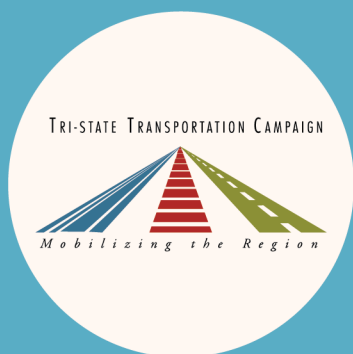
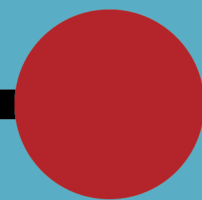


FROM HERE TO THERE

REGIONAL RAIL FOR METRO NEW YORK



TRI-STATE TRANSPORTATION CAMPAIGN



Tri-State Transportation Campaign

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Tri-State Transportation Campaign is a 501(c)(3) non-profit policy and advocacy organization dedicated to mobility, accessibility, and livability in New York, New Jersey, and Connecticut. TSTC uses data and policy analysis, along with strategic media outreach, to influence decision-making throughout the metropolitan region. Since it was founded in 1993, TSTC has become a leading voice in the region for transportation and land use policy reform, and has enjoyed a strong record of accomplishment.

For more information, please visit www.tstc.org.

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Publication Date: June 2022

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TRI-STATE TRANSPORTATION CAMPAIGN



From Here to There

Regional Rail for Metro New York

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EXECUTIVE SUMMARY

“Too often, investments fail to meet the needs of marginalized communities left behind.” – President Joe Biden

6 The New York metropolitan area’s economy is powered by the Long Island Rail Road (LIRR), Metro-North Railroad (MNR), and New Jersey Transit (NJT), three of the largest and busiest commuter rail systems in the United States.¹ Each of the railroads connects communities in Long Island, the Hudson Valley, Connecticut, and New Jersey with Midtown Manhattan, the world’s largest central business district (CBD).

Commuter rail lines radiate out from Midtown like spokes on a wheel—each day whisking hundreds of thousands of people between the CBD and the metropolitan region. However, the pandemic-fueled shift to remote work, which experts say is unlikely to ever fully reverse course,² has upended the traditional commuter rail business as well as its operations model. Designed primarily for white collar workers commuting each weekday to “9-to-5” jobs in Manhattan, as the traditional workday changes, the region’s commuter rail systems must adapt to serve a broader population.³

The commuter rail operations model reflects outdated assumptions regarding where people and jobs are located, and how people want to move about the region. Trains generally run

frequently during weekday rush hours, and infrequently most other times. The entire system is designed around the “peak of the peak.” Additionally, commuter rail fares are structured in a way that discourages short-haul trips between suburbs and within New York City. Relying on the railroads as a mobility option outside of traditional work hours, “reverse-commuting,” or to reach destinations beyond Manhattan, is difficult, unreliable, and oftentimes, impossible.

Climate change and social inequality are two of the most pressing challenges of this century, and our region is ill-equipped to tackle either one, despite each state spending billions of dollars on expensive new infrastructure. The inefficient use of one of our region’s most valuable infrastructure assets—a robust and extensive rail network—contributes to worsening traffic congestion, segregation of people and opportunities, and unsustainable land use, particularly in the suburbs.⁴ To match the scale of the solution with the scale of the problem, a comprehensive plan is needed to transform the legacy commuter rail systems into a unified regional rail network.

Today, there are several major transportation



and economic development proposals in the works for the tri-state area, but each suffers from siloed planning, a narrow scope, and a lack of interagency coordination. Why should the governor of New York be concerned with expanding rail electrification in New Jersey? Why should the mayors of Newark and Paterson care about economic development at Sunnyside Yard in Queens? Questions like these can be answered only from a zoomed-out, regional perspective—through the lens of understanding how each project affects the whole region. Transportation and land use decisions that our region makes today will determine whether a unified regional rail network remains a viable possibility in the 21st Century.

If the transit agencies continue with an uncoordinated strategy, they will further solidify the region’s socio-economic inequities and subpar transportation network. This report is an initial step in a fresh evaluation of regional rail in the New York metropolitan area. The focus of this report is to understand the benefits of regional rail, and to quantify the potential of unifying and optimizing the region’s commuter rail systems. It also summarizes the various considerations that will need to be addressed in an implementation plan.

THE COMMUTER RAIL PROBLEM

“We should not design a [transit] system around the most privileged of our populations. If we are truly about servicing demand, COVID-19 showed who demanded it most.”

– Charles Brown, CEO of Equitable Cities

If you look at a map of the region’s three commuter rail systems, it’s not very hard to figure out what these systems are designed to do. Nearly all of the lines come together in Manhattan and fan outward. This is a network that is really good at moving people between the suburbs and the Midtown business district. This design may have made sense in the 1950s, but our region’s economic, housing, and travel needs are no longer best served by this outdated design. There is a lack of orbital routes going from suburb to suburb, or borough to borough, which makes the rail network useless for people who need those connections in order for transit to be a better alternative than driving.

The existing system largely operates as a premium shuttle service for a niche market: suburban commuters, typically of privileged socioeconomic status, traveling to and from Manhattan during the traditional peak periods. Other riders and travelers are left with infrequent and inconsistent off-peak service, fares that discourage short-distance trips and price out low-income individuals, and a notable lack of inner-city stops. These barriers make it difficult for people to get to work, shop for healthy and

affordable food, access medical appointments, reach educational opportunities, and connect with family, friends, or leisure activities. Fears of COVID-19 transmission on transit have only compounded the issue, driving up the rate of car ownership and usage, which is contributing to worsening traffic congestion, poor air quality, unsustainable land use, and income inequality.⁵ The effects of this troubling trend disproportionately harm BIPOC communities, low-income individuals, older adults, young adults, and people with disabilities.

Maintaining the 20th Century model of commuter rail is not only destructive to the environment, it also reinforces divisions along class and racial lines. Driven largely by the decentralization of job opportunities and the need for affordable housing, the nation’s suburbs are now home to the largest and fastest growing low-income population.⁶ Housing costs are rising faster in New York City than in surrounding suburbs, forcing many low-income people to find more affordable housing in less transit-accessible parts of the region, which diminishes their access to jobs and opportunities, and forces the need to lease or buy a car—a significant extra

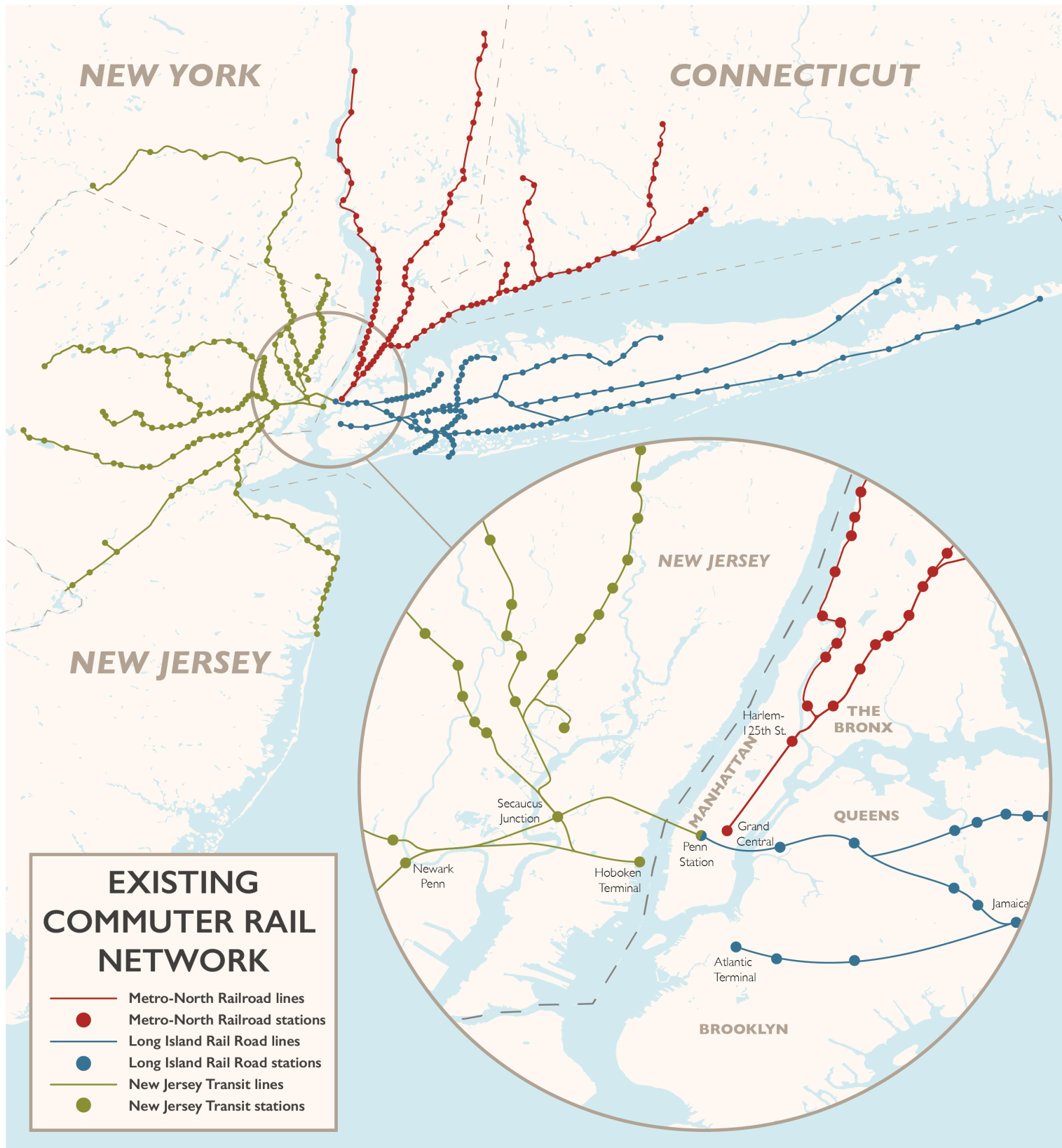


Figure 1: Three commuter rail systems serve the NYC metro area today, each with their own service area, fare structure, scheduling, and wayfinding.

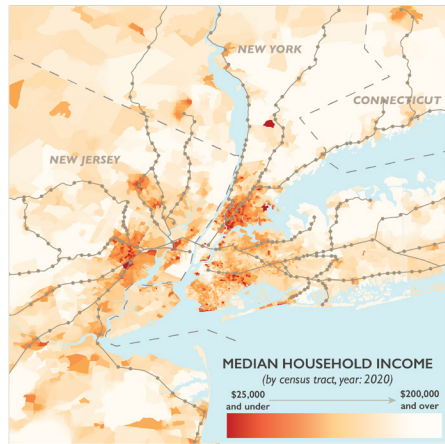


Figure 2: Poverty in the region is concentrated outside the Manhattan core, primarily in Newark, Paterson, the South Bronx, and East New York.

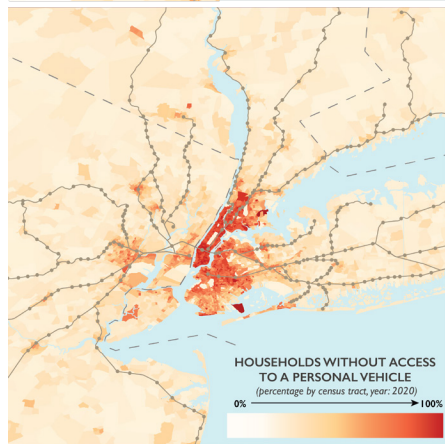


Figure 3: NYC boroughs with extensive subway service, such as Manhattan, the Bronx, and Brooklyn, have lower car ownership rates than Queens, Staten Island, and the surrounding region.

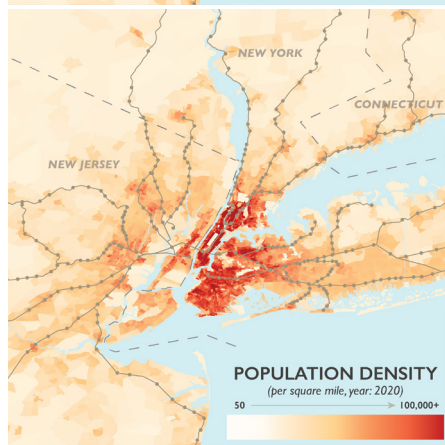


Figure 4: Population density is highest where there is greater access to frequent transit service.

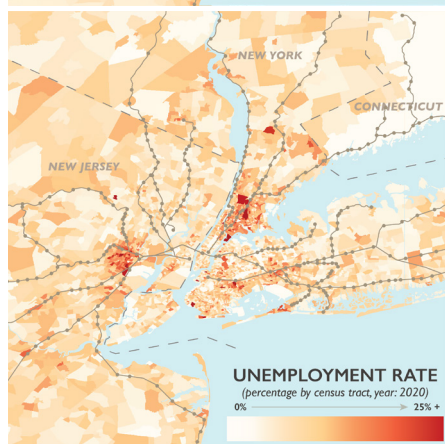


Figure 5: The unemployment rate is higher outside the region's core in places like Newark, the Bronx, and East New York.

expense. Between 1980 and 2018, poverty grew in places like Newark, Paterson, New Brunswick, the South Bronx, Yonkers, and Hempstead. During the same period, neighborhoods in the region's core, such as Midtown West, Downtown Brooklyn, and Long Island City, experienced the greatest economic turnaround, with poverty rates dropping significantly.⁷ It's no coincidence that these places are transit-rich, regionally accessible, and well-connected to the Midtown business district. Access to transit is access to economic opportunity.

According to the Economic Innovation Group, “despite the prevalence of turnaround neighborhoods in the city, New York retains an exceptionally high number of persistent poverty neighborhoods and a stubbornly large number of people living in high-poverty neighborhoods. New York City’s landscape of poverty is a unique patchwork of entrenched poverty, rapidly transitioning neighborhoods, and new high-poverty neighborhoods on the city’s periphery.” Furthermore, “even though [the total number of people residing in high-poverty neighborhoods] has fallen significantly since 1980, [the number of people still living in high-poverty neighborhoods in NYC] is roughly equal to the total number of people living in high-poverty neighborhoods in the next three largest cities (Chicago, Los Angeles and Houston) combined. This stat alone points to how much more work remains to restore economic opportunity to more corners of the country’s leading metropolis.”⁸

Additionally, the number of “nearby jobs” is declining in inner-ring suburbs and expanding



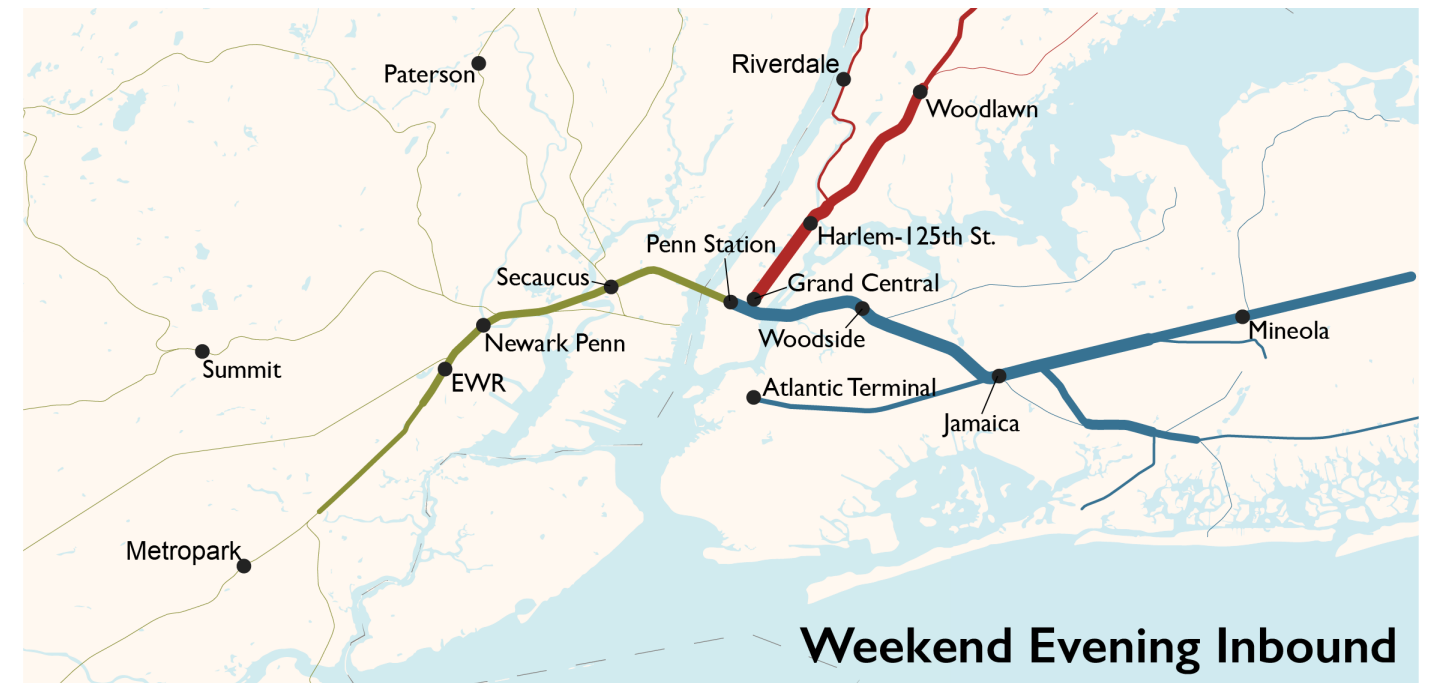
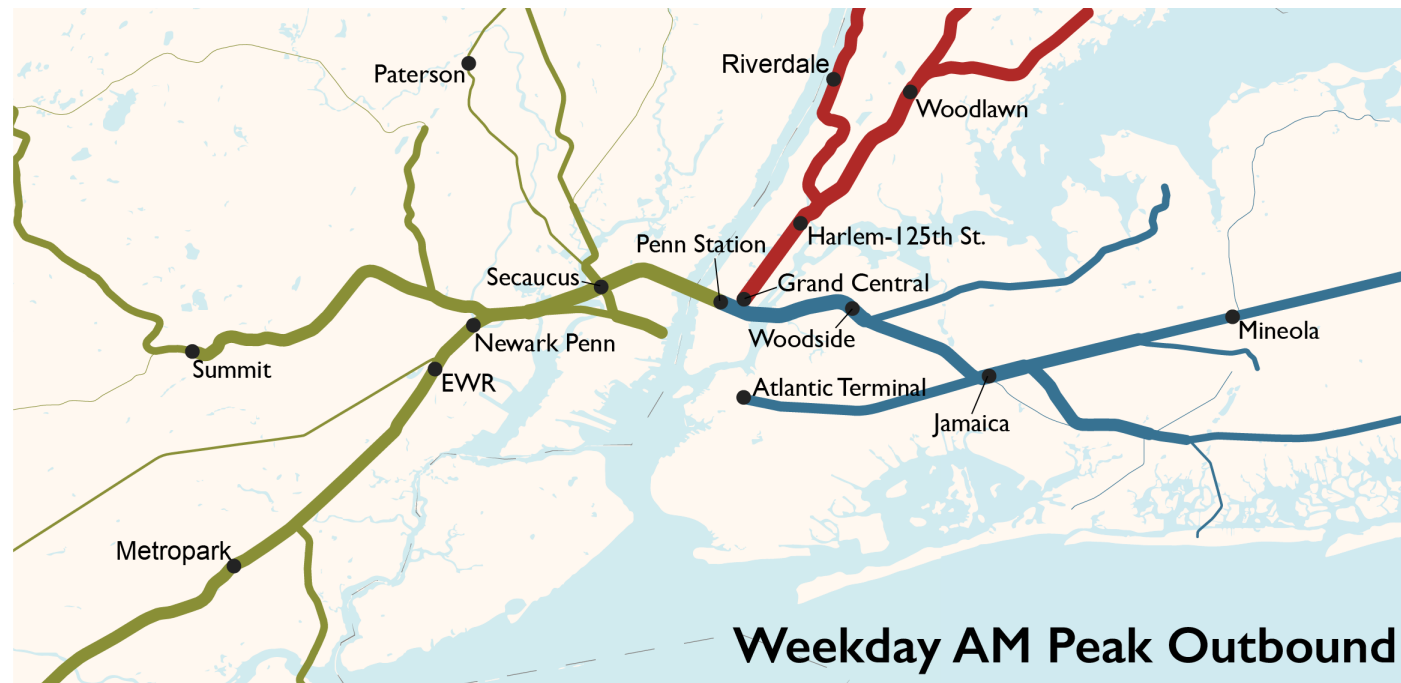
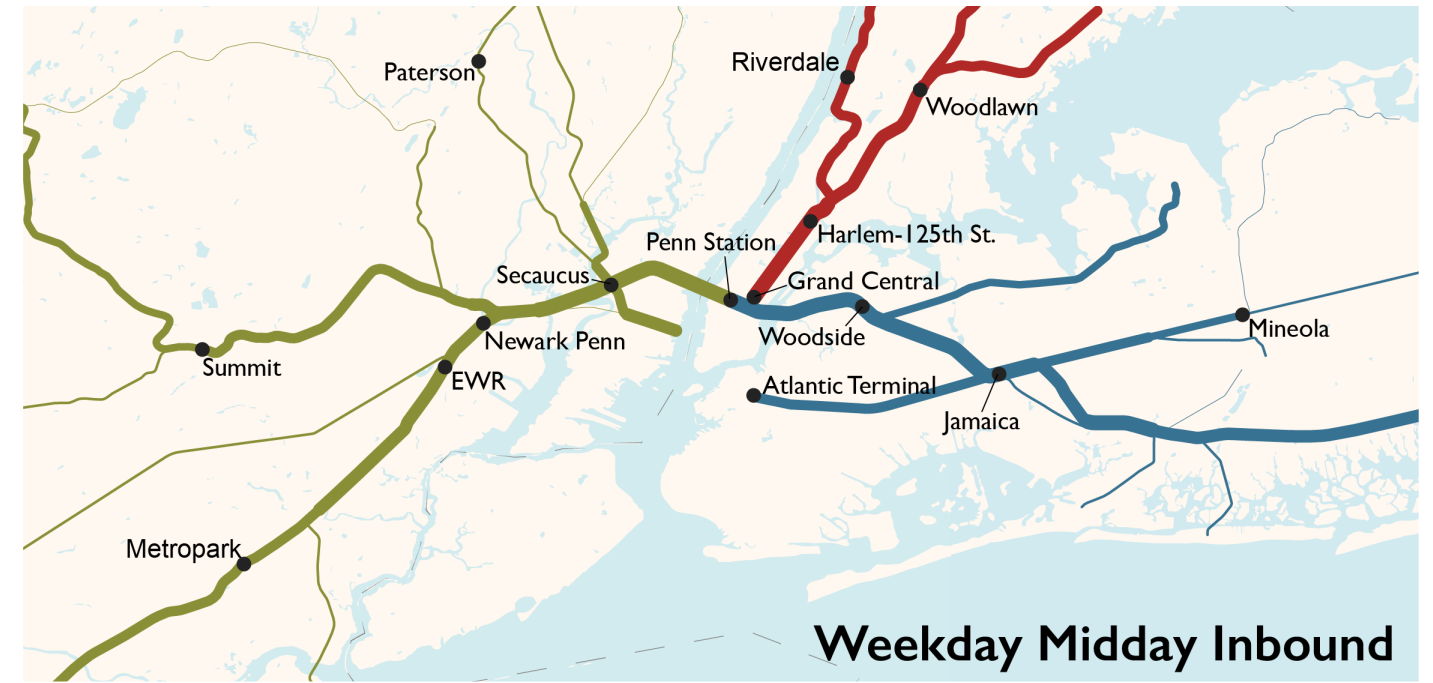
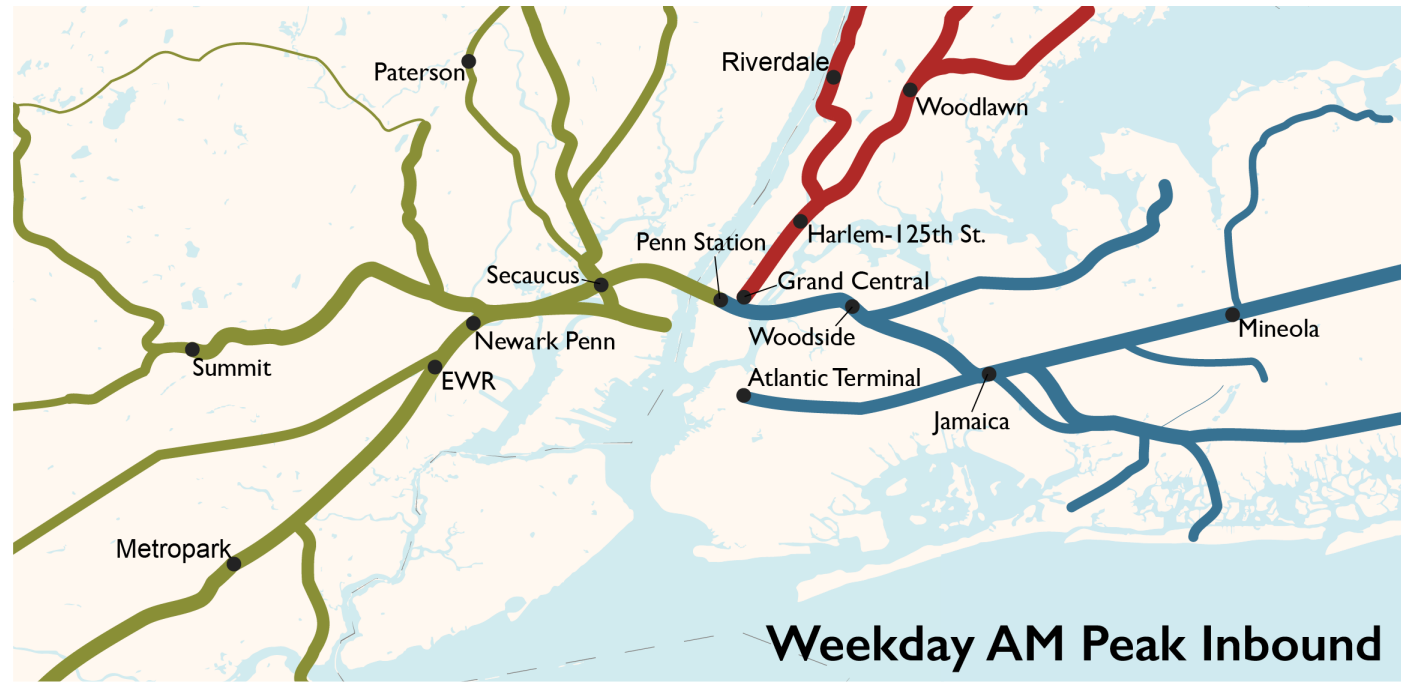
Figure 6: Unlike Midtown Manhattan, the area around Newark Penn Station (green) has ample space for new development (orange). A unified regional rail network with metro-style service will expand Newark’s accessibility to a greater share of the region, which will attract more visitors, jobs, and investment.

in the urban core, and while most of the region has some form of transit, suburban residents can reach far fewer jobs by transit than city residents.⁹ An analysis by the NYC Department of City Planning found that northern New Jersey was home to 22% of the region’s workforce in 2019, but only accounted for 5% of the region’s total employment growth since 2000. “As job growth fails to keep up with housing development, northern New Jersey residents are becoming more dependent on NYC for employment opportunities, which is reflected by growth in the trans-Hudson commuter population.”¹⁰ In the last twenty years, the outer boroughs and Long Island gained more jobs than housing, while northern New Jersey and the Lower Hudson Valley

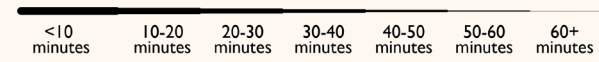
gained more housing than jobs, an imbalance that impacts commuting patterns and the demands placed on the region’s transportation infrastructure.¹¹

This disparity is made worse by commuter rail systems that over-stimulate job growth in the urban core and housing production outside the core. It’s for this reason that entire Midtown neighborhoods are being torn down and replaced with Class A office space (prestigious buildings competing for premier office users, with rents above average for the area), while large swaths of land around Newark Penn Station—only 9 miles from Midtown—remain undeveloped.¹² This is reflective of a transportation system that is not

FREQUENCY OF RAIL SERVICE IN THE NYC METROPOLITAN AREA



Frequency of Train Service:



Operators:

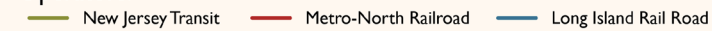


Figure 7: Commuter rail service frequency is not balanced throughout the day. The current operations model focuses primarily on connecting suburban commuters with Manhattan during the AM and PM peak periods, which makes the service less useful for people who don't work traditional 9-to-5 jobs in the region's core.

being utilized to its full potential. Making better use of existing rail infrastructure could result in a more equitable distribution of economic opportunity throughout the region by establishing stronger connections between Manhattan, secondary business districts, and inner-ring suburbs.

When the rail network caters to only one type of use (trips to and from Manhattan), a car is necessary to make most other trips, which incentivizes sprawl and unsustainable land use—more highways, single-family homes, and massive parking lots. Sprawl costs the U.S. economy \$1 trillion each year, including roughly \$600 billion in direct costs related to inefficient land usage and car dependency, and another \$400 billion in indirect costs from traffic congestion, pollution, and the like.¹³

Delivering quality transit service to low-density communities is both challenging and expensive, which means that states need to implement policies for guiding growth to areas where transit infrastructure is already in place. However, the COVID-19 pandemic is likely making the sprawl problem even worse, with demand increasing for housing in areas as far away as 25 miles from a commuter rail station. A work-from-home analysis, conducted by economists at Barclays,

found that people no longer want to come into the office five days a week, and are potentially eschewing a commute all together. The findings suggest that “even in the (relatively) transit-heavy New York metro area, we could see further car-dependent development and growth in outlying areas.”¹⁴ Aside from the negative environmental impacts, this trend toward decentralization will further erode transit agency revenues and the tax base of cities, which will degrade urban quality of life and increase poverty.

“THE SYSTEM OPERATES AS A PREMIUM SHUTTLE SERVICE FOR A NICHE MARKET: SUBURBAN COMMUTERS, TYPICALLY OF PRIVILEGED SOCIOECONOMIC STATUS, TRAVELING TO AND FROM MANHATTAN DURING THE TRADITIONAL PEAK PERIODS.”

perpetuate operational inefficiencies, sprawl, and socio-economic segregation for decades to come. Furthermore, continuing to ignore the obvious need for a shift in the transit planning and operations paradigm means producing more of the same half-measure, narrowly scoped, and over-priced infrastructure projects that fail to maximize benefits for the entire region.

Fifty years from now, residents of the tri-state area may look back on the next few years as a significant turning point for the metropolitan

NJT, MNR, and the LIRR each serve different parts of the region, with very little overlap, despite an economy and population that are deeply interconnected. Investments are being made to expand and modernize the rail network, but a lack of unity in vision and coordination for the region could

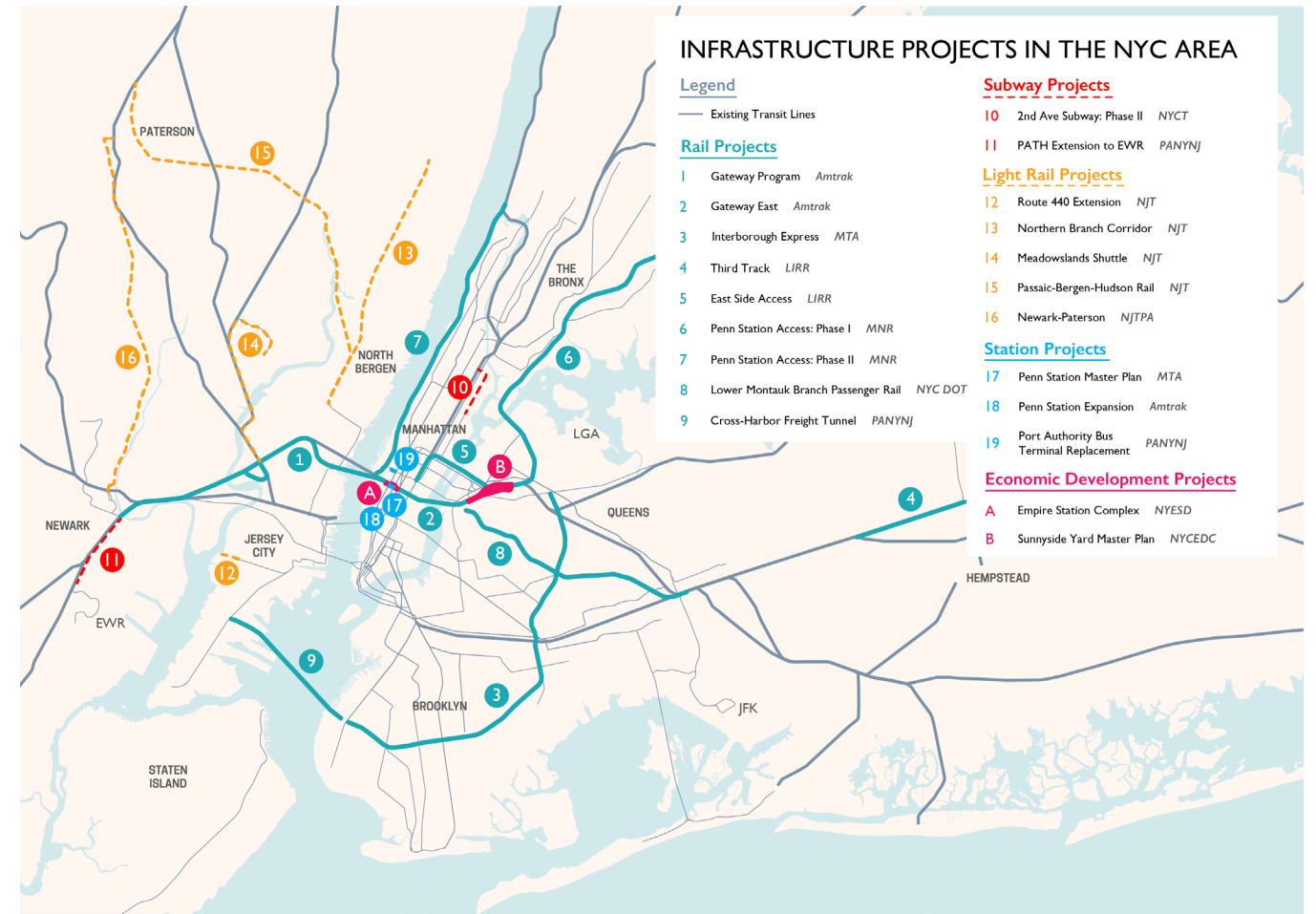


Figure 8: Throughout the region, transportation and economic development projects are planned in silos by various agencies. A lack of unity in vision and coordination for the region could perpetuate operational inefficiencies, sprawl, and socio-economic segregation for decades to come.

region. This could be the great turning point—an opportunity for New York, New Jersey, and Connecticut to take bold action to address socio-economic inequality, a lack of affordable housing, and connecting workforces to employment opportunities. This is also the moment to significantly reduce the region’s contribution to climate change, which is already set to raise sea levels along the U.S. coastline by 10 to 12 inches in the next 30 years.¹⁵ Through planning that reflects an understanding of the inextricable links between these issues, the region’s bifurcated commuter rail systems can be transformed into a unified regional rail network that optimizes and

shifts service to facilitate the more diverse travel needs of riders today and in the future. This is the first step towards establishing a more equitable and sustainable transportation network.

THE REGIONAL RAIL EXPERIENCE

“The new, post-pandemic equation is: ‘If you’re going to have expensive infrastructure, how do you get more utility out of that infrastructure?’”

– Randy Clarke, President & CEO of Capital Metropolitan Transportation Authority

In Germany and other European countries with more connective rail service, “organization before technology before concrete”¹⁶ is the planning and engineering doctrine that reigns supreme. The highest priority is to resolve issues of agency coordination; which includes streamlining fare policies and integrating services between agencies. The next priority is improvements to technology; such as a unified interagency mobile ticketing app, modern signaling systems, and

upgraded rolling stock (train sets). The last priority is building expensive new infrastructure like tunnels and terminals. This prioritization provides the most economically efficient means of improving service and network capacity.¹⁷ The United States does the opposite, and the result is a country where only 5% of its workforce uses public transportation—of which, 38% live in New York City.¹⁸ If you compare these numbers to Germany, use of public transit is three times



Figure 9: The MI-09 is a double-deck, dual-voltage electric multiple unit trainset that is operated on RER A, a hybrid suburban commuter and rapid transit system serving Paris and its Île-de-France suburbs.

greater in metro areas of all sizes.¹⁹ In the United States, transportation accounts for 29% of greenhouse gas emissions.²⁰ For there to be any hope in curbing the worst effects of climate change, use of public transit must increase significantly.²¹

“MAKING BETTER USE OF EXISTING RAIL INFRASTRUCTURE COULD RESULT IN A MORE EQUITABLE DISTRIBUTION OF ECONOMIC OPPORTUNITY BY ESTABLISHING STRONGER CONNECTIONS BETWEEN MANHATTAN, SECONDARY BUSINESS DISTRICTS, AND INNER-RING SUBURBS.”

A new business and operations model is needed to meet the needs of the post-COVID-19 workforce. The pandemic caused commuter rail ridership to plummet, and there’s no guarantee that riders are coming back to pre-pandemic levels anytime soon. A greater share of the workforce is now working from home, which is an acceleration of a trend that was already underway before the pandemic. According to the freelancing platform Upwork, only 8% of workers worked from home prior to the pandemic, but estimates predict this number to increase to as much as 25% within the next five years.²² While this trend may seem insignificant, many workers who plan to return to the office are expecting more flexible daily work schedules and the ability

to work from home at least one or two days per week.²³ This prediction is supported by a Partnership for New York City survey of more than 160 major NYC employers, which found that 78% of employers expect a hybrid office model to be the predominant post-pandemic policy, up from just 6% pre-pandemic.²⁴ If the commuter rail systems fail to adjust their service to match emerging travel patterns, as well as to better serve “third-shift” workers, revenue from fares will continue to fall.

Regional rail is the next evolution of the legacy commuter rail network. It will transform the region by expanding the “car-optional” zone beyond New York City, Newark, and a handful of other dense, mixed-use clusters. This vision of the future is possible with better utilization and optimization of the region’s existing rail assets, without first requiring decades of building expensive—often redundant—new infrastructure. The region’s commuter rail systems can be transformed into a unified regional rail network by introducing metro-style service and through-running at New York Penn Station.

Metro-style service can be achieved by running trains frequently, all day, in both directions, with a train coming at least every half hour in the suburbs and at least every 15 minutes²⁵ in New York City and other core hubs like Newark and Jamaica. Riders should be able to arrive at a station and be confident that the next train is coming soon, without consulting a schedule, just as millions of commuters do each day on the NYC Subway. Providing this level of service to riders is a critical component of



Figure 10: La Défense is Europe's largest purpose-built business district, created in the mid-twentieth century in response to demand for more housing and office space. It is connected to Paris by RER A.

multimodal integration because it allows for efficient and coordinated transfers with local and intercity transit systems, maximizing the ability to replace car trips with mass transit trips.²⁶ Aside from integrating operations, fares need to be coordinated and restructured to attract new riders, particularly those who could use the system to travel shorter distances, from Woodside, Queens to Elizabeth, New Jersey, for example.

Under a regional rail model, a third-shift worker will have access to robust, reliable, and efficient public transit. They will spend less time commuting and more time with their family. The cost of commuting would be lower and more

predictable, reducing economic strain for families struggling to meet basic needs, like purchasing affordable, healthy food for their loved ones and themselves. With access to a greater share of the region's employment centers, job opportunities that were previously inaccessible would now be within a reasonable commuting distance. Efficient and reliable transit must be available to everyone, and our region should strive to provide mobility options that not only meet the needs of transit-dependent riders, but also compete with private vehicles to attract new riders.

Philadelphia, Boston, and Toronto each have a plan to transition their legacy commuter rail systems to metro-style regional rail service.^{27, 28, 29} With

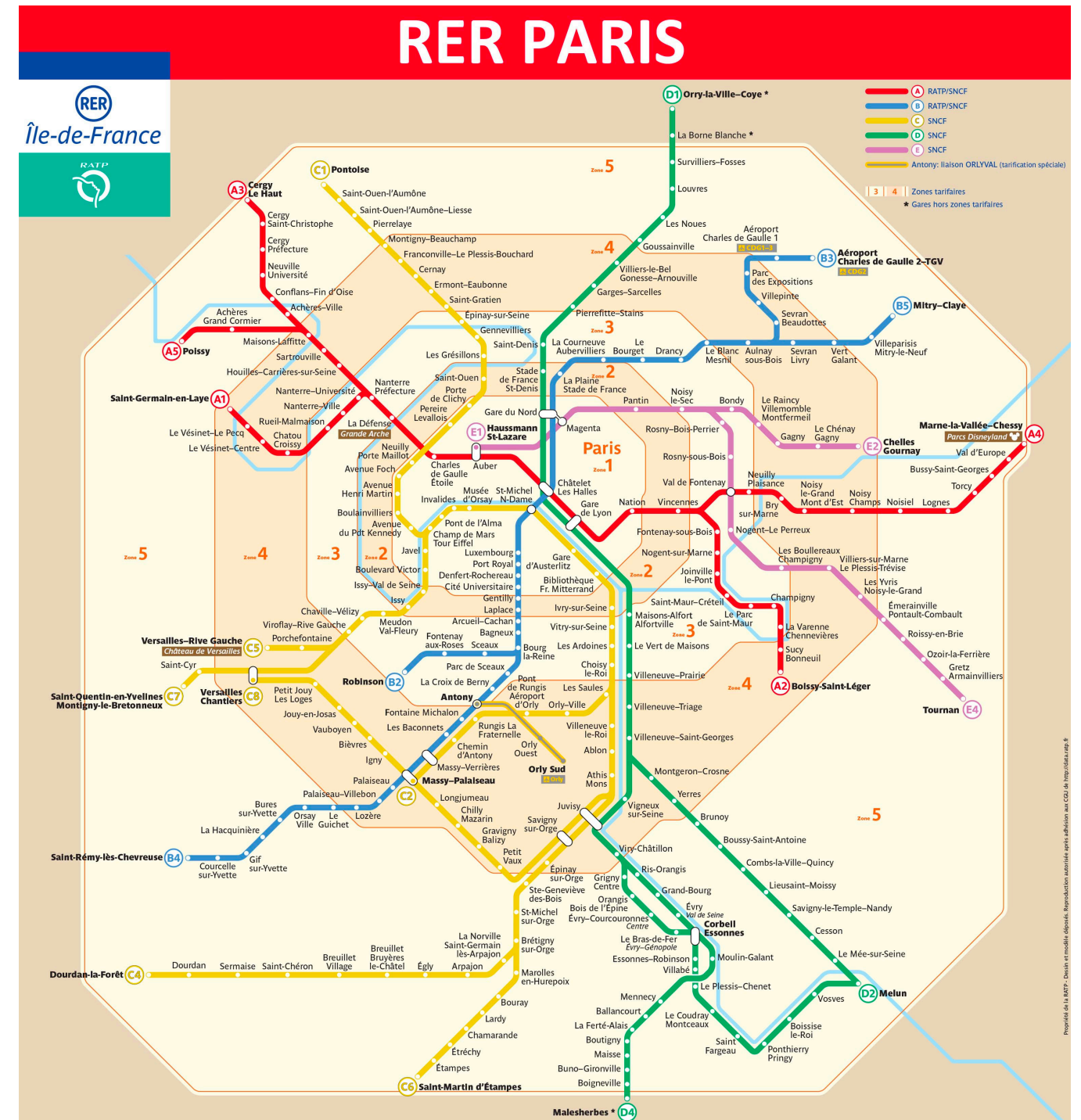


Figure 11: The Réseau Express Régional (RER) is a hybrid commuter rail and rapid transit system serving Paris and its suburbs. In the urban core, it operates more like the Paris Métro, though faster, having fewer stops. This makes the RER a model transit system for cities around the world, including New York.

an abundance of underutilized rail infrastructure throughout the NYC metropolitan area, and with through-running at Penn Station as a key component, the region has an opportunity to

create a balanced and equitable transportation network, setting an example for other cities and regions.

THE TRANSFORMATIONAL BENEFITS OF REGIONAL RAIL

“The days of the Long Island Rail Road rider being just five days a week—get on the train in the morning to go to Manhattan and at the end of day go home—it has shifted.”

– Phil Eng, Former President & CEO of the Long Island Rail Road

20 The goal of moving toward a unified regional rail network is to bring high-quality transit service, on par with the NYC Subway, to a greater share of the metropolitan area. Most people living and working in New York City have access to a subway system that operates 24 hours a day, providing more freedom and flexibility, which is largely why demand for housing and jobs is highest in this part of the region, and individual car ownership rates are the lowest in the nation. Over a century ago, when most of the city’s population lived south of 59th Street, subway lines were built far out into the countryside to what is today Upper Manhattan, the Bronx, Queens, and outer Brooklyn. Along with establishing the street grid and water system, building subway lines to undeveloped parts of the city was the largest bet ever taken on its future.³⁰

That bet paid off. One result is that the city now has a scarcity of available land.³¹ The growth of the transit network has not kept pace with total growth and demand because building new subway lines today is much more expensive and challenging than it was a century ago.³² A unified regional rail network would make better

use of the legacy commuter rail systems, create stronger connections between new, emerging, and existing business districts, and achieve more equitably distributed growth throughout the region by guiding development to places that have capacity for it. This will increase the supply of affordable, transit-accessible housing, improve the region’s jobs-housing balance, and enable better coordinated economic development.

Regional rail will restore balance to the region’s transportation network because trains, not cars, are the most efficient means of moving large volumes of people.³³ The region’s overreliance on cars has resulted in crippling traffic congestion on the region’s highways and roads, unsustainable sprawl, highways that destroy communities, climate change, and tailpipe emissions that contribute to poor air quality, particularly in BIPOC communities.³⁴ To become a more equitable and sustainable region, we must roll back the car’s dominance by establishing a unified regional rail network as the backbone of the transportation system. From the user’s perspective, taking transit must be a seamless experience, which means frequent, all-day service,



Figure 12: Sunnyside, Queens: 33rd St-Rawson St Station on the IRT Flushing Line shortly after construction was completed in 1917. At the time, Queens was mostly rural, but the expansion of the subway network stimulated new development.

efficient and coordinated transfers between rail, subway, and bus systems, and a unified fare structure and wayfinding system.

Achieving this standard of service requires coordinating capital investments and operations between transit agencies, and across the region. It requires unifying rolling stock so that the network is efficient, flexible, and resilient. Other investments, such as high-level platforms at more stations to simplify and speed up the boarding process, and electrifying more rail lines to allow for electric trains to replace existing push/pull diesel fleets, will also be necessary.³⁵ Aside from speeding up travel times, these improvements to the transportation network will advance our region’s equity goals and be a major step toward racial and environmental justice.

There are advocacy efforts already underway that

will move us closer to a regional rail network. Most notably, the proposed Freedom Ticket would establish discounted LIRR and MNR fares for travel within New York City, with free subway and bus transfers.³⁶ The MTA agreed to test this fare restructuring strategy on the LIRR Atlantic Branch, between stops in Southeast Queens and Atlantic Terminal, providing a faster and more affordable commute for riders in Queens and Brooklyn, many of whom lack subway access. The MTA also recently began piloting a fare-capping policy, which allows subway and bus riders using the tap-and-go OMNY payment system to have free unlimited rides during a seven-day period, after paying for 12 rides.³⁷ With a unified regional rail network, these policies could be expanded to include, not only LIRR and MNR service within New York City, but also NJT and PATH service between Newark and Manhattan, for example.

THE NEED FOR THROUGH-RUNNING

“Cities with through-running regional rail services have moved away from the terminus-as-destination model of providing suburban and intercity rail service. That’s a transition that benefits riders and the cities they live in.”

– Yonah Freemark, Senior Research Associate at the Urban Institute

22 Today, NJT and LIRR terminate passenger service at Penn Station, with LIRR using the northern half of the station and NJT using the station’s southern half.³⁸ Most of the trains from New Jersey continue east—without passengers—to Sunnyside Yard in Queens, where they are serviced and stored until they are needed for the evening rush hour. Similarly, most trains from Long Island continue to the West Side Yard, on the far west side of Manhattan, for the same purpose. Amtrak operates intercity through-running service on the station’s central tracks, however, the required crew change results in lengthy dwell times for Amtrak service.³⁹ Additionally, some NJT, LIRR, and Amtrak trains turn around at Penn Station, switching directions by reversing out of the station, which creates crossing conflicts with trains entering the station.⁴⁰ MNR currently terminates all service at Grand Central Terminal, although the completion of Penn Station Access will allow some MNR New Haven Line trains to serve Penn Station,⁴¹ and the completion of East Side Access will allow some LIRR trains to serve Grand Central.⁴²

For decades, transportation planners and advocates have proposed and debated methods of improving Penn Station and the commuter rail systems it serves. The most common critiques are that the station and rail network are operationally antiquated, inefficient, over-capacity, and not in line with best practices adopted by modern transit agencies around the world.⁴³ New York’s global peers, including London, Berlin, and Paris, run trains from the suburbs, through one or more central business districts, and on to suburbs on the other side of the metro area.⁴⁴ This practice, known as “through-running,” simplifies train operations, increases capacity, and strengthens connections between housing and job centers throughout the region. Implementing this practice in New York is far from a new idea, but it is one that has yet to receive due attention, evaluation, and investment.

Instead of limiting all of the region’s rail commuters to a single destination in Manhattan, through-running would overlap each railroad’s service area, which greatly increases the number of places that can be accessed by a single-seat

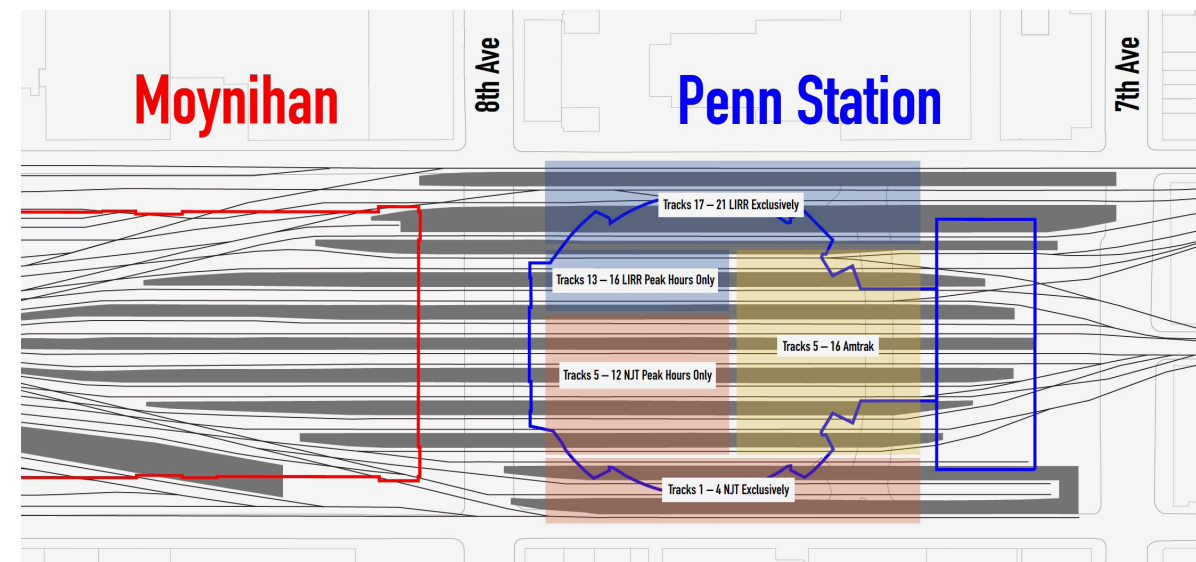


Figure 13: Penn Station is shared by three operators, with LIRR using the northern half of the station, NJT using the southern half of the station, and Amtrak utilizing the station’s central zone.

or single-transfer ride. This will improve travel options and opportunities for residents, expand the pool of potential employees for employers outside Manhattan, and produce a more equitable balance of jobs and housing throughout the region.⁴⁵

In this report, through-running refers to a scenario whereby, primarily using existing rail infrastructure, NJT and LIRR provide passenger service beyond their current terminus of Penn Station, and into Long Island or New Jersey, respectively. NJT trains could continue east past Penn Station into Long Island to serve stations currently served only by LIRR. Similarly, LIRR trains could continue west into New Jersey to serve stations currently served only by NJT and Amtrak. Completion of the Penn Station Access project in 2027 could allow MNR to provide service to New Jersey, and NJT to provide service to the Bronx, Westchester County, and Connecticut.

Through-running can be an effective way of reducing traffic congestion in the CBD and on

the region’s highways. A survey by Bruce Schaller found that each of the crossings into Manhattan (below 60th Street) had a significant percentage of drivers traveling through the CBD without stopping or parking, with the Holland Tunnel (59%) and Queensboro Bridge (44%) handling the majority of through-traffic.⁴⁶ These findings are supported by a NYC Department of City Planning analysis, which determined that only 22% of the region’s workers who commute to jobs in the outer boroughs are using transit.⁴⁷ Through-running would create a one-seat train ride across the region, allowing some of these car trips to be replaced with transit trips.

In 2014, the MTA’s Transportation Reinvention Commission released its final report, highlighting seven key strategies to help the agency plan, prepare for, and fund the next 100 years of transit investments. Relating to Penn Station, the Commission’s recommendations called for increasing connectivity between the MTA and other regional transportation providers, implementing through-running service between LIRR, MNR, and NJT, and strengthening regional cooperation and integration.⁴⁸

“INSTEAD OF LIMITING ALL OF THE REGION’S RAIL COMMUTERS TO A SINGLE DESTINATION IN MANHATTAN, THROUGH-RUNNING WILL GREATLY INCREASE THE NUMBER OF PLACES THAT CAN BE ACCESSED BY A SINGLE-SEAT OR SINGLE-TRANSFER RIDE.”

An annual performance metrics report, released by the MTA in 2021, determined that LIRR and MNR have significantly higher operating costs per vehicle mile than 38 of its international peer agencies. As cited in the report, one primary cause of high operating costs is the lack of through-running service in Manhattan, which would produce significant cost savings. The report states, “many international commuter rail systems feature through-running from one branch to another through their Central Business District (CBD), offering an efficient operating environment. In contrast, MNR and LIRR run terminal service operations into New York’s CBD, which requires making additional non-revenue train moves and drives up costs.”⁴⁹

The complex movement of trains at Penn Station, due to its terminal functions, are a primary contributor to train delays. For example, trains arriving at the station often have to wait several minutes for departing trains to cross in front of them, which also significantly limits the station’s train capacity.⁵⁰ Delays are hard on riders, and may be a contributing factor to the reluctance of many commuters to return to in-person work. Furthermore, delays are bad for business. A pre-pandemic study by The Partnership for New York City found that it costs Manhattan employers \$14.5 million for

every hour train commuters from New Jersey and Long Island are delayed.⁵¹

Prior to 1987, Penn Station had no track connection with the West Side Yard. LIRR trains had to return to Long Island—without passengers—for midday storage, which limited capacity on lines heading toward Penn Station.⁵² The MTA acquired the disused rail yard, built the track connection to Penn, and reconfigured the yard with provisions to allow for future commercial development above it. The new yard immediately increased capacity at Penn by allowing trains from Long Island to unload passengers and continue west for storage between rush hours.⁵³ NJT uses a similar process for midday train storage, except these trains have to travel east for 4.5 miles—without passengers—to reach Sunnyside Yard in Queens. This limits East River tunnel capacity, and is an expensive and unproductive use of labor.

The Gateway Program is a critically important project that will expand and modernize the Northeast Corridor between Newark, NJ and New York Penn Station. The project includes replacing rail bridges over the Meadowlands, adding new tunnels under the Hudson River, increasing NJT cross-Hudson capacity, and building a new \$12 billion Midtown terminal with at least nine stub-end tracks and five platforms

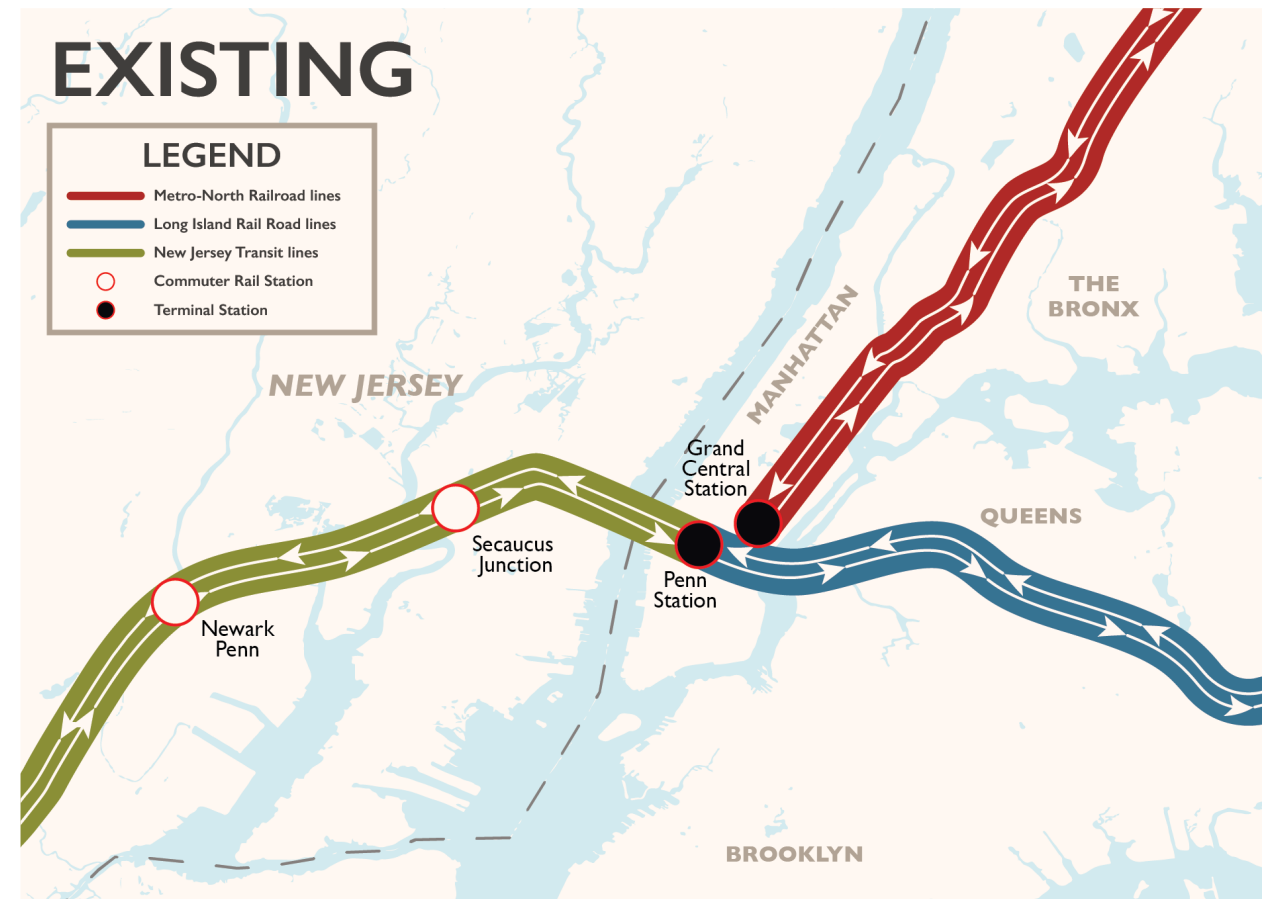


Figure 14: (above) The three commuter rail systems terminate service in Manhattan at Penn Station and Grand Central Terminal, creating an inefficient operating environment and limiting regional accessibility.

Figure 15: (below) Through-running provides a more ideal operating environment, increases core station capacity, and expands regional accessibility to places outside Manhattan.



to the south of Penn Station.⁵⁴ These tracks will not be connected to the East River tunnels and Sunnyside Yard, so most of the NJT trains using this terminal will have to go back to New Jersey—without passengers—for midday storage at a new rail yard in the Meadowlands.

The proposed terminal, officially called “Penn Expansion,” and previously known as “Penn South,” contravenes international best practices, and will essentially recreate the same operational problems that LIRR solved in 1987 with the connection to West Side Yard. The current plan would spend billions of dollars to double-down on an antiquated rail service model that most other cities, including London, Paris, and Berlin, are moving away from: building a stub-end terminal in the CBD.⁵⁵ Although it will

be built with provisions that allow for future through-running, converting the new terminal to a through-running station will require building “Gateway East,” two new tunnels under Midtown Manhattan and the East River⁵⁶—a massive undertaking that might not be completed until 2080, if ever.⁵⁷ A thorough cost-benefit evaluation of Penn Expansion must factor in Gateway East, which is projected to cost at least an additional \$8 billion,⁵⁸ when comparing the proposal with other through-running alternatives. Implementing a version of through-running in the short-term would solve the need for increases in capacity while requiring fewer tracks than a terminal. This is because crossing conflicts are eliminated and end-of-line functions are moved to less-congested stations outside the CBD. Some analysts have proposed modifying

“THE GATEWAY PROGRAM IS A CRITICALLY IMPORTANT PROJECT THAT WILL EXPAND AND MODERNIZE THE NORTHEAST CORRIDOR BETWEEN NEWARK, NJ AND NEW YORK PENN STATION.”

Penn Station’s existing tracks and platforms to accommodate through-running without Penn Expansion.⁵⁹ However, a thorough study by an independent third party is needed to determine if construction will negatively impact the station’s daily operations—a red line for the railroads. This full-conversion alternative may have been less of a possibility in pre-pandemic times, but daily projected ridership continues to be well below previous numbers, and commuting patterns have permanently shifted as a result of remote work.

If it’s proven that through-running can’t be done without first expanding Penn Station, TSTC proposes the Tri-State Solution, an alternative scheme that will achieve through-running on a shorter timeline without disrupting Penn’s daily operations.

In the first phase of the Tri-State Solution, Platform 1 and Platform 2 will be extended to the east and west to accommodate longer trains and increase seat capacity. Two new stub-end tracks and one new platform will be built to the south of the station, which will increase station train capacity and create room for continued service while the existing station is reconfigured to accommodate through-running. Additionally, the expansion will allow for all platforms to be accessed from the West End Concourse.

Once the expansion is complete, two tracks and one platform can be removed in the central zone of the station, making room for 5 wide platforms and 10 through-tracks. The new wide platforms will accommodate more stairs, escalators, and elevators, and allow for simultaneous boarding and detraining.⁶⁰ Together, these improvements will provide a 65% capacity increase (in addition to the capacity gained from the two-track expansion to the south) by significantly reducing the amount of time that through-running trains must dwell in the station to an average of 6 minutes.⁶¹

There are numerous ways that through-running can be achieved, but the Tri-State Solution is an alternative that will reduce the scale of the south expansion, create at least 15% more capacity than the official proposal, and simultaneously increase regional connectivity. This new approach will minimize neighborhood disruption, modernize the station’s tracks and platforms, reduce train delays, improve rider safety, and address the primary concerns of riders, advocates, and the railroads. Regardless of which alternative is ultimately chosen, there can be no true unified regional rail network until there is through-running revenue service at Penn Station.⁶²

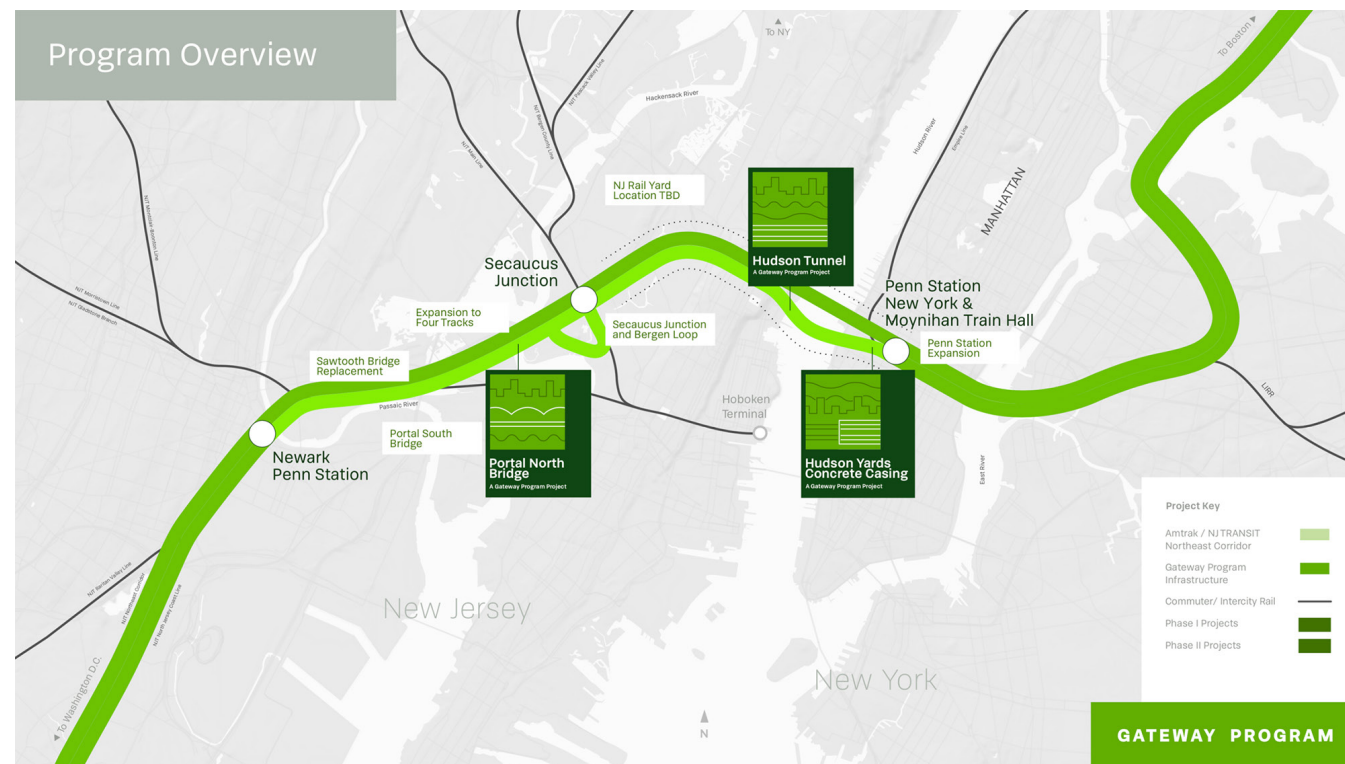


Figure 16: The Gateway Program is the planned phased expansion and renovation of the Northeast Corridor rail line between Newark, New Jersey and Manhattan. The program includes a new Hudson River rail tunnel and a new terminal station one block south of the existing Penn Station.

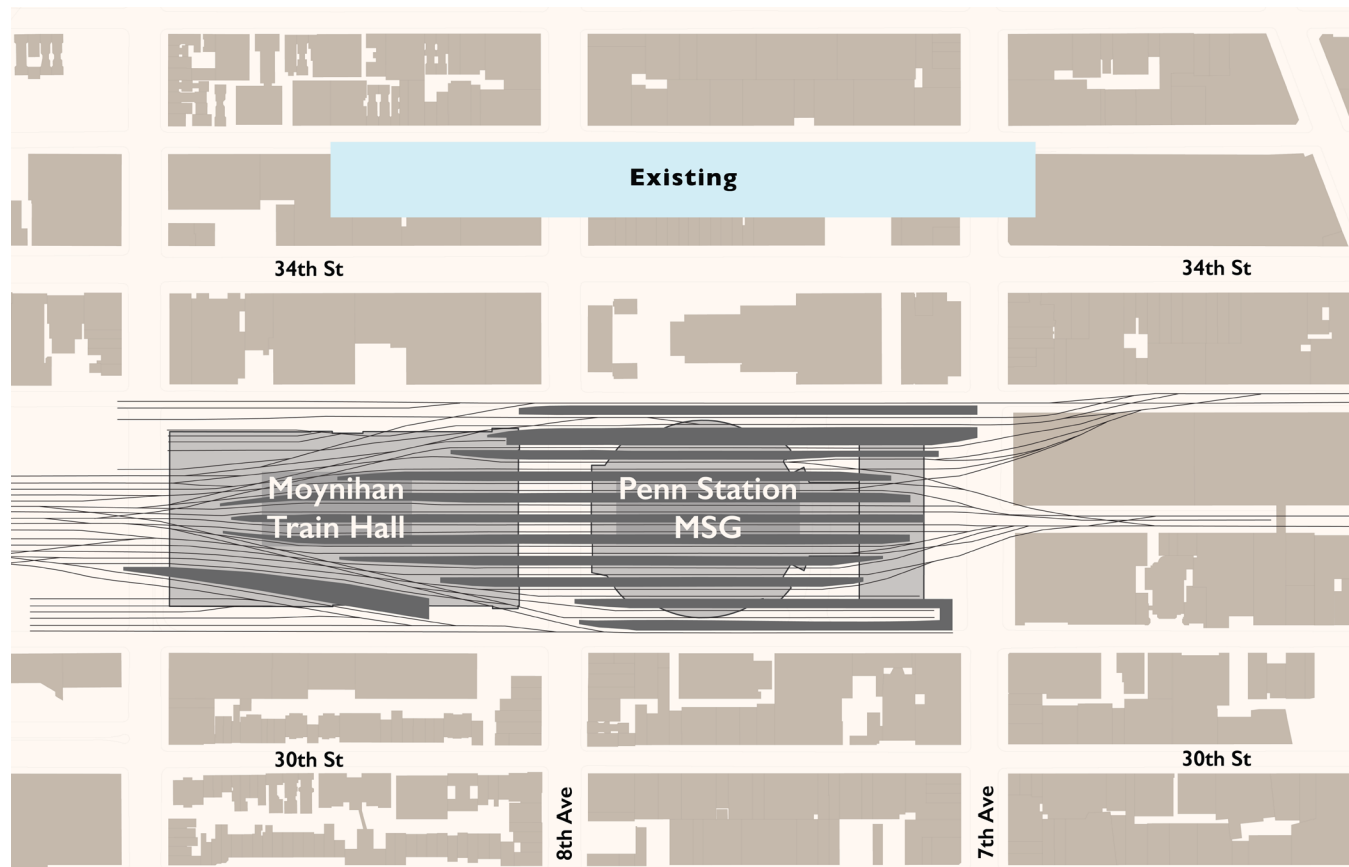


Figure 17: The existing station is plagued with narrow platforms and inefficient train operations, which increases dwell times and delays, and reduces the station's capacity.

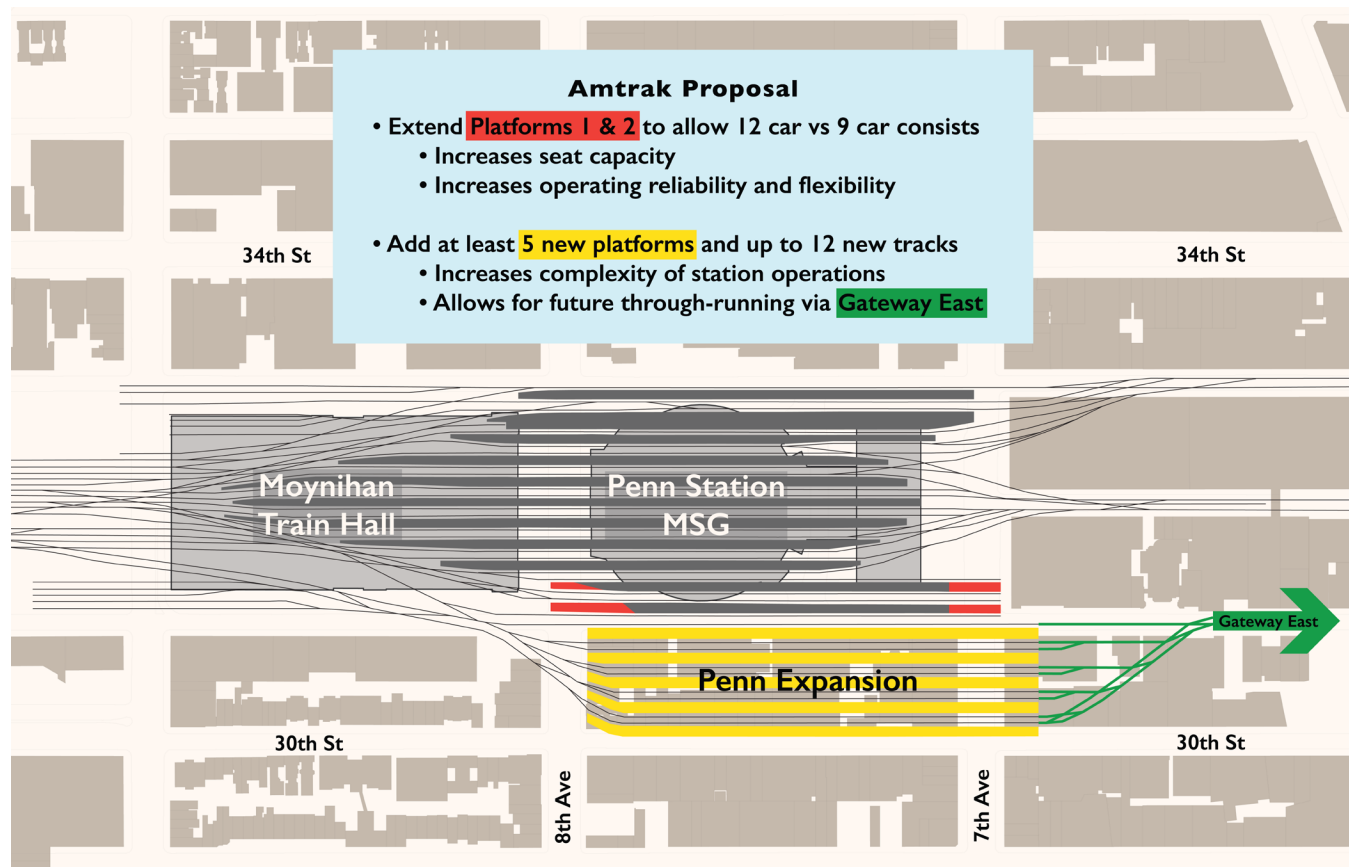


Figure 18: Amtrak's proposal solidifies Penn Station as a terminal for LIRR and NJT service for at least the next few decades, adding further complexity to the station's operations by creating more train crossing conflicts.

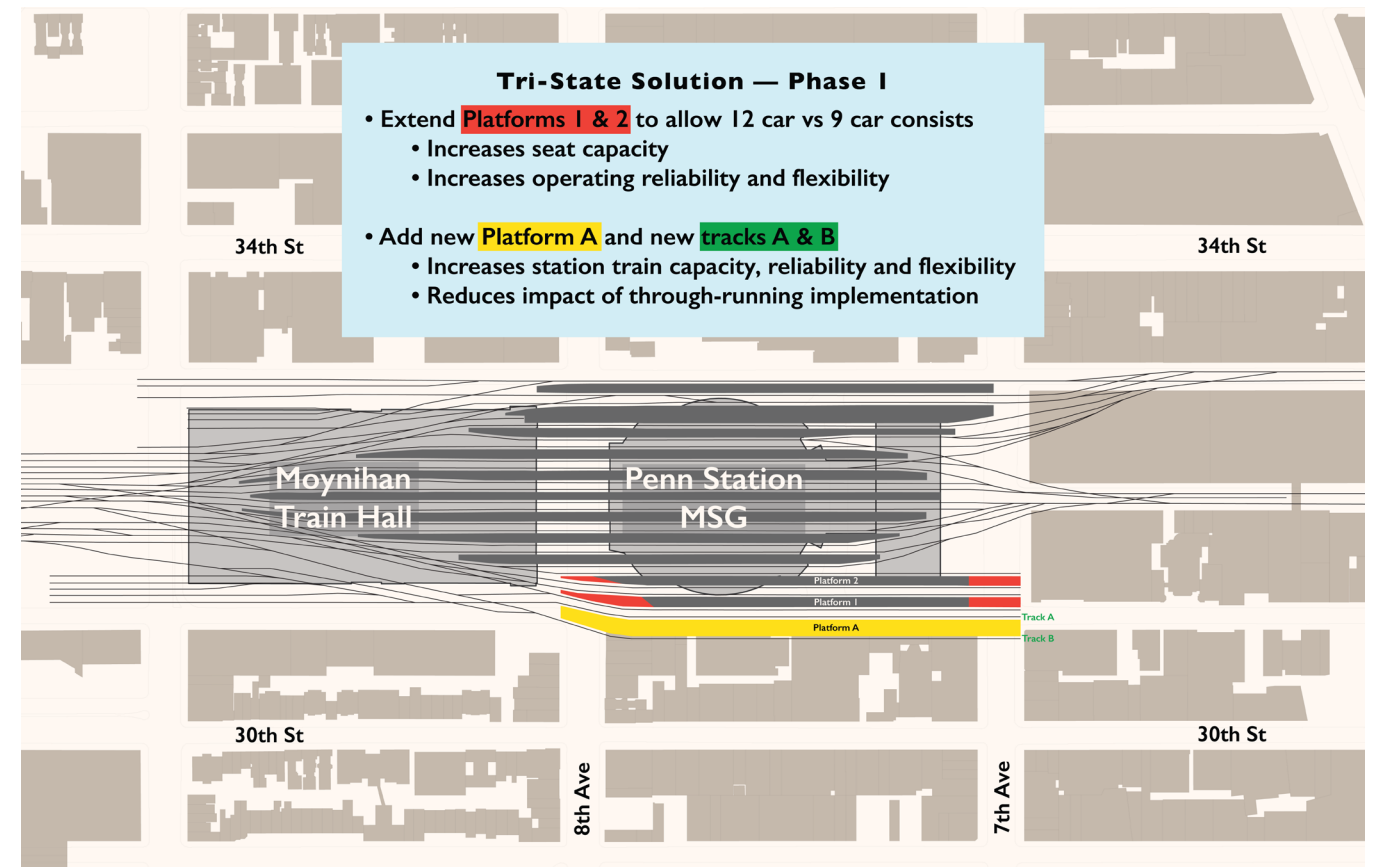


Figure 19: The Tri-State Solution includes a small-scale expansion of the station to allow for continued service while the station's central zone is reconstructed to accommodate efficient through-running service.

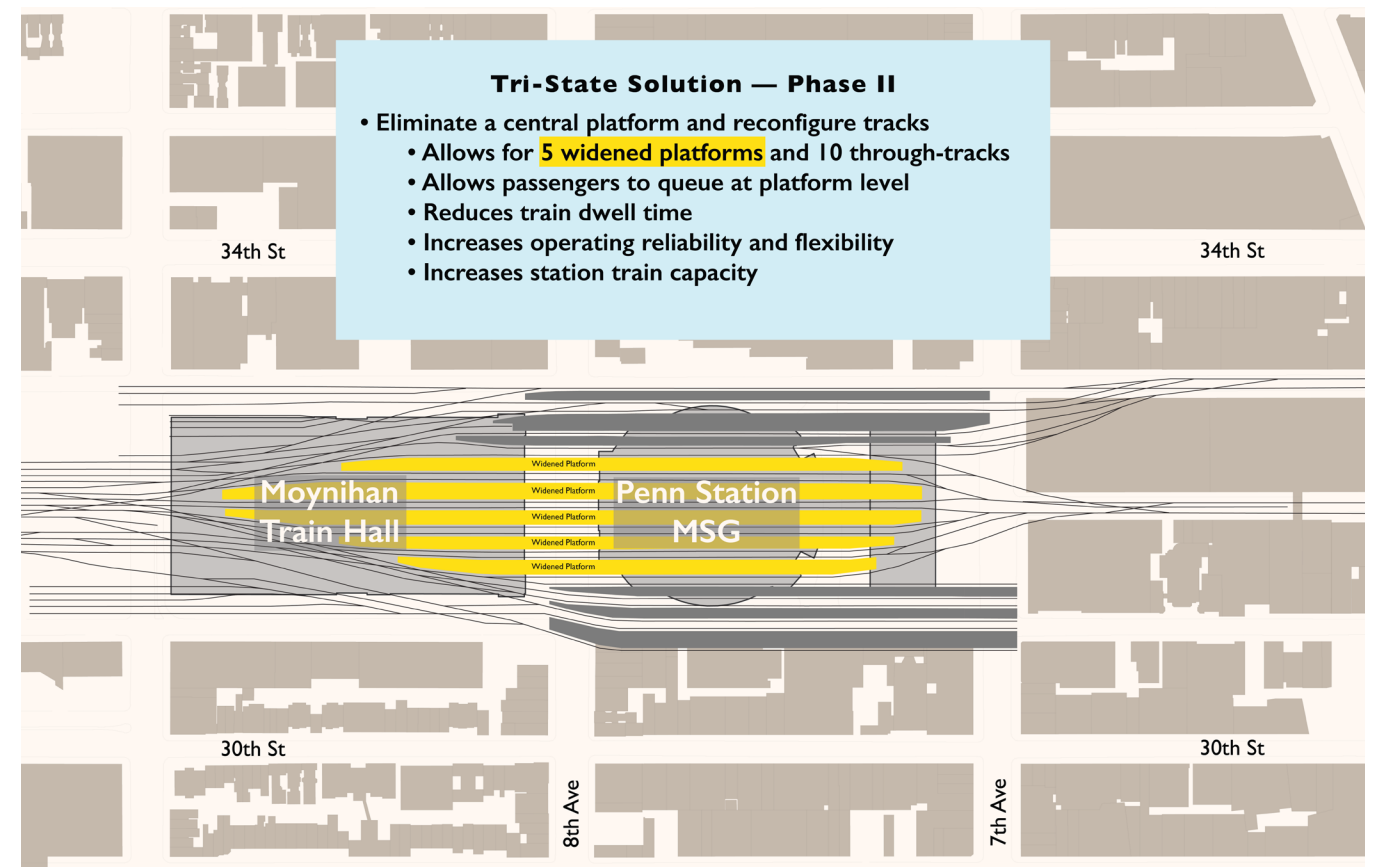


Figure 20: Once the expansion is completed, the station's central zone will be reconstructed to allow for 5 widened platforms and 10 through-tracks for Amtrak, LIRR, NJT, and future MNR service.

SURMOUNTABLE CHALLENGES

“Yes, our local railroads can stay relevant within their regions. They can become valuable providers of useful transportation at all times and for all potential riders. They must change some attitudes and innovate. Throughout history, that has always been the key to success, especially during hard times.”

– David Peter Alan, Former Chair of the Lackawanna Coalition

There are a number of obstacles that must be overcome in order to transition to a unified regional rail network. Fortunately, none are unique to New York, and all have been solved many times over by peer cities around the world. Unifying the network is contingent upon a through-running operation at New York Penn Station. Amtrak, who owns the station and already through-runs its own trains, plans to implement through-running for LIRR, NJT, and MNR trains in a “next generation” investment, likely by 2080.⁶³ This timeline, however, does not reflect the urgency of the ongoing climate emergency, affordable housing crisis, and growing mismatch between workforces and employment centers. The railroads all agree that through-running is the ultimate goal, therefore, other implementation alternatives that achieve this goal on a faster timeline should be seriously evaluated.

There is a critical need to widen Penn Station’s platforms in order for a through-running operation to work well, so that passengers can safely wait for trains at the platform level, and the amount of time that trains need to dwell at the station is significantly reduced. The existing

platforms are dangerously narrow, which is why arriving trains must first unload riders before the train’s track assignment is announced to passengers waiting above at the concourse level.⁶⁴ Widening the platforms will allow for trains to simultaneously unload and load passengers, just as they do at every other rail station in the region, which will speed up service, provide more space for stairs and elevators, and allow for safer circulation of people throughout the station. Additionally, widening the platforms will greatly enhance accessibility and safety, reduce crowding, and minimize the risk of catastrophic loss of life in the case of an emergency or terrorist attack.

Given the amount of work this would entail, it is possible that a smaller-scale expansion of the station may be necessary to maintain capacity while existing tracks and platforms are retrofitted for through-running. This work, however, should be done simultaneously to minimize the footprint of any expansion, and so that through-running can be implemented expeditiously and in conjunction with a station redesign.

Beyond Penn Station, there is the issue of

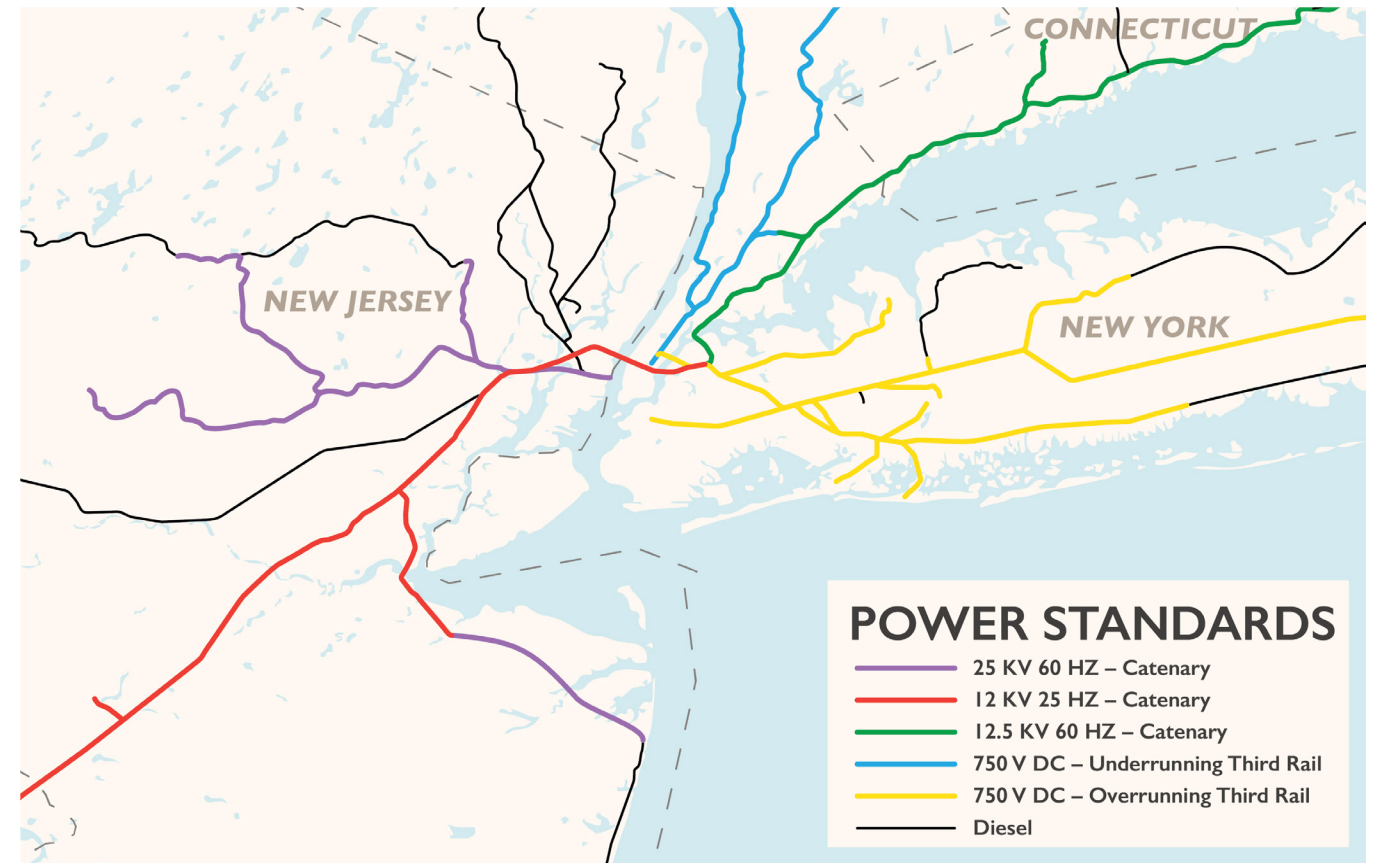
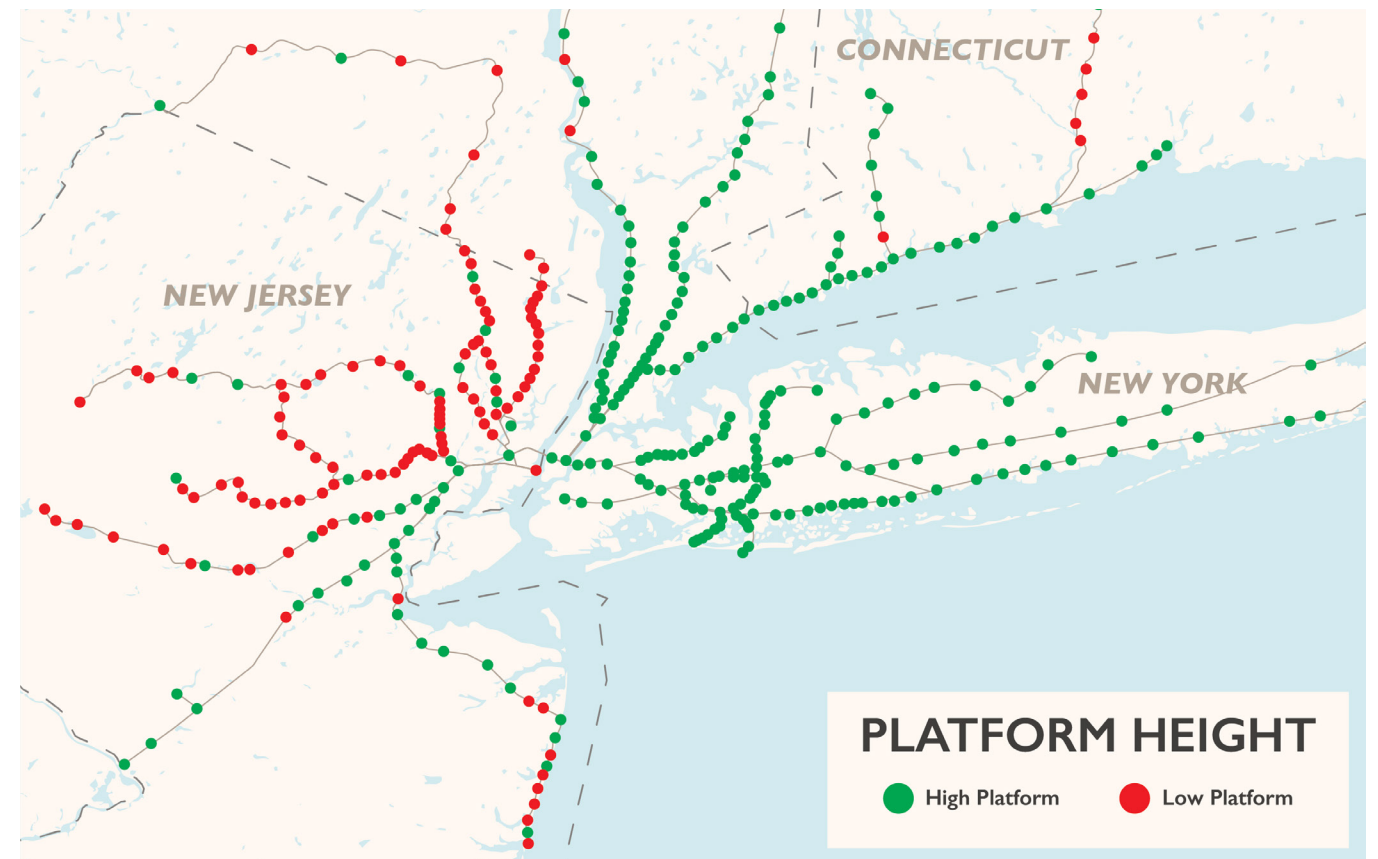


Figure 21: (above) Although power standards vary across the region’s rail lines, modern rolling stock can operate across different power standards, and electrification can be strategically expanded in phases.

Figure 22: Nearly all LIRR and MNR stations already feature high-level platforms, which allows for faster boarding and detraining. For through-running to work well, stations in New Jersey will have to be reconfigured to accommodate high-level platforms.



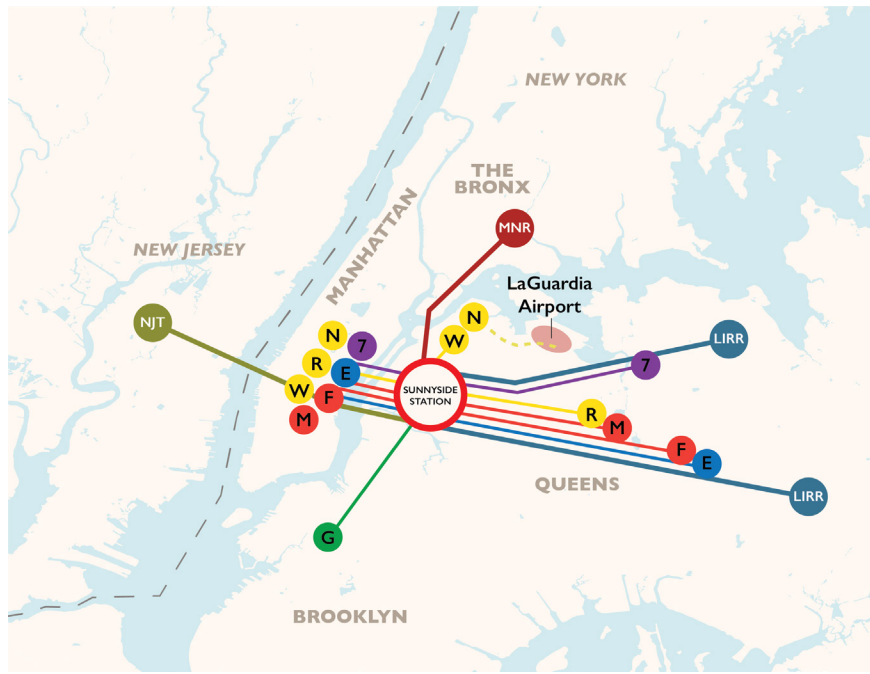


Figure 23: Sunnyside Yard is an ideal location for a regional rail station due to its proximity to Queens subway lines, LaGuardia Airport, and Long Island City.

Jersey, where currently only 35% of stations have high platforms.⁶⁶ There is also the issue of where to locate rail yards, which will depend on which routes are paired by through-running, and where each paired route will start and terminate service.

The railroads will need to coordinate operations and capital projects for regional rail to become a reality. In the New York City metropolitan area, this is particularly challenging due to the number of stakeholders (the federal government,

three governors, four railroads, and numerous municipalities) involved across the three states that are served by the railroads. When transit agencies develop plans in silos, focused primarily on the immediate needs of one agency without sufficient coordination with other agencies, a lot of money can be wasted and many opportunities can be missed.⁶⁷

Coordination is needed between the railroads and the various economic development corporations throughout the region so that land use and transportation can be strategically planned together. The need for this is evident at Sunnyside Yard, where the NYC Economic Development Corporation's current plan calls for a two-platform LIRR station to be built adjacent to a future major development above the rail yard.⁶⁸ However, with through-running at Penn Station, this new Sunnyside Station would need

to be large enough to serve LIRR, NJT, MNR, and Amtrak trains. Building a small LIRR station, while better than nothing, misses an enormous opportunity to establish a new regional transit hub in a growing business district. The new hub would add significant transit capacity in western Queens, an area that suffers from overcrowded subways and traffic-congested streets.⁶⁹

Resolving labor issues will likely be the toughest part of the fight for through-running and regional rail. The commuter railroads largely operate under obsolete and labor-intensive practices,

including staffing trains with large numbers of crew members and insisting on collecting tickets manually.⁷⁰ Due to these inefficiencies that drive up operating costs, increasing frequency and introducing new service will continue to be incredibly expensive, even when the cost of building new infrastructure is relatively cheap. Crew reform, while maintaining good paying union jobs, is necessary for transitioning to regional rail, which means that labor unions will need to participate and play a vital role in this effort.

Given the degree of coordination and the scale of reforms necessary for a unified regional rail network to come to fruition, the transit agencies are not currently well positioned to enact these changes independently. Therefore, a task force should be created, enabled by state legislation, to identify and study alternatives for a "network manager," an entity that would oversee the coordination and unification of regional transit operations, capital investments, fare policies, and wayfinding.⁷¹

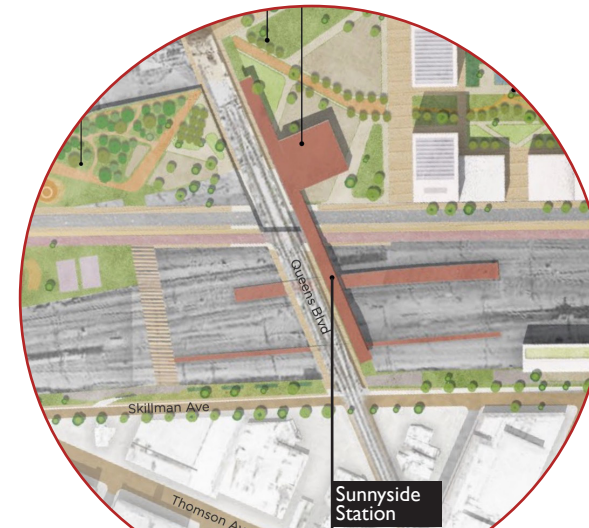


Figure 24: The NYCEDC Sunnyside Yard Master Plan includes a small two-platform station for LIRR service. Under a through-running scheme, the Sunnyside Station will require a larger footprint to handle NJT and MNR service.

THE PATH FORWARD

“Our transportation sector has reached a turning point. We can clean our air and protect the health of our children. We can connect all of our communities with affordable, accessible and reliable public transportation. We can address the climate crisis and grow our economy at the same time.” – Vice President Kamala Harris

The case for regional rail is clear. Our region depends on transit to connect people with jobs, moderate and affordable housing, school, healthcare, culture, leisure, and other amenities that improve quality of life. New York City benefits from an extensive network of subways and buses that moves millions of people throughout the city. Most of the region, however, has to rely on a car or subpar bus and commuter rail service. Better utilization of the existing infrastructure, by transitioning toward a unified regional rail network, will expand transit accessibility beyond New York

City, and make transit a stronger competitor with the car.

The Infrastructure Investment and Jobs Act (IIJA), signed into law by President Biden in November 2021, dedicates an unprecedented amount of funding for intercity rail systems. Some of this federal funding could go toward expanding rail electrification, retrofitting stations for high-level platforms, station accessibility projects, and modernizing signaling systems. This represents a far more equitable distribution of infrastructure funding

than spending billions on a new Midtown Manhattan terminal that will be operationally inefficient.

Achieving this vision of a unified regional rail network will require a number of coordinated

efforts and investments, and would be a significant paradigm shift for our region’s public transit agencies. The following are steps that can be taken in the short- and long-term that will move us closer to a unified regional rail network:

Short-term (0-5 years):

- Establish a network manager
- Restructure fare policies (Freedom Ticket expansion, fare capping, free transfers)
- Unify mobile ticketing apps and enable “through-ticketing” (the ability to buy fares across agency systems)
- Unify wayfinding (signage, maps) across transit agencies
- Share data between transit agencies and departments of transportation
- Coordinate schedules between modes for more efficient transfers
- Increase off-peak and bidirectional rail service
- Pilot through-running NJT, LIRR, and MNR service at NY Penn Station

Long-term (5-15 years):

- Permanently establish NJT, LIRR, and MNR revenue through-running service
- Coordinate rolling stock procurement between transit agencies
- Automate fare collection
- Expand rail electrification
- Retrofit stations for high-level boarding
- Build a regional transit hub at Sunnyside Yard
- Expand passenger rail service on freight corridors and abandoned rights of way



CONCLUSION

“A failure to do hard but necessary visionary projects will have you looking back at the missed opportunities. I just hope we’ve learned that lesson.”

– Jarred Johnson, COO of TransitMatters

36 The New York metropolitan area is well-positioned to move toward a unified regional rail network that rivals modern transit systems in global peer cities. Much of the infrastructure is already in place, which is a great advantage over other cities, like Boston, that presently lack a critical downtown rail connection to enable through-running service. However, transitioning the rail network to enable a more inclusive, affordable and connected region requires significant collaboration and raising expectations to a degree that hasn’t been accomplished in this region since the subways and railroads were built over a century ago. Fortunately, if we work together, our region has the talent and resources necessary to chart a new course and enact a bold vision for a 21st Century metro region.

Maintaining and doubling down on the antiquated commuter rail business model of the last century is a disservice to the region’s economy and residents. The commuter rail systems of yesterday must become a modern unified regional rail network that adapts to the realities of today’s world. Making better use of our assets will enable sustainable mobility options for a regional workforce that no longer

exclusively works “9-to-5” jobs, and connect existing and new job centers throughout the region. Given the climate crisis and the urgent need to cut greenhouse gas emissions in the transportation sector, we must encourage a modal shift on a regional scale, which can only be accomplished by providing more efficient and reliable rail service beyond the region’s core.

As the region recovers from the pandemic, and we work to address socio-economic inequities, this regional rail vision will reimagine some of our most untapped assets and build towards a more prosperous future. Regional rail will restore balance to the transportation network, increase ridership and economic opportunity, and reduce operating costs in the long-term. Riders will benefit from a more accessible transit system, reliable and efficient rail service, affordable mobility options, and greater access to schools, healthcare, healthy food, and other amenities that improve quality of life.

Now is the perfect time to start the process for planning and implementation of a unified vision. The confluence of declining transit ridership, the passage and implementation of the IJJA, a

transit-friendly administration in the White House, and ambitious, cooperative governors, means that we are unlikely to see a better time than now to act boldly. Our region’s recovery from COVID-19 and our ability to remain a global economic and cultural leader depend on no less than this. While this vision for regional rail will require substantial investments (completed in phases), it will increase

the supply of transit-accessible affordable housing, reduce greenhouse gas emissions, and connect workforces with employment centers to form a more globally competitive region.

“AS THE REGION RECOVERS FROM THE PANDEMIC, AND WE WORK TO ADDRESS SOCIO-ECONOMIC INEQUITIES, THIS REGIONAL RAIL VISION WILL REIMAGINE SOME OF OUR MOST UNTAPPED ASSETS AND BUILD TOWARDS A MORE PROSPEROUS FUTURE.”

Endnotes

- 1 American Public Transportation Association. 2021. "2021 Public Transportation Fact Book." American Public Transportation Association. <https://www.apta.com/wp-content/uploads/APTA-2021-Fact-Book.pdf>.
- 2 Calvert, Scott, and Jimmy Vielkind. 2022. "Commuter Railroads Face Murky Future After Pandemic." *The Wall Street Journal*. <https://www.wsj.com/articles/the-pricey-future-of-commuter-railroads-for-the-post-pandemic-era-11646575383>.
- 3 Shaver, Katherine. 2022. "Hybrid work schedules force commuter rail systems to think beyond office worker." *The Washington Post*. <https://www.washingtonpost.com/transportation/2022/03/04/pandemic-commuter-rail-ridership/>.
- 4 Johnston, Sandy. 2016. "Must (Only) the Rich Have Their Trains?" *Itinerant Urbanist*. <https://itineranturbanist.files.wordpress.com/2016/05/final-paper-5-1.pdf>.
- 5 Plautz, Jason. 2021. "The pandemic changed car ownership. How can cities adapt?" *Smart Cities Dive*. <https://www.smartcitiesdive.com/news/the-pandemic-changed-car-ownership-how-can-cities-adapt/604497/>.
- 6 Berube, Alan. 2015. "Confronting Suburban Poverty in the Greater New York Area." *Philanthropy New York*. https://philanthropynewyork.org/sites/default/files/resources/06.11.15%20Funding%20Where%20Poverty%20Lives_Berube.pdf.
- 7 Benzow, August, and Kenan Fikri. 2020. "The Persistence of Neighborhood Poverty." *Economic Innovation Group*. <https://eig.org/wp-content/uploads/2020/04/Persistence-of-Neighborhood-Poverty.pdf>.
- 8 *Ibid.*, 14
- 9 Berube, Alan. 2015. "Confronting Suburban Poverty in the Greater New York Area." *Philanthropy New York*. https://philanthropynewyork.org/sites/default/files/resources/06.11.15%20Funding%20Where%20Poverty%20Lives_Berube.pdf.
- 10 New York City Department of City Planning. 2021. "NYC Department of City Planning." *NYC Metro Region Explorer*. <https://metroexplorer.planning.nyc.gov/about#6.88/40.857/-73.528>.
- 11 *Ibid.*
- 12 Kaysen, Ronda. 2016. "In Newark, a New Chapter Unfolding." *The New York Times*. <https://www.nytimes.com/2016/08/21/realestate/in-newark-a-new-chapter-unfolding.html>.
- 13 London School of Economics. 2015. "Release: Urban sprawl costs US economy more than \$1 trillion per year." *The New Climate Economy*. <https://newclimateeconomy.net/content/release-urban-sprawl-costs-us-economy-more-1-trillion-year>.
- 14 Goldstein, Steve. 2022. "The shift to work-at-home is so pronounced that New York properties near rail stations now trade at a discount." *MarketWatch*. https://www.marketwatch.com/story/the-shift-to-work-at-home-is-so-pronounced-that-new-york-properties-near-rail-stations-now-trade-at-a-discount-11647353691?link=MW_latest_news.
- 15 National Oceanic and Atmospheric Administration. 2022. "2022 Sea Level Rise Technical Report." *NOAA's National Ocean Service*. <https://oceanservice.noaa.gov/hazards/sealevelrise/sealevelrise-tech-report.html>.
- 16 Smith, Stephen J. 2014. "Advanced Signaling Makes the Most Out of Old Subways, But Can New York Handle it?" *NextCity*. <https://nextcity.org/urbanist-news/new-york-advanced-signaling-subway>.
- 17 Levy, Alon. 2017. "Analysis: How SEPTA can turn Regional Rail in Philly into high-frequency rapid transit." *WHYY*. <https://why.org/articles/analysis-how-septa-can-turn-regional-rail-in-philly-into-high-frequency-rapid-transit/>.
- 18 United States Census Bureau. 2021. "New Census Report Shows Public Transportation Commuters Concentrated in Large Metro Areas of the United States." *U.S. Census Bureau*. <https://www.census.gov/newsroom/press-releases/2021/public-transportation-commuters.html>.
- 19 Ralph Buehler, "Promoting Public Transportation: Comparison of Passengers and Policies in Germany and the U.S.," *Transportation Research Record: Journal of the Transportation Research Board*, No. 2110, 2009, pp. 60-68.
- 20 U.S. Environmental Protection Agency. 2022. "Fast Facts on Transportation Greenhouse Gas Emissions | US EPA." *US Environmental Protection Agency*. <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions>.
- 21 Joshua, Josyana. 2021. "CityLab Daily: Transit Use Must Double to Meet 1.5°C Goal." *Bloomberg.com*. <https://www.bloomberg.com/news/newsletters/2021-11-10/citylab-daily-transit-use-must-double-to-meet-1-5-c-goal>.
- 22 Ozimek, Adam. 2021. "Economist Report: Future Workforce." *Upwork*. <https://www.upwork.com/press/releases/economist-report-future-workforce>.
- 23 Saad, Lydia, and Ben Wigert. 2021. "Remote Work Persisting and Trending Permanent." *Gallup News*. <https://news.gallup.com/poll/355907/remote-work-persisting-trending-permanent.aspx>.
- 24 Partnership for New York City. 2022. "Nearly 80% of New York City Employers Anticipate Hybrid Work Model Moving Forward, Partnership Survey Finds." *Partnership for New York City*. <https://pnfyc.org/news/nearly-80-of-new-york-city-employers-anticipate-hybrid-work-model-moving-forward-partnership-survey-finds/>.
- 25 TransitMatters. 2018. "Regional Rail for Metropolitan Boston." *TransitMatters*. <https://transitmatters.org/regional-rail-report>.
- 26 Viriyincy, Oran. 2019. "Key considerations for integrated multi-modal transport planning." *International Growth Centre*. <https://www.theigc.org/wp-content/uploads/2019/02/Integrated-multi-modal-transport-planning-FINAL-Jan2019.pdf>.
- 27 City of Philadelphia. 2021. "The Philadelphia Transit Plan." *City of Philadelphia*. <https://www.phila.gov/media/20210222110702/OTIS-Philadelphia-Transit-Plan.pdf>.
- 28 Luczak, Marybeth. 2021. "MBTA Looks To 'Regional Rail' Model; Massachusetts to Explore 'Future of Work and Life.'" *Railway Age*. <https://www.railwayage.com/passenger/commuterregional/mbta-looks-to-regional-rail-model-massachusetts-to-explore-future-of-work-and-life/>.
- 29 Mackenzie, Robert. 2021. "Toronto Region Board of Trade Proposes Regional Rail Network." *UrbanToronto*. <https://urbantoronto.ca/news/2021/03/toronto-region-board-trade-proposes-regional-rail-network>.
- 30 Mahler, Jonathan. 2018. "The Case for the Subway." *The New York Times*. <https://www.nytimes.com/2018/01/03/magazine/subway-new-york-city-public-transportation-wealth-inequality.html>.
- 31 Ionescu, Diana. 2022. "Opinion: One Solution to Manhattan's Land Shortage: Just Build It." *Planetizen*. <https://www.planetizen.com/news/2022/01/115935-opinion-one-solution-manhattans-land-shortage-just-build-it>.
- 32 Barro, Josh. 2019. "Why Is Infrastructure So Expensive to Build in New York?" *New York Magazine*. <https://nymag.com/intelligencer/2019/05/new-york-infrastructure-costs.html>.
- 33 Hoffrichter, Andreas. 2019. "Rail travel is cleaner than driving or flying, but will Americans buy in? | Greenbiz." *GreenBiz*. <https://www.greenbiz.com/article/rail-travel-cleaner-driving-or-flying-will-americans-buy>.
- 34 Schweber, Nate. 2021. "NYC Traffic: How Neighborhoods Outside of Manhattan Are Feeling the Pain." *The New York Times*. <https://www.nytimes.com/2021/12/28/nyregion/nyc-traffic-today.html>.
- 35 TransitMatters. 2018. "Regional Rail for Metropolitan Boston." *TransitMatters*. <https://transitmatters.org/regional-rail-report>.
- 36 Brashears, Bradley. 2021. "Freedom Ticket." *PCAC*. <https://pcac.org/app/uploads/2021/10/Freedom-Ticket-Phase-II-Final-Report-10.12.2021.pdf>.
- 37 Metropolitan Transportation Authority. 2022. "MTA Fare Change Pilot to Begin at End of Month." *MTA*. <https://new.mta.info/press-release/mta-fare-change-pilot-begin-end-of-month>.
- 38 Amtrak. 2018. "Infrastructure Renewal at New York Penn Station." <https://www.amtrak.com/content/dam/projects/dotcom/english/public/documents/corporate/NYPRenewal/Amtrak-NYP-Track-Map-Updated.pdf>
- 39 Amtrak. 2014. "Analyzing the Potential for Commuter Train Run-Through Service at New York Penn Station." *IRUM*. http://irum.org/20140807_Amtrak_NYP_Thru_Running_Assessment.pdf.
- 40 Amtrak. 2017. "Chapter 5B: Transportation Services." *Hudson Tunnel Project*. <http://www.hudsonunnelproject.com/documents/deis/05B%20Transportation%20Services.pdf#page=5>.
- 41 Metropolitan Transportation Authority. 2021. "ICYMI: Governor Hochul Announces MTA to Award Contract for the Metro-North Penn Station Access Project." *MTA*. <https://new.mta.info/press-release/icymi-governor-hochul-announces-mta-award-contract-metro-north-penn-station-access>.
- 42 State of New York. 2021. "Governor Hochul Marks East Side Access Milestone With LIRR Test Ride to Grand Central." *Governor Kathy Hochul*. <https://www.governor.ny.gov/news/governor-hochul-marks-east-side-access-milestone-lirr-test-ride-grand-central>.
- 43 Ullman, David G. 2017. "Through-Running and Regional Transit in New York: An Analysis of Legal Structures and Approaches." *American Bar Association*. https://www.americanbar.org/groups/state_local_government/publications/urban_lawyer/2017/49-1/regional-transit/.
- 44 Freemark, Jonah. 2015. "For rail services, downtown sometimes isn't the right place for a terminus." *The Transport Politic*. <https://www.thetransportpolitic.com/2015/07/06/for-rail-services-downtown-often-isnt-the-right-place-for-a-terminus/>.

- 45 Stacy, Christina, Brady Meixell, and Serena Lei. 2019. "Too Far from Jobs: Spatial Mismatch and Hourly Workers." Urban Institute. <https://www.urban.org/features/too-far-jobs-spatial-mismatch-and-hourly-workers>.
- 46 Schaller, Bruce. 2007. "Free Parking, Congested Streets." Transportation Alternatives. https://web.archive.org/web/20081230081417/https://www.transalt.org/files/newsroom/reports/freeparking_traffictrouble.pdf.
- 47 New York City Department of City Planning. 2021. "NYC Department of City Planning." NYC Metro Region Explorer. <https://metroexplorer.planning.nyc.gov/about#6.88/40.857/-73.528>.
- 48 Metropolitan Transportation Authority. 2014. "MTA Transportation Reinvention Commission Final Report." MTA. http://web.mta.info/mta/news/hearings/pdf/MTA_Reinvention_Report_141125.pdf.
- 49 Metropolitan Transportation Authority. 2021. "Annual Performance Metrics Report Calendar Year 2019." MTA. <https://new.mta.info/document/69476>.
- 50 Kaiser, C. 1995. Penn Station Utilization and Capacity Analysis. In archive.org. STV Group; Metropolitan Transportation Authority; Amtrak; New Jersey Transit. <https://archive.org/details/penn-station-utilization-and-capacity-analysis>
- 51 Antonelli, Ron. 2017. "Penn Station Is NYC's Commuter Nightmare, and It's About to Get Worse." Bloomberg.com. <https://www.bloomberg.com/graphics/2017-penn-station-summer-construction-creates-commuting-hell/>.
- 52 Blumenthal, Ralph. 1984. "Problems Halt Laying of Pipe at L.I.R.R. Project (Published 1984)." The New York Times. <https://www.nytimes.com/1984/02/21/nyregion/problems-halt-laying-of-pipe-at-lirr-project.html>.
- 53 Doherty, Matthew. 2004. "Far West Side Story." The New York Times. <https://www.nytimes.com/2004/11/07/nyregion/far-west-side-story.html>.
- 54 Dunn, Danielle M. 2022. "'This isn't Podunk': A Cuomo-era plan to dramatically alter Manhattan meets resistance." Politico. <https://www.politico.com/news/2022/04/10/podunk-cuomo-manhattan-penn-station-00024206>.
- 55 Freemark, Yonah. 2015. "For rail services, downtown sometimes isn't the right place for a terminus." The Transport Politic. <https://www.thetransportpolitic.com/2015/07/06/for-rail-services-downtown-often-isnt-the-right-place-for-a-terminus/>.
- 56 Regional Plan Association. 2019. "Build new rail tunnels under the Hudson and East Rivers." The Fourth Regional Plan. <http://fourthplan.org/action/gateway>.
- 57 Metropolitan Transportation Authority. 2021. Empire Station Complex Community Advisory Committee Working Group.
- 58 Regional Plan Association. 2019. "Build new rail tunnels under the Hudson and East Rivers." The Fourth Regional Plan. <http://fourthplan.org/action/gateway>.
- 59 ReThinkNYC. 2021. "ReThink Penn Station." ReThinkNYC. <https://www.rethinknyc.org/rethinkpenn/>.
- 60 Empire State Development Corporation. 2021. Through-Running at Empire Station Complex. <https://esd.ny.gov/sites/default/files/CACWG-Meeting-4-2021-05-18-Through-Running-Briefing-v2.pdf>.
- 61 Amtrak, New Jersey Transit, Metropolitan Transportation Authority. "Thru Commuter - PSNY South: New thru station w/ 28' wide platforms." Tri-Venture Standards.
- 62 Colon, Dave. 2021. "Analysis: Hochul's New Penn Station Will Be Pleasant To Walk Through, But Won't Add Train Capacity." Streetsblog. <https://nyc.streetsblog.org/2021/11/04/hochuls-new-penn-station-will-be-pleasant-to-walk-through-but-wont-add-train-capacity/>.
- 63 Metropolitan Transportation Authority. 2021. Empire Station Complex Community Advisory Committee Working Group.
- 64 Amtrak. 2017. "Chapter 5B: Transportation Services." Hudson Tunnel Project. <http://www.hudsonunnelproject.com/documents/deis/05B%20Transportation%20Services.pdf#page=5>.
- 65 TransitMatters. 2021. "Regional Rail Electrification: Costs, Challenges, Benefits." TransitMatters. <https://static1.squarespace.com/static/533b9a24e4b01d79d0ae4376/t/617ab7300ffe59061878be08/1635432241916/Regional+Rail+Electrification+Final.pdf>.
- 66 Tri-State Transportation Campaign. 2021. Analysis of Commuter Rail Station Platform Heights.
- 67 Viriyincy, Oran. 2019. "Key considerations for integrated multi-modal transport planning." International Growth Centre. <https://www.theigc.org/wp-content/uploads/2019/02/Integrated-multi-modal-transport-planning-FINAL-Jan2019.pdf>.

- 68 NYC Economic Development Corporation. 2020. "Sunnyside Yard Master Plan." Sunnyside Yard. <https://sunnysideyard.nyc/>.
- 69 Miller, Emma. 2018. "QNS: What will Amazon HQ2 in Long Island City mean for the local transit system?" <https://qns.com/2018/11/will-amazon-hq2-long-island-city-mean-local-transit-system/>.
- 70 Johnston, Sandy. 2016. "Must (Only) the Rich Have Their Trains?" Itinerant Urbanist. <https://itineranturbanist.files.wordpress.com/2016/05/final-paper-5-1.pdf>.
- 71 Griffiths, Ian, and Stephanie Beechem. 2020. "Timely new research on 'world class' transit systems offers striking lessons for Bay Area." Seamless Bay Area. <https://www.seamlessbayarea.org/blog/2020/9/9/timely-new-research-on-world-class-transit-systems-offer-striking-lessons-for-bay-area>.

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