

State of the Northeast Corridor Region Transportation System

Summary Report – February 2014





Congress established the Northeast Corridor Infrastructure and Operations Advisory Commission (the Commission) to develop coordinated strategies for improving the Northeast's core rail network in recognition of the inherent challenges of planning, financing, and implementing major infrastructure improvements that cross multiple jurisdictions. The expectation is that by coming together to take collective responsibility for the NEC, these

disparate stakeholders will achieve a level of success that far exceeds the potential reach of any individual organization.

The Commission is governed by a board comprised of one member from each of the NEC states (Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, and Maryland) and the District of Columbia; four members from Amtrak; and five members from the U.S. Department of Transportation (DOT). The Commission also includes non-voting representatives from four freight railroads (Providence & Worcester, Norfolk Southern, CSX Transportation, and Conrail), states with connecting corridors (Maine, New Hampshire, Vermont, Virginia, and North Carolina) and several commuter operators in the Region (Massachusetts Bay Transportation Authority, New York Metropolitan Transportation Authority, and Southeastern Pennsylvania Transportation Authority).



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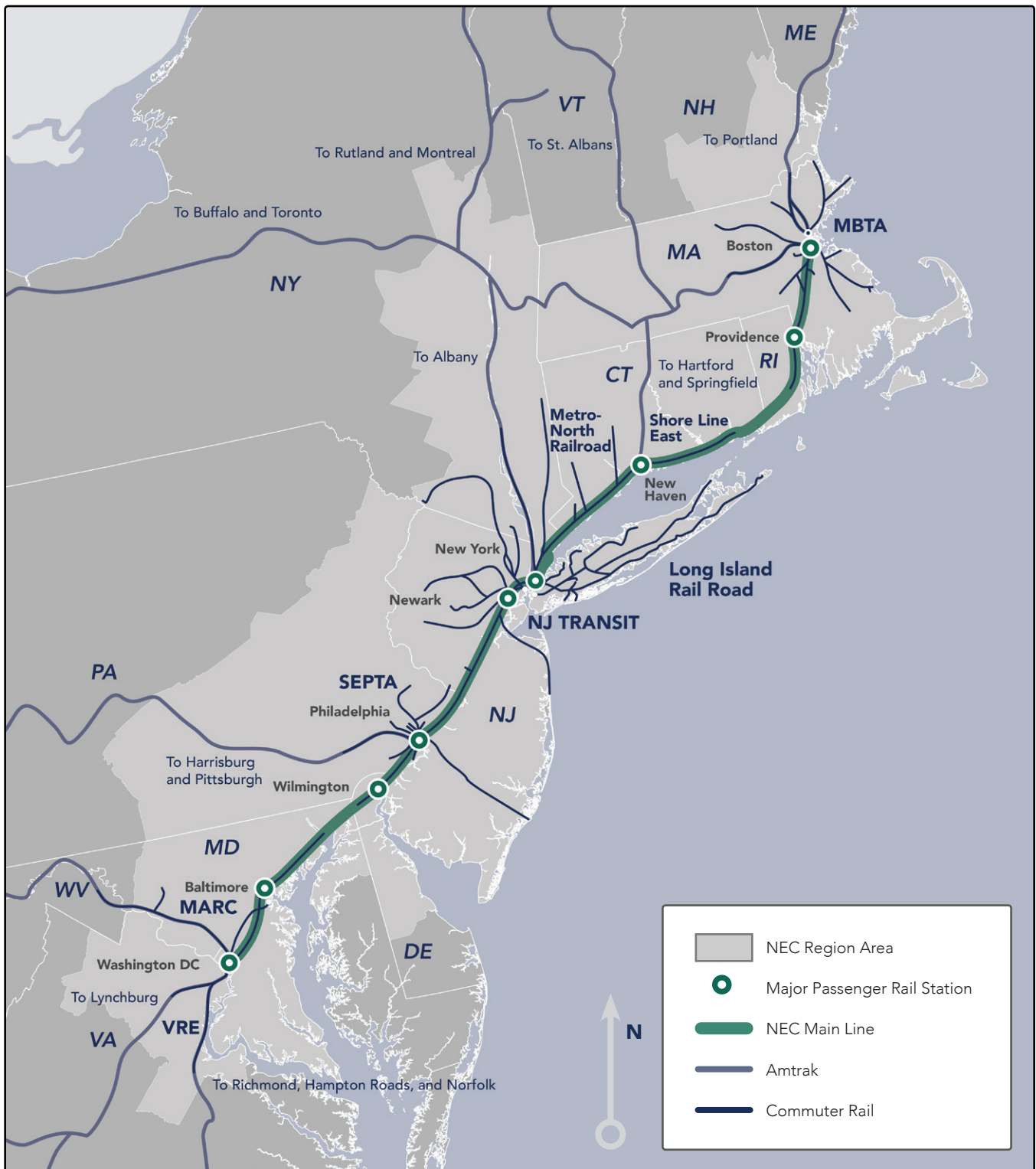
Introduction

The Northeast Corridor (NEC) is a 457-mile railroad that connects the major metropolitan areas of Boston, MA, New York, NY, Philadelphia, PA, and Washington, DC. The NEC Region, shown in light gray at right, is home to one out of every six Americans and one out of every five U.S. jobs on just two percent of the nation's land area. Mobility in the NEC Region relies on an interdependent set of highway, rail, and aviation networks that comprise the country's most diverse transportation system.

This report presents information on the current state of and future outlook for the NEC Region's multimodal passenger and freight transportation system. It draws on existing studies and databases, aggregating information, as feasible, for the study area defined at right. This summary report is derived from a detailed full report available at: <http://www.nec-commission.com/>.

The NEC Region's transportation system supports a productive economy and a growing population. While residents and businesses benefit from a legacy of plentiful transportation options, each of the major modes now faces a similar set of challenges. Available capacity on the highway, rail, and aviation networks is limited such that all three modes experience serious congestion levels with negative consequences for productivity and quality of life. Aging infrastructure, especially on the highway and rail networks, threatens to reduce the capacity we enjoy today. Existing plans and identified funding sources fail to fully address the capital needs for bringing our transportation system into a state of good repair or building new infrastructure to support growth in the economy. Despite these challenges, advances in technology and new types of intermodal and interjurisdictional coordination offer opportunities for modernizing our transportation system.

The NEC Region and Passenger Rail Infrastructure



Map files: National Transportation Atlas Database.



1. Where We Live

1.1 A Dense and Growing Region

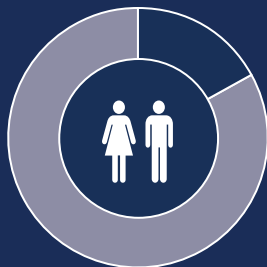
The NEC Region is home to more than 51 million people, accounting for 17 percent of the nation's population.¹ The NEC Region is more densely settled than any other part of the U.S. and continues to attract new residents. The region's suburban counties continue to demonstrate a long pattern of strong and consistent population growth. In addition, after seeing their population decline during the 1970s and 1980s, the Region's core cities have once again started posting population gains.

**Home to 17% of the
U.S. Population**

**Producing 20% of
U.S. GDP**

**On just 2% of
U.S. Land Area**

U.S. Population



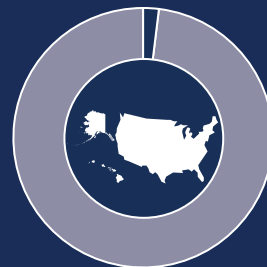
Source: U.S. Census Bureau, 2010.

U.S. GDP



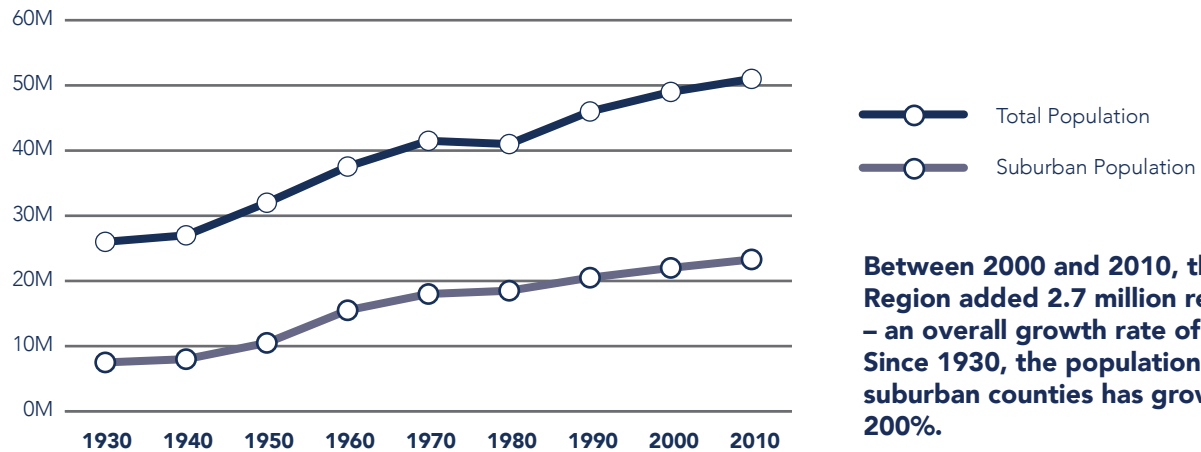
Source: Bureau of Economic Analysis, 2010.

U.S. Land Area



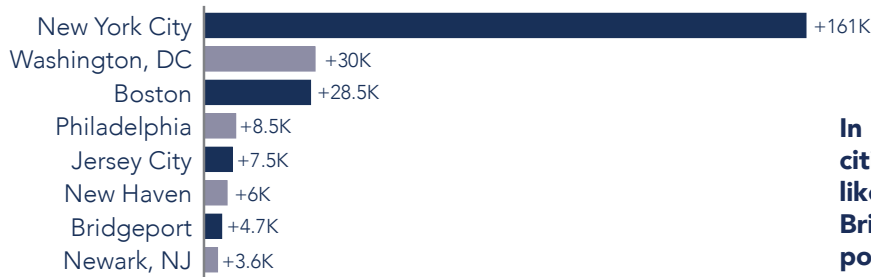
Source: U.S. Geological Survey.

Population Growth: NEC Region, 1930-2010



Source: U.S. Census Bureau.

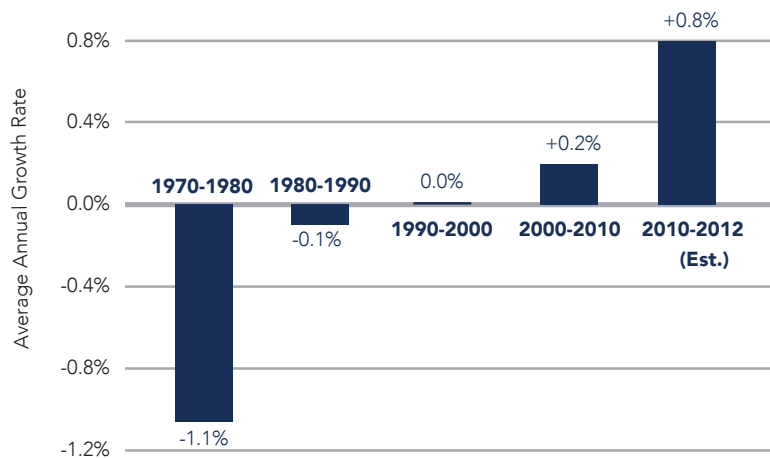
Population Growth: Select Cities, 2000-2010



In the 2010 U.S. Census, most major cities saw population growth. Cities like Philadelphia, Newark, NJ, and Bridgeport, CT all logged their first population growth since the 1950s.

Source: U.S. Census Bureau, 2010 U.S. Census.

Average Annual Growth Rate: NEC Region Cities, 1970-2012



After losing population in the 1970s and 1980s, the major cities of the NEC Region are posting population gains.

Source: U.S. Census Bureau. Cities include: Washington DC, Baltimore, Wilmington, Philadelphia, Newark, New York, Stamford, New Haven, Providence and Boston.

Population Density: NEC Region, 2010

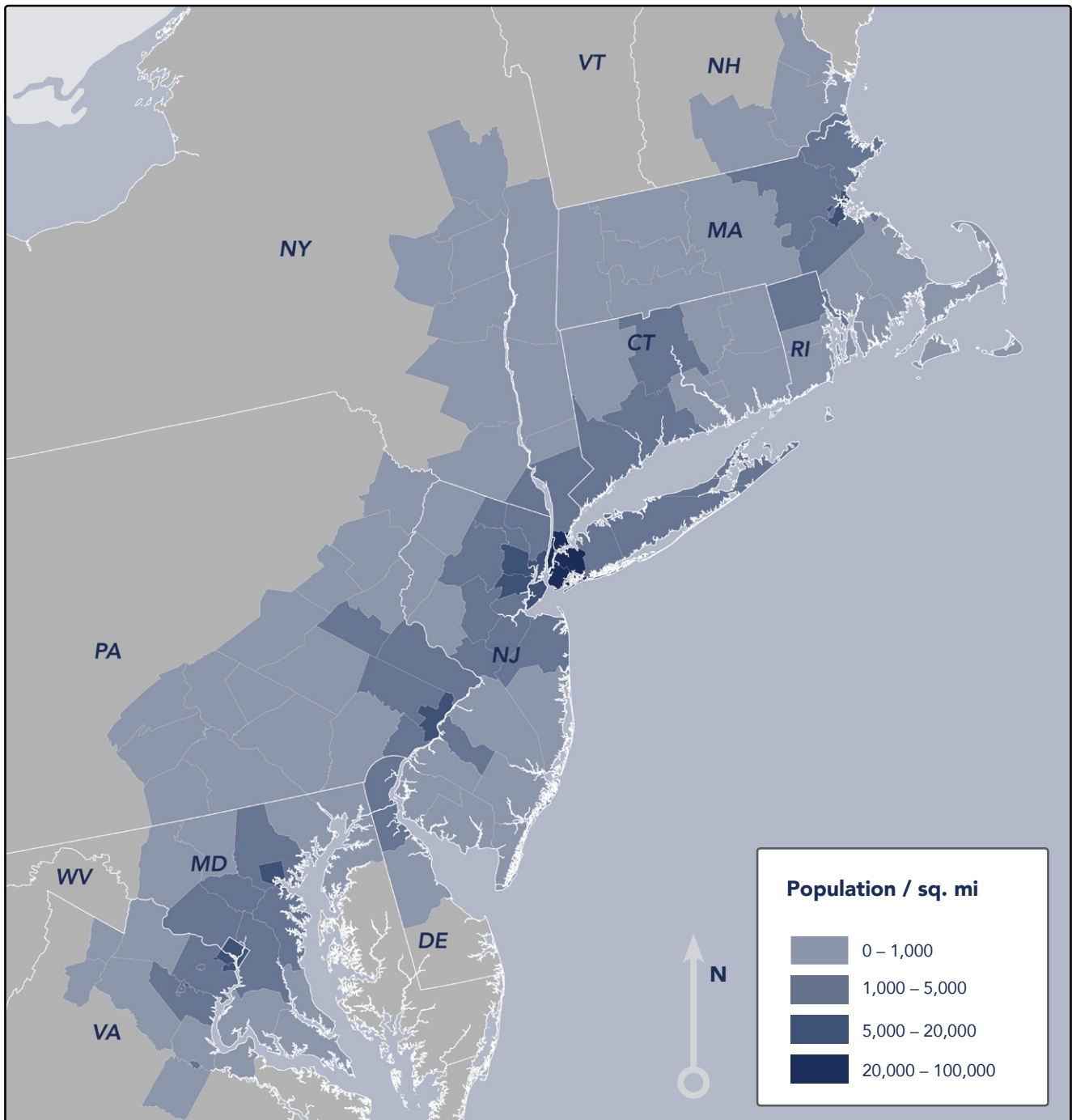
The NEC Region is the most densely settled region in the U.S. – with a population density ten times greater than the national average.



U.S. Average: 98
Persons per square mile



NEC Region: 987
Persons per square mile



Source: U.S. Census Bureau, 2010 U.S. Census.

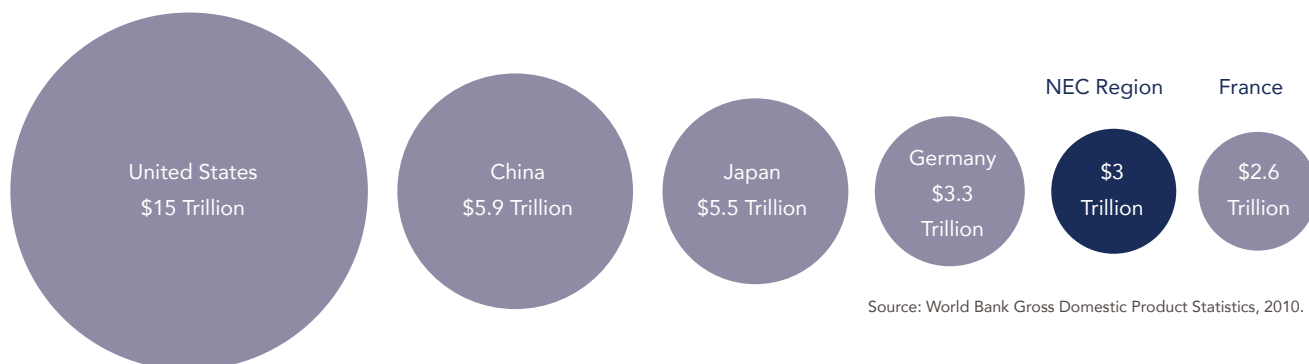
1.2 A Highly Productive Economy

A diverse set of industry sectors power the highly productive economy of the NEC Region. The Region is home to 24 million workers and has an annual GDP of \$3 trillion dollars.² It is a global center for commerce, education, and finance, and home to one-third of all Fortune 100 companies, six of the country's ten top-ranked research universities, and six of the world's ten largest financial institutions.

One in five U.S. jobs is located in the NEC Region.



Annual Gross Domestic Product: Global Comparison, 2010



If the NEC Region were an autonomous country, its economy would be the fifth largest in the world, just behind Germany and just ahead of France.

Global Ranking of Contribution to Gross Domestic Product:
Select Metropolitan Areas, 2012

Metropolitan Area	Global Rank	GDP (\$ Billions)
New York	2	\$1,210
Washington	14	\$415
Philadelphia	22	\$324
Boston	25	\$321

Source: Brookings Institution, 2012.

The four largest metropolitan areas in the NEC Region are among the most productive in the world.



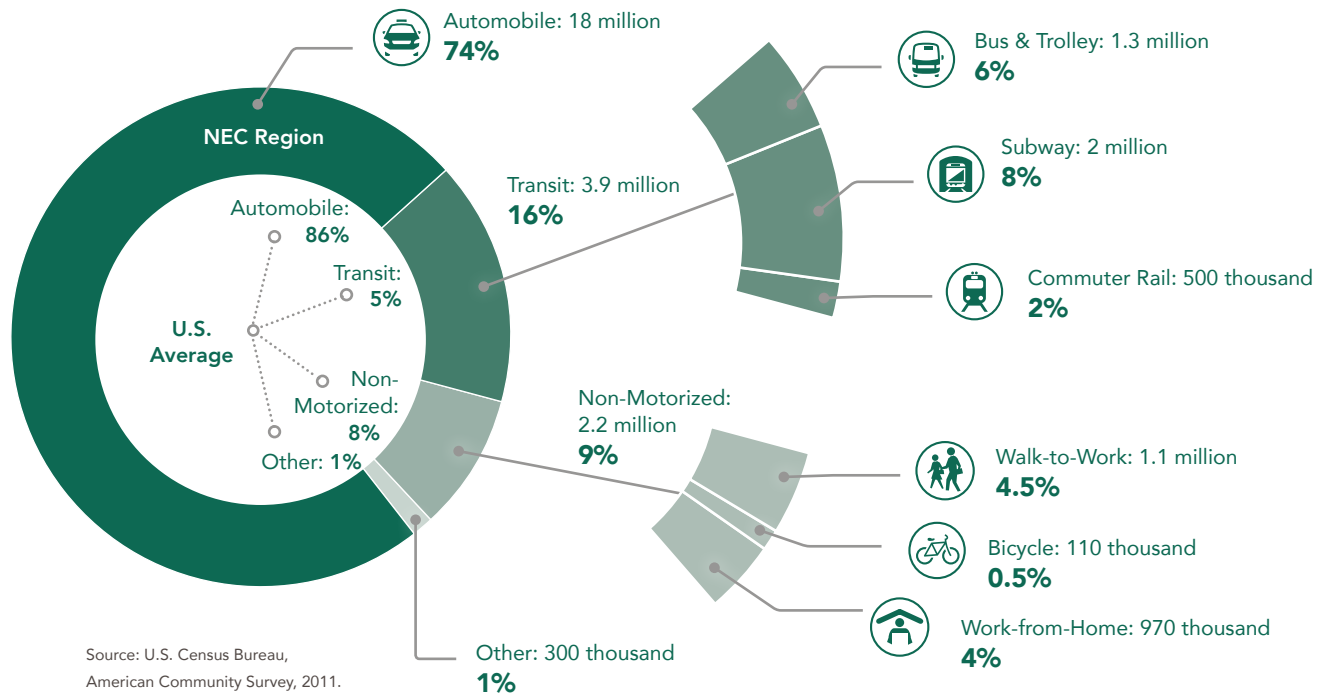
2. How We Travel

2.1 A Diverse Transportation System Facing Challenges

Residents of the NEC Region enjoy a broad range of transportation options for local, metropolitan, and intercity travel, and exhibit a more diversified set of travel behaviors than the nation as a whole. The Region has an extensive roadway network like much of the country, in addition to many of the largest transit systems in the U.S., half of all Amtrak trips, and 30 percent of all air travel. Together with robust pedestrian and bicycle infrastructure, these networks act as a system to provide multiple options for many trips.

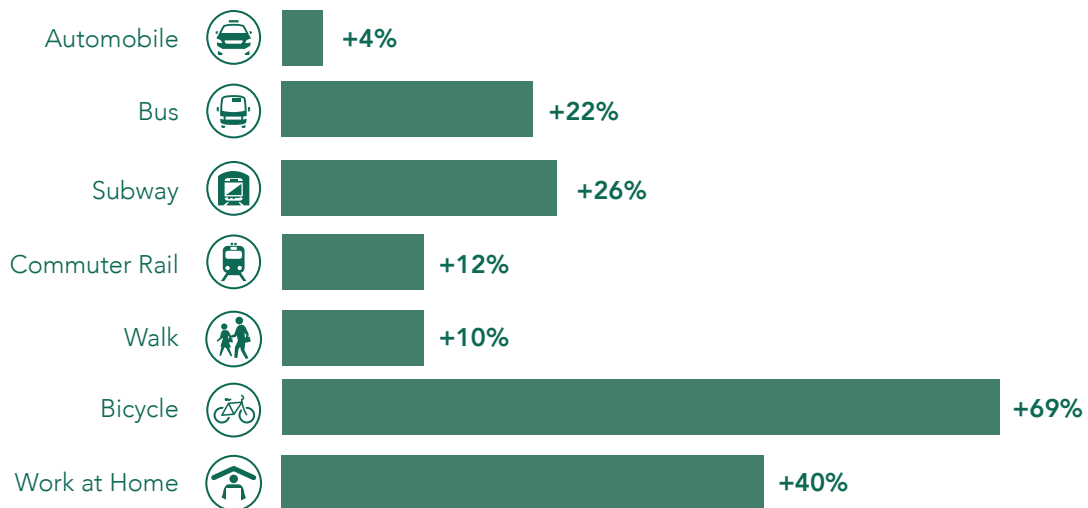
However, growth in the NEC Region is putting increasing pressure on this transportation system. About 50 percent of the worst highway bottlenecks in the country are in the NEC Region, where the average automobile commuter loses 47 hours per year to traffic as opposed to 38 nationally.³ Congestion in the NEC Region's skies has national implications as the major airports in New York and Philadelphia together are the originating source of nearly half of all flight delays in the U.S.⁴

Journey to Work by Mode: NEC Region and U.S., 2011



Though the majority of commuters (18 million or 74.1 percent) still commute by automobile, the Region added more transit commuters (708,000) than automobile commuters (671,000) between 2000 and 2011.

Growth in Journey to Work Travel Demand: NEC Region, 2000-2011



Source: U.S. Census Bureau, American Community Survey, 2011.

2.2 Highways in the NEC Region

Drivers in the NEC Region travel more than 487 million miles each day on highways and major arterials.⁵ This is equivalent to nearly 10 miles of travel per resident each day. The highway system in the NEC Region experiences some of the highest levels of congestion in the nation. However, in recent years, the growth of vehicle miles traveled (VMT) in the NEC Region states has diminished.

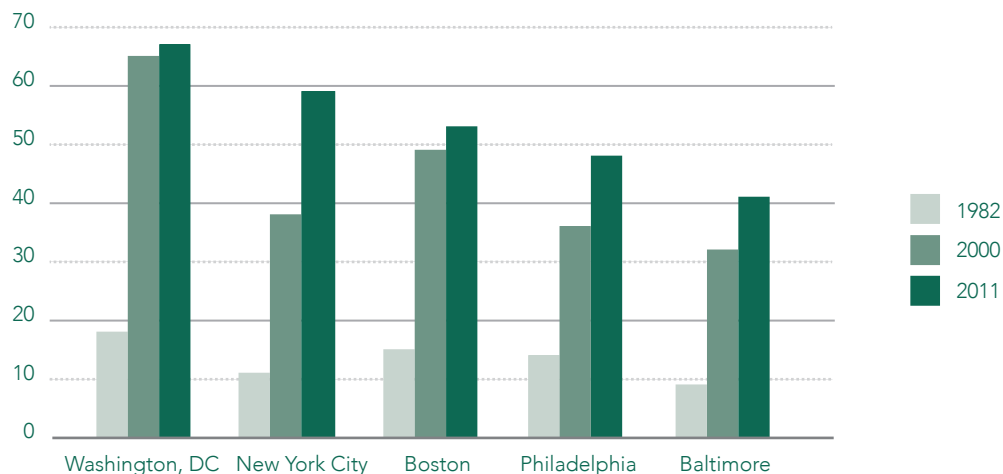
Annual Vehicle Miles Traveled: NEC Region States, 2004-2012



Source: Federal Highway Administration.

Since 1982, congestion has increased in all 5 major metropolitan areas of the Region.

Annual Hours of Delay Per Auto Commuter: Select Metropolitan Areas, 1982-2011



Source: Texas Transportation Institute, 2012 Urban Mobility Report.

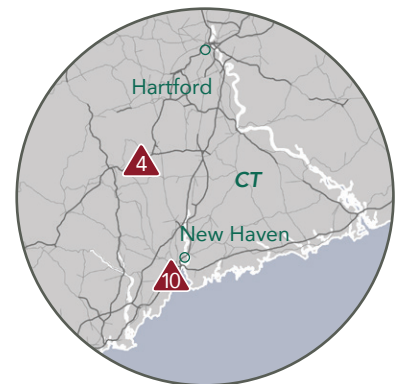
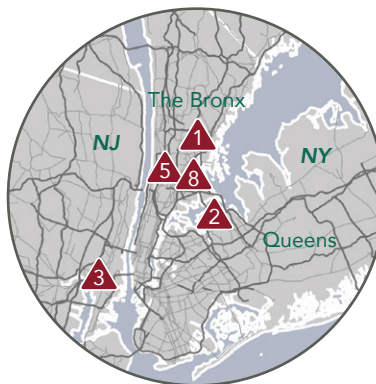
About 50 percent of the worst highway bottlenecks in the country are in the NEC Region. At the Region's worst bottleneck, a six-minute journey takes the average commuter 28 minutes at least once per month.

Top Ten Highway Bottlenecks: NEC Region, 2010

Travel Time (Minutes)



NEC Rank ^a	U.S. Rank	Metro Area	Location	Miles	Free-flow	Average Rush Hour	Average Worst per Month
1	3	New York	Hutchinson River Parkway Northbound	4.5	6	9	28
2	4	New York	Bronx Whitestone Bridge Northbound/ Whitestone Expressway Northbound	3.4	5	9	23
3	6	New York	Pulaski Skyway Northbound	3.3	4	7	17
4	7	New Haven	Interstate 84 Westbound	3.4	3	5	14
5	11	New York	Major Deegan Expressway Southbound	3.5	4	8	19
6	12	Washington	Interstate 70 Westbound	6.8	7	9	23
7	15	Washington	Interstate 95 Southbound	23.9	24	45	113
8	16	New York	Interstate 95 Southbound (Northeast Thruway, Bruckner/Cross-Bronx Expressway)	22.7	25	69	138
9	18	Baltimore	John Hanson Highway/ U.S.-50/U.S.-301 Eastbound	3.4	3	5	12
10	21	New Haven	Interstate 95 Northbound	4.0	4	7	17



Source: Texas Transportation Institute, 2011 Congested Corridors Report, INRIX.

Note (a): Rankings are based on values of "Buffer Index," calculated by INRIX, which is the ratio of average travel time through a bottleneck to the estimated travel time under free-flow conditions.

Average Annual Hours of Delay & Cost of Congestion
Per Auto Commuter: Select Metropolitan Areas, 2011

**The average automobile commuter in the
NEC Region faces \$1,000 or more in lost
productivity each year due to highway
congestion.**

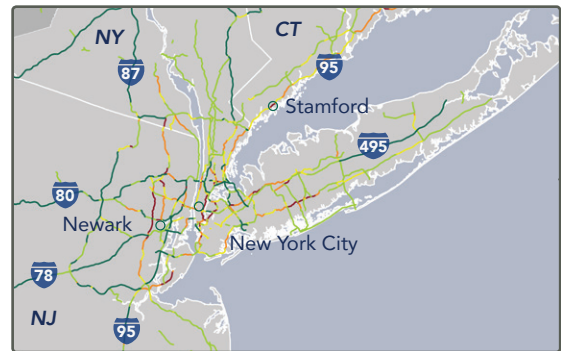
Boston Metropolitan Area

States	MA, RI, NH
Hours of delay	53 hours
Productivity lost to congestion	\$1,147
National ranking for worst delays	5



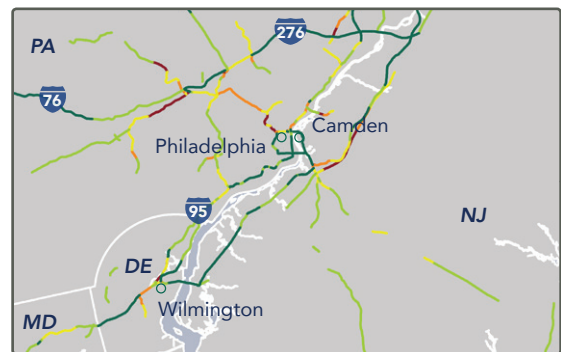
New York Metropolitan Area

States	NY, NJ, CT
Hours of delay	69 hours
Productivity lost to congestion	\$1,281
National ranking for worst delays	4



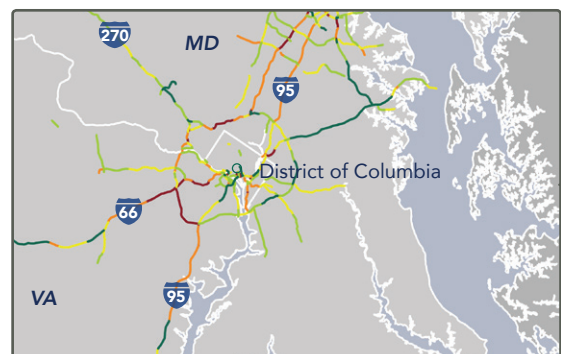
Philadelphia Metropolitan Area

States	PA, NJ, DE, MD
Hours of delay	48 hours
Productivity lost to congestion	\$1,018
National ranking for worst delays	9



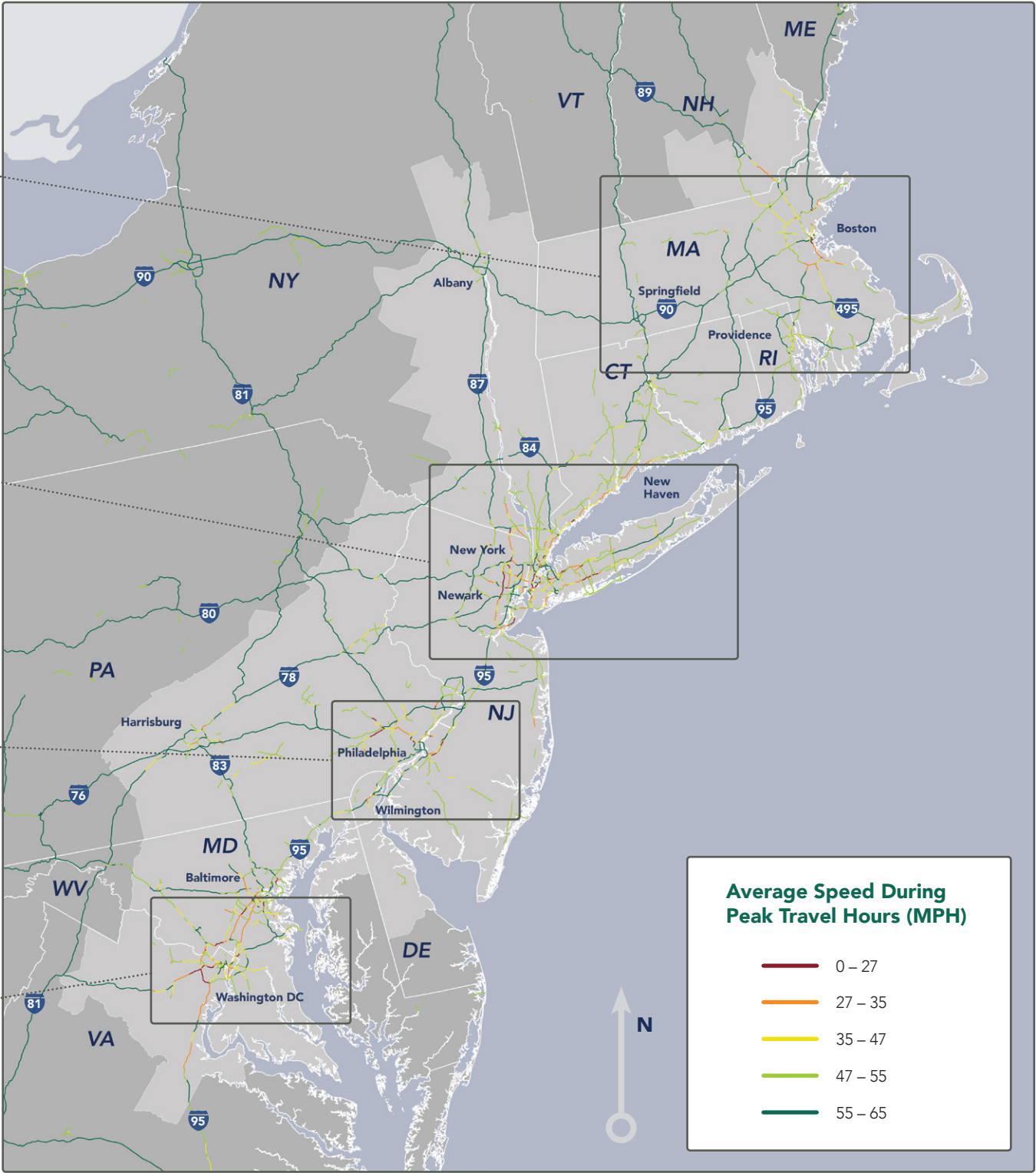
Washington, DC Metropolitan Area

States	DC, VA, MD
Hours of delay	67 hours
Productivity lost to congestion	\$1,398
National ranking for worst delays	1



Source: Maps data: I-95 Corridor Coalition, Integrated Corridor Analysis Tool (ICAT). Congestion data: Texas Transportation Institute, 2012 Urban Mobility Report.

Average Peak-Period Travel Speeds: NEC Region, 2012

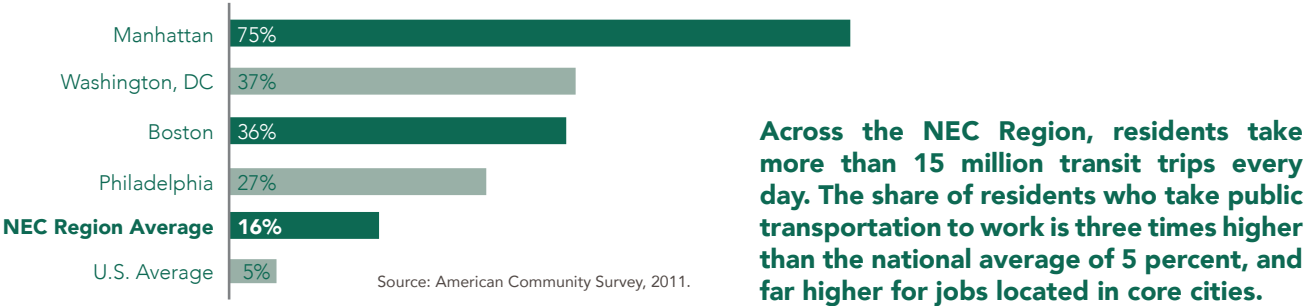


Source: Speed data: I-95 Corridor Coalition, Integrated Corridor Analysis Tool (ICAT). Map files: National Transportation Atlas Database.

2.3 Transit and Passenger Rail in the NEC Region

The NEC Region's extensive transit network includes five of the ten largest bus systems, five of the seven largest subway or metro systems, and seven of the ten largest commuter railroads in the U.S. These rail and transit systems provide relatively high reliability and also offer benefits to automobile users who might otherwise be sharing already congested roads and highways with additional users. Amtrak and eight commuter railroads share the NEC main line between Boston and Washington, serving a combined 750,000 passengers on over 2,000 trains each day. Amtrak now carries 75 percent of the air-rail market between New York City and Washington, DC and 54 percent of the air-rail market between New York City and Boston.⁶

Journey to Work on Transit by Place of Employment: U.S., NEC Region, and Select Cities, 2011



Congestion Relief Benefits from Transit: NEC Region Metropolitan Areas, 2011

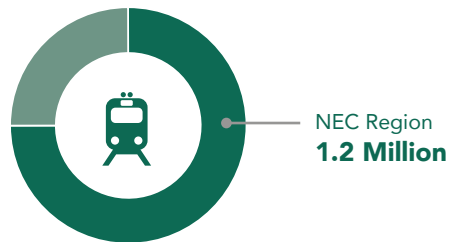
Metropolitan Statistical Area	Saved Hours of Delay (Thousands)	Saved Congestion Cost (\$ Millions)
Albany NY	567	13
Allentown-Bethlehem PA-NJ	344	8
Baltimore MD	11,219	249
Boston MA-NH-RI	37,943	809
Bridgeport-Stamford CT-NY	382	8
Hartford CT	1,460	30
New Haven CT	336	7
New York-Newark NY-NJ-CT	440,647	9,587
Philadelphia PA-NJ-DE-MD	30,167	655
Poughkeepsie-Newburgh NY	395	9
Providence RI-MA	1,184	24
Springfield MA-CT	349	7
Washington DC-VA-MD	33,810	711
Worcester MA-CT	98	2
TOTAL	559,000	\$12,118

Thanks to transit service, the Region's residents collectively save roughly 559 million hours of time and \$12.1 billion in productivity each year that would be lost to additional highway congestion.

Source: Texas Transportation Institute, 2012 Urban Mobility Report.

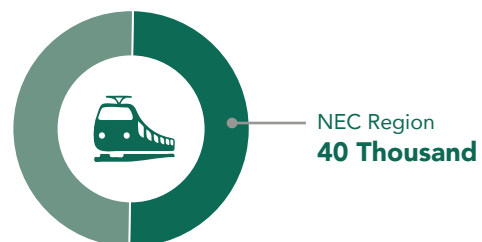
The NEC Region is home to 75% of all commuter rail riders in the U.S. and 50% of all Amtrak trips nationwide.

Daily Commuter Rail Trips: U.S.



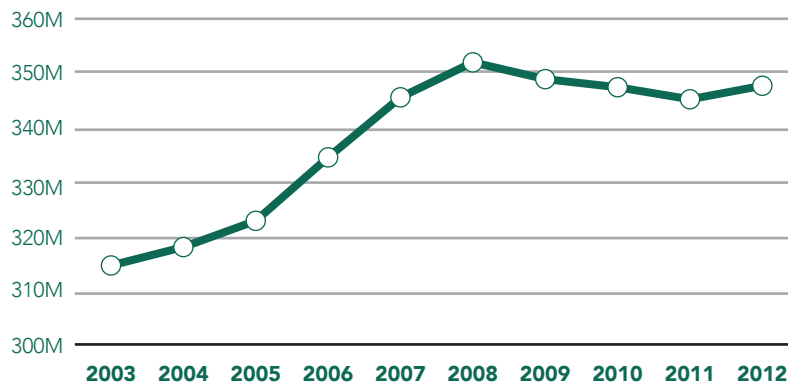
Source: National Transit Database.

Average Daily Amtrak Trips: U.S.



Source: Amtrak, Fiscal Year 2013 Ridership Data.

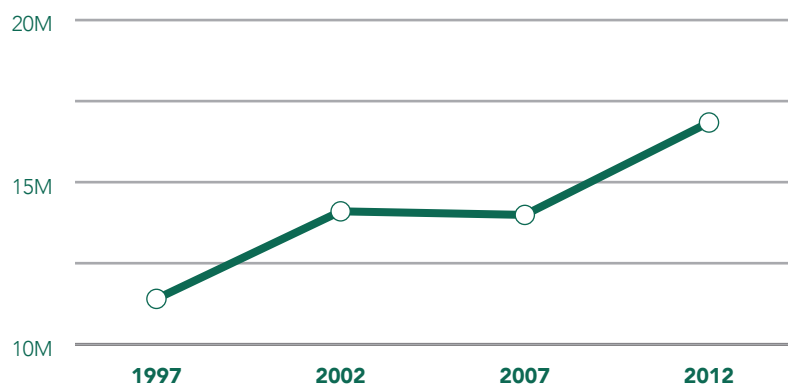
Annual Commuter Rail Trips: NEC Region, 2003-2012



Source: National Transit Database.

Since 2003, commuter rail ridership in the NEC Region has jumped by 33 million trips, to 348 million annual trips in 2011.

Annual Amtrak Ridership: Northeastern U.S., FY1997-FY2012

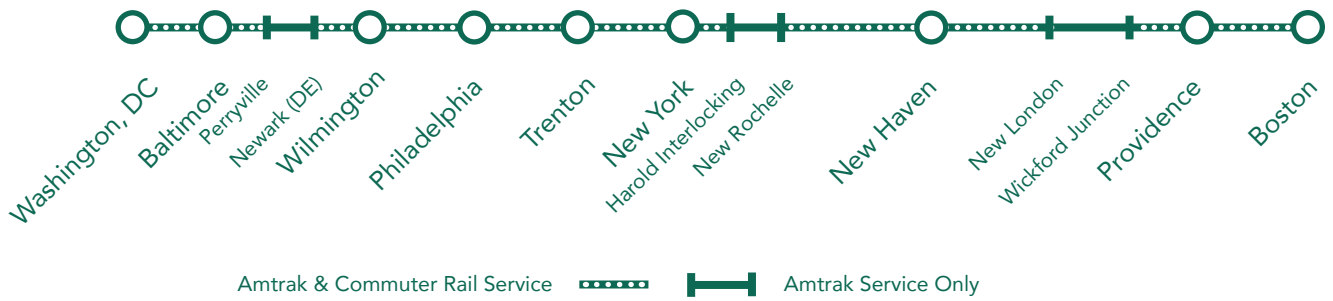


Sources: 2002-2012: Amtrak. 1997: Government Accountability Office, Intercity Passenger Rail: Financial Performance of Amtrak Routes, RCED-98-151, 1998.

Since 1997, total Amtrak ridership in the Northeastern U.S. has increased by 48% to 16.9 million annual riders in Fiscal Year 2012.^b

Note (b): Figures exclude Amtrak long-distance services.

The Northeast Corridor Main Line



The NEC Main Line is the busiest passenger rail line in North America.



750,000
Daily Riders



2,000
Daily Trains

In total, 62% of commuter rail riders and 53% of commuter trains in the NEC Region travel on the NEC for at least a portion of their trip.

Commuter Rail Daily Ridership and Operations: NEC Region, 2012



20,000 Daily Riders



On NEC



Off NEC



















60 Daily Riders



On NEC

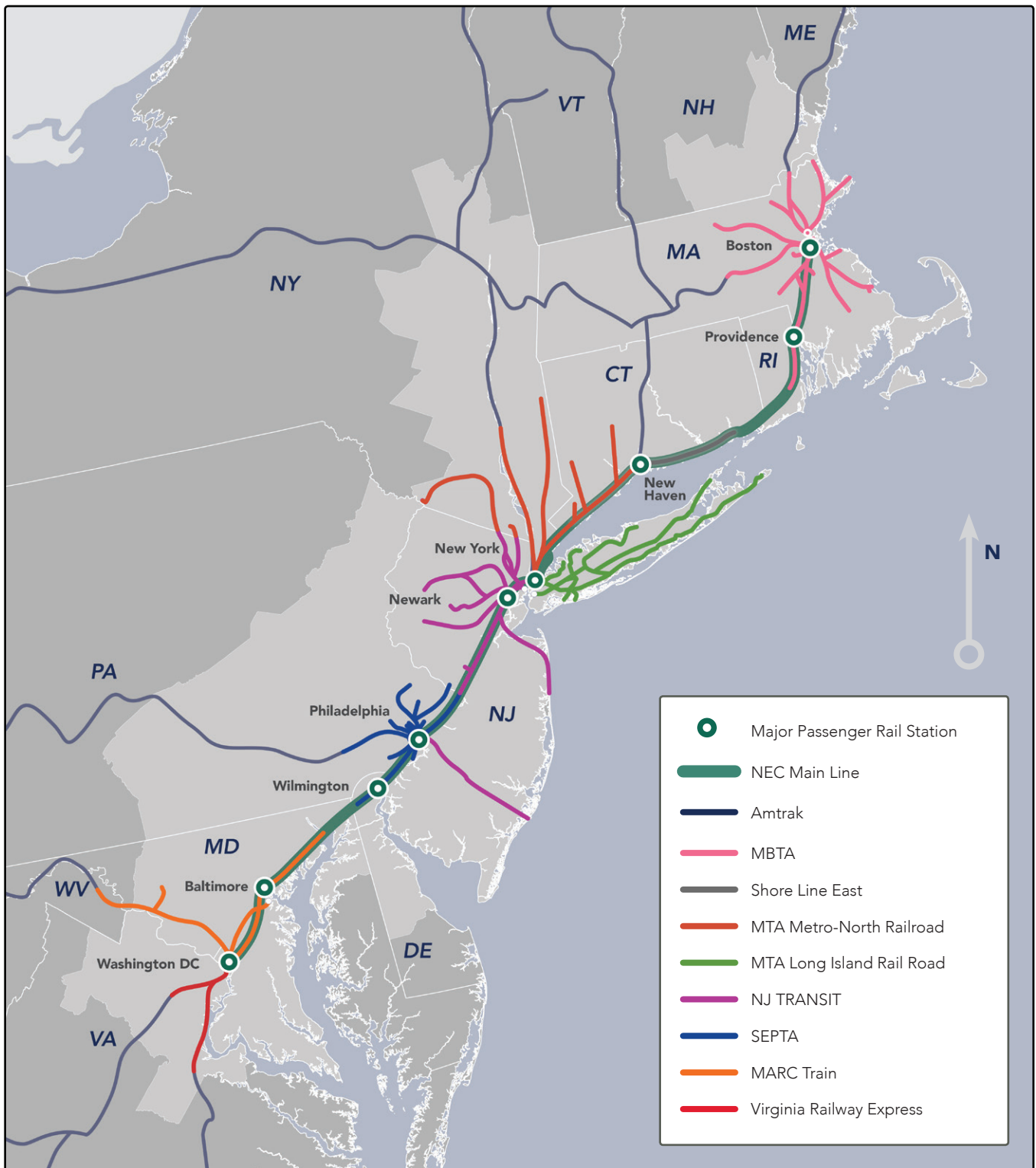


Off NEC

AGENCY	TOTAL RIDERS	% ON NEC	TOTAL TRAINS	% ON NEC
MBTA	127,000 	68%	483 	59%
Shore Line East	2,200 	100%	27 	100%
MTA Metro-North	281,000 	40%	729 	39%
MTA LIRR	285,000 	81%	728 	65%
NJ TRANSIT	275,000 	78%	667 	62%
SEPTA	125,300 	25%	738 	33%
MARC	36,100 	94%	91 	100%
VRE	18,800 	21%	30 	100%
TOTAL	1,150,400	62%	3,493	53%

Source: National Transit Database, Commuter Railroads.

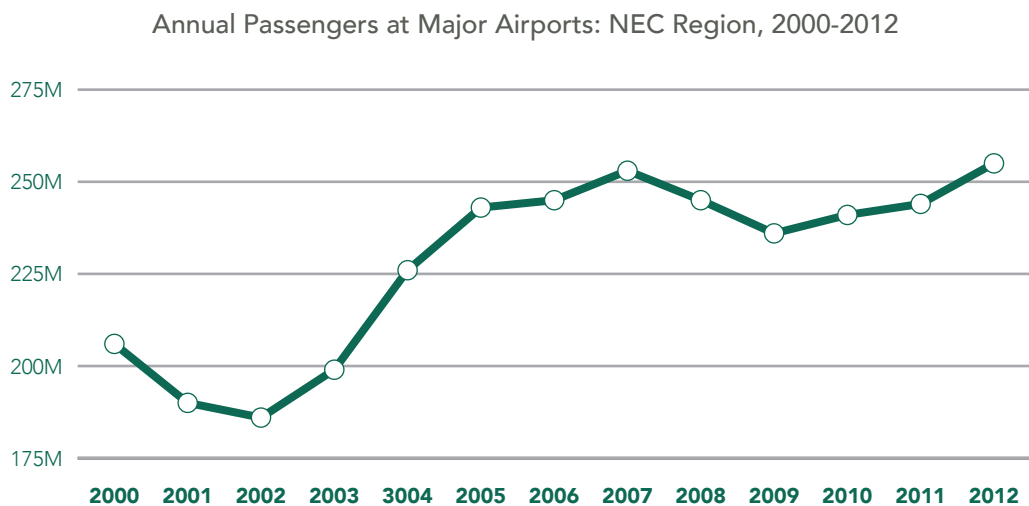
NEC Region Passenger Rail: Amtrak & Commuter Railroads



Map Files: National Transportation Atlas Database.

2.3 Aviation in the NEC Region

NEC Region airports serve 244 million annual passenger trips, representing 30 percent of all U.S. trips.⁷ Demand for air travel is growing. Passenger activity – measured by total passengers flying to and from the study area’s major airports – increased by 18 percent, or 38 million trips, between 2000 and 2011. While air travelers in the NEC Region pass through several of the nation’s most congested airports, on-time performance has improved since a low point in 2007.



Source: Bureau of Transportation Statistics, TranStats, Airline Operations Data, Form T-100.

Since 2000, traffic at major airports in the NEC Region has increased by 18% to 255 million annual passengers in 2012.

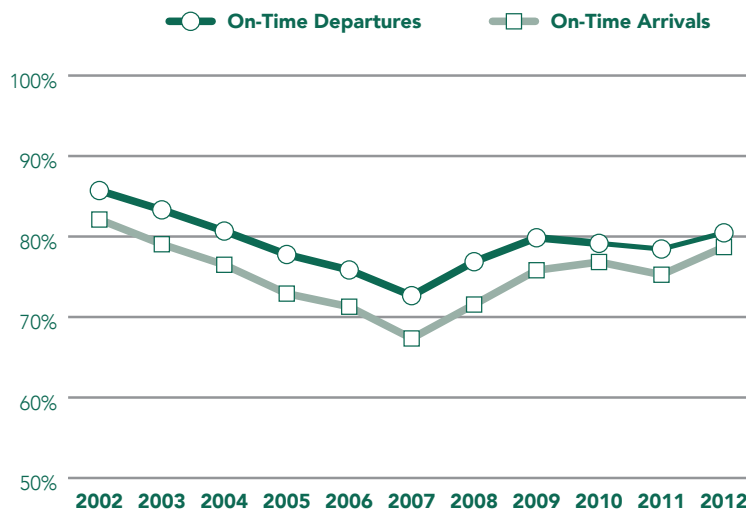
Ten Worst On-Time Arrival Rates:
U.S. Primary Hub Airports, 2012



In 2012, five of the nation’s airports with the most frequent and severe flight delays were located in the NEC Region.

Source: Bureau of Transportation Statistics, TranStats, Airline On-Time Data.

Average On-Time Performance at Major Airports: NEC Region, 2002-2012

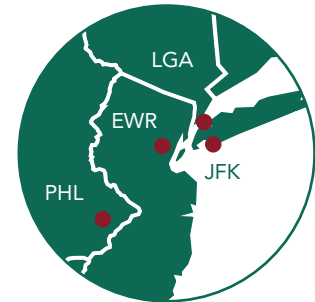


In 2012, 11% of flights arrived with delays at major airports in the NEC Region.

Source: Bureau of Transportation Statistics, TranStats, Airline On-Time Data.

The four major airports in the NYC airspace are the originating source for nearly one half of all U.S. flight delays.

Source: Government Accountability Office, 2010. Setting On-Time Performance Targets at Congested Airports Could Help Focus FAA's Actions.



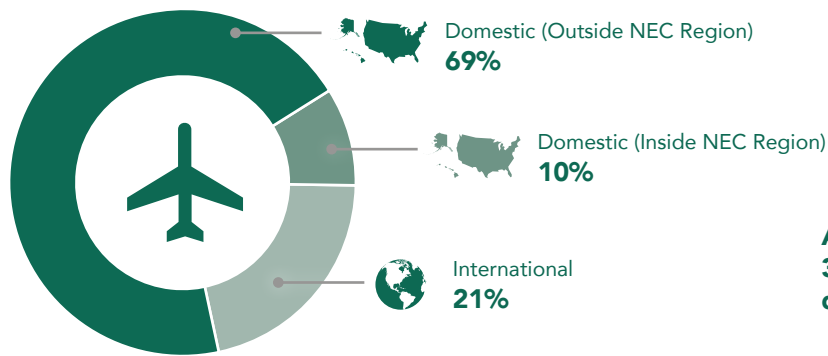
Cost of Congestion at Major Airports: NEC Region, 2007

Airport	Delay per Passenger Served (Minutes)	Costs of Delay (2007 \$ Millions)
BWI Thurgood Marshall (BWI)	14	138
Boston Logan (BOS)	22	209
New York JFK (JFK)	28	633
New York LaGuardia (LGA)	29	299
Newark Liberty (EWR)	33	519
Philadelphia International (PHL)	24	289
Washington Reagan (DCA)	20	183
Washington Dulles (IAD)	23	182
Total		\$2,452

Passengers utilizing NEC Regional airports in 2007 were subject to \$2.45 billion in costs associated with delays.

Source: ACRP 31, 2010, Innovative Approaches to Addressing Aviation Capacity Issues in Coastal Mega-regions.

Aviation Departures by Destination: NEC Region, 2012



At NEC Region airports, approximately 32,000 daily departures are to destinations within the region itself.

Source: Volpe Transportation Center analysis of BTS TranStats DB1B Data and NEC Commission analysis of BTS TranStats Airline Operations Form T-100 Data.

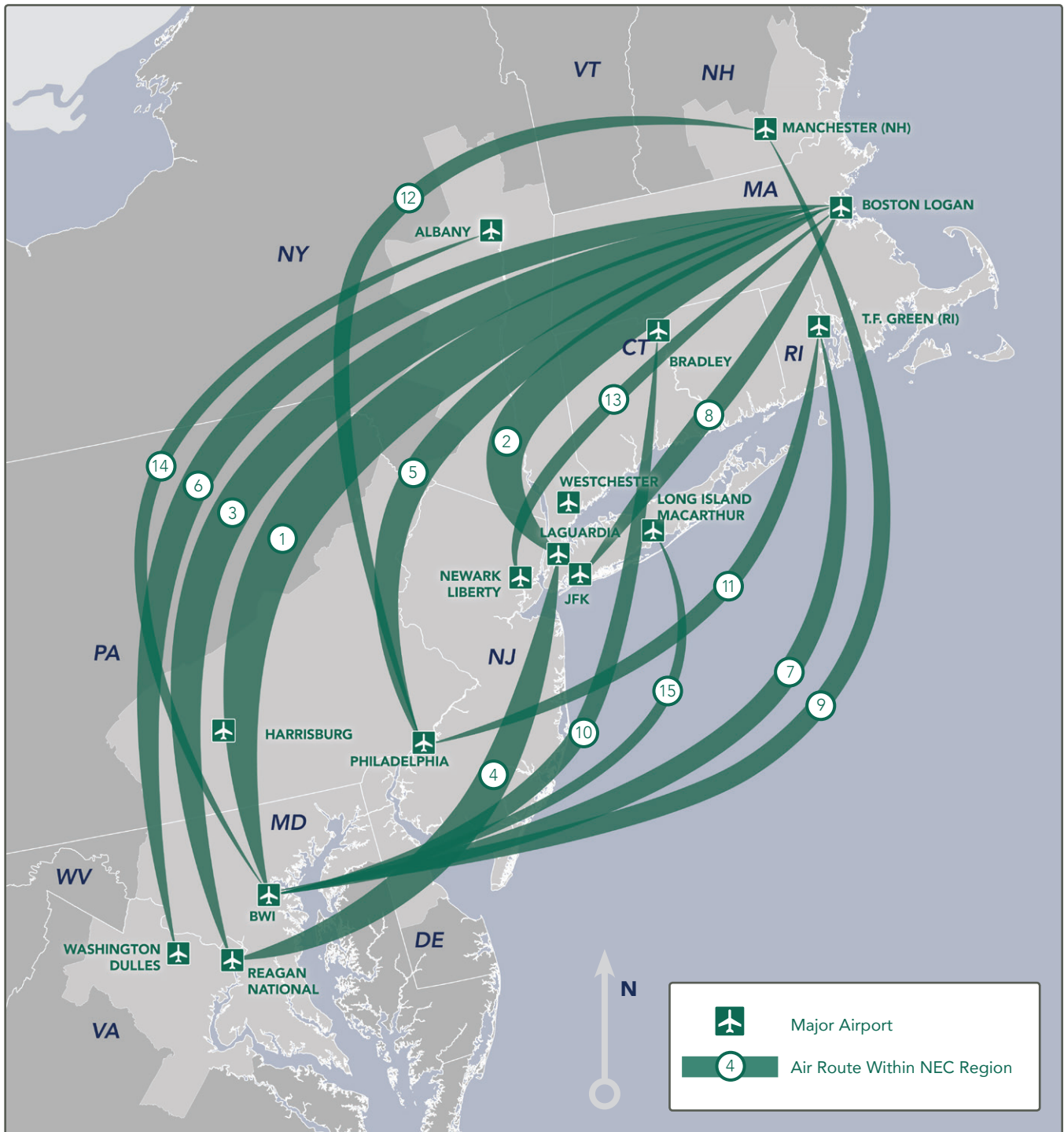
Top Air Passenger Flows between Airports in the NEC Region, 2010

Rank	Origin/Destination	Origin/Destination	Annual Passengers (2010)
①	Boston Logan	BWI Thurgood Marshall	1,054,490
②	Boston Logan	LaGuardia	875,700
③	Boston Logan	Reagan National	826,640
④	Reagan National	LaGuardia	755,500
⑤	Boston Logan	Philadelphia International	663,980
⑥	Boston Logan	Washington Dulles	651,900
⑦	BWI Thurgood Marshall	T.F. Green (Providence, RI)	490,430
⑧	Boston Logan	John F. Kennedy	476,510
⑨	BWI Thurgood Marshall	Manchester (NH)	440,070
⑩	Bradley International	BWI Thurgood Marshall	407,560
⑪	Philadelphia International	T.F. Green (Providence, RI)	374,180
⑫	Manchester (NH)	Philadelphia International	364,350
⑬	Boston Logan	Newark Liberty	297,460
⑭	Albany International	BWI Thurgood Marshall	293,350
⑮	BWI Thurgood Marshall	Long Island MacArthur	242,890

Source: Volpe Transportation Center Analysis of BTS TranStats DB1B Data.

Among all flights that begin and end in the NEC Region, the busiest routes are longer-distance flights that tie the north and south ends of the region together.

Top Air Passenger Flows between Airports in the NEC Region, 2010



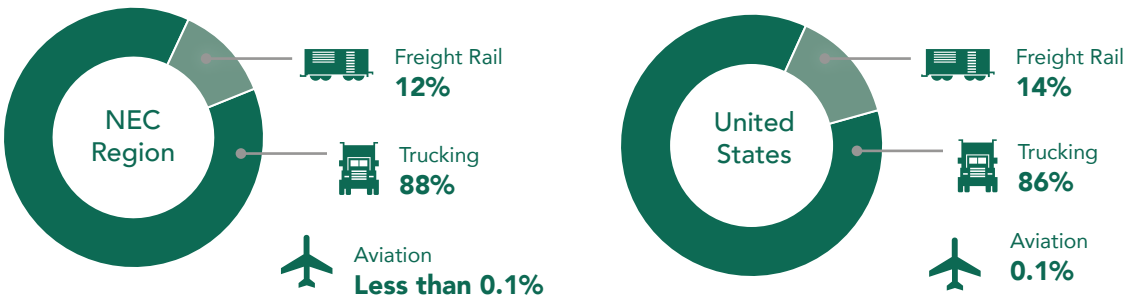
Source: Volpe Transportation Center Analysis of BTS TranStats DB1B Data. Map files: National Transportation Atlas Database.

24 Moving Goods in the NEC Region

The freight network of highways, rail lines, and ports supplies the NEC Region's households and businesses with food, clothing, fuel, building materials, and manufacturing parts and equipment. In 2010, freight shippers and carriers moved over 1.6 billion tons of freight into, out of, through, or within the NEC Region.⁸ The Region is slightly more dependent on trucking than the rest of the U.S., though rail and aviation play strategically important roles.

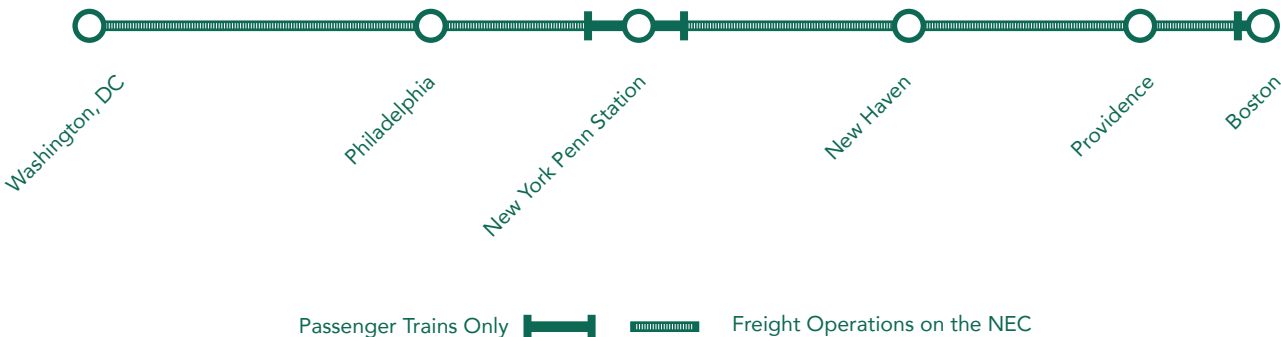
The NEC Region is slightly more dependent on trucking than the U.S. as a whole. Trucks move 88% of total freight tonnage in the NEC Region.

Annual Freight Tonnage by Mode, 2010



Source: FHWA, 2010, Freight Analysis Framework 3.

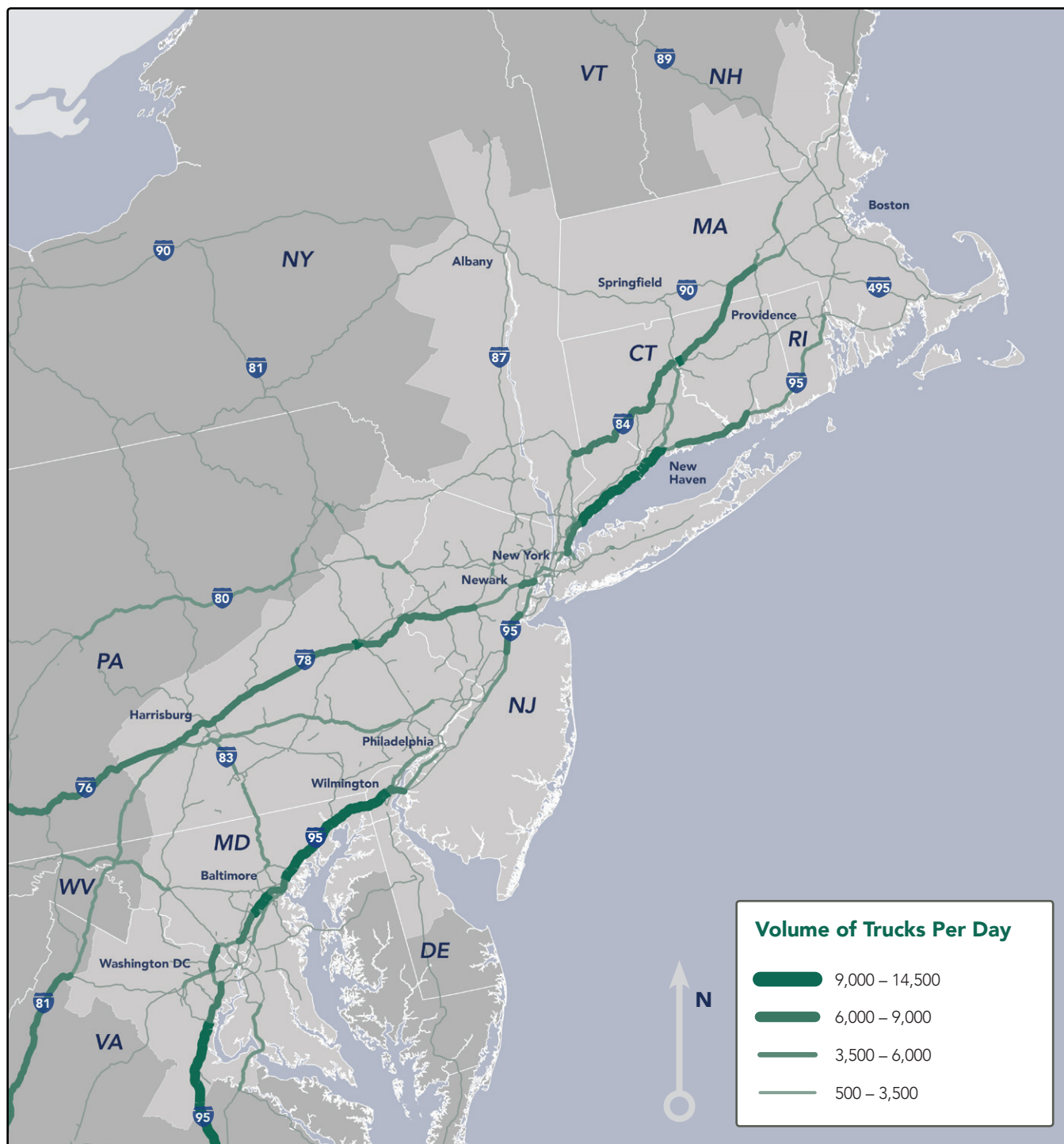
Freight Access on the NEC Main Line



The NEC Main Line supports four freight railroads and approximately 70 daily freight trains, carrying an estimated 350,000 car-loads of freight each year.

The NEC Region's busiest freight corridor is Interstate 95, which carries as many as 14,500 trucks per day on the segments with the heaviest truck traffic.

Estimated Daily Truck Flows on Major Highways: NEC Region, 2012



Source: Estimated daily truck flows: I-95 Corridor Coalition, 2012, Integrated Corridor Analysis Tool (ICAT). Map files: National Transportation Atlas Database.



3. Challenges and Opportunities For the Future

3.1 Continued Growth

The NEC Region is projected to grow from 51 million residents in 2010 to 58 million residents in 2040. In addition, the region is expected to add nearly five million new jobs, growing from 23.6 million jobs in 2010 to 28.5 million jobs in 2040.⁹

Population 2040
58 Million



+ 7 Million Residents

Jobs 2040
29 Million



+ 5 Million Jobs

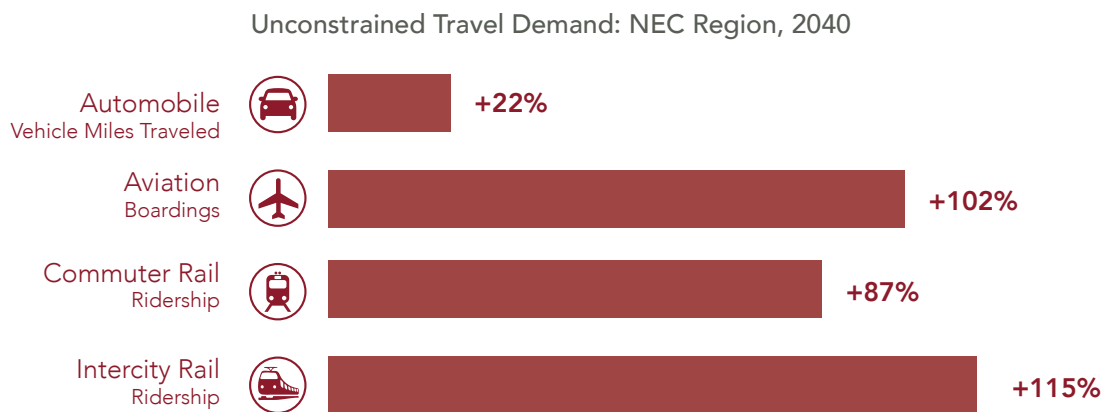
Source: Moody's Analytics.

3.2 Tomorrow's Challenges

Increased Demand

Studies suggest that demand for transportation will continue to outpace population and job growth, as has been the case in recent history. As all modes of transportation already experience high levels of congestion, additional demand is likely to increase delays even further.

Unconstrained forecasts project that demand will grow across all modes in the NEC region by 2040.



VMT: I-95 Corridor Coalition, 2012, Integrated Corridor Analysis Tool (ICAT). Aviation boardings: Federal Aviation Administration, 2013, Terminal Area Forecast Summary, Fiscal Years 2012-2040. Commuter rail and intercity rail ridership: 2010 NEC Infrastructure Master Plan.

Aging Infrastructure and Limited New Capacity

Despite the projected increases in travel demand, the NEC Region is not programmed to dramatically expand transportation capacity. If VMT only grew at 13 percent to keep pace with population growth, the NEC Region would still need to build 2,750 new lane-miles of highway to maintain today's ratio of travel demand to available roadway space.¹⁰ Critical sections of the NEC are already at capacity, like the tunnels between New York and New Jersey that send trains every 2.5 minutes in each direction during peak hours. Several major NEC Region airports are expected to be capacity constrained by 2025 even with planned expansions.¹¹

Only a handful of new capacity projects are in the planning stages in the NEC Region. Constructing new transportation capacity in the NEC Region is limited by a number of factors. The densely populated metropolitan areas of the NEC Region provide little available land to construct new highways, airports, and rail lines. Building new transportation capacity is made more difficult by high costs of construction. Finally, with much infrastructure in the Region reaching the end of its original life expectancy, state departments of transportation (DOTs), transit agencies, and airport authorities are directing a significant share of their short- and long-term investments to renewal projects. Eighty million cars each day travel over structurally deficient bridges in the NEC Region. The NEC's 750,000 daily users travel on bridges that date back to the Model T and through a tunnel built shortly after the Civil War.

Increased Congestion

As population and employment grow and transportation demand exceeds the current capacity of an already heavily used transportation system, congestion and delays will likely worsen.

Highway: Estimates from the I-95 Corridor Coalition's Integrated Corridor Analysis Tool (ICAT) model forecast that, without improvements, the number of highway miles operating at 27 mph or less during peak periods will increase from 165 miles to 474 miles by 2035.

Aviation: According to a 2007 report by the Federal Aviation Administration, five NEC Region airports will be capacity constrained by 2025, even following planned improvements. A failure to accommodate the increased demand would increase congestion-related costs at major NEC Region airports from \$2.5 billion in 2007 to an estimated \$7.1 billion in 2025.¹²

Rail: Even with the modest increases in capacity proposed by the NEC Infrastructure Master Plan in 2010, demand on 186 miles of the 457-mile Corridor were expected to exceed 100 percent of available track space in 2030.¹³

3.3 Tomorrow's Opportunities

While grappling with the challenges of growing demand and increased congestion, the NEC Region is identifying opportunities to improve its transportation system and support continued economic and population growth. These and other strategies have the potential to support the Region's growth, though adequate funding remains a key challenge for their success.

Better Connections Across the Region

Transportation agencies are working on ways to enhance connections between modes and facilities. Such projects, like the Silver Line Metrorail extension to Dulles Airport in Northern Virginia or the new Pennsauken station connecting the River Line light rail and Atlantic City Line commuter rail services in southern New Jersey, can enhance the mobility provided by existing transportation assets.

Better connections are also being made across cities and metropolitan areas by running new services on existing infrastructure. In the New York metropolitan area, the NY Metropolitan Transportation Authority and NJ TRANSIT have launched one such service, in the form of a new regional train service to Met-Life Stadium in the NJ Meadowlands. The service offers a one-seat ride on commuter rail from Connecticut and New York to northern NJ – without the need to transfer in New York City. There may be additional opportunities to provide new services that creatively meet transportation needs.

New Technology

Improvements in transportation technology are supporting increased travel demand, while also mitigating congestion and delays. Highway agencies are increasingly taking advantage of technologies like electronic tolling and real-time delay information to improve and manage traffic flow. The Federal Aviation Administration is leading the implementation of Next Generation air traffic control technology to increase the capacity of the Region's air corridors. Several of the Region's rail and transit agencies, including the NY Metropolitan Transportation Authority, are pursuing high-density signaling technology that can increase capacity on existing rail lines by enabling trains to run closer together. Real-time information and new kinds of electronic ticketing and fare collection are improving the passenger experience on Amtrak and transit systems throughout the NEC Region.

Long-term Plans and Regional Collaboration

Local, state, regional, and federal agencies are working together in new ways to coordinate efforts and tackle shared challenges. New services and infrastructure cited above are examples of the benefits of this kind of collaboration. Technology improvements like electronic fare collection combined with regional coordination have already resulted in several joint ticketing programs with opportunities for many more.

For the NEC, the Federal Railroad Administration is undertaking a comprehensive planning effort to define, evaluate, and prioritize investments by 2040 with the completion of a Service Development Plan and Environmental Impact Statement called NEC FUTURE. Similarly, the NEC Commission represents a new approach to addressing shared challenges by bringing together stakeholders from multiple states, the federal Department of Transportation, Amtrak, transit agencies, and other organizations for the purposes of coordinating planning and investment for modernizing the NEC.

End Notes

1. U.S. Census Bureau. *2010 U.S. Census*.
2. Bureau of Economic Analysis, 2010.
3. Hours of delay: Texas Transportation Institute, 2012. *2012 Urban Mobility Report*.
Bottleneck information: Texas Transportation Institute, 2011. *Congested Corridors Report*.
4. Government Accountability Office, 2010. *Setting On-Time Performance Targets at Congested Airports Could Help Focus FAA's Actions*.
5. Based on analysis from the I-95 Corridor Coalition's Integrated Corridor Analysis Tool (ICAT).
6. Amtrak, Fiscal Year 2013 Ridership Data, October 2013.
7. Bureau of Transportation Statistics, TranStats, Airline Operations Data, Form T-100.
8. Federal Highway Administration (FHWA), 2010. *Freight Analysis Framework (EAF) 3*.
9. Analysis by Moody's Analytics, 2013.
10. Future lane-mile needs estimated using data from the Texas Transportation Institute 2012 Urban Mobility Report.
11. Federal Aviation Administration (FAA), 2007. *FACT 2: An Analysis of Airports and Metropolitan Area Demand and Operational Capacity in the Future*.
12. Ibid.
13. Northeast Corridor Master Plan Working Group, 2010. *Northeast Corridor Infrastructure Master Plan*.

Photos

Front Cover: Boston South Station, Boston, Massachusetts. iStockphoto.com.

Page 6: Fenway Park, Boston, Massachusetts. iStockphoto.com.

Page 10: Boston South Station. Courtesy of Amtrak, 2012.

Page 26: Susquehanna River Bridge, Havre de Grace, Maryland. Courtesy of Amtrak, 2012.

Back Cover: Track construction on the Northeast Corridor. Courtesy of Amtrak, 2012.



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