Poughkeepsie to Hoffmans) & Amtrak Post Road Branch	Acquire right of way (ROW) and infrastructure from CSX and Amtrak, and complete initial state of good repair
CSXT	NY Border to Westboro	Eliminate vertical constraints to establish full domestic double-stack clearance
CSXT	West Springfield	Roadway access improvements to intermodal terminal at West Springfield & industrial park
CSXT	Boston to Springfield	Inland Route passenger service

MID-ATLANTIC RAIL OPERATIONS PHASE II STUDY SUMMARY

Title	Mid-Atlantic Rail Operations Phase II Study Summary
Prepared for:	I-95 Corridor Coalition
Prepared by:	Cambridge Systematics, Inc.
Date:	December 2009
Accessed:	Dec 3, 2012 from http://www.i95coalition.org/i95/Portals/0/Public_Files/p.m./reports/MAROps%20Phase%20II%20Summary.pdf

Summary of the Technical Approach

Examines the condition and performance of the regional rail system, updating the findings of the 2002 MAROps Phase I study. Assesses rail capacity in the region. Reports estimated cost of improvements.

Data Sources: Class I Railroad data, TRANSEARCH, IHS-Global Insight Business Demographics, 2008. Woods & Poole Population and Employment trends, 2005 STB Waybill Sample, HERS, BLS.

Analysis Methods: This study builds on the findings of MAROps I, released in 2002, to identify the critical rail improvement projects needed to sustain current rail level of service (LOS) within the MAROps region through the year 2035. It uses the level of service measurement typically applied to highways (LOS A, B, C, D, E, or F) and translates these to rail corridors.

Summary of Key Relevant Findings

The population of the five-state area is projected to grow from 36 million in 2008 to nearly 45 million in 2035; and employment is expected to grow from 23 million jobs to 31 million jobs.

Currently, 88 percent of freight rail corridor miles in the MAROps region operate below capacity (at LOS A, B, or C); and only 3 percent operate in excess of capacity (at LOS F). Without further improvements to the rail system, by 2035 only 43 percent of rail corridor miles in the MAROps region are projected to operate below capacity (at LOS A, B or C), while 30 percent will operate above capacity (LOS F).

Between 2002 and 2009, the estimated cost to complete the MAROps program grew from 6.2 billion to 12 billion. The program involves implementation of 217 projects, including 110 projects to add mainline capacity and 81 projects to provide double-stack clearance.

Implementing the top 150 priority MAROps improvements would cost \$6 billion. This would reduce the total amount of rail traffic the system could accommodate, but would still be an improvement over the current level. Nineteen percent of

the rail system would operate above capacity under this assumption. Figure 2.2 breaks down the percentage of rail mileage that would see capacity constraints under different investment scenarios and with different assumptions about future growth.

Figure 2.2 Percentage of MAROps Freight Rail Corridor Miles by Level of Service Grade and Scenario

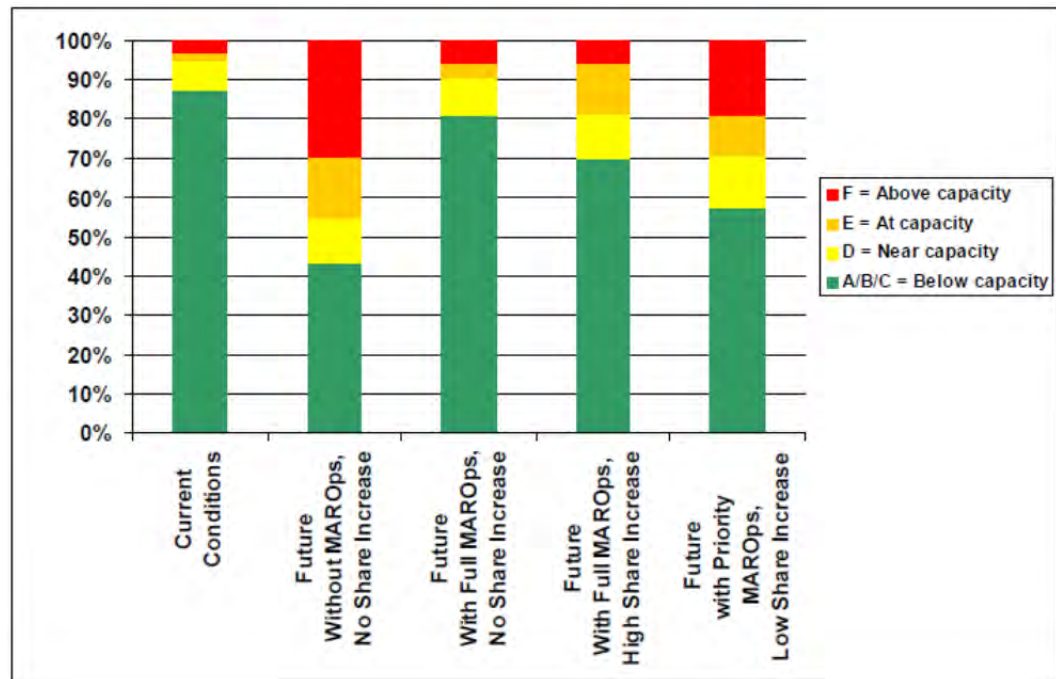


Table 2.4 shows the estimated economic benefits in the future with MAROps improvements and assuming a high increase in rail mode share to the year 2035.

Table 2.4 Estimated Economic Benefits of Future with MAROps Improvements and High Increase in Rail Mode Share
2035

State/Region=	Business Output (\$ million/year)	Value Added (\$ million/year)	Jobs (per year)	Wage Income (\$ million/year)
Delaware	\$75	\$36	583	\$28
Maryland	\$371	\$202	2,913	\$152
New Jersey	\$203	\$110	1,314	\$75
Pennsylvania	\$349	\$190	2,836	\$134
Virginia	\$272	\$143	2,226	\$106
<i>Total for States</i>	<i>\$1,269</i>	<i>\$681</i>	<i>9,873</i>	<i>\$495</i>
NY/NJ CMSA	\$358	\$204	2,398	\$139
Philadelphia CMSA	\$355	\$189	2,490	\$134
Baltimore-Washington CMSA	\$528	\$290	4,066	\$218

The benefit/cost ratio of implementing the full MAROps program and achieving a high increase in rail mode share is estimated at 1.86. The benefit/cost ratio of implementing only the priority MAROps improvements while achieving a low increase in rail mode share is estimated at 2.9. The ratio is greater because implementing only the priority MAROps improvements would defer several of the highest-cost and most complex improvement projects.

NYMTC MULTISTATE TRUCK STOP INVENTORY AND ASSESSMENT STUDY

Title	NYMTC Multistate Truck Stop Inventory and Assessment Study
Prepared for:	NYMTC
Prepared by:	Cambridge Systematics, Inc., and STV
Date:	January 2009
Accessed:	12/10/12 from: http://www.nymtc.org/project/freight_planning/truck_stop/TruckStop_Study.pdf

Summary of the Technical Approach

The study included a data collection effort that inventoried truck parking facilities throughout the NYMTC region and surrounding areas. Informal parking locations were also included. The inventory included the number of parking spaces and the availability of services. Parking utilization data were collected during the morning, midday, evening and overnight periods. A driver cordon survey was conducted on the outskirts of the multistate region. The truck parking demand, in combination with truck traffic forecasts, was used to determine future truck parking demand on each major corridor.

Data Sources: Federal Motor Carrier Safety Administration (FMCSA), NYMTC Regional Truck Stop Operations/Capacity Assessment, Driver Interview Cordon Survey, Truck Stop Facility Inventory, Cross Harbor Freight Movement Project.

Analysis Methods: Reviews previous studies on truck parking and compares conclusions. Reports the results of a stakeholder roundtable.

Summary of Key Relevant Findings

The parking supply in the region is not sufficient to meet demand. The 1,655 truck parking spaces that the study examined were used most heavily overnight. The situation is expected to continue to deteriorate in the future.

Agencies in the tristate region are recommended to work to expand truck parking capacity along highway corridors which span multiple states. The study also recommends:

- Real-time information systems to guide drivers to available parking; and
- Planning agencies in the region to act as advocates for truck parking, communicating the nature of the problem and the aims of improvement plans to local governments, the public and other agencies that will be involved in the development, and promotion of solutions that address the movement of freight.

2040 FREIGHT INDUSTRY-LEVEL FORECASTS

Title	2040 Freight Industry-Level Forecasts
Prepared for:	North Jersey Transportation Planning Agency
Prepared by:	Cambridge Systematics, Inc., with Anne Strauss-Wieder, Inc., Parsons Brinckerhoff Rutgers, The State University of New Jersey
Date:	December 2012
Accessed:	December 13, 2012 from http://www.njtpa.org/Plan/Element/Freight/documents/FreightForecastStudyFinalReport_000.pdf

Summary of the Technical Approach

The report was prepared for the North Jersey Transportation Planning Authority, the Metropolitan Planning Organization for the Northern New Jersey region. The study relies on TRANSEARCH assignment to the FAF-3 network to illustrate truck volumes on highway corridors. Data relevant to freight activity is mapped including employment by industry, inbound and outbound tonnage, location of manufacturing facilities and warehouses. The Rutgers Economic Advisory Service econometric model of the State of New Jersey (R/ECON™) was used to produce economic forecasts of the State of New Jersey for the period from 2010 to 2040, in 10-year increments.

Data Sources: Selectory database from Dun & Bradstreet, Freight Locator database from IHS Global Insight, the Torto Wheaton database from CB Richard Ellis, U.S. Census Bureau, NJTPA Freight Forecasting Tool.

Analysis Methods: A TRANSEARCH domestic commodity flow database for New Jersey was obtained from IHS/Global Insight by North Jersey Transportation Planning Authority (NJTPA). That database is identical in structure and content to the database which was delivered to the New Jersey Department of Transportation. The FAF Highway network assignment was then used as a basis for an assignment of truck trips to the NJTPA's Regional Transportation Model-Enhanced (RTM-E) network, which consists of interstate, state, and county highways and many of the major local roads throughout the NJTPA Region. Thirty-year county-level forecasts from Moody's Economy.Com were obtained and compared to the R/ECON results.

Summary of Key Relevant Findings

It is highly desirable to closely integrate freight planning within the larger NJTPA regional planning process. To accomplish this integration in an effective manner, one which can be sustained by NJTPA staff year over year, NJTPA would benefit from:

- A validated, accurate set of baseline freight metrics, defining freight movements by origin-destination pair, volume (tons and units), transportation mode, and commodity type.
- A clear understanding of the “key drivers” of the freight industry - the locations and types of business and consumer activities that generate demand for certain commodity volumes, by mode and by trade lane.
- An excellent understanding of freight trends and how they may act upon both industries and commodity movements. One of the key drawbacks of commercial freight datasets such as TRANSEARCH is that they assume the future will look a lot like the past.
- A state-of-the-art set of industry-level forecasts, completely transparent and tailored specifically for the NJTPA region, which can be closely integrated and married to other NJTPA planning and forecasting activities, including but not limited to the 2040 Regional Transportation Plan.
- A future freight demand database, depicting both “key drivers” and network flows over NJTPA’s existing highway network model, generated directly from the NJTPA’s industry-level forecasts, and providing the opportunity to test the effects of different types of freight trends on the database and network model.

The Base R/ECON Forecast estimated 32 percent overall growth in employment. Almost every sector of the economy was projected to grow with the exception of printing. Alternative projections were made based on high population growth, low population growth, High CPI, and Low CPI. The NJTPA Freight forecasting tool projects that the modal split for the year 2040 will be essentially identical to today with modest gains of less than one percentage point for both rail and water.

THE FUTURE NEEDS US

Title	The Future Needs Us
Prepared for:	General Audience
Prepared by:	Norfolk Southern Corporation
Date:	2012
Accessed:	December 13, 2012 from http://www.thefutureneedsus.com/

Summary of the Technical Approach

An analysis of the impacts of implementing the Crescent Corridor which is a double-stack intermodal corridor connecting the Northeast U.S. to New Orleans. The site tracks the progress on construction of the corridor, the impacts to various states and the progress on supporting infrastructure such as intermodal terminals. The focus of this analysis is on New Jersey impacts, due to the northeastern terminus of the Crescent Corridor being in northern New Jersey. The study is relevant to NYMTC, however, as NS operates several branch lines from New Jersey northward through Rockland County.

Data Sources: AAR, U.S. Census, U.S. DOT, U.S. BLS, TTI Urban Mobility Report, TIGER grant proposal.

Analysis Methods: State profiles are presented that illustrate how the construction of the corridor would benefit each state in terms of jobs, trucks removed, congestion costs, CO₂, logistics savings and reductions in annual accident costs.

Summary of Key Relevant Findings

For the State of New Jersey, the corridor is projected to produce:

- 4,400 jobs for New Jersey over the next decade;
- 151,000 fewer long-haul trucks annually on New Jersey highways;
- 1.4 million fewer gallons of fuel consumed annually on New Jersey highways;
- 16,000 fewer tons of CO₂ released annually into New Jersey's air;
- \$5 million less in annual congestion costs for New Jersey motorists;
- \$68 million in annual logistics savings for New Jersey businesses;
- \$1 million less in annual highway maintenance costs for New Jersey; and
- \$1.3 million less in annual accident costs for New Jersey motorists.

CROSS HARBOR FREIGHT PROGRAM

Title	Cross Harbor Freight Program
Prepared for:	Port Authority of New York and New Jersey and Federal Highway Administration
Prepared by:	AKRF, Cambridge Systematics, STV
Date:	On-going
Accessed:	January 10, 2013

Summary of the Technical Approach

The Port Authority and FHWA are conducting a Tier I EIS, evaluating alternatives to enhance freight transportation across New York Harbor. The project is making use of many sources of commodity and traffic data and extensive industry outreach and involvement to quantify markets and potential diversion to project alternative transportation services.

Data Sources: TRANSEARCH and FAF 3 commodity flow data; NYMTC BPM and NJTPA RTM-E travel demand model networks; PANYNJ truck origin-destination survey data; interviews, focus groups, and surveys with shippers/receivers, transportation system owners/operators, and real estate representatives.

Analysis Methods:

- Conduct a market analysis by evaluating commodity flow data to estimate key commodities, origin/destination pairs, and modes.
- Develop a list of “no-action” and “build” project alternatives through stakeholder and public input
- Develop, calibrate, and employ a series of shipper choice models to estimate demand for each of the project alternatives given specific level of service parameters.
- Estimate costs and public and private benefits associated with the project alternatives
- Estimate regional traffic impacts on the highway and rail networks
- Estimate regional environmental impacts and identify potential conflicts that should be addressed in a more detailed Tier II EIS analysis.

Summary of Key Relevant Findings

The project is on-going. As of January 2013, the Draft EIS Methodology, Needs Assessment, and Draft Scoping Document, as well as associated meeting presentations and comment summaries, are available on the project website.¹

Preliminary findings supporting the need for the project include:

- 920 million tons of freight moved to, from, within, and through the 54-county Cross Harbor modeling study area by truck and rail in 2007;
- 690 million tons of origin-destination freight were handled, and 93.2 percent of this tonnage was handled by truck;
- By 2035 nearly 1.2 billion tons of freight will be moved to, from, within, or through the study area by truck and rail. E
- 860 million tons of origin-destination freight will be handled, 92.5 percent by truck.
- Between 2007 and 2035, truck tonnage will increase by around 160 million tons and rail tonnage will increase by 18 million tons (excluding through traffic), representing total tonnage growth of around 26 percent.
- Based on NYMTC projections, total truck traffic on the Cross Harbor facilities are expected to increase by 35 percent by 2035.
- According to INRIX, the Cross Bronx Expressway is the nation's worst bottleneck, and is congested 94 hours per week. Average travel speed between 4PM and 5PM on Fridays is just 5 mph, i.e. the slowest in the United States in 2009.

Once the Tier I DEIS is published, detailed market, demand, cost/benefit, regional highway and rail network impact, and regional environmental impact findings will be available.

¹ <http://www.panynj.gov/about/cross-harbor.html>

INTERMODAL FREIGHT MOVEMENT OPPORTUNITIES FOR LONG ISLAND: MAKING THE CASE FOR THE PILGRIM STATE HOSPITAL SITE

Title	Intermodal Freight Movement Opportunities for Long Island: Making the Case for the Pilgrim State Hospital Site
Prepared for:	NYSDOT, Suffolk County, Nassau County, MTA Long Island Rail Road, New York and Atlantic Railroad, NYC Economic Development Corporation
Prepared by:	NYMTC Staff
Date:	January 1999
Accessed:	December 10, 2012

Summary of the Technical Approach

The study includes projections of freight traffic for Long Island through the year 2020, environmental impacts of the traffic, potential commodity types, and proposed intermodal sites.

Data Sources: NYMTC Intermodal Management System Inventory, Long Island Transportation Plan 2000, New York Downstate Rail Freight Study, Oak Point Link Study.

Analysis Methods: Compares the needs of the Long Island Freight System with the attributes of the Pilgrim site.

Summary of Key Relevant Findings

Several sites were evaluated for the potential development of an intermodal facility. Five sites were taken from the report, Long Island Rail Road Freight Business Plan. The site assessments were performed by NYMTC staff. The remaining sites were recommended through the Cargo Subcommittee of the Long Island Transportation Plan 2000. The Pilgrim site was determined to be the best location due to:

- Roadway Access;
- Location;
- Parcel Size; and
- Parcel Availability.

The study concludes that the most important next step is to ensure that the site is preserved so it is not designated for another purpose. Other required steps include market analysis, environmental impact, funding and design and implementation.

The report concludes that the growth of rail service for Long Island would not only improve traffic on a daily basis, but would provide critical redundancy for the freight delivery system to the island.

FREIGHT FACILITIES AND SYSTEM INVENTORY IN THE NEW YORK METROPOLITAN REGION

Title	Freight Facilities And System Inventory In The New York Metropolitan Region
Prepared for:	NYMTC
Prepared by:	Mary Hrabowska
Date:	September 2000
Accessed:	December 10, 2012, CD

Summary of the Technical Approach

The purpose of this inventory report is to describe the current condition of major freight transportation facilities and systems in order to identify bottleneck locations and to generate improvement strategies. The inventory was intended to be updated every five years.

Data Sources: Intermodal Freight Transportation,” G. Muller, 1999 “Year-End 1998 Executive Review, Economy,” PANYNJ, Office of Policy and Planning, “Regional Transportation Plan, Executive Summary,” NYMTC, May 1999, “U.S. Freight Transportation Forecast to 2007, 4th Annual Report” by the American Trucking Association (ATA) Foundation, 1999, “Delaware Valley Regional Planning Commission (DVRPC), Annual Report for Fiscal Year 1998”, “The Southern Gateway,” February 1999, “Freight Synthesis” by the New York City Department of City Planning (NYCDCP), 1999, “Regional Freight Plan Project,” New York Metropolitan Transportation Council (NYMTC), 11/22/99.

Analysis Methods: The report tracks the condition of freight facilities by mode. It inventories the air cargo facilities by factors such as type, size/area, nearest highway, access, ground transportation, runway/taxiway, number of employees, passenger use, terminal condition, equipment services, terminal condition, air carries, aircraft operations, aircraft types, economic activity, future plans and issues.

Marine Facilities are described by owner/operator, size, employees, serving rail line, nearest highway, road access, water access, berth/pier facilities, type of operation, shipping lines, barge operation, commodities, volume/capacity, equipment, warehouses, parking, special services, terminal condition, future plans and issues.

Channels are described by depth, width, intermodal facility served, issues, type of ship operating, main commodities and volume.

Rail lines are classified by alignment, ownership, clearance, usage, commodities and issues.

Yards are described by ownership, location, size, serving rail line, nearest highway, access, employees, rail tracks, capacity, equipment, terminal condition, rail operation, truck movement, commodities, and future plans.

Truck terminals and distribution facilities are also described.

Summary of Key Relevant Findings

The report notes that while 72 percent of the metropolitan area consumer market is east of the Hudson River, 63 percent of distribution and warehousing infrastructure is located west of the Hudson, which constrains regional freight mobility.

For air freight, the report identifies the following critical issues:

- **Airport Access** - Congestion and substandard roadway conditions reduce the benefits of fast-moving air cargo in many metropolitan areas;
- **Airport Support System** - The land near many metropolitan area airports is subject to development pressures, and warehouse and refrigeration facilities are not always available to meet the demand; and
- **Public Policy** - Environmental issues, new deicing procedures, noise regulations, air quality concerns, and hazardous material regulations will continue to impact the operations at airports and the air cargo industry.

For maritime freight, the report notes that most waterborne freight uses the New Jersey side of the harbor, because of the land availability for storing containers, better access to the nation's rail and highway network, and better accessibility to warehouses than the east side of the Hudson River. The report correctly predicts that container throughput at the PANYNJ will be 5 million TEUs per year by 2010.

For channel maintenance, the report notes the difficulty in securing adequate dredge disposal sites for the New York area. It notes that deepening projects to 50 feet for the PANYNJ's main channels (Ambrose, Anchorage, Port Jersey, and Kill Van Kull) had been approved in 1998.

TRUCK TERMINALS AND WAREHOUSES SURVEY RESULTS: IN THE NEW YORK METROPOLITAN REGION

Title	Truck Terminals and Warehouses Survey Results: In the New York Metropolitan Region
Prepared for:	NYMTC
Prepared by:	Mary Hrabowska
Date:	February 2001
Accessed:	December 10, 2012 from http://nymtc.org/files/2001WhseReport.pdf

Summary of the Technical Approach

This survey is a continuation of the truck terminals and warehouses survey, conducted by NYMTC Staff and its member agencies staff in 1995, which resulted in the publication of the NYMTC report: *Truck Terminal and Warehouse Survey Results*, issued in 1996. The comparison of changes within the last 5 years as well as findings are discussed. This report does not include facilities in northern New Jersey or southwestern Connecticut.

Data Sources: Truck Terminals and Warehouse Survey Results, 1995 and 1999. Cross Harbor Freight Movement Major Investment Study, NYCEDC, 2000, American Trucking Trends ATA.

Analysis Methods: Surveys were conducted with truck terminals and warehouses in 1995 and 1999. Results were compared with each other and supplemented with secondary sources.

Summary of Key Relevant Findings

The study asserts that in New York City, for the most part, larger, heavy trucks are used to deliver goods to the vicinity of the CBD, while smaller delivery truck and vans are used to move cargoes to and from the CBD. Urban goods pickup and delivery (PUD) differs from intercity trucking in that most shipments are small, many weighing no more than 100 pounds. The typical PUD truck is less than 10,000 pounds gross vehicle weight (GVW) and rarely fully loaded. The typical trip length is short, less than three miles between stops, and speeds are slow, especially in the congested areas of the CBD. Freight flows wholly within the NYMTC region represent 15 percent of total freight flows, while through moves account for 11 percent of total flows. Freight trips with one end in the NYMTC region and the other end outside represent 74 percent of total flows. While the nationwide trend is toward increasing the size of terminals, most of the terminals in the metropolitan area are still of moderate size, with 75 percent having fewer than 20 truck bays.

RAIL FREIGHT YARD REQUIREMENTS LAND ASSESSMENT FOR THE EAST OF HUDSON AREA

Title	Rail Freight Yard Requirements Land Assessment for the East of Hudson Area
Prepared for:	New York Metropolitan Transportation Council
Prepared by:	Howard Mann
Date:	March 2003
Accessed:	December 11, 2012 from http://www.nymtc.org/files/railfreight.pdf

Summary of the Technical Approach

The objectives of the report are to:

- Investigate the need for additional facilities,
- Assess the land area necessary for either expanded or additional facilities, and
- Catalogue the parcels that are available for potential future use as part of the regional rail freight system.

The focus area of this study is east of the Hudson River.

Data Sources: TRANSEARCH Reebie Data 1998, Carrier interviews, Field visits.

Analysis Methods:

- Focusing on the near, three- to five-year term;
- Identifying plots of land with active and non-active physical connections that could be put into use quickly at a low cost;
- Identifying large plots of land very near or adjacent to rail lines that warrant further investigation and possible land banking; and
- Incorporating the response of the carriers operating freight services east of Hudson.

Field reconnaissance and previous study search efforts were used to review and identify sites. For the purpose of searching for sites in New York City, a more complex methodology was used because of New York City's density, complex geography and greater number of potential candidate sites. Since there is a multitude of parcels it was necessary to eliminate those sites that did not meet minimal criteria. The criteria used were:

- Access to highway (less than or equal to one mile);
- Land zoned commercial or industrial;

- Parcels of two acres or more; and
- Land adjacent to rail line.

Summary of Key Relevant Findings

The objective of this study was to determine the need for freight facilities and to survey land area in the NYMTC region to determine potential locations where yards could be situated or existing yards expanded. The study was undertaken in response to concerns about the scarcity of suitable land for railroad use, and its constraint on the potential growth of rail freight volume east of the Hudson River. These concerns were expressed at meetings of the Council, the East of Hudson Rail Freight Task Force, and other public forums.

The study built on the findings of the Pilgrim Intermodal Feasibility Study New York State Department of Transportation (NYSDOT) – Region 10 which had determined that the Pilgrim site was the only viable site for an intermodal yard on Long Island. Recent studies had determined that for all counties, with the exception of Queens, greater numbers of carloads could be handled. The Pilgrim Hospital grounds was confirmed as the preferred site for a functional intermodal and carload yard. Although large sites other than Pilgrim have not been identified, other rail development opportunities could exist on smaller parcels.

Upon completion of the Basic Land Inventory, NYMTC staff, with the assistance of the East of Hudson Rail Freight Operations Task Force staff, interviewed three of the five railroads providing freight services in the east of Hudson area. One of the five carriers was selected for a site tour. The three carriers interviewed were the Canadian Pacific Railway, CSX Transportation, and the New York and Atlantic Railway. The site tour was on the Providence and Worcester Railroad.

HUNTS POINT WATERBORNE FREIGHT ASSESSMENT OPPORTUNITIES TO MEET THE COMMUNITY'S FREIGHT TRANSPORTATION NEEDS THROUGH WATERBORNE STRATEGIES

Title	Hunts Point Waterborne Freight Assessment Opportunities to Meet the Community's Freight Transportation Needs Through Waterborne Strategies
Prepared for:	NYMTC
Prepared by:	Cambridge Systematics, Inc., in association with Seaworthy Systems, Inc. M.G. McLaren, P.C.
Date:	September 23, 2004
Accessed:	December 11, 2012 from http://www.nymtc.org/files/Hunts_Point_Complete.pdf

Summary of the Technical Approach

Describes commodities handled, a profile of services offered, current and future cargo areas.

Data Sources: Hunts Point Truck Study, URS Corporation.

Analysis Methods: Uses an assessment of current land use, freight movement patterns, requirements for vessel types and performance criteria, as well as a description of potential future services.

Summary of Key Relevant Findings

Hunts Point offers appropriate marine conditions, landside resources, and transportation system connections to support both a container barge and a truck ferry service. Marine channel depths of 10 feet or more would be necessary for a truck ferry, and 15 to 18 feet would be necessary for a container barge. At Hunts Point, sufficient depths are available in three places – the pier at the foot of Tiffany Street, Barretto Point, and the waste transfer pier adjoining the NYC Department of Sanitation (DSNY) site. Depths adjoining the Department of Corrections site (14 feet) are not considered adequate, and a pier would be needed to reach deeper water. To accommodate a ferry terminal and/or container storage yard, around three to five acres would be a desirable minimum. Looking at sites adjoining deep water, the best opportunity is at the DSNY site. The required site improvements have been estimated to cost \$6.5 million, and consist of:

- \$2.8 million for bulkhead repair and replacement;
- \$1.0 million for repaving, construction of a gate complex, and perimeter fencing and security;

- \$1.2 million for demolition of the Salt and Sand dome; and
- \$1.5 million (30 percent) for contingency.

In addition to terminal development costs, a freight ferry or container barge would incur vessel acquisition and operating costs. Ideally, all three cost components could be recovered directly and fully from revenues generated by the operation. In practice, however, the public sector may be responsible for some or all of these costs.

The following benefits from Waterborne Freight Services to Hunts Point were identified:

- Improved transportation service and/or reduced transportation cost for Hunts Point businesses;
- Reduced truck traffic (compared to without project conditions) outside of the immediate Market area, benefiting local Hunts Point streets as well as major regional access corridors and the City's overall transportation system;
- Reduced air emissions (compared to without project conditions); and
- A general increase in mobility and accessibility for Hunts Point businesses, customers, and residents, reinforcing its position as the region's preeminent food distribution center.

NJTPA FREIGHT SYSTEM PERFORMANCE ASSESSMENT

Title	NJTPA Freight System Performance Assessment
Prepared for:	North Jersey Transportation Planning Authority
Prepared by:	Cambridge Systematics, Inc.
Date:	April 2005
Accessed:	December 5, 2012 from http://www.njtpa.org/plan/Element/Freight/Freight_study/documents/FA_Summary_Report.pdf

Summary of the Technical Approach

The study relies on demographic projections, location of port and distribution facilities, freight tonnage projections from TRANSEARCH and PANYNJ. GIS mapping is used to illustrate key freight corridors for containerized goods.

Data Sources: Federal Railroad Administration., R.L. Banks Associates, Inc., U.S. Army Corps of Engineers, U.S. Army Corps of Engineers, and PANYNJ, TRANSEARCH 2003.

Analysis Methods: Analysis of commodity tonnage flows for rail and truck. The report compares freight characteristics of international versus domestic, inbound and outbound flows.

Summary of Key Relevant Findings

- The NJTPA freight transportation system must provide for and balance system capacity, performance, safety, and reliability.
- Land use and economic development. Freight transportation capacity influences the region's ability to retain and attract freight-related businesses and maximize economic benefit; conversely, land use strategies can help to focus and cluster freight development where it can be best accommodated by the transportation system, and discourage development where it poses a burden to the transportation system. Freight transportation issues are closely linked with land use policies and strategies.
- Industry competitiveness and performance. There is a compelling public interest in ensuring the competitiveness and performance of freight shippers and receivers, freight carriers, and freight-handling facilities, through efficient and smoothly functioning freight transportation facilities. By doing so, we minimize costs to producers and consumers, maximize job creation and economic benefits, and improve accessibility to national and world markets.
- Environmental, community, and security issues. Freight movement has the potential to create significant environmental impacts – congestion, emissions, noise and vibration, land use conflict, etc., if not properly planned, mitigated,

and managed. Impacts can be especially significant for communities that host freight-generating activities, as well as communities located on major “through” corridors. Finally, as much of the region’s cargo is international in nature, there is an overlaid concern regarding cargo safety and security, on top of established need to regulate hazardous materials and other types of high-risk shipments.

- Implementation and delivery. Freight projects do not fall in the mainstream of public planning or funding. For one thing, much of the freight system is privately owned. For another, freight projects must compete with other legitimate investment needs, which typically have a higher profile. There are few established mechanisms for the dedicated funding of freight improvements, or for structuring shared freight investments between public and private sector partners.

STRATEGIES FOR A NEW AGE: NEW YORK STATE'S TRANSPORTATION MASTER PLAN FOR 2030

Title	Strategies for a New Age: New York State's Transportation Master Plan for 2030
Prepared for:	NYSDOT
Prepared by:	N/A
Date:	Summer 2006
Accessed:	December 12, 2012 from https://www.dot.ny.gov/main/transportation-plan/repository/masterplan-111406.pdf

Summary of the Technical Approach

The Plan relies on results from nine public forums which were conducted across the State in 2004 by the New York State Advisory Panel on Transportation Policy for 2025. Follow up letters to stakeholders and forums with citizens were held following the draft plan's release. Comments received were considered and incorporated as appropriate in preparation of the final Plan.

Data Sources: Forum and survey results, NYSDOT Policy and Strategy, 2004, Global Insight Population Forecasts, 2002 Commodity Flow Survey, New York State Statistical Yearbook, NYSDOT Mass Transit Operating Assistance Program Ridership.

Analysis Methods: Tracks demographic, economic, travel and energy trends to assess transportation implications. Measures potential conformity with goals of mobility and reliability, safety, security, Environmental Sustainability and Economic Competitiveness.

Summary of Key Relevant Findings

This plan serves as a policy directive to drive transportation planning and decision-making to meet NYSDOT's goals. The DOT wants to increase the freight mode share of non-truck modes but faces challenges including the downstate lack of major rail yards and other destination rail facilities, such as intermodal or bulk freight yards, which have an impact in the New York City and Long Island region. NYMTC is studying alternatives to address the problem. In New York State, 90 percent of commodities by weight are moved by truck while only 3 percent are moved by rail, 2.5 percent by pipeline, and the remaining percent by water and multiple modes. Only 1 percent of freight in NYC is moved by rail.

The size and weights of both trucks and rail cars have substantially increased. This has resulted in access problems for both rail and truck traffic due to clearance issues with overhead bridges and inadequate carrying capacities of some of the State's older bridges. In New York City, for example, the longer trucks are banned on many narrow streets which cannot readily accommodate

them. Similarly, rail access to the New York City/Long Island area is restricted to railcars weighing 263,000 pounds or less due to the condition of the existing track and bridge structure. New York State also lags behind in the development of intermodalism.

In support of rail freight access to New York City and Long Island, current efforts will continue to explore the cost-effectiveness of improved rail freight connections across the Hudson River.

ROCKLAND COUNTY TRUCK MOVEMENT STUDY

Title	Rockland County Truck Movement Study
Prepared for:	Rockland County Department of Highways
Prepared by:	Edwards and Kelcey, Cambridge Systematics
Date:	June 18, 2007
Accessed:	December 10, 2012 from https://rocklandgov.com/files/9813/3469/3753/RC_Truck_Executive_Summary.pdf

Summary of the Technical Approach

Define the existing movements of trucks within the County and develop policies to manage truck movements on County routes.

Data Sources: Traffic classification and turning movement counts were collected at strategic locations throughout the County, and geographic data on employment centers, truck generators, physical roadway constraints, and land use.

Analysis Methods: A driver origin-destination survey was conducted on various highways within the County to determine where the trucks observed traveling through Rockland County are coming from, going to, and which routes they use on their trips. The nearly 1,300 survey responses were complemented with a series of interviews with representatives from many of the large businesses in Rockland County that generate truck traffic. The data collection effort led to three key findings: 1) an identifiable freight network is lacking in Rockland County, 2) there are few available options for east-west travel across the County for all traffic, including trucks, and 3) economic and population growth have resulted in conflicting land uses being developed in proximity to one another. The data collection effort also led to the identification of five trucking “Hot Spots.”

Summary of Key Relevant Findings

Based on all of collected data and the Hot Spot Analysis, a network of recommended truck routes was developed for state and county highways. The truck route network is intended to keep truck traffic on appropriate roads and to provide a reasonable set of routes truckers can use to conduct business in Rockland County while avoiding physical constraints and other sensitive areas. The study also recommended signage schemes and industry outreach activities to disseminate truck route information once the truck route network is adopted.

NEW JERSEY COMPREHENSIVE STATEWIDE FREIGHT PLAN

Title	New Jersey Comprehensive Statewide Freight Plan
Prepared for:	New Jersey DOT
Prepared by:	Parsons Brinckerhoff Quade & Douglas, Inc., in association with DMJM+HARRIS, AECOM Transportation Consulting Group, A. Strauss-Wieder, Inc., with data provided by Cambridge Systematics, Inc.
Date:	September 2007
Accessed:	December 5, 2012, CD

Summary of the Technical Approach

The plan has the following objectives:

- Describe the State's goods movement transportation network from a physical, operational, economic, and citizen's perspective;
- Highlight the issues, trends, challenges, and opportunities for goods movement in New Jersey;
- Identify, evaluate, and propose recommendations that address system and modal constraints from a systems perspective;
- Increase private and public understanding of system-level goods movement and logistics issues;
- Develop (or recommend for development) specific data and analysis tools necessary to evaluate freight issues, weigh options, and quantify performance; and
- Strengthen partnerships and coordination with sister transportation agencies, other government organizations, private industry, and the public.

Data Sources: U.S. Census, MPO projections, NJChoices.com, New Jersey Review and Economic Outlook for 2000-2001, New Jersey Council of Economic Advisors, Cambridge Systematics, U.S. Army Corps of Engineers, Federal Railway Administration 2003 Rail Waybill, Reebie Associates TRANSEARCH Database, and Port Authority of New York and New Jersey. FRA Commodity Data, U.S. Army Corps of Engineers, PANYNJ, AAR, BTS National Transportation Atlas.

Analysis Methods: Quantifies the demand for freight by analyzing population, consumption patterns, and supply chains serving New Jersey. Documents the extent and location of major freight generators and industries. Identifies the major commodity categories handled by different modes. Analyzes the pattern of truck and rail origins and destinations.

Summary of Key Relevant Findings

The plan calls for the development of specific infrastructure and operational action plans for the six priority highway freight corridors identified in the Plan. Specifically, the plan recommends to initiate a corridor assessment and project development process on the following priority freight corridors: I-78, the New Jersey Turnpike, I-80, I-287, I-295, and Route 17.

The following major recommendations are made for the rail system:

- Secure funding for the remaining North Jersey Development Plan projects;
- Support/Promote PANYNJ on-dock rail express rail improvements; and
- Champion advancement of Out-of-State MAROps projects.

In addition, the plan recommends that the NJDOT begin to develop a more coordinated mechanism for the planning and management of the rail system through following activities:

- Adopt standards for Rail weight-carrying capacity and height/width dimensions;
- Identify/prioritize at-grade crossing operational/safety improvements along key rail corridors;
- Create a rail freight capacity-oriented project development process; and
- Align the rail assistance program (State Rail Plan) project priorities to broader system objectives.

2009 NEW YORK STATE RAIL PLAN

Title	New York State Rail Plan 2009: Strategies for a New Age
Prepared for:	NYSDOT
Prepared by:	NYSDOT
Date:	February 2009
Accessed:	November 27, 2012 from https://www.dot.ny.gov/divisions/policy-and-strategy/planning-bureau/state-rail-plan

Summary of the Technical Approach

The study provides information on the development of freight and passenger rail in New York State; an inventory of current rail lines, services, and needs; and lists and location maps of potential investment projects.

Data Sources: U.S. DOT BTS, AAR.

Analysis Methods: Describes strategies aimed at improving investment in the system. It presents a funding plan for the projects in the Long-Range Service Investment program.

Summary of Key Relevant Findings

The study provides an overview of current and future rail operations that will impact planning for passenger and freight operations. This New York State rail plan is the first state rail plan in 22 years. The plan covers the period from 2010 through 2030. The plan presents infrastructure needs and proposed investment needs over the next 20 years. It does not provide specific priorities. It presents the end results expected from the projects and the potential impacts of the recommended actions on the region's freight transportation system performance, economy, land use patterns, natural environment, and other aspects of community livability.

Relevant Goals for Passenger Rail System

Several goals within the plan are potentially relevant to NYMTC. The plan envisions a doubling of passenger rail transportation on the NYC-Albany, Albany to Buffalo and Albany to Montreal Routes, and the expansion of reliable intercity passenger rail including service to Montreal and Chicago. The routes rely on lines owned by freight railroads such as CSX and expansion of passenger services could also impact freight capacity on these corridors. These improvements include:

- Ninety-five percent on-time performance for passenger trains between Albany and NYC;

- Completion of the Moynihan Station; and
- Evaluation of new Commuter Rail Services.

Relevant Goals for Freight Rail System

- Increase freight rail market share by 25 compared to 2009 levels;
- Improve the freight rail access to Manhattan and Long Island;
- Move more freight across New York Harbor through the recommendations of the Cross Harbor Freight Movement Project;
- Construct new Intermodal Facilities in Upstate New York;
- Establish a Green Short-Line Railroad locomotive fleet; and
- Improve weight carrying capacity on freight corridors.

Assessment of Needs

\$10.7 billion in investment needed to achieve a state of good repair (SOGR) on freight and passenger systems and improve service capacity over the next 20 years, including \$4.8 billion required within the first five years. Specific proposed investments include:

- Short-Line Railroad SOGR and Capacity improvements \$200 million;
- Class I Railroad SOGR and Capacity Improvements \$200 million;
- Construct Rail/Truck Intermodal Facilities \$50 million;
- Improve Rail-Highway Crossings \$20 million;
- Convert to Green Locomotive Fleet \$10 million; and
- Economic Development/Market Expansion \$40 million.

NYMTC REGIONAL TRANSPORTATION PLAN

Title	NYMTC Regional Transportation Plan
Prepared for:	A Shared Vision for a Shared Future
Prepared by:	A Shared Vision for a Shared Future
Date:	September 24, 2009
Accessed:	November 28, 2012, CD

Summary of Technical Approach

The Regional Transportation Plan (RTP) is a framework produced by NYMTC and its members, which establishes a roadmap for transportation planning and programming in the region. The RTP is updated every five years, with a 25-year planning horizon. Although the RTP does not contain a chapter dedicated solely to freight, discussion of freight transportation systems and services, and high-level freight needs are discussed in the chapters summarized below.

Data Sources: U.S. Census Bureau 2006 American Community Survey (ACS), Comprehensive Port Improvement Plan Consortium, U.S. Bureau of Transportation Statistics, TRANSEARCH, Freight Analysis Framework, U.S. Commerce Department County Business Patterns, New York City Economic Development Corporation, America 2050, Bureau of Economic Analysis, AASHTO Freight Bottom Line Report, Journal of Transport Geography, Review of International Political Economy, WTO, CBO, Intergovernmental Panel on Climate Change.

Methodology. NYMTC used its regional travel demand model, the Best Practices Model (BPM), to forecast future passenger and freight travel demand based on updated forecasts of Population, Employment, Labor force and Households.

Summary of Key Relevant Findings

Chapter 1

The plan assesses needs for the NYMTC Region through 2035 in three key products.

1. The Regional Transportation Plan (RTP), which establishes long-range goals, objectives, and strategies, typically over a 25-year horizon;
2. The Transportation Improvement Program (TIP), which defines funding for specific investments and actions over a five-year horizon; and
3. The Unified Planning Work Program (the Work Program or UPWP), which determines how funding for planning activities will be spent over the course of a program year.

The report examines the impacts to regional Desired Growth Areas, which are the region's priorities for growth, to be supported by targeted investments in transportation infrastructure and services.

The NYMTC plan is to manage the overall share of goods moved by truck. While trucking is expected to continue to dominate, the plan calls for providing additional opportunities for alternative modes like rail and barge to take some market share. In the long run, the plan aims to develop new strategies to diversify freight mode share as congestion increases.

New funding mechanisms for transportation are proposed including:

- Tax credit bonds, investment tax credits;
- New opportunities for toll-supported highways and high-occupancy vehicle toll lanes (HOV) to supplement funding for all surface modes, including freight railroads and public transportation;
- Studying ways that motorists can be charged tolls based on VMT, vehicle type, emissions and traffic volume (at the time of travel). The charges could replace fuel taxes at state or Federal levels; and
- Investigating opportunities for public-private partnerships that raise additional investment capital and advance project delivery while maintaining fair and equitable access to transportation resources.

Chapter 2

The Plan projects a 15 percent growth in population from 2010 to 2035. This growth will be accompanied by 22 percent growth in employment and a 28 percent increase in daily vehicle hours of travel. Because the overall labor force is expected to increase at a lower rate than the number of jobs, transportation becomes even more critical to bring more commuters from outside of the region to work. Increased congestion has negative implications for future freight mobility. Total VMT for the region is expected to grow from 136,802,819 to 158,368,257 million from 2010 to 2035. Counties that will see particularly high levels of growth include Suffolk County in Long Island, from 31.7 to 37.1 million and Westchester County in the LHV from 27.8 to 35.3 million.

Brooklyn will see the highest tonnage growth in freight by 2035. The overall share of rail freight in 2030 will remain 1 percent of the total. Water transportation is expected to play a larger role than rail and provide 9.1 percent of total tonnage in 2030, including 18.7 percent of movements internal to the region.

Chapter 3

The region is employing several new technological strategies to ease passenger and freight congestion including:

- Geographic positioning systems (GPS);
- Adaptive ramp metering;
- Radio Frequency Identification (RFID); and
- Communication, conferencing, and collaborative management tools.

Chapter 6

The RPT outlines a number of short- and long-term actions that could be taken.

Down payments on the four Foundation Projects are included in the TIP intended to improve future access to and mobility within Manhattan's midtown and downtown central business districts. This area includes two of the ten desired growth areas: Hudson Yards and lower Manhattan. By themselves, these areas can accommodate 40 million square feet of commercial space and nearly 24,000 residential units, or nearly 45 percent of the commercial space and 35 percent of the residential units of all ten desired growth areas combined.

PLAN 2035: REGIONAL TRANSPORTATION PLAN FOR NORTHERN NEW JERSEY

Title	Plan 2035: Regional Transportation Plan for Northern New Jersey
Prepared for:	FHWA and FTA
Prepared by:	NJTPA
Date:	August 2009
Accessed:	December 6, 2012 from http://www.njtpa.org/plan/LRP2035/default.aspx

Summary of the Technical Approach

The plan maps potential population growth areas through 2035 as well as additional employment. It updates projections in commuting patterns and VMT within the region and modal share of commuters. The plan does not include a chapter dedicated to freight, but it describes freight activity and needs generally, alongside commuting, pedestrian and bicycle, and safety topics. The plan assesses maintenance needs for highways and bridges, inventories actions taken to improve safety, and identifies necessary future actions. Identifies key areas of needed delay mitigation and additional transit and ridesharing service. Identifies locations of key freight facility and freight corridor improvements. Identifies abandoned and preserved rail corridors as well as bike and pedestrian corridors.

Data Sources: U.S. Census, ATA Truck Tonnage Index, New Jersey Greenhouse Gas Inventory and Reference Case Projections, NJDOT Pavement Management System, NJDOT Comprehensive Statewide Freight Plan, NJDOT 2008 Bridge Management System, NJDOT New Jersey State Airport System Plan. NJDOT FY 2009-2018, PANYNJ Budget and Capital Investment Plan.

Analysis Methods: In creating Plan 2035, the NJTPA considered various levels of funding and investments in three future scenarios:

1. A Baseline Scenario that continues current trends and funding levels;
2. A Plan 2035 Scenario that includes increased funding and changes to regional land use to emphasize smart growth; and
3. An Aspirational Scenario with substantial funding increases and more extensive land use changes.

Summary of Key Relevant Findings

The key forecasts for the years 2010 and 2035 for Northern New Jersey are listed below:

- Population – 16 percent growth;
- Jobs – 17 percent growth;

- Vehicle-Miles Traveled - 14-16 percent increase;
- Transit Trips - 45-60 percent increase;
- Freight Traffic - 100 percent increase;
- Traffic Congestion - 44-52 percent increase;
- Median Travel Time - 11-13 percent increase; and
- Accidents/Crashes - Decline per capita.

The most intense growth is centered in Hudson, Bergen, Essex, and Union Counties.

The strategies identified through the Plan 2035 vision include eight investment principles:

1. Promote smart growth rather than continued sprawl;
2. Make travel safer and more secure;
3. Give highest funding priority to maintaining and repairing existing infrastructure;
4. Expand public transit where possible;
5. Improve roads but limit capacity expansions;
6. Move freight more efficiently;
7. Better manage incidents and apply new transportation technologies; and
8. Support walking and bicycling.

The Region's key initiatives include:

- **Maintenance and Preservation** - Nearly two-thirds of available funding will go toward maintenance activities.
- **Targeted investment in ITS and bottleneck removal.**
- **Transit** - The most significant improvement in transit was expected to come from the Completion of the \$8.7 billion Mass Transit Tunnel under the Hudson River (project suspended after the report's publication).
- **Preservation** - Plan 2035 seeks to preserve open space by working with regional development agencies including the Highlands Council, the Meadowlands Commission and the Pinelands Commission.
- **Climate Change** - New Jersey has established a goal of meeting 20 percent of the State's energy needs through energy efficiency and conservation gains by 2020. Plan 2035 is committed to supporting that goal within the transportation sector through measures such as promotion of smart growth, increased transit investments and prioritization of investments that encourage energy efficiency.

MTA CAPITAL PROGRAM 2010-2014

Title	MTA Capital Program 2010-2014
Prepared for:	As approved by the MTA CAPITAL PROGRAM REVIEW BOARD
Prepared by:	MTA
Date:	June 2010
Accessed:	December 10, 2012 from http://www.mta.info/news/pdf/cap10/capital_program.pdf

Summary of the Technical Approach

The study applies a new needs-based maintenance standard across all investment areas. It illustrates how this new approach will impact maintenance activities across modes.

Data Sources: Data from MTA Long Island Rail Road, Metro-North, MTA Bus, MTA Security Capital Program and MTA Interagency Capital Program. Federal Transit Agency Revised Full Funding Grant Agreement Budget/Schedule.

Analysis Methods: Presents an accounting of major investments by mode. Aligns needs with funding sources.

Summary of Key Relevant Findings

The MTA 2010-2014 Capital Program (dollars in millions) is listed below in Table 2.5.

The MTA Capital Program alters the formula when determining when to invest. Each investment will address a documented and fully justified need, and deliver a specific and measurable customer benefit. It is no longer acceptable to replace an asset *simply* because it has been deemed a “state of good repair-” or “normal replacement”-based need. Assets will no longer be replaced simply because they are old or at the end of their “useful life.”

Each investment is intended to benefit customers in one of three ways:

9. Maintain the high levels of service reliability and safety provided today;
10. Improve service on the existing system; and
11. Complete critical expansion projects to ease crowding and support growth.

The MTA’s 2010-2014 Capital Program is projected to create:

- More than 20,000 new jobs annually over nine years; and
- Nearly \$37 billion in economic activity/sales,

Table 2.5 The MTA 2010-2014 Capital Program
Dollars in Millions

Program Elements	Approved 2010-2014
Core Capital Program	
New York City Transit	\$12,841
Long Island Rail Road	2,554
Metro-North Railroad	1,703
MTA Bus	325
MTA Wide Security Program	335
MTA Interagency	315
Core Subtotal	\$18,073
Network Expansion Projects	5,739
Total 2010-2014 CPRB Program	\$23,812
Bridges and Tunnels	2,453
Total 2010-2014 Capital Program	\$26,265

INTEGRATIVE FREIGHT DEMAND MANAGEMENT IN THE NEW YORK CITY METROPOLITAN AREA

Title	Integrative Freight Demand Management in the New York City Metropolitan Area
Prepared for:	U.S. DOT
Prepared by:	José Holguín-Veras, Ph.D., P.E., Kaan Ozbay, Ph.D., Alain Kornhauser, Ph.D., Anthony Shorris, Satish Ukkusuri, Ph.D.
Date:	September 30, 2010
Accessed:	December 8 from http://transp.rpi.edu/~usdotp/OHD_FINAL_REPORT.pdf

Summary of the Technical Approach

The first phase of the project began from a request made in early 2002 by the New York City Chapter of the then Council of Logistics Management to find ways to encourage off-hour deliveries in New York City. The goals of this latest phase of the project were to:

- Define the set of policies and programs that would induce a shift of deliveries to off-peak hours (referred to here as *off-peak delivery initiatives*);
- Quantify stakeholders' costs and benefits associated with off-peak deliveries initiatives;
- Perform an economic analysis of the expansion of hours during which pick-ups and deliveries are made to commercial areas; and
- Quantify extra costs to stakeholders so that compensation schemes could be implemented, should off-peak deliveries be found to be economically beneficial to society at large.

Data Sources: Shipper Survey results, Carrier Survey results, TTI Urban Mobility Report

Analysis Methods:

- The development of a Behavioral Micro-Simulation (BMS) and of an approximation model to estimate participation in off-hour deliveries;
- The formulation of an analytical model that explains the observed limitations of freight road pricing, and the need for comprehensive carrier-receiver policies; and
- The application of these novel developments to the New York City case.

Summary of Key Relevant Findings

This project is one of the first in the world that has successfully integrated the use of remote sensing technology – in this case Global Positioning System (GPS) enabled cell phones – as part of a system that effectively reduces truck traffic in

the congested hours of the day, through the use of incentives to receivers. The project focused on urban deliveries since they represent the bulk of the freight traffic in urban areas.

Previous research had shown that the ability of carriers to unilaterally change delivery times is quite limited as it necessitates the concurrence of the receivers. The receiver is the key decision-maker. Only market segments with market power can pass toll costs reliably to customers. Policies should target the receivers of the cargoes as they are the ones that determine whether or not the carriers can switch to the off-hours.

- Receiver participation in off-hour deliveries increases with the amount of the incentive provided (though there are industry segments that are more sensitive than others);
- Conducting off-hour deliveries is about 30 percent cheaper than delivering in the regular hours;
- The carriers most inclined to participate are those that have delivery tours with fewer delivery stops;
- Cordon time-of-day pricing is of limited usefulness for freight demand management because of the inability of carriers to readily pass the cost to customers; and
- Time-distance pricing is slightly more effective than cordon time-of-day tolls, though in order to produce a significant shift to the off-hours it would require high tolls.

These findings are summarized in Table 2.6 below.

Table 2.6 Summary of B/C Ratios for Different Incentive Levels

	Cost to receivers	Benefit to carriers	Benefit to road users	Total benefits	Total Incentive Costs	Net benefits	Marginal B/C (ΔB/ΔC)
Financial incentive to food and retail sectors							
\$5,000	(16.20)	\$28.72	\$57.10	\$85.81	(\$16.20)	\$69.62	5.30
\$10,000	(76.07)	\$63.20	\$84.42	\$147.62	(\$76.07)	\$71.55	1.03
\$15,000	(172.91)	\$93.39	\$100.24	\$193.63	(\$172.91)	\$20.72	0.48
\$20,000	(284.13)	\$113.23	\$146.15	\$259.38	(\$284.13)	(\$24.75)	0.59
Targeted programs aimed at Large Traffic Generators							
Large Buildings ¹	?	\$24.75	\$24.36	\$49.11	?	?	?
Large Bldgs. & 250+ ¹	?	\$53.02	\$53.60	\$106.62	?	?	?
Unassisted deliveries							
Security incentives	?	?	?	?	?	?	?
Bonded deliveries	?	?	?	?	?	?	?

The key conclusions of the study are as follows:

- Financial incentives to receivers will be effective in inducing a shift of carriers to the off-hours;
- The traffic simulations indicate that the switch of truck traffic to the off-hours brings about substantial economic benefits;
- The GPS devices installed in the participant vehicles indicate that, on average, a truck traveling in the off-hours achieves speeds of about 8 miles per hour, while in the regular hours they typically fall below 3 miles per hour; and
- There are substantial reductions in service times during the off-hours.

VISION 2020: NEW YORK CITY COMPREHENSIVE WATERFRONT PLAN

Title	Vision 2020: New York City Comprehensive Waterfront Plan
Prepared for:	The New York State Department of State
Prepared by:	The City of New York Department Of City Planning
Date:	March 2011
Accessed:	December 9, 2012 from http://www.nyc.gov/html/dcp/pdf/cwp/vision2020/chapter1.pdf

Summary of the Technical Approach

Assesses the history of New York waterfront development including the deindustrialization of the waterfront and efforts of environmental relocation. Reviews the ongoing balance between commercial redevelopment, public recreational opportunities and freight activity. Assesses the initiatives that tie into the overall goals for the waterfront.

Data Sources: BLS, County Business Patterns, Employment in Water Transportation and Support Activities for Water Transportation, United States Army Corps of Engineers, Waterborne Commerce of the United States, 2008, PANYNJ Trade Data, Employment data from NYS Department of Labor, NYC Department of City Planning

Analysis Methods: Eight key goals were identified. Of these, Goal 3 has the most direct relevance to freight:

- Goal 1 – Expand public access;
- Goal 2 – Enliven the waterfront;
- Goal 3 – Support the working waterfront;
- Goal 4 – Improve water quality;
- Goal 5 – Restore the natural waterfront;
- Goal 6 – Enhance the Blue Network;
- Goal 7 – Improve government oversight; and
- Goal 8 – Increase climate resilience.

Numerous initiatives were analyzed based on their advancement of these goals.

Summary of Key Relevant Findings

Overview

Nearly half of New York City’s 520-mile waterfront is now part of its open-space network. In industrial waterfront areas, desires for public access must be

balanced with the needs of industrial businesses as well as safety and security concerns. There are many port sites within the city where public access is restricted due to Homeland Security regulations.

PlaNYC estimated that New York City has 7,600 acres of brownfields – vacant or underutilized sites where redevelopment is impeded due to the presence, or perceived presence, of contamination by hazardous materials.

New York State’s environmental remediation efforts include the Brownfield Cleanup Program (BCP). This program, which is intended to enhance private-sector cleanup of brownfields, addresses contaminants including hazardous waste and petroleum and provides liability relief and tax credits for cleanup and redevelopment.

Goal 3: Support the Working Waterfront

In 2009, the Port of New York and New Jersey received 4,430 calls from vessels of all types, nearly twice as many as the next largest East Coast port, in Norfolk, Virginia. About half of the vessels calling on the Port carry containers. Currently, the Army Corps is deepening select shipping channels to 50 feet as part of the second phase of the Harbor Deepening Project. These channels include the Kill Van Kull and Arthur Kill Channels off of the shores of Staten Island. The work is anticipated to be completed in 2014, the same year the Panama Canal expansion is expected to conclude.

The U.S. Army Corps of Engineers estimated that almost one-quarter of all tugs and barges on the East Coast were registered in New York City, a total of more than 200 tugboats and 1,000 barges. In 2005, there were 21,295 tugboat calls of service.

To bolster the remaining industrial uses, the Bloomberg Administration in 2005 designated 18 areas of the city Industrial Business Zones (IBZ). The Administration created IBZs to stabilize primarily industrial areas in the Bronx, Brooklyn, and Queens. Manufacturers that relocated to IBZs became eligible for a tax benefit, and, in addition, the Administration committed not to support the rezoning of industrial property for residential use. Significant stretches of the Significant Maritime and Industrial Areas (SMIA) and IBZs suffer from prolonged vacancy and considerable contamination.

Several new waterfront developments, such as an IKEA store, have been constructed that take away capacity from the active waterfront. The City’s own Brooklyn Navy Yard represents one of the most promising examples of large-scale adaptive reuse. Cleanup efforts for the heavily polluted Newtown Creek and the Gowanus Canal are under way. New Jersey’s Portfields Initiative is another approach to the legacy of pollution and disinvestment. Disposal of contaminated dredged material is the most expensive part of the dredging process because of requirements for the management of environmental risks.

The report identified five key strategies for enhancing the working waterfront:

12. Maintain the robust activity in the Port of New York and New Jersey and at the Brooklyn and Staten Island marine terminal facilities;
13. Promote the region's marine highways to move domestic and international goods within the city and throughout the region;
14. Pursue a long-term dredged material management strategy to make New York City's waterways navigable for all forms of transport;
15. Analyze and promote policies to strengthen maritime support services and spur reinvestment in waterfront industrial areas; and
16. Promote environmentally sustainable practices, which will enhance not only waterfront industrial businesses but adjacent residential communities as well.

A NEW ECONOMY FOR A NEW LONG ISLAND

Title	A New Economy for A New Long Island: A Strategic Economic Development Plan for Nassau and Suffolk Counties
Prepared for:	New York State Gov. Andrew M. Cuomo
Prepared by:	Long Island Regional Economic Development Council
Date:	Working Draft, as of 10/22/11
Accessed:	November 30, 2012, from: regionalcouncils.ny.gov/assets/documents/102811_LI_DraftPlan.pdf

Summary of the Technical Approach

Data Sources: NYS Labor Department, U.S. Census Bureau, Multiple Listing Service of Long Island, New York State Department of Taxation and Finance.

Analysis Methods: The development plan uses an analysis of Long Island’s economic history to identify which key strengths should be reinforced through new investment and which new economic areas should see future investment.

Summary of Key Relevant Findings

The report asserts that Long Island’s Nassau and Suffolk Counties deserve significant study due to their unique role as some of America’s first true suburbs. It also suggests that these communities demonstrate the significant challenges suburbs face as they mature and that their example may be instructive for other communities which will encounter similar challenges in the future. Long Island’s economy has transitioned from a “bedroom community” to an economy in which 80 percent of residents work on the island. The economy is still recovering from the mass loss of defense-related jobs following the end of the Cold War. While the employment rate had largely recovered by 2008, these were mainly low-wage service jobs that were lost quickly during the recession. As a result, average pay per employee on Long Island has reached a 10-year low. The lack of available land constrains the opportunities for new freight-related developments.

Transportation Weaknesses

The report refers to Long Island’s transportation system as aging and outdated. Improving land use goes hand in hand with improving the transportation system for both passenger and freight traffic.

The Long Island transportation system was built to accommodate the needs of a commuter corridor where almost all major traffic was to and from New York City. The Island needs better north-south connections. This lack of connectivity harms the efficiency of personal transportation and freight. On the Long Island Rail Road (LIRR), there is a need to improve passing sidings as well as

expanding parking at stations. With respect to freight, rail plays almost no role in moving freight to and from Long Island.

Transportation Opportunities

There are additional opportunities for new freight terminals on Long Island such as the 28-acre Brookhaven Rail Terminal (BRT) on Sills Road near the Long Island Expressway. Another prime opportunity is development around airports to support new passenger and freight operations.

The East Side Access project will continue to serve as Long Island's premier infrastructure project. It will connect the LIRR's Main and Port Washington Branch lines in Queens to a new terminal beneath Grand Central Terminal in Manhattan. The new connection will increase the LIRR's capacity and shorten travel time for Long Island and eastern Queens commuters traveling to the east side of Manhattan. This project has continued to advance since the report's publication and is currently scheduled to be complete by 2019.

Consequences of Inaction

While the East Side access project provides an opportunity for growth, it also threatens to compound some of the problems that are already apparent within the transportation system such as lack of parking at transit stations and lack of north-south routes to accommodate reverse commuters.

FEASIBILITY OF FREIGHT VILLAGES IN THE NYMTC REGION: TASK 6 – SITE IMPACT ASSESSMENT

Title	Feasibility of Freight Villages in the NYMTC Region: Task 6 – Site Impact Assessment
Prepared for:	New York Metropolitan Transportation Council/University Transportation Research Center Region 2
Prepared by:	Center for Advance Infrastructure and Transportation Rutgers, The State University of New Jersey
Date:	March 23, 2011
Accessed:	November 20, 2012 CD

Summary of the Technical Approach

Study assesses traffic, logistics and economic impacts, which are then used to determine the extent to which freight village development has the potential to assist in NYMTC's regional objectives.

Data Sources: NCHRP Synthesis 320. Integrating Freight Facilities and Operations with Community Goals – A Synthesis of Highway Practice. Transportation Research Board, Washington, D.C., 2003.

Analysis Methods: The generation of truck traffic was analyzed by the type of facility located within a freight village. A typical freight village model was created and was applied to six sites. The number of trucks generated by facilities was estimated using the truck trip rates from the ITE Trip Generation manual and relevant figures. To assess the impact of alternative land uses compared to freight village development, various scenarios were used for comparisons which included development of a business park, an amusement park, and a regional park. The traffic impact of a freight village was then compared to that of alternative developments.

Summary of Key Relevant Findings

The report described a freight village housing “businesses heavily relying on transportation services and providers of transportation and logistics services. Facilities supporting their activities include light and heavy warehousing, general light industrial and cross-docking facilities, industrial park and, usually, intermodal terminals. The following typology of freight facilities was used in the analysis along with an analysis of average truck trip generation per acre. The analyses in Tables 2.7 and 2.8 showed that heavy warehousing produces the highest total vehicle trips per acre; however, cross-docking facilities produce the highest number of truck trips per day per acre.

17. Warehousing;

18. General Light Industrial;

- 19. Industrial Park;
- 20. Truck Terminal; and
- 21. Intermodal Terminals.

Table 2.7 Total Vehicle and Truck Trips Generated

	Daily			AM Peak		PM Peak	
	Total Vehicle Trips/acre	Trucks (%)	Trucks/day/acre	Total Vehicles/hr/acre	Trucks/hr/acre	Total Vehicles/hr/acre	Trucks/hr/acre
Light Warehousing (LW)	35.9	19.7	7.06	3.15	0.63	2.72	0.71
Heavy Warehousing (HW)	69.9	20.43	14.29	4.64	0.59	6.27	0.65
General Light Industrial (GLI)	37.3	21.4	7.98	3.65	1.04	4.96	0.93
Crossdocking (CD)	42.6	54	22.99	1.95	0.73	2.18	1.13
Industrial Park (IP)	24.8	19.6	4.86	2.64	0.52	3.82	1.20
Intermodal Terminal (IT)			15.3		0.94		1.19

Table 2.8 Alternative Freight Village Developments as Applied to the Six NYMTC Sites

		Sunset Park	Mount Vernon	LITRIM/Pilgrim	GATX	Calverton	AVR
	Total Area (acres)	97	180	50	220	365	660
Light Warehousing (LW)	%	70	50	20	19	21	25
	area	68	90	10	41	76	168
Heavy Warehousing (HW)	%	0	0	0	15	15	20
	area	0	0	0	33	55	132
General Light Industrial (GLI)	%	0	0	0	0	25	0
	area	0	0	0	0	91	0
Crossdocking (CD)	%	10	20	20	30	11	25
	area	10	36	10	66	40	165
Industrial Park (IP)	%	20	30	0	22	20	25
	area	19	54	0	50	73	165
Intermodal Terminal (IT)	%	0	0	60	14	8	5
	area	0	0	30	30	30	30
Total	%	100	100	100	100	100	100
	area	97	180	50	220	365	660

The report then estimates the traffic that will be generated by the six sites under alternative development scenarios. Results are presented in Table 2.9.

Table 2.9 Traffic Generation under Freight Village Development

Daily Traffic, All Vehicles and Trucks

		Sunset Park	Mount Vernon	LITRIM/Pilgrim	GATX	Calverton	AVR
	Daily traffic						
Light Warehousing (LW)	all vehicles	2386	3229	359	1484	2717	6014
	trucks	470	636	71	292	535	1185
Heavy Warehousing (HW)	all vehicles	-	-	-	2309	3830	9235
	trucks	-	-	-	472	783	1887
General Light Industrial (GLI)	all vehicles	-	-	-	-	3405	-
	trucks	-	-	-	-	729	-
Crossdocking (CD)	all vehicles	405	1533	426	2810	1710	7026
	trucks	218	828	230	1518	923	3794
Industrial Park (IP)	all vehicles	471	1339	-	1228	1811	4093
	trucks	92	261	-	239	353	798
Total without IT*	all vehicles	3261	6101	785	7831	13473	26393
(Total with IT)	all vehicles	(3721)	(-)	(1245)	(8291)	(13933)	(26853)
without IT	trucks	780	1725	301	2229	3323	7664
(with IT)	trucks	1240	-	761	2689	3783	8124

* Intermodal Terminal

The report caveats the findings by noting that freight village development does not follow a unique model and that a number of practices can be adopted that would reduce the traffic-related impacts of developments. Furthermore, the development of freight villages does not necessarily produce net regional increases in truck traffic as some trips can be transferred from other areas and result in net reductions in overall heavy truck traffic.

2011 SOUTH WESTERN (CONNECTICUT) REGION LONG-RANGE TRANSPORTATION PLAN GOING FORWARD: THE PLAN TO MAINTAIN AND IMPROVE MOBILITY (THE PLAN)

Title	2011 South Western Region Long-Range Transportation Plan <i>Going Forward: The Plan to Maintain and Improve Mobility</i> (the Plan)
Prepared for:	South Western Region Metropolitan Planning Organization
Prepared by:	South Western Regional Planning Agency
Date:	April 28, 2011
Accessed:	December 6, 2012 from http://www.swrpa.org/Uploads/SWRPA_LRTP_2040_full.pdf?phpMyAdmin=727f2ac42cbcd584386014c03e889f71

Summary of the Technical Approach

This document is the “blueprint” for transportation in the eight municipalities comprising the South Western Region of Connecticut: Darien, Greenwich, New Canaan, Norwalk, Stamford, Weston, Westport, and Wilton (collectively, the “Region”). The 2011 edition of the Plan is intended to be more reader-friendly and concise as compared to prior editions. For this reason, numerous chapters have been consolidated into subject areas and organized by subsections, thereby providing easy points-of-reference for the reader.

Data Sources: SWRPA Regional Land Use and Zoning Inventory, Connecticut Department of Labor. Mid-Atlantic Regional Air Management Association (MARAMA) report, The Governor’s Steering Committee on Climate Change.

Analysis Methods: Assesses land use and demographic patterns as well as rates of growth. Examines patterns of commuting and quantifies infrastructure needs.

Summary of Key Relevant Findings

The key themes guiding the plan are:

- Limited Funding is available to achieve objectives;
- Given the choice between investing in new capacity or addressing the maintenance needs of existing facilities, a “Fix It First” approach should be followed;
- Congestion on the Region’s roadways continues to impact quality of life in the South Western Region;
- Transportation policy must be addressed in conjunction with land use policy to promote the use of transit, walking, and bicycling; and

- Rail parking, both within the Region and further up the line, must be sufficiently available to promote use of the rail network and support economic development within the Region.

The region is expected to continue to see slow population growth with 82 percent of the growth concentrated in Greenwich, Norwalk and Stamford. There is a general lack of developable land within the region which serves to limit future population growth as well as the location for future industrial and freight-oriented land uses. A program of safety and operational improvements to pavement, shoulders and bridges along nearly the full extent of the Merritt Parkway is planned. With respect to waterborne transportation, the plan mentions the as yet realized attempt to bring fast ferry service between the Port of Bridgeport and NYC. Unmentioned are similar attempts to develop container-on-barge services which had been previously studied by the Port of Bridgeport and the Connecticut Department of Transportation.²

A number of key features of the freight system are mentioned:

- Nearly 85 percent of the Region’s commercial truck miles traveled occurs on I-95;
- Aside from I-95, the Region’s freight system includes two small but important maritime ports as well as limited freight rail service;
- Imports are skewed toward low-value, high-weight goods while exports tend toward high-value, low-weight goods;
- Transportation and warehousing jobs represent about 2 percent of the workforce; and
- Truck delays on I-95 represent the majority of truck delay hours in the Region.

A recurring problem is the presence of oversized trucks on the Merritt Parkway which is height restricted and cannot accommodate their dimensions. A number of accidents are attributed to “insufficient vertical clearance.”

Demand for truck parking consistently exceeds the supply. The shortage of 1,200 truck parking spaces within Connecticut is expected to grow to 1,600 spaces by 2020. The Plan proposes better enforcement of overweight trucks, noting that the weigh station located along the northbound lanes in Greenwich is open on only a limited basis. A weigh-in-motion system, similar to the one in Union on I-84 east, has been proposed for the Greenwich weigh station.

With respect to rail, the dominance of passenger service has limited freight rail service to narrow time windows, usually at night. There is only one rail

² <http://www.ct.gov/dot/LIB/dot/Documents/dpolicy/barge/BargeReport.pdf>.

customer in the entire region. Waterborne freight traffic is also very minor and limited to Fuel Oil, Sand and Gravel and Iron and Steel scrap.

Truck VMT is expected to increase at a faster rate than overall VMT in the region. Truck VMT is projected to grow by 115 percent between 2002 and 2035. These numbers rely on the 2002 rather than the 2007 FAF projections.

PLANYC UPDATE (2011)

Title	PlaNYC
Prepared for:	New York Mayor's Office
Prepared by:	New York City Government
Date:	2011
Accessed:	December 11, 2012 from www.nyc.gov/html/planyc2030/html/home/home.shtml

Summary of the Technical Approach

The report reviews initiatives undertaken or supported by the City of New York in ten vital areas of city services.

Data Sources: Sources are not directly cited within the document.

Analysis Methods: The study highlights key metrics from each area and documents supporting initiatives. The transportation section highlights initiatives in public transit, traffic management, and freight.

Summary of Key Relevant Findings

Transportation Chapter

The chapter reviews recent citywide initiatives to improve transportation. Several of the goals have direct or indirect impact on freight services.

Improve and expand sustainable transportation infrastructure and options:

22. Improve and expand bus service throughout the city – Indirect freight impact due to the potential of higher operating speeds;
23. Improve and expand subway and commuter rail – Indirect Freight impact due to potential impacts on freight rail capacity;
24. Expand for-hire vehicle service throughout neighborhoods;
25. Promote car-sharing;
26. Expand and improve ferry service;
27. Make bicycling safer and more convenient; and
28. Enhance pedestrian access and safety.

Reduce congestion on our roads, bridges, and at our airports:

29. Pilot technology and pricing-based mechanisms to reduce traffic congestion – *indirect freight impact due to lower overall congestion;*
30. Modify parking regulations to balance the needs of neighborhoods;
31. Reduce truck congestion on city streets – Direct freight impact;

32. Improve freight movement – Direct freight impact; and
33. Improve our gateways to the nation and the world.

Maintain and improve the physical condition of our roads and transit system:

34. Seek funding to maintain and improve our mass transit network; and
35. Maintain and improve our roads and bridges.

There are three goals (10, 11, and 12) that are directly tied to freight and several others that are indirectly impact freight.

Initiative 10: Reduce Truck Congestion on City Streets

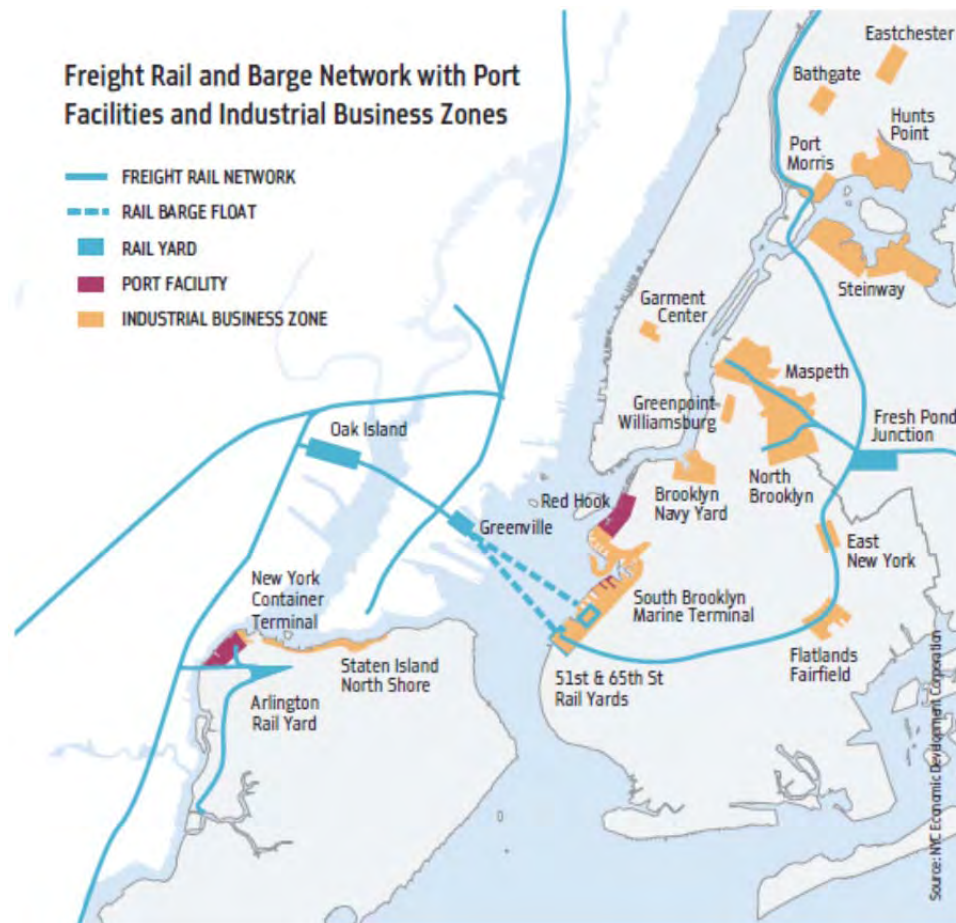
More than 434 million tons of freight moved to and through New York City in 2004. Almost 90 percent of this was transported by truck. The volume of freight in the city is projected to grow by 85 percent by 2030. The city will expand pilot programs to shift truck freight to off-peak periods working with interested shippers. The City will implement commercial paid parking at high-demand loading zones citywide to increase the turnover of curbside loading spots and to encourage businesses to make off-peak deliveries. The City will focus on improving truck access to The New York Container Terminal (NYCT) at Howland Hook in Staten Island, which is the largest container terminal within New York City and handles more than 10 percent of the three million containers that enter the Port of New York and New Jersey. Improving truck access to the terminal and reducing its impact on local streets is critical. Working with the Port Authority, the City will try to reduce traffic bottlenecks at the intersection of Forest Avenue and the Staten Island Expressway, and create direct access between the NYCT and the Goethals Bridge.

Initiative 11: Improve Freight Movement

The City has launched several initiatives to improve the flow of freight. The Port Authority is currently leading its Comprehensive Long-Term Regional Goods Movement Plan, which will result in a 30-year action plan for improving freight movement in the New York/New Jersey metropolitan area. The City will continue to participate in this effort and take the appropriate actions that emerge within its jurisdiction.

The city is currently reviewing the transportation needs of the Bronx as part of a Federal grant to study the Sheridan Expressway corridor. The study contains a range of alternatives, including the option of removing the highway and improving arterials. The Hunts Point Terminal Produce Market, located at the Food Distribution Center, presents an opportunity to expand the use of freight trains to supplement trucks for incoming shipments. The produce market handles 60 percent of the produce consumed in the city and 22 percent consumed in the region. Approximately 3,800 trucks travel to and from the market each day, with many additional trucks also serving other enterprises in the vicinity. Figure 2.3 illustrates this network.

Figure 2.3 Freight Rail and Barge Network with Port Facilities and Industrial Business Zones



The City will also increase rail and waterborne freight deliveries at the South Brooklyn Marine Terminal. The City will invest more than \$90 million, to be matched by \$60 million in private investment, to return the facility to a state of good repair. This investment is expected to create 300 new jobs and allow ships and barges to deliver vehicles, construction materials, and unprocessed metal, glass and plastic to and from the facility.

In partnership with the Port Authority, the City will launch a comprehensive study of the JFK air cargo industry. The study will quantify cargo market conditions and trends, identify the specific costs and benefits of doing business at JFK, and identify opportunities for infrastructure, financing, and development programs that will benefit New York-based importers and exporters who depend on competitive access to global markets.

Initiative 12: Improve Our Gateways to the Nation and the World

The City will encourage the Federal Aviation Administration (FAA) and the airline industry to implement next-generation (NextGen) air traffic control technology in our region, upgrading from radar-based technology to a satellite-based system.

The City will launch a comprehensive study of the JFK air cargo industry. The study will quantify cargo market conditions and trends, identify the specific costs and benefits of doing business at JFK, and identify opportunities for infrastructure, financing, and development programs that will benefit New York-based importers and exporters. The City also plans improvements to the Van Wyck expressway.

Other Initiatives

Freight issues are mentioned in connection with several other goals outside of the transportation chapter. For example, the City's plan for air quality includes working with the Port Authority to implement the Clean Air Strategy for the Port of New York and New Jersey. The City is partnering with the Port Authority, EPA, New York Power Authority, and Carnival Cruise Lines to develop the first operational "cold ironing," or shore power-capable cruise terminal, on the East Coast at the Brooklyn Cruise Terminal (BCT) in Red Hook, Brooklyn. Cold Ironing would result in annual reductions of 6.5 tons of PM and 89.3 tons of NO_x.

NEW YORK CITY REGIONAL ECONOMIC DEVELOPMENT COUNCIL STRATEGIC PLAN

Title	New York City Regional Economic Development Council Strategic Plan
Prepared for:	NYS DOT
Prepared by:	New York City Regional Economic Development Council
Date:	November 14, 2011
Accessed:	December 12, 2012 from http://regionalcouncils.ny.gov/content/new-york-city

Summary of the Technical Approach

Tracking of economic factors such as employment growth trends. Distribution of employment and industries including emerging industries.

Data Sources: U.S. Census Bureau, New York State Department of Labor and Bureau of Labor Statistics, New York State Department of Labor.

Analysis Methods: Identified a series of priority projects that the Development Council will pursue and described their potential impacts.

Summary of Key Relevant Findings

The plan identified opportunity zones that have already undergone a decade or more of planning and predevelopment work. These are:

- 125th Street Manhattan;
- Coney Island (Brooklyn);
- Brooklyn Navy Yard (Brooklyn);
- Greenpoint-Williamsburg (Brooklyn);
- Hunts Point (Bronx);
- Long Island City (Queens);
- Lower Manhattan (Manhattan);
- Jamaica/Southeastern Queens (Queens);
- Hudson Yards (Manhattan);
- Flushing/Willets Point (Queens);
- North Shore (Staten Island);
- South Bronx (Bronx);
- Southwest Brooklyn (Brooklyn); and
- West Shore (Staten Island).

Specific Freight-related initiatives include the Expansion of the New York Container Terminal in partnership with the city and the Port Authority to develop a 38-acre berth adjacent to the existing terminal. The berth 4 expansion will allow the Howland Hook terminal to accommodate Post Panamax vessels. Annual throughput at the terminal would be increased to 800,000 lifts, a 55 percent increase.

This project will measure its success in the following ways:

- **Completion Timeframe** - Assuming that financing is secured so that the planning/design process begins in January 2012, construction will be completed by December 2014.
- **Private Funding** - The \$489 million cost of the project is being funded by the Ontario Teachers' Pension Plan. The Pension Plan is seeking an equity partner, and most likely a major shipping line, to complete the financing package.
- **Job Creation** - The creation of Berth 4 will result in 200 full-time equivalent positions on the terminal and over 2,500 total direct on- and off-terminal full-time equivalent jobs inside and outside of New York City. The proposed action would increase the number of jobs at the terminal by approximately 28 percent.
- **Environmental Sustainability** - The project will be LEED certified.

MID-HUDSON REGION ECONOMIC DEVELOPMENT COUNCIL STRATEGIC PLAN

Title	Mid-Hudson Region Economic Development Council Strategic Plan
Prepared for:	Governor Andrew Cuomo
Prepared by:	Mid Hudson Region Economic Development Council
Date:	November 2011
Accessed:	December 8, 2012 from http://regionalcouncils.ny.gov/themes/nyopenrc/rc-files/midhudson/MHREDCSPFINAL11_12_11.pdf

Summary of the Technical Approach

Profile of economic trends within the region along with summary of key opportunities for growth.

Data Sources: New York State Department of Labor, Working group findings, feedback from public forums, interviews with business leaders

Analysis Methods: Assesses the strengths and weaknesses of the region in terms of transportation infrastructure, labor, taxation policy, and employment trends.

Summary of Key Relevant Findings

The Strategic plan will undertake initiatives to retain and stimulate more freight intensive industries such as distribution and food and beverage services. It will encourage additional waterfront development in part to encourage trade.

The region currently suffers from high operating costs due to high land and labor costs that impede new businesses. Transportation infrastructure in the Mid-Hudson region is also aging. The Tappan Zee Bridge, critical to moving people and goods in the region and state, has been recommended for outright replacement and is now one of nation's and State's priority infrastructure projects.

Very few projects are considered shovel ready. The impediments work group of the council found several factors that contribute to a dearth of shovel-ready sites in the region, including delays in the permitting process at local levels; home rule provisions that restrict zoning; membership disparities on local planning and zoning boards; inconsistency between municipal and environmental requirements and allowances; restrictive environmental protection requirements; and a reactive rather than a proactive approval processes.

There are some freight intensive firms that are expanding such as PepsiCo., which plans to increase the workforce at its headquarters in Purchase in Westchester County by 800 over the next 10 years. The Council claims that additional jobs can be created in other freight intensive industries such as

Agriculture, Distribution, Food and Beverage, high-tech manufacturing and natural resources.

Highlights of current trends and opportunities related to freight include:

- Manufacturing and distribution activities are spread throughout the region. According to the New York State Department of Labor, average annual employment in this seasonal industry was approximately 5,000 in 2010, little changed from 2000;
- The Mid-Hudson Region is home to more than 800 firms that operate 4,100 distribution facilities;
- 572 firms engaged in high-tech manufacturing and these employed approximately 13,500 worker in 2010, down by 39 percent from 2000;
- Orange County has approximately 3 million square feet of shovel ready space available for sale;
- Five distribution projects that are evaluating location options have the potential to add 3,500 jobs and approximately \$200 million in capital investment;
- Stewart Airport presents an opportunity to catalyze development in Orange County as an air transportation hub for the distribution industry; and
- Large and underutilized Pfizer and IBM facilities in Pearl River and Fishkill (Pfizer) and Kingston (IBM), offer great potential to be repurposed for commercial-industrial uses.

The region currently has two Class I Railroads - CSX and Norfolk Southern as well as six international airports.

TAPPAN ZEE HUDSON RIVER CROSSING DEIS

Title	Tappan Zee Hudson River Crossing DEIS
Prepared for:	U.S. EPA
Prepared by:	NYSDOT, FHWA, NYSTA
Date:	01/2012
Accessed:	December 9, 2012 from http://www.newnybridge.com/documents/deis/00-executive-summary.pdf

Summary of the Technical Approach

This EIS examines the potential environmental effects of proposed alternatives for the Tappan Zee Hudson River Crossing Project, and where adverse impacts are identified, it discusses measures to mitigate them.

Data Sources: PANYNJ.

Analysis Methods: Project development is being guided by three goals with supporting objectives that address the deficiencies of the existing bridge described above. These goals are as follows:

- Ensure the long-term vitality of this Hudson River crossing;
- Improve transportation operations and safety; and
- Maximize the public investment in a new Hudson River crossing.

This EIS considers two alternatives – No Build Alternative and Replacement Bridge Alternative. Rehabilitation, Tunnel, and Single Span Alternatives were previously considered and determined not to be prudent because they would not meet the project’s goals and objectives.

Summary of Key Relevant Findings

Based on criteria provided in the NYSDOT Load and Resistance Factor Design Bridge Design Specifications, the Tappan Zee Bridge is classified as a “critical bridge,” i.e., one required to be open to all traffic once inspected after a major event and be usable by emergency vehicles and for security, defense, economic or secondary life safety purposes immediately after the major event. However, the structure currently cannot sustain extreme natural or man-made events because it lacks the required structural redundancy.

From 2001 to 2009, more than 2,700 accidents occurred between Interchange 9 (Route 9) in Tarrytown and Interchange 10 (Route 9W) in Nyack. During this same period, the accident rate on this 3.89-mile roadway segment was 2.15 accidents per million miles of vehicle travel (acc/MVM), more than twice NYSTA’s statewide average.

Analyses were performed to determine the potential for adverse and/or beneficial impacts in the following categories: transportation; community character; land acquisition, displacement, and relocation; parklands and recreational resources; socioeconomic conditions; visual and aesthetic resources; historic and cultural resources; air quality; noise and vibration; energy and climate change; topography, geology, and soils; water resources; ecology; hazardous waste and contaminated materials; and construction impacts.

EMPIRE STATE DEVELOPMENT CORPORATION SMALL BUSINESS DREDGE NEEDS PORT OF NEW YORK STUDY

Title	Empire State Development Corporation Small Business Dredge Needs Port of New York Study
Prepared for:	Empire State Development Corporation
Prepared by:	Eric Johansson
Date:	July 2012
Accessed:	December 13, 2012, CD

Summary of the Technical Approach

The purpose of this preliminary study is to investigate East Chester and Mariners Harbor small businesses dredging needs in the Port of New York and develop a strategic plan that helps them with dredging needs to ultimately grow jobs in New York State.

Data Sources: Gulf Intracoastal Canal Association, K-Sea Transportation, Survey Results.

Analysis Methods:

- Develop a Survey;
- Survey small businesses;
- Perform site visual inspections;
- Research funding arrangements available to small businesses for dredging; and
- Conduct interviews.

Summary of Key Relevant Findings

- Terminals in East Chester Creek play a large role in intermodal transportation moving petroleum, sand, gravel and recyclables.
- In the past few years, New York has seen a decline in small/medium terminals primarily due to diminishing water depths due to the natural process of siltation. Saving small/medium terminals is paramount to New York's economy and taxpayers to maintain an environmentally superior supply chain to reduce trucks on our bridges and roads.
- Data should be collected and studied to determine desired water depths, dredging needs/schedules, and supply chain needs. Participating commercial waterfront facilities would then join together in a cooperative together with NYSDEC to facilitate testing and permitting.

- The Empire State Development Corporation should facilitate these actions by developing small/medium terminals dredging needs model. The model would be based on sound and established procedures such as benefit/cost methods or others. The outcome would be a priority list based on maximum return to the community.
- The banding together of a cooperative program will reduce dredging cost to small business. Dredging companies have large initial costs that can be spread out over a larger contract. This type of program would require a new administrative structure.
- A planned maintenance schedule is a common sense approach to dredging.

Items to Consider

36. Lobby the Army Corp of Engineers to institute the 1950 Authorization and dredge East Chester Creek as proposed;
37. Lobby the Army Corp of Engineers to reauthorize the Y portion of East Chester Creek North of the Fulton Avenue Bridge to the Imperial Masonry site;
38. Fund dredging of Small/Medium Terminals utilizing a model similar to road/bridge maintenance programs;
39. Study each Creek, Canal, River, and Bay to determine dredging needs;
40. Develop periodic state-funded dredging plan for key small/medium terminals on creeks, canals, rivers, and bays; and
41. Work with local economic development corporations to identify/implement additional commercial uses.

Action Plan

Facilitating dredging program could be either in-house utilizing Empire State Development Corporation personnel as a project manager and outsource consulting as appropriate:

42. Work with USACE to ensure Federal channels are dredged to modern needs;
43. Study and collect data for each area;
44. Work with NYSDEC to obtain dredging and bulkhead permits;
45. Qualify/quantify dredging needs;
46. Select dredging vendor;
47. Assure dredging goals; and
48. Manage periodic dredging and facilitate enhanced commercial uses.

NEW YORK CITY DEPARTMENT OF SANITATION COMPREHENSIVE SOLID WASTE MANAGEMENT PLAN

Title	New York City Department of Sanitation Comprehensive Solid Waste Management Plan
Prepared for:	New York City Department of Sanitation
Prepared by:	New York City Department of Sanitation
Date:	September 2006
Accessed:	April 15, 2013, available from: http://www.nyc.gov/html/dsny/html/swmp/swmp-4oct.shtml

Summary of the Technical Approach

The Comprehensive Solid Waste Management Plan uses reported transfer station, recycling facility, disposal facility, and haulers' data to quantify the volume of disposed and recycled household, commercial, and construction waste and debris.

Data Sources: NYSDEC Planning Unit data on material flows, previous DSNY studies and reports.

Analysis Methods:

- Quantify existing volume of waste and recycled material and trends;
- Set goals to reduce truck trips and miles associated with waste disposal, and establish cost-effective, reliable, and environmentally sound system for managing the City's waste over the next 20 years.
- Establish next steps and implementation framework, including traffic studies, task forces, education programs, etc.

Summary of Key Relevant Findings

- About 50,000 tons of waste and recyclables are collected daily in New York City.
- The current truck-based waste export system is unsustainable, and cannot be the cornerstone of the City's long-term disposal plan.
- The Plan's recommendations include:
 - Shift 70% of City's waste stream to recycling by 2015;
 - Eliminate use of long-haul trucks to transport DSNY-managed household waste, and minimize truck trips associated with disposal of commercial waste;
 - Expansion of barge and rail export of commercial and household waste, including activation of marine transfer stations; and

- Implement the goals by activating marine transfer stations, restructuring transfer station permit fees, performing traffic and cost-benefit analyses, engaging and educating communities (particularly those hosting transfer stations).

Acronym Glossary

AASHTO. American Association of State Highway and Transportation Officials.

AAR. Association of American Railroads.

ASC. American Community Survey.

ASLRRA. American Short Line and Regional Railroad Association.

ATA. American Trucking Association.

BLS. Bureau of Labor Statistics.

BPM. Best Practices Model, the regional travel demand model for NYMTC.

BTS. Bureau of Transportation Statistics.

CPIP. Comprehensive Port Improvement Program.

DSNY. New York City Department of Sanitation.

EIS. Environmental Impact Statement.

FAA. Federal Aviation Administration.

FHWA. Federal Highway Administration.

FMCSA. Federal Motor Carrier Safety Administration.

FRA. Federal Railroad Administration.

FAF. Freight Analysis Framework.

HAZMAT. Hazardous Materials.

HERS. Highway Economic Requirements System.

HPMS. Highway Performance Monitoring System, managed by FHWA.

IBZ. Industrial Business Zone, according to New York City zoning code.

ITE. Institute of Transportation Engineers.

LOS. Level of Service.

MPO. Metropolitan Planning Organization.

MTA. Metropolitan Transportation Authority.

NJTPA. North Jersey Transportation Planning Authority, the MPO for 13 counties in New Jersey – Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

NYCDP. New York City Department of City Planning.

NYCDOT. New York City Department of Transportation.

NYCEDC. New York City Economic Development Corporation.

NYMTC. New York Metropolitan Transportation Council, the MPO for 10 counties in New York State – Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Rockland, Suffolk, and Westchester.

NYSDOT. New York State Department of Transportation

NYSDEC. New York State Department of Environmental Conservation.

NYSTA. New York State Thruway Authority.

PANYNJ. Port Authority of New York and New Jersey.

PUD. Pick-Up and Delivery.

RO/RO. Roll-On/Roll-Off.

RTM-E. Regional Transportation Model-Enhanced, the regional travel demand model for NJTPA.

RTP. Regional Transportation Plan.

TEU. Twenty-foot Equivalent Unit.

TIGER. Transportation Investments Generating Economic Recovery, a Federal grant program.

TOFC. Trailer On Flat Car.

TTI. Texas Transportation Institute.

USACE. United States Army Corps of Engineers.

USDOT. United States Department of Transportation.

USEPA. United States Environmental Protection Agency.

VMT. Vehicle Miles Traveled.