

Trends & Opportunities

How Changes in Ridership, Population, and Employment
Should Guide Future Metropolitan Transit Planning

July 2013

Overview



The New York metropolitan region is in the midst of \$25 billion in capital projects due to be completed before the end of the decade. These projects include the extension of the 7 Line subway to 34th Street, the opening of the first phase of the Second Avenue Subway, the completion of the East Side Access program to bring LIRR trains to Grand Central Terminal, and the construction of the Fulton Center and World Trade Center Transit Hub in Lower Manhattan. As government leaders plan for the next round of capital projects within the metropolitan region, it is imperative that investments target regions and populations that will most benefit from transit improvements both now and in the future. *Trends & Opportunities* outlines a number of metropolitan transit trends and opportunities to consider when it comes to preparing for our future transportation-based planning.

Trends in Metropolitan Transit

Rail on the Rise

From 2002 to 2012, the New York metropolitan area has seen substantial ridership growth in both local and regional rail systems. In terms of local mass transit rail, the New York Subway system added the greatest number of annual riders since 2002 at 241.4 million, which represented a 17.1% rise in ridership over ten years. Hudson-Bergen Light Rail, however, had the most dramatic gains by percentage, growing 329% since 2002 and gaining over 10 million annual passengers. Ridership growth was also very high for the PATH system and Newark Light Rail, which had ridership growth of 50.3% and 42.5% respectively. Overall, local mass transit rail ridership increased by 279.4 million annual riders over the past ten years. Regional commuter rail ridership, which includes MTA LIRR, MTA Metro-North, and NJ Transit (Hoboken and Newark divisions), also increased by 25.5 million annual passengers, or 11.7% growth, since 2002. Growth has been less apparent for regional commuter bus systems, which grew by only 8% over ten years. Included in this growth, however, is a ten-year loss of 2.1 million annual riders using Nassau Inter-County Express Bus service,

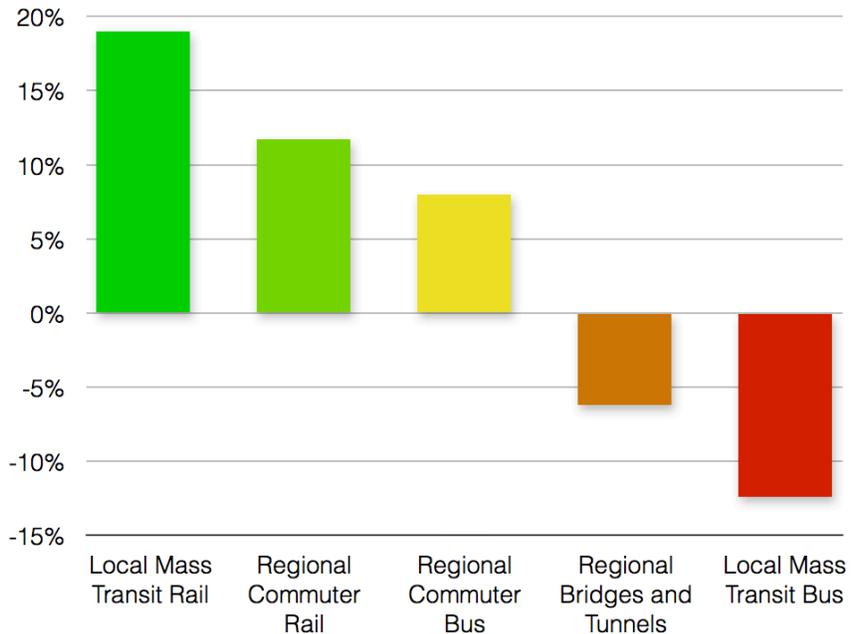
Annual Ridership by Transit Mode
(in millions of passengers)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2002-2012 Change	Percentage Change
NJ Transit Hudson-Bergen Light Rail	3.1	4.1	4.2	5.3	7.9	10.7	12.4	13.2	12.8	12.4	13.3	10.2	329.0%
PANYNJ PATH Trains	51.9	47.9	57.7	60.8	67.0	71.6	75.0	72.3	73.9	76.6	78.0	26.1	50.3%
NJ Transit Rail (Newark and Hoboken Divisions)	61.6	58.9	64.4	68.1	72.7	77.2	81.2	80.3	79.3	76.8	79.4	17.8	28.9%
MTA Regional Bus Operations	-	-	-	-	99.3	109.5	120.7	119.5	120.2	119.4	120.9	21.6	21.8%
MTA New York City Transit (Subway)	1,413.2	1,384.1	1,426.0	1,449.1	1,498.9	1,562.5	1,623.9	1,580.9	1,604.2	1,640.4	1,654.6	241.4	17.1%
MTA Metro-North Railroad	73.2	72.0	72.4	74.5	76.9	80.1	83.6	80.5	81.1	82.3	83.0	9.8	13.4%
NJ Transit Bus (Northern and Central Divisions)	134.1	128.6	125.2	130.7	134.2	138.6	140.2	141.1	136.8	131.8	137.2	3.1	2.3%
MTA Long Island Rail Road	83.9	80.9	79.2	80.1	82.0	86.1	87.4	83.0	81.5	81.0	81.8	-2.1	-2.5%
MTA Bridge & Tunnels	299.8	297.0	302.9	300.4	302.1	304.4	295.7	291.2	291.7	283.5	282.6	-17.2	-5.7%
MTA Long Island Bus / Nassau Inter-County Express Bus	31.3	30.0	30.6	31.5	32.6	32.2	32.7	30.8	30.8	30.3	29.2	-2.1	-6.7%
PANYNJ Bridge & Tunnels	125.2	123.8	126.5	125.9	127.0	127.0	123.7	121.5	121.2	119.0	116.2	-9.0	-7.2%
MTA New York City Transit (Bus)	762.1	735.0	740.6	736.5	741.4	731.8	739.4	716.8	696.9	670.7	667.9	-94.2	-12.4%

formerly known as MTA Long Island Bus.

Vehicle crossings over the metropolitan region's bridges and tunnels declined by 26.2 million annual trips over ten years, amounting to a net decrease of 6.2%. However, the steepest decline in transit ridership over the past ten years has come from local bus services, presumably because of a shift in transit mode preference as riders choose to take advantage of newer light-rail networks and local mass transit improvements. The MTA's NYCT Bus service alone lost 94.2 million annual riders since 2002, amounting to a net decrease of over 12%.

Change in Use of Different Modes of Transportation (2002 to 2012)



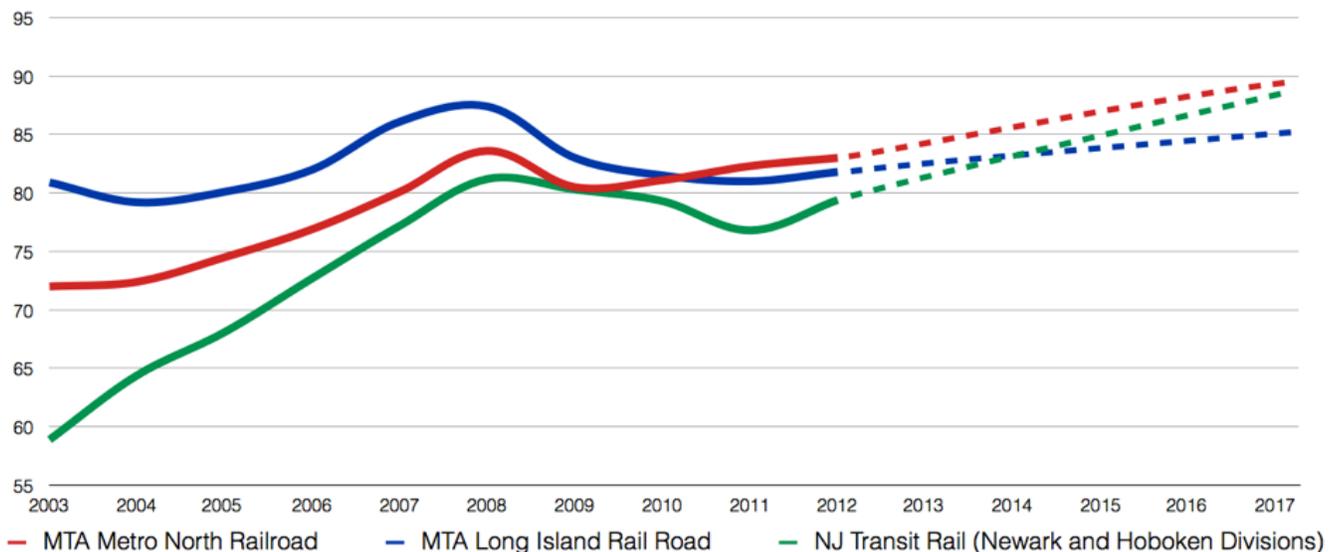
In sum, more and more riders are choosing to travel by rail around the metropolitan region, with the greatest increases coming from local and regional routes in northern New Jersey. In addition, New York City subway service has added nearly a quarter of a billion annual riders since 2002. In contrast, use of the metropolitan region's roads, whether by bus or by automobile, has generally declined over the past decade.

Changes in Regional Rail Ridership

Even though residents, commuters, and visitors to the metropolitan region have increasingly chose to use rail to travel from point A to point B, ridership growth among the region's three regional rail systems has not been uniform. Since 2003, all three regional rail systems enjoyed sustained growth of several million annual passengers year over year until reaching a ridership peak in 2008. For MTA LIRR, MTA Metro-North, and NJ Transit (Newark and Hoboken divisions), those peaks were, respectively, 87.4 million, 83.6 million, and 81.2 million annual riders. Following the recession of 2008 and 2009, ridership declined throughout the three regional rail systems. However, MTA Metro-North and NJ Transit were able to rebound more successfully than MTA LIRR. Specifically, in 2011, MTA Metro-North passed MTA LIRR to become the most used regional rail network in the metropolitan region. Using forecasting models based on predicted future growth, NJ Transit is likely to also pass MTA LIRR's annual ridership by 2015.

In terms of overall growth, NJ Transit has added both the greatest number of new annual riders since 2003 at 17.8 million and has enjoyed the steepest net percentage increase over the past ten years at a growth rate of 28.9%. MTA Metro-North has added 9.8 million annual passengers since 2003 at a ten-year growth rate of 13.4%. MTA LIRR, however, has lost over 2.1 million annual passengers from 2003 to 2012, resulting in a ten-year net loss of 2.5%. Along with the steep decline in Long Island bus ridership, Long Island counties have seen their use of the region's transit networks decline significantly over the past ten years in comparison to other areas within the metropolitan region. Specifically, there has been dramatic growth in the use of transit systems within northern New Jersey and this trend will likely lead to NJ Transit overtaking MTA LIRR as the second most-used commuter rail system within the metropolitan region.

Annual Commuter Rail Ridership (in millions of passengers)



Changes in Metropolitan Population Growth

Over the past ten years, changes in regional ridership have not necessarily corresponded to changes in resident population within the counties utilizing each of the three respective regional transit systems. For instance, Queens, Nassau, and Suffolk counties grew by over 80,000 people or 1.6% from 2000 to 2010, yet MTA LIRR annual ridership decreased by 3.2 million passengers, or 3.8%, during the same period of time. This disparity is even greater when comparing 30-year population growth within the various rail systems, with both MTA Metro-North and NJ Transit annual rail ridership growing at higher rates than the respective 30-year population growth within the counties they serve. This trend demonstrates that the growth in transit ridership throughout different segments of the metropolitan region is a result of more than just mere population growth, but rather because of either expanded service options or changes in the way people choose to travel around the metropolitan region.

Resident Population by Primary Commuter Rail System

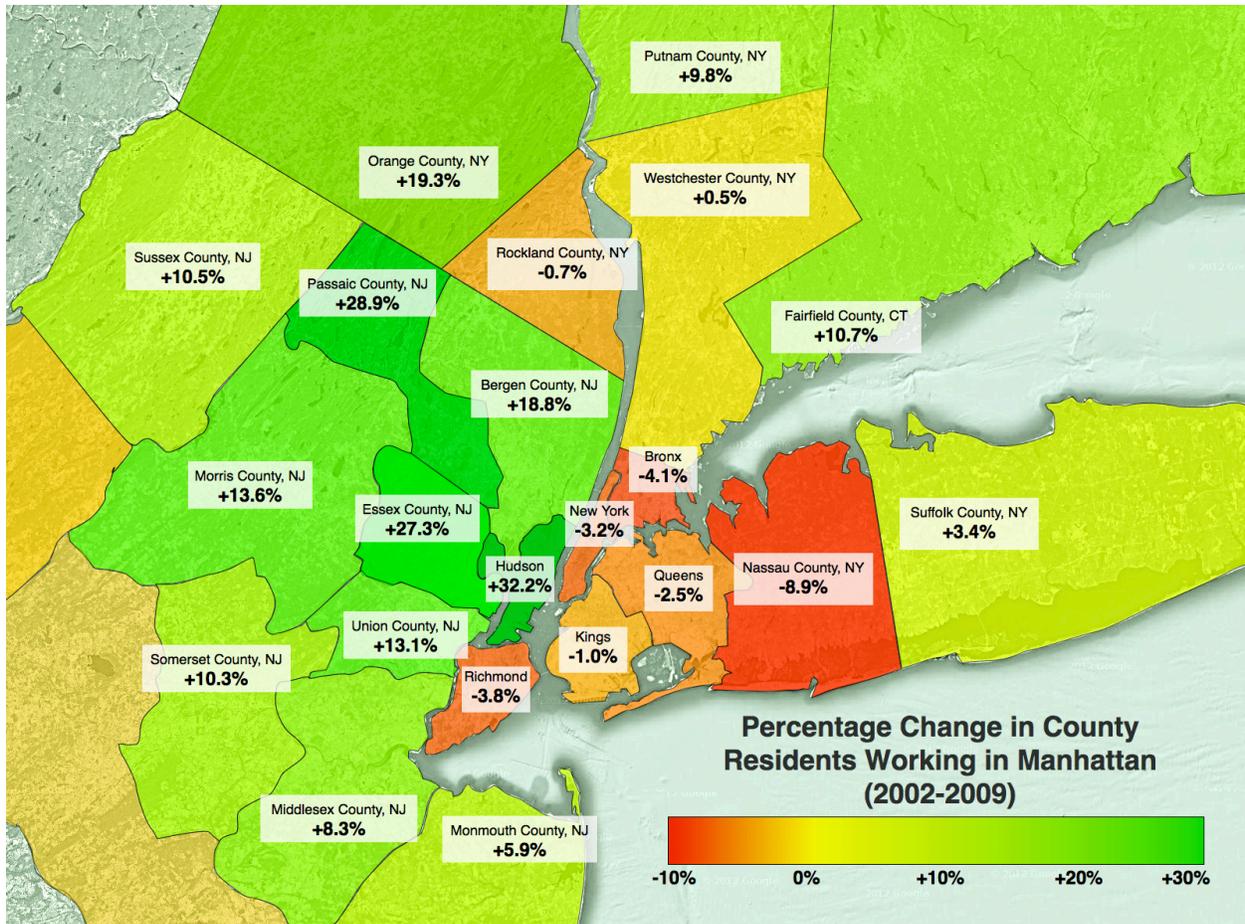
	1980	1990	2000	2010	Population Growth (1980-2010)	Percentage Change (1980-2010)
MTA LIRR Counties (Queens, Nassau, and Suffolk Counties)	4,497,138	4,560,810	4,983,292	5,063,604	566,466	12.6%
MTA Metro North Counties (Bronx, Westchester, Putnam, Fairfield, and New Haven Counties)	3,681,244	3,794,460	4,058,429	4,213,237	531,993	14.5%
NJ Transit Counties (Ocean, Somerset, Middlesex, Hunterdon, Morris, Hudson, Union, Monmouth, Passaic, Bergen, and Essex Counties in New Jersey; Orange and Rockland Counties in New York)	5,867,697	6,104,201	6,692,506	7,006,450	1,138,753	19.4%

Looking toward the future, it is important to recognize which transit sectors will likely continue to grow at the fastest rates. From 1980 to 2010, NJ Transit counties grew by 19.4% compared with 14.5% for Metro-North counties and 12.6% for LIRR counties. This includes a net growth of over 1,000,000 residents in NJ Transit counties compared to approximately 550,000 residents in both Metro-North and LIRR counties. From 2000 to 2010, the comparative population growth is even more dramatic. Over those ten years, NJ Transit counties grew at over three times the rate as LIRR counties and added twice as many residents as Metro-North counties.

More NJ Residents Are Commuting to Manhattan

In addition to strict population growth, a number of counties throughout the metropolitan region have also seen increases to the percentage of their residents commuting to work in Manhattan. This growth rate has been most pronounced in Essex, Passaic, and Hudson Counties, which have grown at respective rates of 27.3%, 28.9%, and 32.2% from 2002 to 2009. This growth rate can largely be attributed to the introduction of new transit options that have become available to resident populations over the past two decades, including the linking of Hoboken Division trains to Newark Division tracks to Manhattan via the Kearny Connection in 1996, the construction of the various phases of Hudson-Bergen Light Rail in from 2000 to 2011, and the construction of Secaucus Junction in 2003. In addition, the increase in county residents commuting to Manhattan is much greater than the pure population increase of residents living in a given county over the same period of time. For example, from 2000 to 2010, Bergen County grew by 2.7%, yet during the same period of time, the number of Bergen County residents commuting to Manhattan grew by 18.8%. Similarly, Essex County, NJ actually saw a decrease in population of 1.2%, yet grew by over 27% in the percentage of its residents working in Manhattan.

In contrast to the growth of Manhattan commuters within northern New Jersey counties, New York counties, including Richmond, Kings, Queens, Bronx, and Nassau counties, have all seen the percentage of their residents commuting to Manhattan drop from 2002 to 2009. Nassau County, whose population grew by approximately 0.4% from 2000 to 2010,

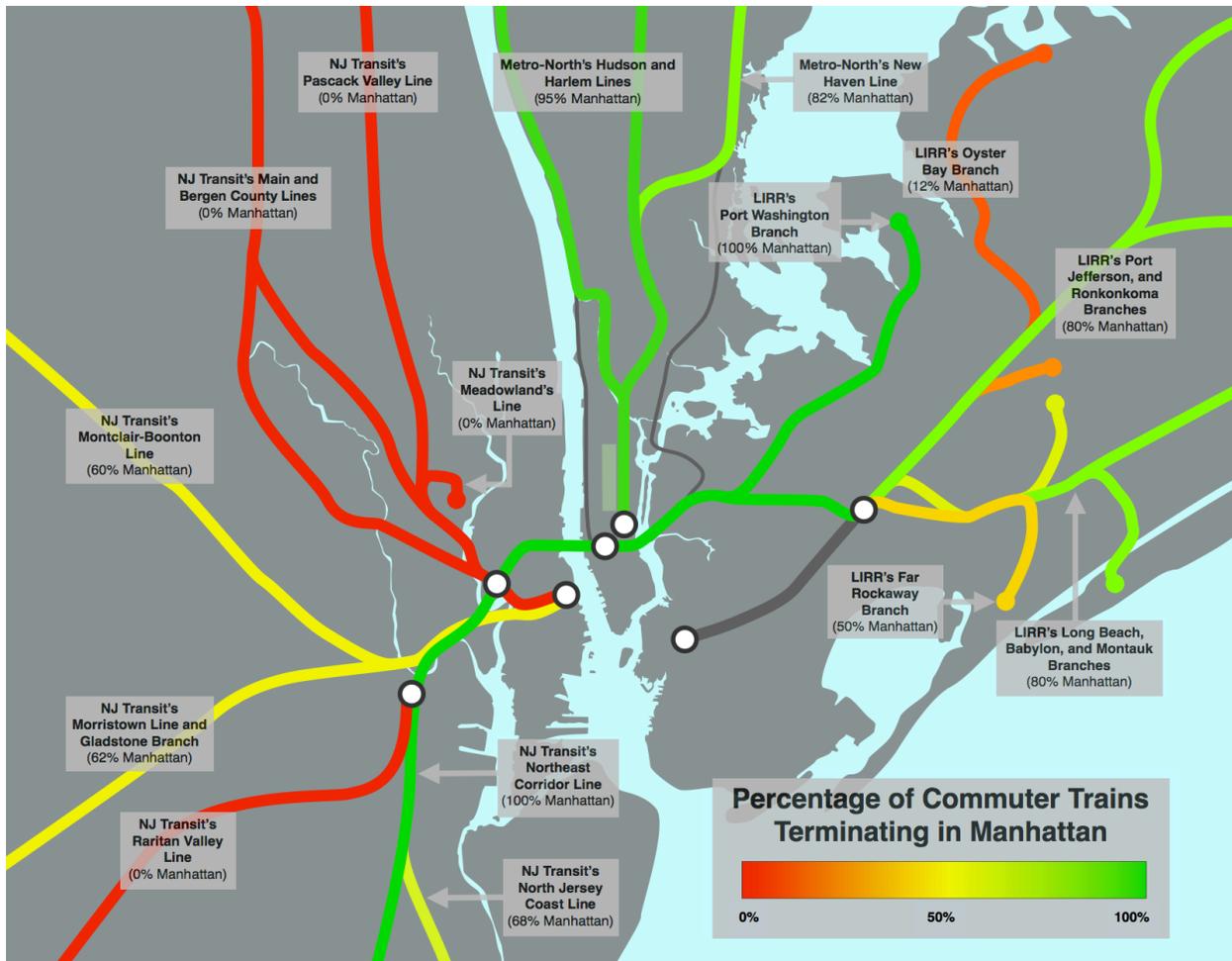


lost close to 9% of its Manhattan commuters over the same period of time. Even Suffolk County, which grew by 5.2% from 2000 to 2010, gained only 3.4% more commuters to Manhattan, less than its total population growth over the same period of time. The only New York counties whose commuter growth eclipsed their population growth from 2002 to 2009 were Orange County, NY and Putnam County, NY, which each gained Manhattan commuters at a rate approximately double their population growth.

Comparative Access to Trains Terminating in Manhattan

More than 75% of Manhattan workers rely on mass transit to commute to work. In addition, and as discussed earlier in this report, an increasing number of residents from northern New Jersey are commuting to Manhattan as fewer residents in Long Island and Westchester are commuting to Manhattan relative to population growth. Yet, despite these changes in metropolitan commuting, the current availability of direct, one-seat rail lines to Manhattan is not proportionate to the growing and declining demand for these routes throughout the metropolitan region.

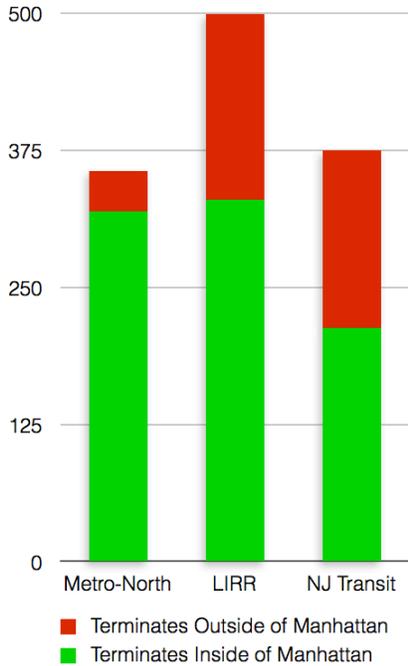
Out of the three regional rail systems, MTA Metro-North has the highest percentage of daily trains terminating in Manhattan at Grand Central Terminal. Out of 356 weekday inbound trains, 319 of them, or 89.6%, terminate at Grand Central, with the remainder requiring a transfer at an intermediate station. In addition, of the 37 daily trains that terminate outside of Grand Central Terminal, 100% of them connect to trains that do terminate in Manhattan.



Inbound MTA LIRR trains, on the other hand, may terminate at either New York Penn Station, Atlantic Terminal in Brooklyn, Jamaica Station in Queens, or Long Island City and Hunterspoint Avenue in Queens. From an infrastructural standpoint, however, aside from LIRR's Port Washington Branch, every LIRR line originating east of Jamaica is capable of terminating at any of the LIRR terminal stations. The only infrastructural limitation keeping certain trains originating in eastern Long Island from terminating in Manhattan is a lack of rail electrification, although several of these lines have circumvented this restriction by using dual-mode locomotives. Of the 499 daily inbound LIRR trains, 330 of them, or 66.1%, terminate at New York Penn Station in Manhattan.

Service to Manhattan is worst for NJ Transit trains, mostly due to the layout of existing rail infrastructure. Originally, all trains along NJ Transit's lines terminated on the banks of the Hudson River in New Jersey. With the opening of the North River Tunnels and New York Penn Station in 1910, a number of trains along the Northeast Corridor were rerouted to Manhattan. In 1996, the completion of the Kearny Connection brought a number of NJ Transit trains on the Morris & Essex Lines into Manhattan as well. Finally, the opening of Secaucus Junction in 2003 allowed passengers along NJ Transit's Main, Bergen County, and Pascack Valley Lines to transfer to Manhattan-bound trains. However, these trains, and all other trains not using either the Kearny Connection or traveling along the Northeast Corridor must still terminate in Hoboken, NJ. The Raritan Valley Line, which connects to the Northeast Corridor, still terminates at Newark Penn Station because of a lack of rail electrification and limited capacity within New York Penn Station. Of the 375 daily inbound NJ Transit trains, only 213, or 56.8%, terminate at New York Penn Station in Manhattan. However, unlike certain Metro-North and LIRR trains, which terminate at other locations due to electrification issues, three entire NJ Transit lines are incapable of terminating at New York Penn Station because there is no rail link from those lines to the North River

Number of Weekday Trains by Terminus



Tunnels. Thus, even though recent transit improvements have brought the percentage of NJ Transit trains terminating in Manhattan up to slightly over 50%, it is unlikely that this percentage will continue to increase without significant infrastructural changes.

Changes in Ridership Within New York Penn Station

On a given weekday, New York Penn Station sees approximately 430,000 riders boarding and alighting trains within the station. A rider is counted twice if that rider takes a train into Penn Station in the morning (an alighting) and boards a train in Penn Station in the evening (a boarding). Penn Station is served by three regional rail systems. MTA LIRR accounts for approximately 233,360 boardings and alightings, or 54% of daily riders on a given weekday. NJ Transit accounts for approximately 167,750 boardings and alightings, or 39% of daily riders on a given weekday. And Amtrak accounts for approximately 30,750 boardings and alightings, or 7% of daily riders on a given weekday. Amtrak's service at Penn Station can be divided between trains traveling on the Northeast Corridor, which accounts for approximately 26,000 daily riders, and Amtrak's Empire Corridor, which accounts for approximately 4,750 daily riders. In terms of measuring the percentage of a transit network's riders traveling to Penn Station as opposed to a different

station within the network, LIRR leads the three systems with 75.8% of all riders boarding and alighting in Penn Station.

Amtrak is second with 71.5% of all riders along the Northeast

Corridor and Empire Corridor boarding and alighting in Penn Station.

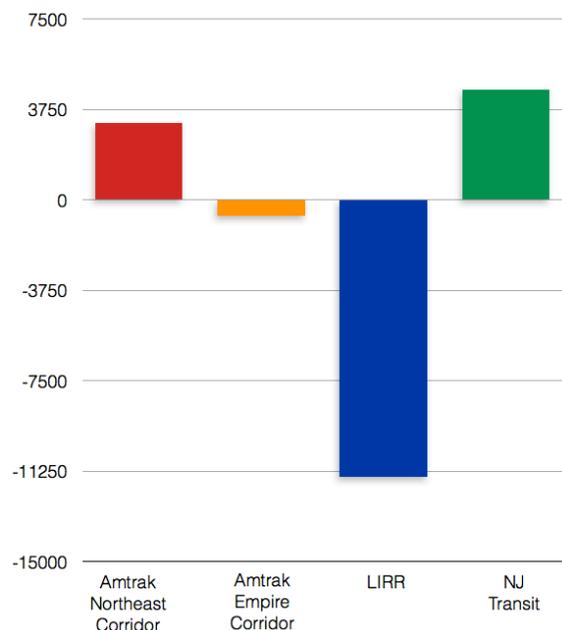
NJ Transit has the lowest share of riders boarding and alighting in Penn Station, only 58.7%, largely due to infrastructural limitations preventing more trains from terminating in Penn Station.

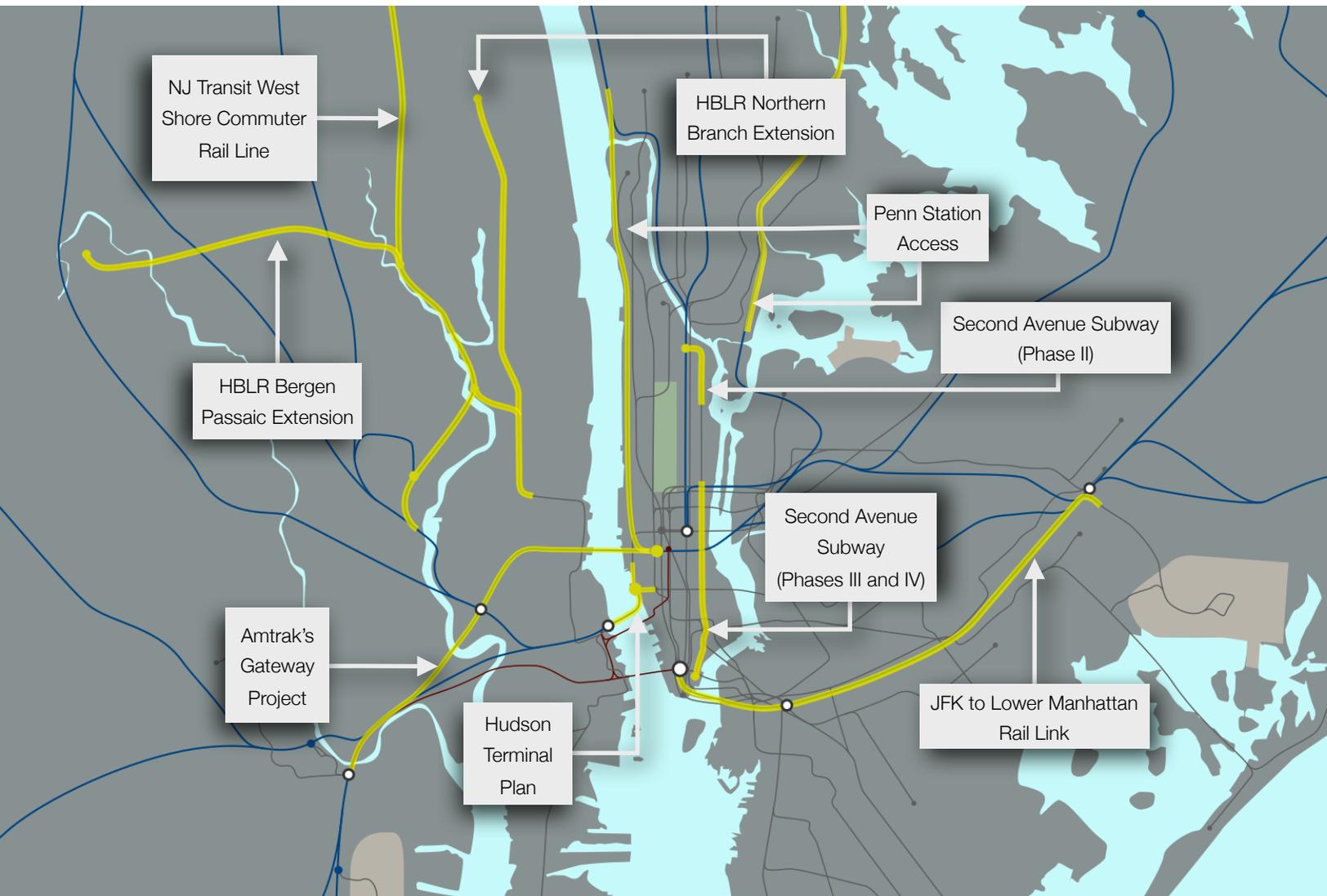
However, in spite of these limitations, NJ Transit has also added the greatest number of new boardings and alightings over the past seven years. Since 2007, approximately 4,500 more NJ Transit passengers use Penn Station every day. Amtrak has also added over 3,000 daily Northeast Corridor riders boarding and alighting in Penn Station since 2007, but has lost approximately 700 daily Empire Corridor riders. The biggest decrease in daily use of Penn Station has come from MTA LIRR, which saw almost 11,500 fewer riders boarding and alighting in 2012 than in 2007.

This discrepancy can largely be attributed to changes in each system's broader ridership. From 2007 to 2012, NJ Transit saw its annual ridership increase by 2.2 million passengers, while LIRR saw its annual ridership decrease by 4.3 million

passengers. Overall, New York Penn Station has seen its net daily ridership decline by approximately 4,400 passengers since 2007.

Change in Weekday New York Penn Station Ridership (2007 to 2012)





Prioritizing Transit Opportunities

As metropolitan residents increasingly rely on a Manhattan commute to access high-paying jobs, the availability and diversity of transit options to and from Manhattan has become increasingly more important. Further, as the price of gas increases and transit systems expand with growing demand, movement within the metropolitan region by local and regional rail has become more attractive as bridge and tunnel crossings and local bus usage decline. Changes in metropolitan residency and employment have also resulted in varying growth among the region's commuter rail systems. In particular, counties in northern New Jersey have grown at a faster rate than traditional commuter counties in New York, including Kings, Queens, Nassau, and Westchester Counties. As a result, ridership on NJ Transit's commuter and light rail lines as well as the Port Authority's PATH lines continues to increase at higher rates than MTA LIRR, MTA Metro-North, and New York City Subway. However, despite the apparent growth in commuter population and increased local and commuter rail use, NJ residents are still severely limited in their ability to travel directly into New York City on a one-seat ride. As construction of the East Side Access project proceeds and the Penn Station Access project is studied,

similar efforts need to be made to correct the imbalance between northern New Jersey's significant commuter growth and the paucity of New Jersey rail lines terminating in Manhattan. As the metropolitan region prepares to usher in a new set of capital projects for the upcoming decade, it is imperative that decision makers are cognizant of the trends in transit use and population growth identified in this report. Further, political leaders must identify new opportunities to expand service to underserved areas while minimizing the creation of redundancies within the broader regional transit system.



West Shore Regional Proposal Diagram (NJ Transit)

West Shore Regional Proposal

The West Shore Regional Proposal seeks to improve commuter and local rail access within Hudson, Bergen, and Passaic Counties in New Jersey and Rockland County in New York. There are several transit elements within the overall proposal, including a northern extension of Hudson-Bergen Light Rail, a western extension of Hudson-Bergen Light Rail, and the creation of a new NJ Transit West Shore Commuter Rail Line. The Northern Branch Light Rail Extension would take advantage of existing tracks already traveling north through Bergen County, NJ and would terminate in either Englewood or Tenafly. The Northern Branch Light Rail Extension is expected to cost \$900 million and would increase ridership by an estimated 24,000 daily passengers, or 55% within the entire light-rail system. Funding for this element of the project has not yet been identified, and a Final Environmental Impact Statement has not yet been published. The Bergen Passaic Light Rail Extension would also take advantage of existing infrastructure linking Hudson-Bergen Light Rail's current terminus at Tonnelle Avenue to existing tracks traveling northwest to Paterson, NJ. This line would include intermediate stations in Hackensack, Maywood, and Rochelle Park. Finally, the West Shore Regional Proposal contemplates a new commuter rail line running from Hoboken to Rockland County, NY. The West Shore Line would run along the existing Main Line through Secaucus Junction before traveling

northeast along a new right-of-way. After passing through the Meadowlands Sports and Entertainment Complex, the rail line would join the Bergen Passaic Light Rail Extension at a new Vince Lombardi park-and-ride hub station. The line would continue north along an existing right-of-way before branching north onto tracks currently being used by CSX freight through Bergen and Rockland counties. The West Shore Line would include intermediate stations in Teaneck, West Englewood, Bergenfield, Dumont, Closter, Norwood, and Orangeburg before terminating in West Nyack, NY at a new intermodal park-and-ride station at the Palisades Center Mall.

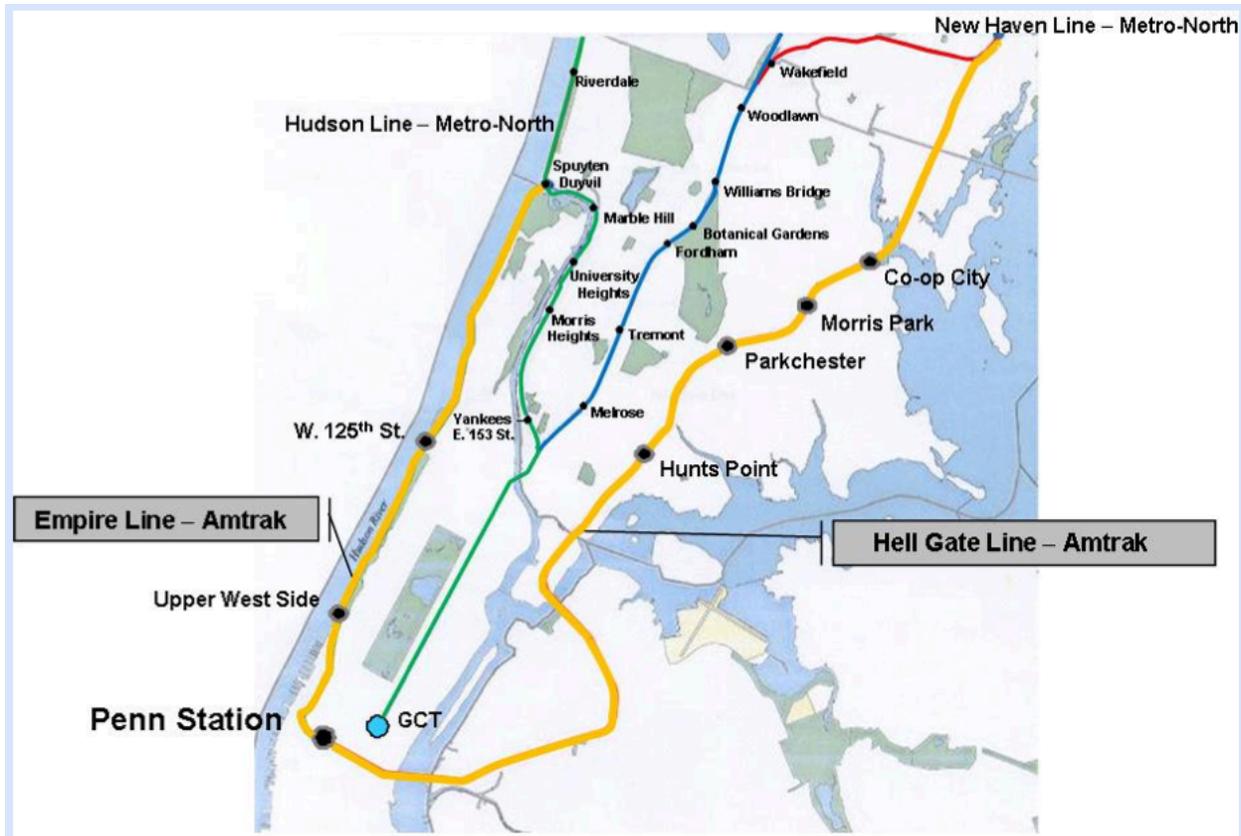
The West Shore Regional Proposal would expand NJ Transit's local and commuter rail lines into underserved, yet rapidly expanding neighborhoods and counties in New Jersey. The proposal would also expand Hudson-Bergen Light Rail into Bergen and Passaic counties for the first time. The three New Jersey Counties served by this project represent a combined resident population of slightly over 2 million people and also represent a combined Manhattan commuter growth of over 26% over the past decade. The West Shore Regional Proposal would capitalize on this commuter growth and demand by providing multiple new transit options and routes. In spite of these benefits, the West Shore Regional Proposal fails to address the lack of a direct one-seat ride into Manhattan for residents of Bergen, Passaic, and Rockland counties. As a result, connecting ridership at Secaucus Junction and ridership into Hoboken Terminal would increase, which would in turn increase cross-Hudson PATH train and ferry ridership. However, in order to minimize travel times, optimize the commuter experience, and truly capitalize on local and regional rail investments over the long-term, residents of northern New Jersey need a direct route into Manhattan.

Second Avenue Subway, Phases II, III, and IV

When the first phase of the Second Avenue Subway opens in late 2016, the upper east side will add a much needed subway line for residents who have, for decades, been forced to use the often overcrowded 4/5/6 lines in order to travel into midtown Manhattan. Both Phase I and Phase II of the Second Avenue Subway address growing subway ridership within Manhattan as well as increased resident population within Manhattan's upper east side, and seek to ease peak ridership on the 4/5/6 lines by offering an alternative route into midtown Manhattan along an extended Q line. Phases III and IV will expand the line southward down Manhattan's east side and will create an independent T line that will travel exclusively on a north-south route along second avenue. As New York City Subway ridership continues to grow, expanding service within Manhattan is paramount in order to provide residents and commuters a more diverse transit system within New York City. However, unlike the deficiency of transit options on the upper east side, some areas of Manhattan's lower east side, which will be served by Phases III and IV of the Second Avenue Subway, are already blanketed by a number of alternative transit routes. Considering the large costs, the construction of Phase III and IV of the Second Avenue Subway, while beneficial, may result in the creation of unnecessary transit redundancies before key deficiencies are remedied throughout other areas of the metropolitan region. Nevertheless, funding for the latter phases of the Second Avenue Subway has not yet been secured, and it is likely that the construction of these segments will not commence for a number of years.



Second Avenue Subway Diagram (MTA)



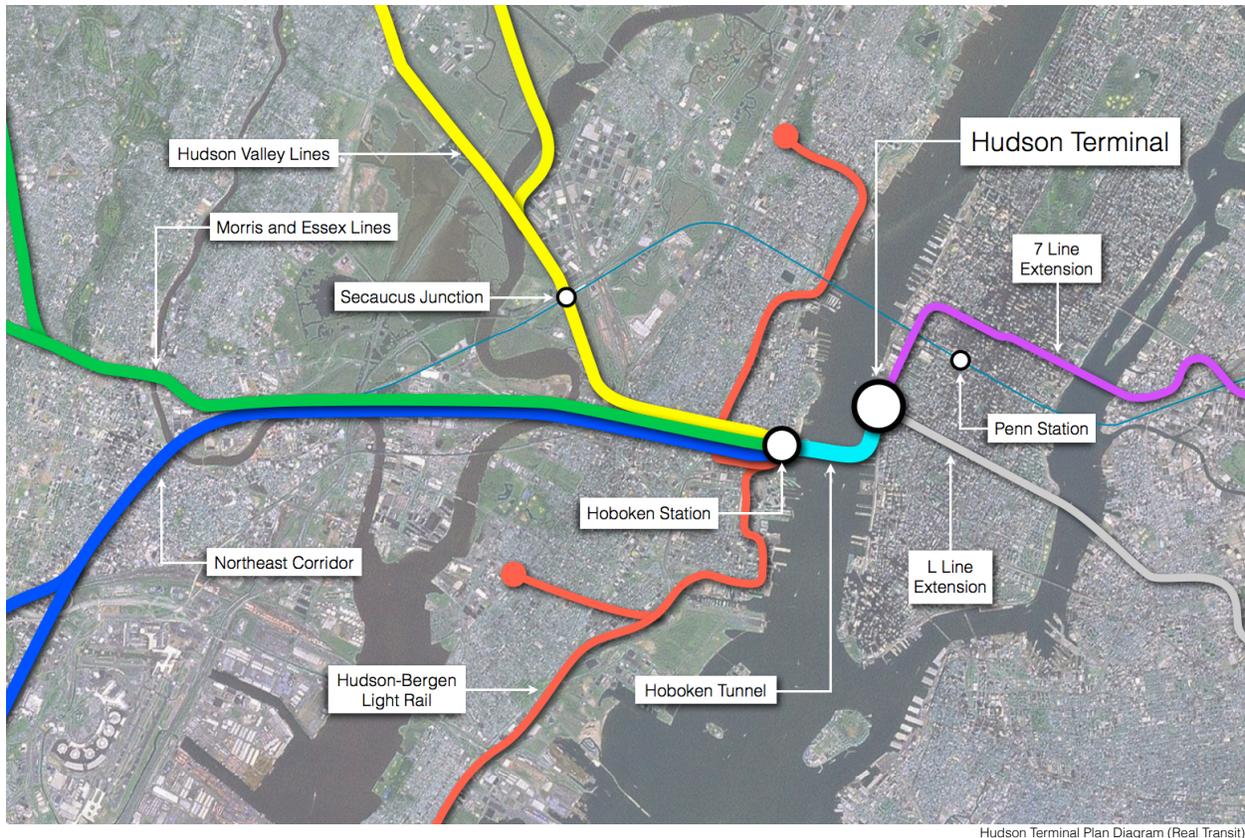
Penn Station Access Diagram (MTA)

Penn Station Access

The Penn Station Access proposal seeks to bring Metro-North trains into Penn Station just as East Side Access will one day bring LIRR trains into Grand Central Terminal. The proposal would take advantage of existing infrastructure in order to connect Metro-North trains to Penn Station via Amtrak's Empire Connection through Manhattan's West Side and Amtrak's Hell Gate Line through the Bronx and Queens. The Empire Connection alternative would utilize an existing swing bridge across the Harlem River at the northern tip of Manhattan to divert inbound Hudson Line trains down Manhattan's West Side. Intermediate stations at 125th Street and 59th Street would be constructed to provide additional Penn Station service within Manhattan. The Hell Gate alternative would utilize Amtrak's existing trackage linking the New Haven Line in Westchester County with Penn Station via the Hell Gate Bridge. Intermediate stations would be built in Co-op City, Morris Park, Parkchester, and Hunts Point. In terms of need, the Hell Gate alternative would chiefly serve communities in the Bronx and offer passengers currently utilizing the New Haven Line the option of terminating in Penn Station as opposed to Grand Central Terminal. While Fairfield County has shown a growth of Manhattan commuters by 10% from 2002 to 2009, Bronx County has shown a decline of over 4% during the same period of time. Westchester County added a nominal percentage of Manhattan commuters from 2002 to 2009. One of the chief benefits of Penn Station Access is its ability to significantly contain costs by taking advantage of existing rail infrastructure. Unlike the major capital projects currently under construction, such as the 7 Line Extension, East Side Access, and the first phase of the Second Avenue Subway, Penn Station Access will not need to construct a new right-of-way to accomplish its goals of providing a secondary route into Manhattan for Metro-North trains. Unlike East Side Access, however, Penn Station Access fails to include the construction of new tracks and concourse space, and as a result, will bring even more passengers into the already overcrowded and overburdened Penn Station without creating additional capacity for those passengers.

The Hudson Terminal Plan

The Hudson Terminal Plan seeks to fill several crucial gaps in the metropolitan transit landscape by linking together a number of local and regional rail lines at a new transportation hub in Manhattan. The proposal suggests constructing a new tunnel under the Hudson River to link existing NJ Transit regional and light rail tracks already traveling to Hoboken, NJ with a new train station at the intersection of 14th Street and 11th Avenue on the Hudson River. In addition to the New Jersey elements of the proposal, the Hudson Terminal Plan suggests extending the L and 7 subway lines to meet at the new rail hub in order to provide passengers with convenient transit connections at Hudson Terminal.



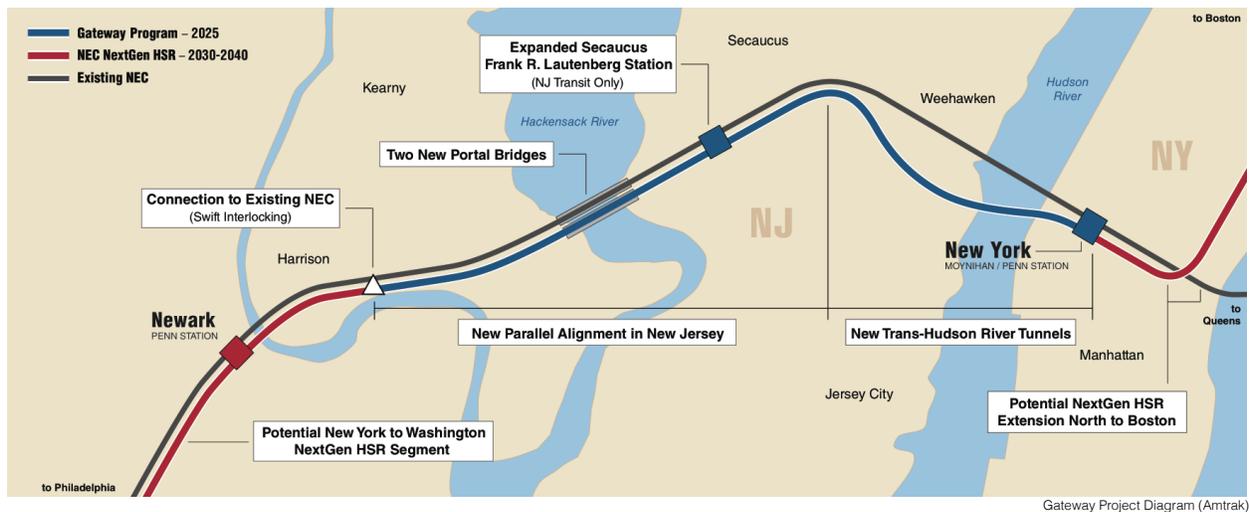
Hudson Terminal Plan Diagram (Real Transit)

The Hudson Terminal Plan's greatest benefit is in its ability to create a one-seat ride into Manhattan for a number of existing commuter and light rail lines, including NJ Transit's Main, Bergen, Pascack Valley, Raritan Valley, and Meadowlands lines as well as Hudson-Bergen Light Rail, which currently terminate in New Jersey. The Hudson Terminal Plan also allows for the future integration of new NJ Transit lines including the West Shore commuter line as well as the Northern Branch and Bergen Passaic extensions of Hudson-Bergen Light Rail. Without a new commuter hub station in Manhattan, investments in both Penn Station Access and the expansions of NJ Transit's commuter rail and Hudson-Bergen Light Rail systems would be unable to fully realize their potential benefits. Both the MTA's Penn Station Access and NJ Transit's West Shore Regional Project would increase use of the already overburdened tracks, platforms, and concourse space within Penn Station. In light of these, as well as other metropolitan transit trends, including the increase in ridership on Amtrak's Northeast Corridor, the need for a dedicated Manhattan transit hub for NJ Transit's commuter and light rail lines could not be more apparent. Since 2002, NJ Transit commuter rail lines and Hudson-Bergen Light rail have gained a combined 28 million new annual passengers. In contrast, MTA Metro-North and LIRR have gained 7.6 million new annual passengers over the same time period. But even as MTA LIRR continues to lose passengers, a brand new concourse and rail link is being constructed within Grand Central Terminal. Simultaneously, the Penn Station Access

project seeks to add even more passengers to Penn Station. It is clear that given recent ridership trends, significant population growth in New Jersey, and a lack of one-seat trains from New Jersey to Manhattan, the Hudson Terminal Plan would be a valuable addition to the metropolitan transit landscape. Overall, the Hudson Terminal Plan provides an efficient and cost-effective means of relieving the current bottleneck of rail tracks plaguing cross-Hudson commuters in order to allow for the anticipated influx of additional passengers as the metropolitan region's transit systems continue to expand.

Gateway Project

Amtrak's Gateway Project seeks to double the number of tracks traveling from Newark, NJ to New York Penn Station from 2 to 4 by constructing a new rail tunnel beneath the Hudson River. The two new tracks would connect with existing trackage at Penn Station and would also connect with a new annex station south of the current Penn Station structure. Eventually, the Gateway Project's tracks will become part of Amtrak's next generation high speed rail line traveling from Boston to Washington, D.C. There have not been any feasibility studies completed at this time, but preliminary estimates put the total cost of the project at approximately \$15 billion with a completion year of 2025.



The Gateway Project's greatest advantage is the long term prospect of creating a modern high-speed rail network along the Northeast Corridor. As population grows in the northeast and gas prices rise, the demand for fast and efficient regional rail service will continue to increase, and the Gateway Project hopes to address this future transportation challenge. In addition, the Gateway Project will also presumably allow for a future connection to Grand Central Terminal's East Side Access terminus, which would eventually allow trains originating in Washington, Baltimore, and Philadelphia to connect to both Penn Station and Grand Central Terminal before linking to Amtrak's existing Northeast Corridor line via the Hell Gate Bridge. Despite these benefits, however, Amtrak's Gateway Project has significant shortcomings considering the high costs and little minimal benefit for the metropolitan region. Amtrak has not proposed any means of bringing any of NJ Transit's Hoboken Division rail lines into Penn Station. This lack of connectivity is especially troubling considering the significant increase in Manhattan workers living in northern New Jersey who still do not have access to a direct one-seat ride into New York City. The Gateway Project also fails to sufficiently prepare for the future growth of the metropolitan region's transit systems, including a possible Manhattan link for NJ Transit's Hudson-Bergen Light Rail, a new NJ Transit West Shore commuter line, and expanded ridership from the MTA's Penn Station Access proposal. While the Gateway Project will one day help to usher in a new era of high-speed regional rail service throughout the northeast United States, today, the metropolitan region needs to capitalize on a number of more impactful, and much less expensive transit opportunities.

Notes and Acknowledgments

MTA ridership and traffic data taken from MTA Annual Reports, © 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012

NJ Transit ridership and traffic data taken from NJ Transit Annual Reports, © 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012

Port Authority of New York and New Jersey ridership and traffic data taken from NJ Transit Annual Reports, © 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012

Commuting ridership and employment data taken from *Commuting to Manhattan*, Rudin Center for Transportation Policy and Management, NYU Wagner School of Public Service, © 2012

Penn Station ridership analysis based in part on data from *Moynihan Station Development Project Environmental Assessment*, Empire State Development Corporation, © 2010

Additional ridership data taken from *The Dynamic Population of Manhattan*, Rudin Center for Transportation Policy and Management, NYU Wagner School of Public Service, © 2012

West Shore Regional Proposal information taken from *Northern Branch Corridor DEIS*, NJ Transit, © 2011

Gateway Project information taken from *The Amtrak Vision for the Northeast Corridor*, Amtrak, © 2012

New York and New Jersey population data taken from United States Census Bureau, © 2013

Penn Station Access information taken from *Penn Station Access Study Presentation Materials*, MTA, © 2013

NJ Transit provides service on the sections of its commuter lines that run through New York State by way of a working agreement with MTA Metro-North. For the purposes of simplifying terminology throughout this report, information relating to the MTA Metro-North stations in Rockland and Orange Counties, which utilize NJ Transit tracks and rolling stock, are considered part of NJ Transit's rail network.