

Keeping New York On Track: The Importance of the MTA Transit Network in a Changing World



February 11, 2015

Prepared by HR&A Advisors on behalf of and in coordination with:
The Permanent Citizens Advisory Committee to the MTA
Urban Land Institute – New York



PCAC

PERMANENT CITIZENS
ADVISORY COMMITTEE TO THE MTA



Urban Land Institute **New York**

with assistance from **New York University – Schack Institute of Real Estate** and **Hornick Consulting**

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Analyze. Advise. Act.

The Permanent Citizens Advisory Committee and the Urban Land Institute commissioned HR&A Advisors to examine the MTA Capital Program.

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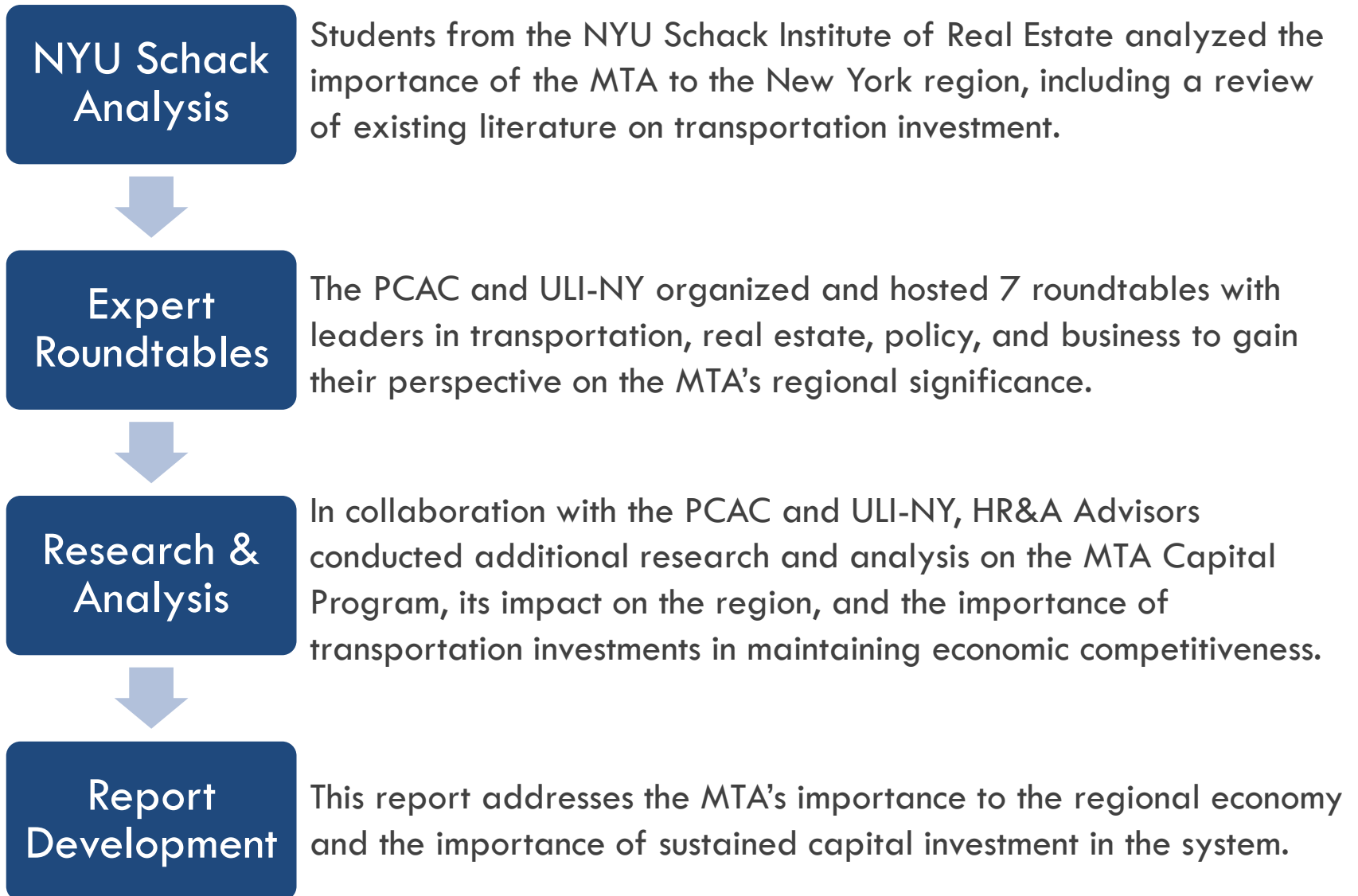
Hornick Consulting

Produced by:



HR&A Advisors, Inc. (“HR&A”) is a leading economic development consulting firm that specializes in conducting economic and fiscal impact studies on behalf of clients in the public and private sectors. HR&A has measured the economic and fiscal impacts of a diverse array of proposed transportation and infrastructure projects in the New York metropolitan area, including the Long Island Rail Road Third Track, the Move New York plan, Access to the Region’s Core (ARC), and the extension of the Long Island Rail Road to Lower Manhattan.

This report is the result of a sustained collaborative effort.



THE MTA: UNIFYING THE NEW YORK METROPOLITAN AREA

THE MTA CAPITAL PROGRAM: HISTORY AND OVERVIEW

THE MTA CAPITAL PROGRAM: A LEGACY OF REVITALIZATION

CAUTION AHEAD: EMERGING REGIONAL CHALLENGES

THE 2015-2019 MTA CAPITAL PROGRAM

WHY THIS CAPITAL PROGRAM MATTERS

With nearly 20 million residents, the New York metropolitan area is one of the world's leading cultural and economic hubs.

\$1.4 trillion
metro area GDP

19.9 million
metro area residents

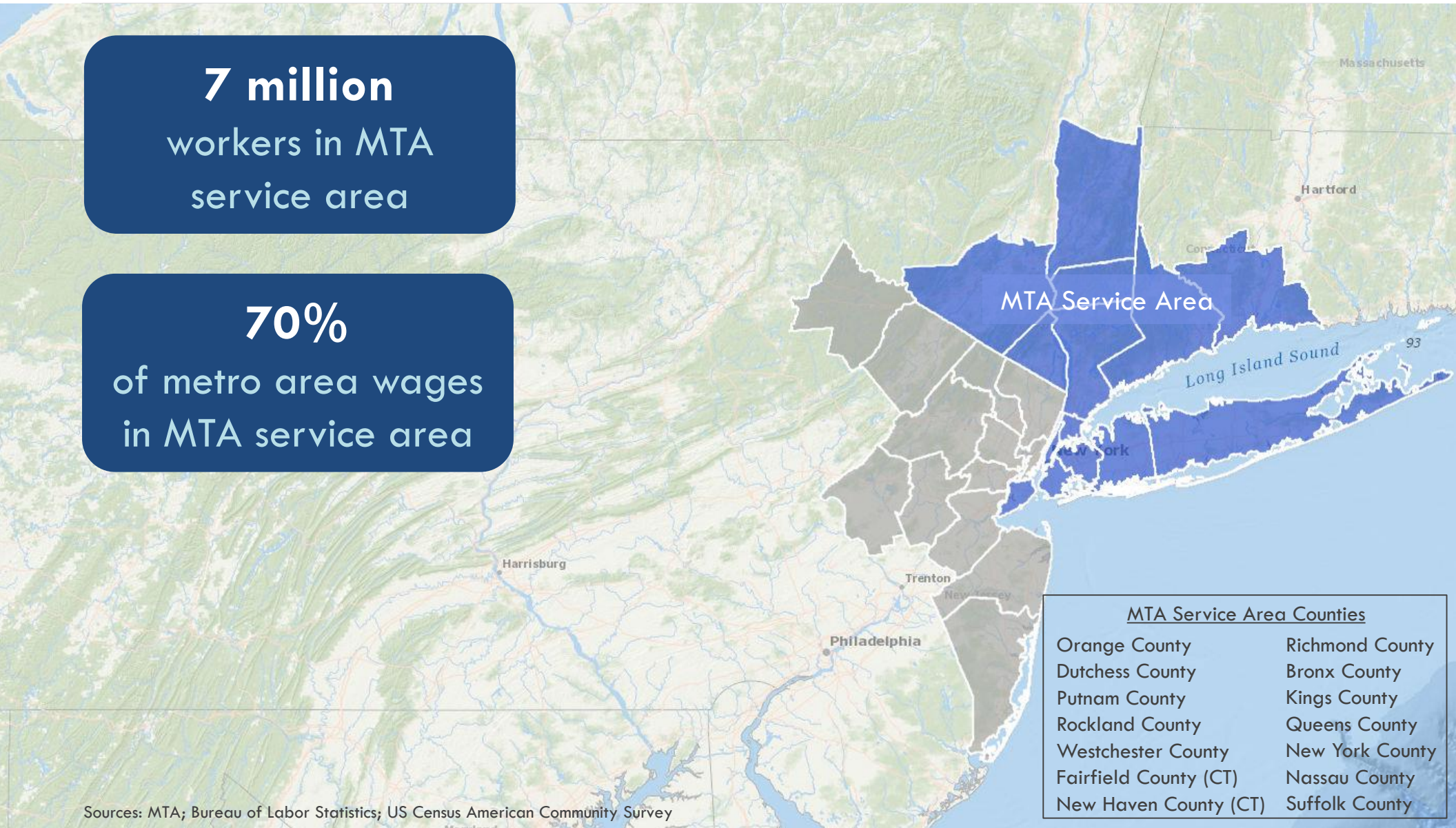
The New York metropolitan area is the largest in the United States. Its economy is the 2nd largest in the world, behind Tokyo.

Sources: US Census; US Bureau of Economic Analysis; MTA

Radiating from New York City into its suburban regions, MTA transit networks cover 75% of the New York metropolitan population.

7 million
workers in MTA
service area

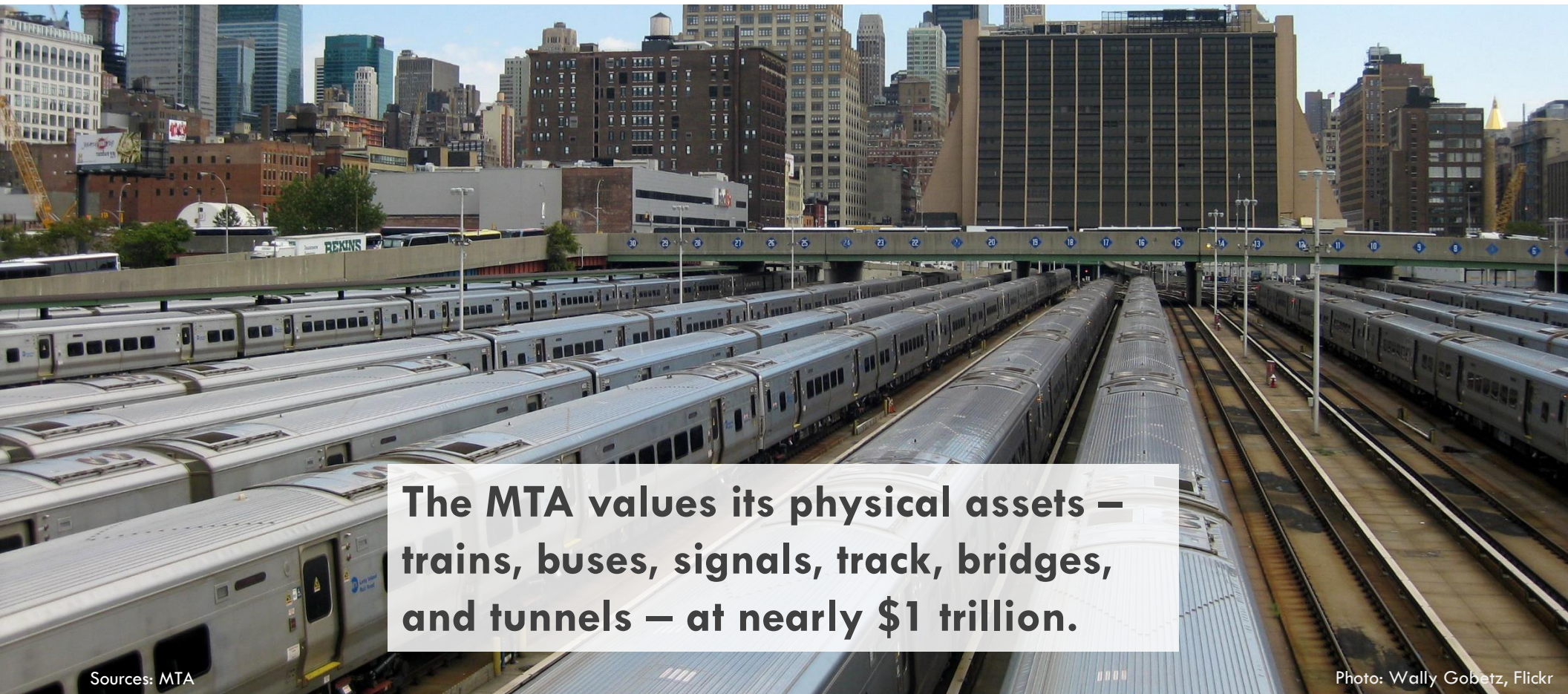
70%
of metro area wages
in MTA service area



Sources: MTA; Bureau of Labor Statistics; US Census American Community Survey

The MTA operates the largest transit network in the United States.

With 6,300 subway cars and 2,400 commuter rail cars, the MTA operates a greater number of rail cars than all other US metro rail and commuter railroads combined. The MTA's 5,600 city buses comprise America's largest bus fleet.



The MTA values its physical assets – trains, buses, signals, track, bridges, and tunnels – at nearly \$1 trillion.

Sources: MTA

Photo: Wally Gobetz, Flickr

Carrying over 1/3 of all US transit riders, MTA transit ridership exceeds the next 16 US transit networks ... combined.



Aggregate usage of the MTA transportation network is over five times greater than the aggregate use of regional transit networks for the Washington D.C., Chicago, and Boston metropolitan regions.

Sources: MTA; American Public Transportation Association

The scale and reach of the MTA's regional transportation network generate broad, sustained benefits for the New York metropolitan area.

Regional Economic Strength



Social Equity



Neighborhood Growth



Tourism

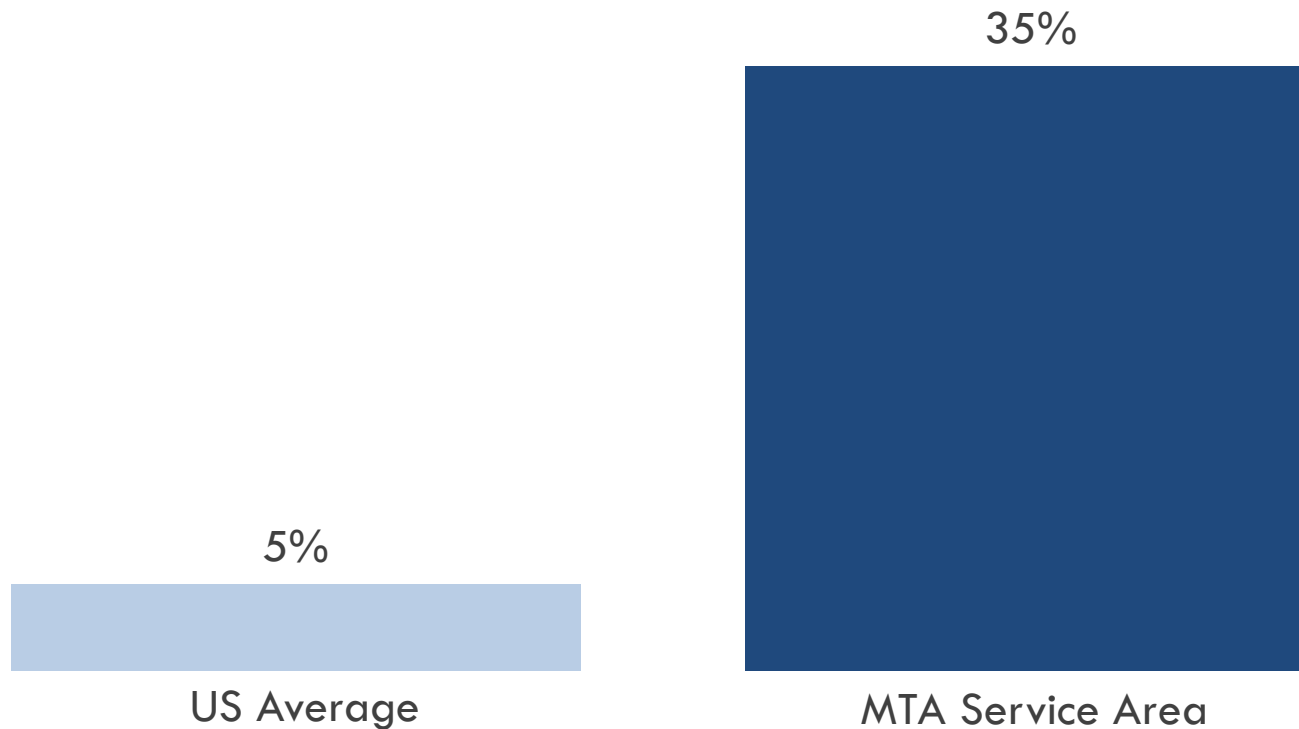


Regional Economic Strength

Metro area commuting on the MTA network outpaces the national average.

Commuter transit use within the MTA service area is the highest in the nation, over seven times greater than the national average.

Workers Commuting on Public Transit, 2012



Sources: American Community Survey 2012; "Missed Opportunity: Transit and Jobs in Metropolitan America," Brookings Institution

Regional Economic Strength

Nearly all metro area residents live near public transportation.

Arverne, Queens



Photo: Harrison Leong, Wikimedia Commons

New Rochelle

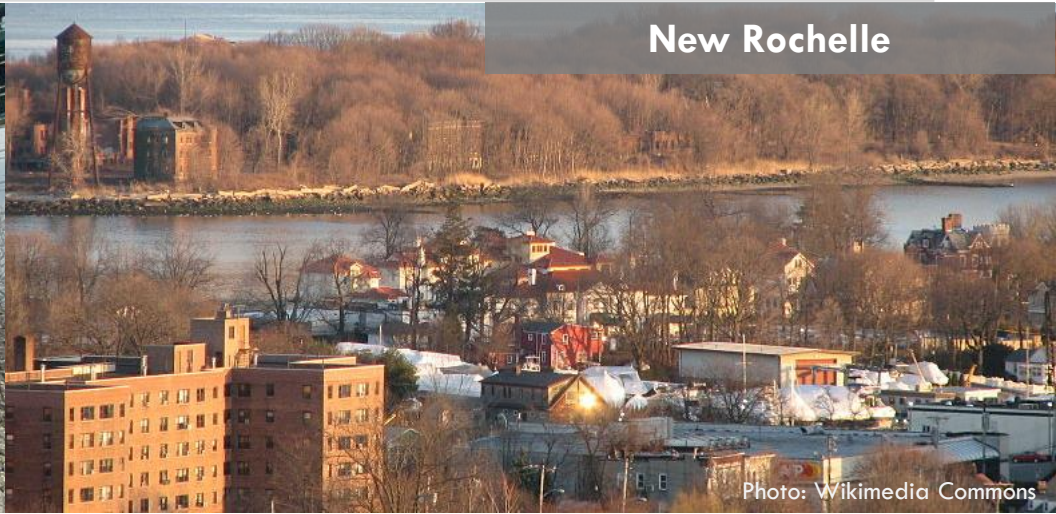


Photo: Wikimedia Commons

90% of New York metro area workers live in neighborhoods served by public transit.

Harlem



Photo: Terence Jones, Wikimedia Commons

Long Island



Photo: DanTD, Wikimedia Commons

Sources: "Missed Opportunity: Transit and Jobs in Metropolitan America, Brookings Institution

Regional Economic Strength

The access offered by the MTA attracts workers to the New York region.

Business and thought leaders in the New York City region agree that the MTA network is a crucially important asset in attracting and retaining talent in the region.

“Subways are the number one factor in livability.”

-Kathy Wylde, President & CEO, Partnership for New York City

“Metro-North is a lifeline for so many who call Westchester County home.”

-Nita Lowey, United States Congressional Representative

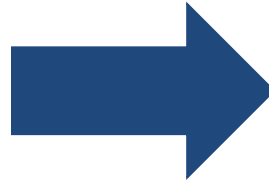
“The Long Island Rail Road strengthens our region by connecting us to New York City...it remains an economic engine that with continued investments will enhance Long Island’s future growth.”

-Kevin Law, President and CEO, Long Island Association

Regional Economic Strength

Firms in the region benefit from the agglomeration benefits of transit.

***Doubling
employment density***



6%
Increase in productivity

Ciccone and Hall, 1996

The MTA enables these high levels of regional density through the provision of high-quality transit service throughout the MTA service area.

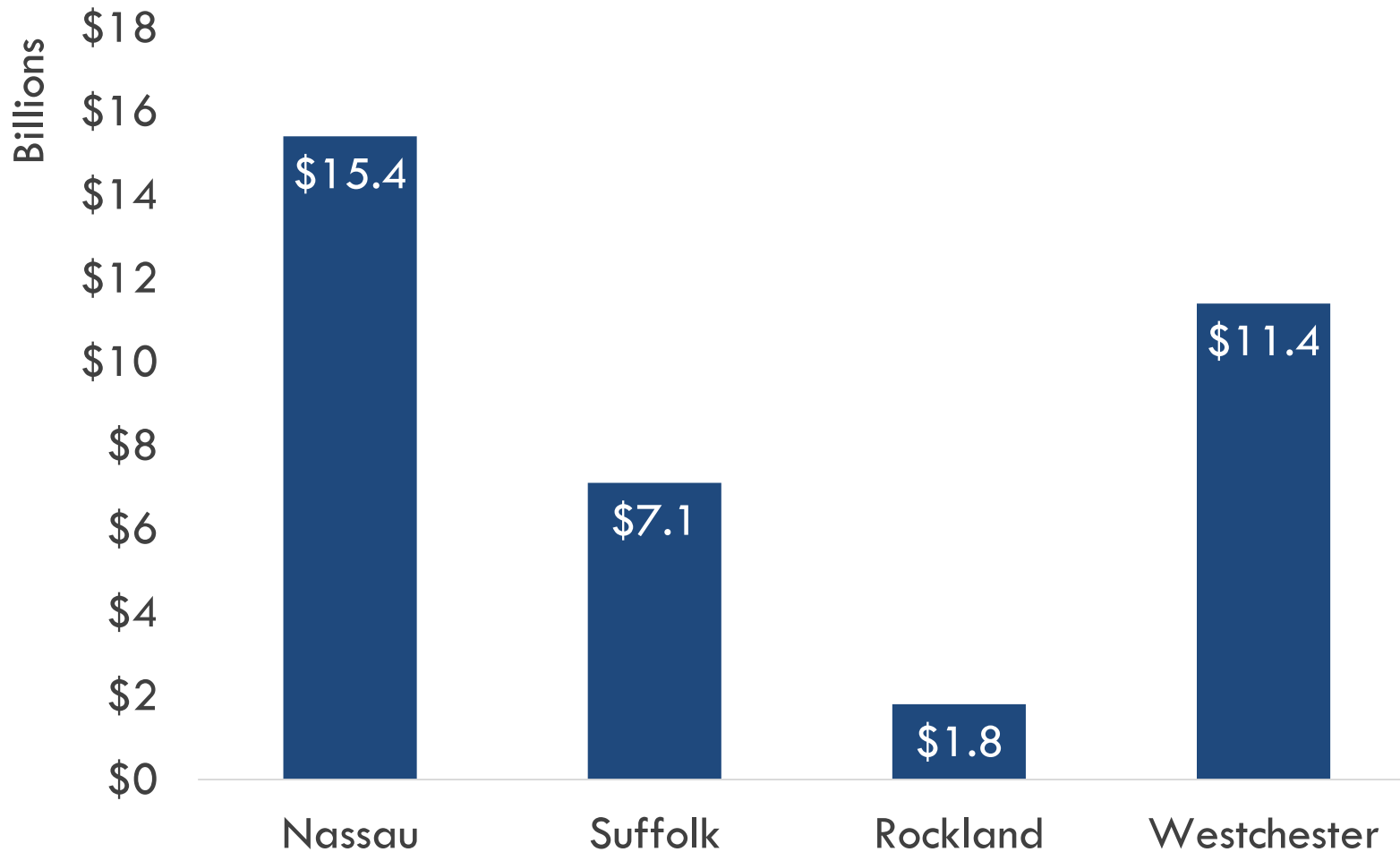
The business density of the New York region is ten times that of the average US city, by far the highest of any US metropolitan area. Dense urban employment centers achieve significantly higher productivity relative to metropolitan areas of lesser density.

Sources: *Triumph of the City*; Ciccone & Hall, "Productivity and the Density of Economic Activity," "The Geography of Business Density," Richard Florida, *The Atlantic Cities*, 2012.

Regional Economic Strength

Regional commuters bring home \$36B of City-earned income each year.

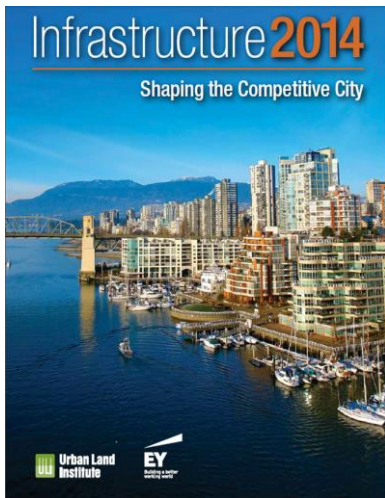
Income earned by commuters from NYC Jobs in 2012



Sources: PCAC analysis of the 2012 Public Use Microdata Sample (PUMS) US Census data, comparing the workplace and residence of workers ages 16 or older with earnings, and calculating the income earned by commuters who live in Nassau, Suffolk, Rockland, or Westchester County and work in New York City.

Regional Economic Strength

These benefits to jobs and workers boost the performance of area firms.



In “Infrastructure 2014: Shaping the Competitive City,” high-level public and private officials identified infrastructure as the top driver for urban development and investment.

- **88%** rated infrastructure quality as a top or very important consideration when determining real estate investments.
- **78%** saw improved transit services as a top or high priority, leading the list of important infrastructure investments.



In a 2012 report, *The Economist* ranked New York the most globally competitive city, emphasizing the importance of its physical infrastructure.

- **27** Fortune 500 companies are headquartered in the metro area
- **Preeminent global center** for key sectors: Finance, Media, Health Care, and Tech.

Sources: *The Economist*, “Benchmarking Global City Competitiveness”; “Infrastructure 2014: Shaping the Competitive City”, ULI.

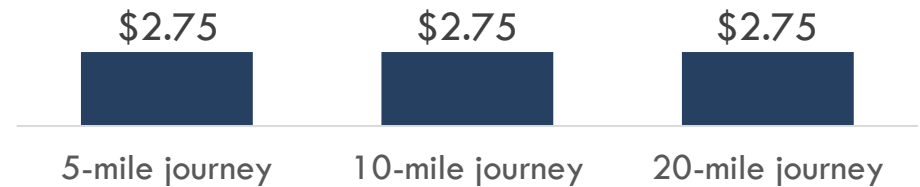
Social Equity

Flat fares allow equitable access to New York City employment centers.



A **flat fare structure** across New York City's subway and bus networks ensures consistent, low transportation costs for residents throughout the five boroughs.

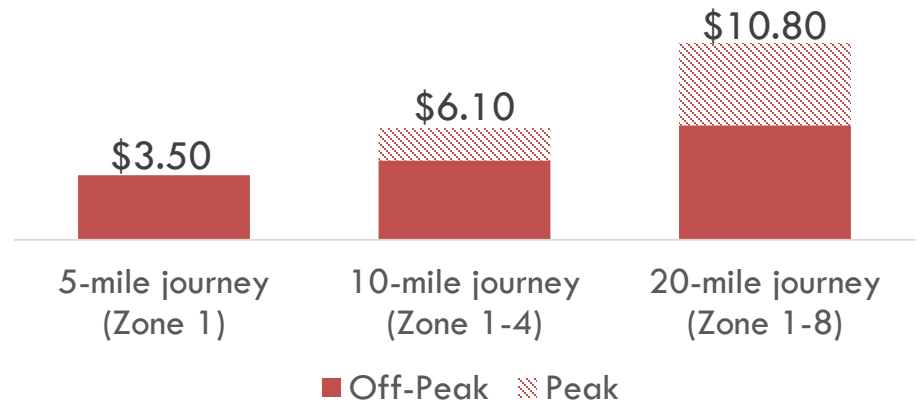
MTA Bus and Subway
Flat fare



Transport for London

In contrast, a **tiered fare structure** like that of Transport for London imposes far greater costs on residents with longer commutes.

Transport for London
Tiered fare structure



Sources: MTA; Transport for London

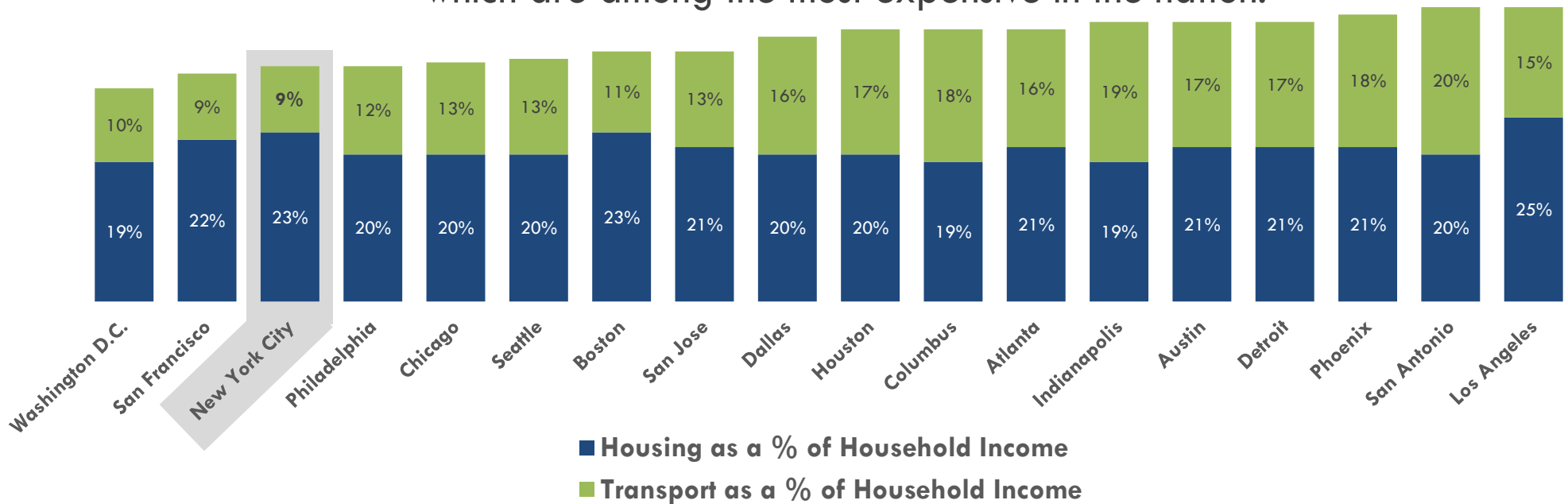
Social Equity

Flat fares positively benefit household budgets, per a recent CBC report.



According to the Citizens Budget Commission, in New York City housing and transportation constitute a comparatively small proportion of household income, thanks to the low cost of NYC transit.

This holds true even when factoring in the high cost of NYC rentals, which are among the most expensive in the nation.

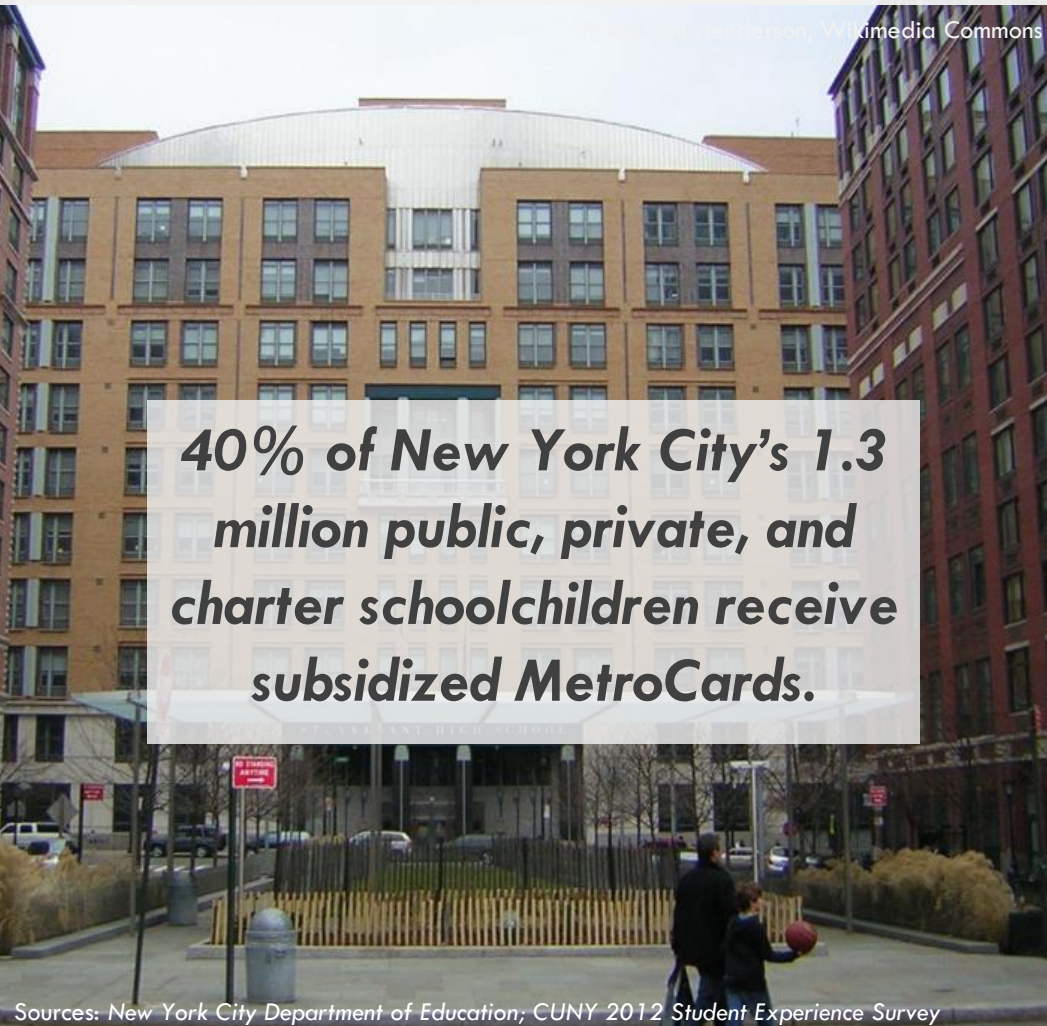


Source: "Housing Affordability versus Location Affordability," Citizens Budget Commission, August 2014

Social Equity

In New York City, the MTA extends access to educational opportunity.

From elementary school to post-graduate study, students throughout New York City rely on the MTA to access the city's thousands of public and private schools.



40% of New York City's 1.3 million public, private, and charter schoolchildren receive subsidized MetroCards.



78% of CUNY students commute by subway or bus, with 90% usage at Manhattan locations.

Sources: New York City Department of Education; CUNY 2012 Student Experience Survey

Social Equity

Across the region, the MTA extends access to parks, beaches, and trails.

Within New York City, MTA subway and bus services offer connectivity to 39,000 acres of parkland and 14 miles of beaches.

To the north, Metro-North stations offer trailhead access to the dramatic vistas of the Hudson Valley.

To the east, the LIRR provides fast and frequent service to the windswept beauty of the Sunken Forest and Shelter Island.



Sources: Trust for Public Land, "City Park Facts 2014"; NYC Parks; "Rockaway West: NY Rising Community Reconstruction Plan

Neighborhood Growth

Robust transit access supports neighborhood growth throughout the region.

Robust and improving transit service has reinforced the upward trajectory of emergent neighborhoods throughout New York City.

Williamsburg



Photo: Wikimedia Commons

Amid Brooklyn's resurgence, 10,000 new units have been built in Williamsburg. MTA investments in a new waterfront bus route and continued investment in subway infrastructure have supported this growth.

New Rochelle



Photo: Jacob, Flickr

Investments in Metro-North helped reverse decades of population decline.

Source: NYU Schack Institute

Farmingdale



Photo: Eric Alexander

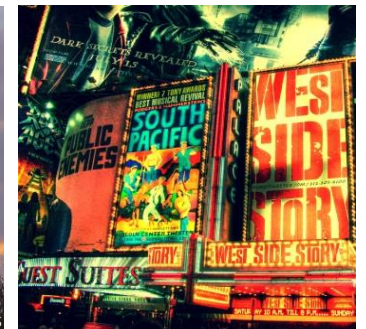
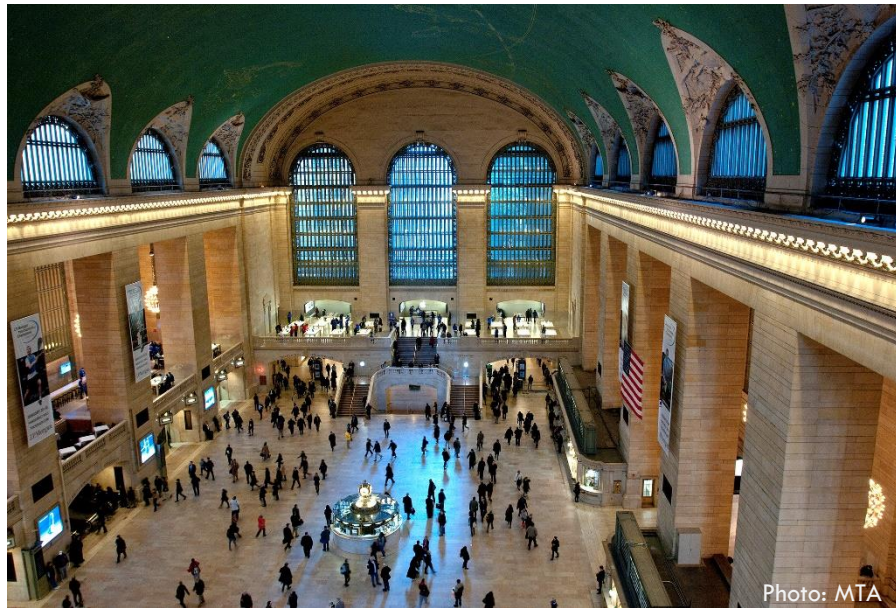
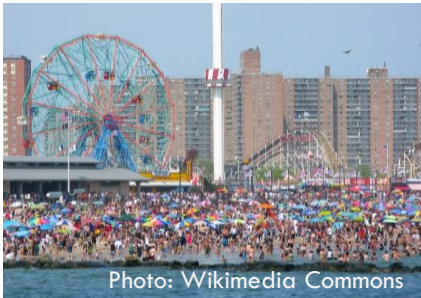
Proximity to fast and frequent LIRR service is catalyzing smart growth in Nassau County.

Tourism

MTA services connect visitors to destinations throughout the metro area.

Amidst its continued revitalization, visitation to New York City has significantly increased.

39.9 million (2004) → 54.3 million (2013)



*65% of international tourists use the MTA system, gaining easy and affordable access to the region's key destinations. These visitors inject **\$18 billion** into the New York economy.*

Source: NYC & Company



These regional benefits of the MTA transit network directly result from New York State's three decades of sustained capital investment.

These achievements in economic growth, social equity, tourism, and neighborhood revitalization were not inevitable; they result from decades of focused capital investment at the direction of New York State.

The establishment of the MTA Capital Program in 1981 created a financial vehicle for this investment that reversed years of economic decline and neglect of the region's infrastructure, repositioning it once again as the region's key asset.

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WHY THIS CAPITAL PROGRAM MATTERS

By the late 1970s, underinvestment over several decades greatly weakened the MTA transit network.

Following decades of deferred maintenance, by the end of the 1970s the MTA transit network had fallen into disrepair, characterized by unreliable service, frequent failures, and unsafe physical conditions.



- **Lack of maintenance/capital spending.** MTA had physical assets worth \$50B, but was spending less than \$300 MM/year on capital reinvestment.
- **An unstructured MTA budget allowed for no preventive maintenance, only “fix it when it breaks.”**
- **Graffiti-covered unsafe subways came to symbolize the city’s decline and discouraged transit use.**

Sources: MTA; *The New Yorker*, “Painting the Elephant”

Public transportation throughout the New York metropolitan region was plagued by system failures and unreliable service.

Before Capital Program

Derailments

1 every 18 days

Subway Fires

2,500 each year

Subway Delays

320,000 each year

Bus Delays

277,000 each year

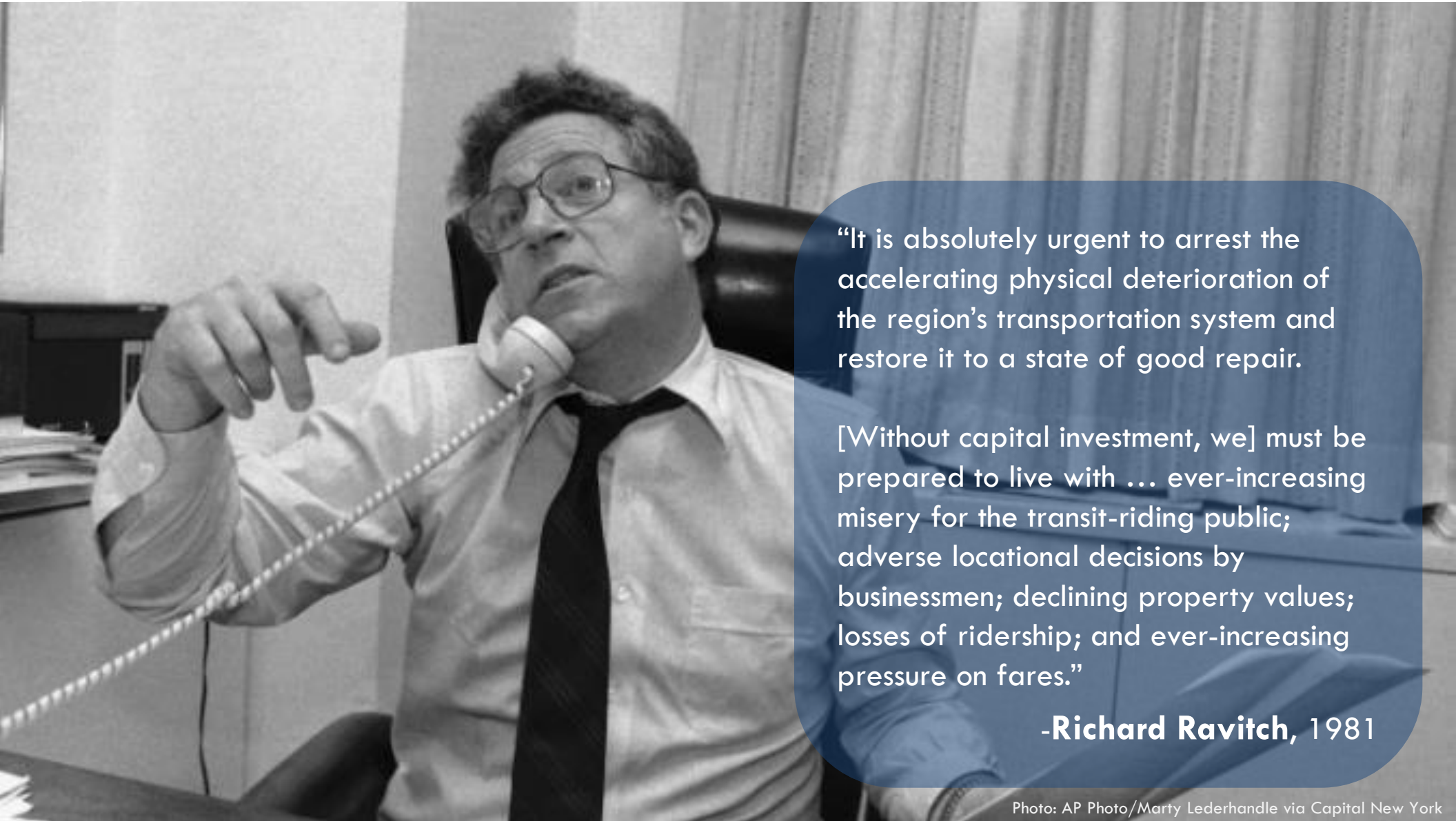
Subway Distance Between Breakdowns

6,640 miles



Sources: MTA; Mark Seaman, "From Rescue to Renaissance," 2004

In response to this crisis, MTA chairman Richard Ravitch took the bold and visionary step of establishing the organization's first Capital Program.



“It is absolutely urgent to arrest the accelerating physical deterioration of the region’s transportation system and restore it to a state of good repair.

[Without capital investment, we] must be prepared to live with ... ever-increasing misery for the transit-riding public; adverse locational decisions by businessmen; declining property values; losses of ridership; and ever-increasing pressure on fares.”

-Richard Ravitch, 1981

Photo: AP Photo/Marty Lederhandle via Capital New York

What is the MTA Capital Program?

“Every five years, the MTA takes a hard look at its system and its infrastructure to identify and prioritize the investments that will be essential to renew, enhance, and expand the system to meet the changing needs of the region, its economy, and its residents.”

-Thomas Prendergast, Chairman and CEO, MTA

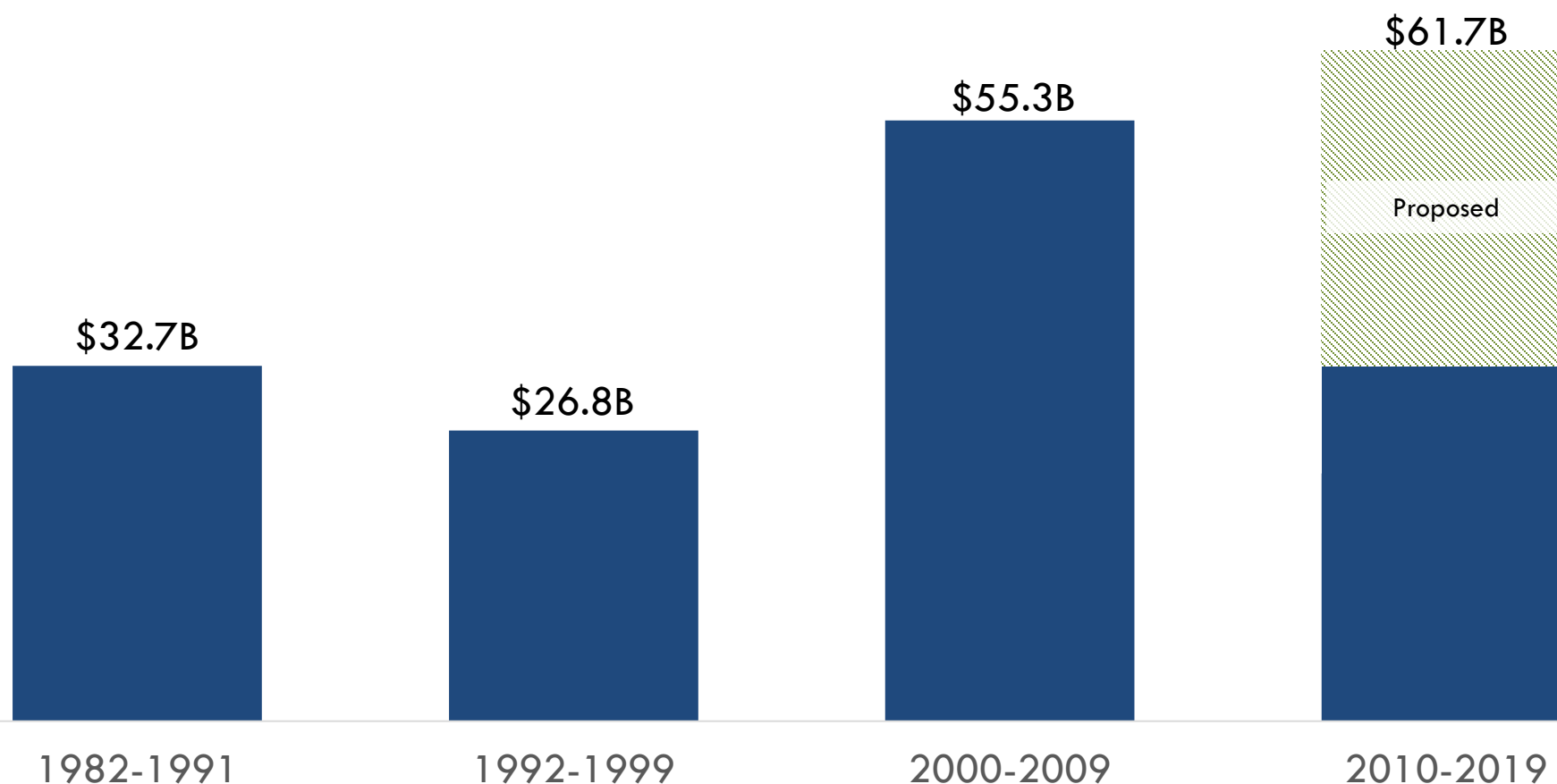
The MTA Capital Program enables the MTA to:

- **Identify maintenance needs and strategic goals;**
- **Prioritize projects to align with rider demand and system needs;**
- **Propose a means of funding these improvements.**

The Transportation System Assistance and Financing Act, passed in 1981, created a formalized approval process for the MTA Capital Program. The Act established the MTA Capital Program Review Board, with four voting members representing the Governor, State Senate, State Assembly, and New York City Mayor. After the MTA Capital Program is approved by the MTA Board, the CPRB has 90 days to approve or reject the plan.

Over 30 years, the MTA Capital Program has invested nearly \$150B in the network, revitalizing the system and its ability to serve the region.

MTA Capital Program Funding Commitments
(2014 \$)



Sources: MTA; PCAC, "The Road Back." The length of each investment period reflects differences in the tenure of past Capital Programs.

These investments have updated, transformed, and extended the numerous components that make up the MTA system.

Priority Repairs



Renew or replace assets that have surpassed or are nearing the end of their useful life.

System Improvements



Enhance the network, providing new capabilities and a better customer experience.

Network Expansion

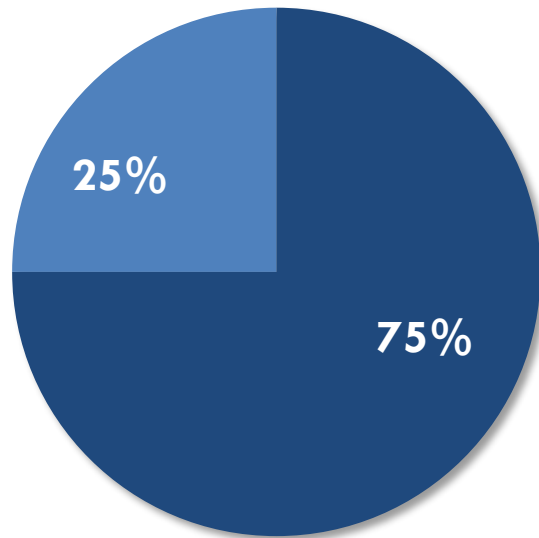


Extend the reach of the MTA network, expanding the service offering.

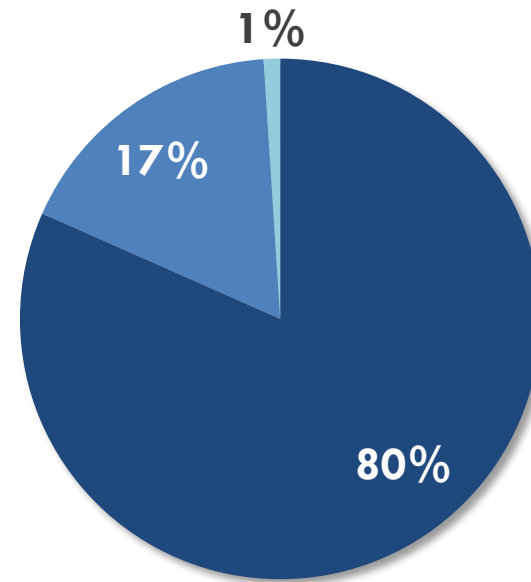
Over the first 18 years of the Capital Program, the MTA prioritized investments that reversed years of decline.

Over 75% of Capital Program funding between 1981 and 1999 was directed towards maintenance and equipment replacement to achieve a state of good repair. With the system in disrepair, investments in system improvements were a lower priority, with little to no investment made in the expansion of the MTA network.

1981-1991



1992-1999



■ Priority Repairs

■ System Improvements

■ Network Expansion

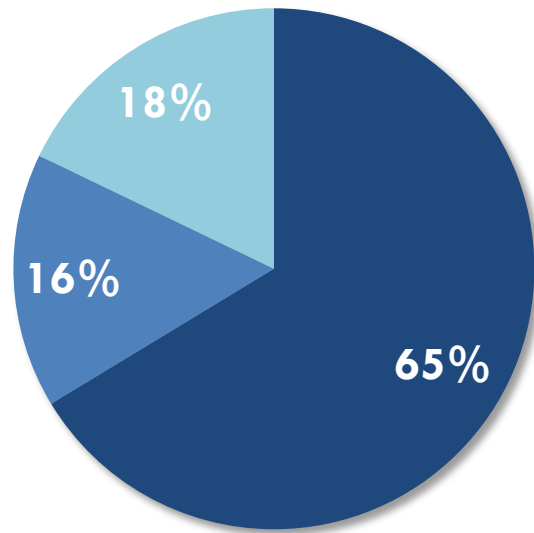
Sources: MTA; PCAC, "The Road Back"

Note: numbers may not add up to 100% due to rounding

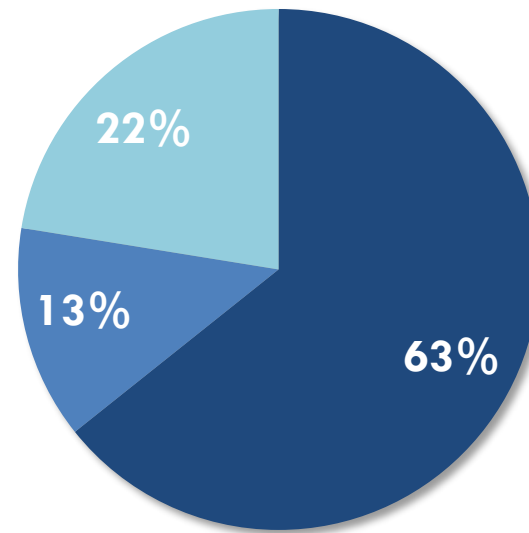
Since 2000, MTA investments in system improvement and network expansion have increased.

Having made major strides in restoring a system-wide state of good repair by the late 1990s, priorities shifted after the year 2000. System improvements, such as updated signal technology, and network expansion, received investment levels matching those for maintaining a state of good repair.

2000-2009



2010-2014



■ Priority Repairs

■ System Improvements

■ Network Expansion

Sources: MTA; PCAC, "The Road Back"

Note: numbers may not add up due to rounding

MTA Capital Program: *New York City Transit*

Sustained capital investment dramatically improved service quality.

As a result of the sustained investments made possible by the Capital Program, the New York City Subway shed its image as an emblem of disinvestment and decline, emerging as one of the world's most effectively-managed transportation networks.



Investments from the Capital Program have funded significant improvements to New York City's bus network, with the provision of new Bus Rapid Transit service, real-time bus tracking, and an expansion of bus routes throughout the five boroughs.



MTA Capital Program: *New York City Transit*

Rail/bus replacement; station improvements; communications/signals.

Over the past 30 years, the sustained investments funded by the Capital Program resulted in a comprehensive replacement of New York City's subway cars and buses, the rehabilitation of dozens of subway stations and major transit hubs, and dramatically improved reliability throughout the network.

1982 to 1991

Large-scale replacement of new subway cars and buses.

1992 to 1999

Expansion of rail/bus fleet and station improvements.

2000 to 2009

Increased emphasis on signals and communication; continued replacement of rail/bus fleet and station improvements.

2010 to 2014

Predominant emphasis on signals/communications; continued replacement of rail/bus fleet and station improvements.

Sources: MTA; PCAC, "The Road Back"

MTA Capital Program: New York City Transit

Sustained capital investment dramatically improved service quality.

<i>NYCT Subways</i>	Before Capital Program (1982)	After Capital Program (2013)	Change
Ridership	989 MM	1,700 MM	+72%
On-Time Performance	71%	81%	+14%
Mean Distance Between Failure	7,200 miles	153,400 miles	+2,000 %
<i>NYCT Buses</i>			
Ridership	512 MM	677 MM	+32%
On-Time Performance	84%*	89%	+6%
Mean Distance Between Failure	940 miles	4,940 miles	+425%

Source: MTA.

* As of 1989

MTA Capital Program: *Metro-North Railroad*

Station renovation, trackwork, and investments in rolling stock.

For Metro-North, the MTA Capital Program has financed the rebuilding of commuter rail stations across its three lines, replaced its aging rolling stock with modern and comfortable rail cars, expanded the electrification of the network, and invested in system capacity to support both peak-hour and reverse commutes.

1982 to 1991

Rolling stock, station improvements, and track work.

1992 to 1999

Passenger stations, track work, and rolling stock.

2000 to 2009

Procurement of new M-7 and M-8 cars; continued emphasis on stations, track, and new investment in shops & yards.

2010 to 2014

Investment largely split between rolling stock, stations, communications, shops, and track

Sources: MTA; PCAC, "The Road Back"

MTA Capital Program: Metro-North Railroad

Capital investments expanded system capacity and improved reliability.

As a result of the Capital Program, failure rates and train delays on Metro-North significantly decreased and on-time performance considerably improved. Due in part to the benefit of these investments, systemwide Metro-North ridership increased by more than two-thirds over the 30-year investment period.

	Before Capital Program (1982)	After Capital Program (2013)	Change
Ridership	48.3 MM	83.4 MM	73%
On-Time Performance	81%	95%	17%
Train Delays	16,064*	2,414	- 85%
Mean Distance Between Failure	18,520 miles	156,615 miles	746%

Source: MTA.

* As of 1985

MTA Capital Program: *Long Island Rail Road*

Station renovation, trackwork, and investments in rolling stock.

For the Long Island Rail Road, the Capital Program financed the rebuilding of nearly all of its commuter rail stations, enabled the comprehensive replacement of electric and diesel rolling stock, expanded the electrification of the network, and invested in system capacity at terminal facilities and maintenance yards.

1982 to 1991

Hillside maintenance facility; station improvements; communications and signals.

1992 to 1999

Major investment in new rolling stock, stations, and track.

2000 to 2009

Continued investment in rolling stock, stations, and track.

2010 to 2014

Predominant emphasis on track replacement with continued investments in rolling stock and stations.

Sources: MTA; PCAC, "The Road Back"

MTA Capital Program: Long Island Rail Road

Capital investments substantially reduced failure rates and train delays.

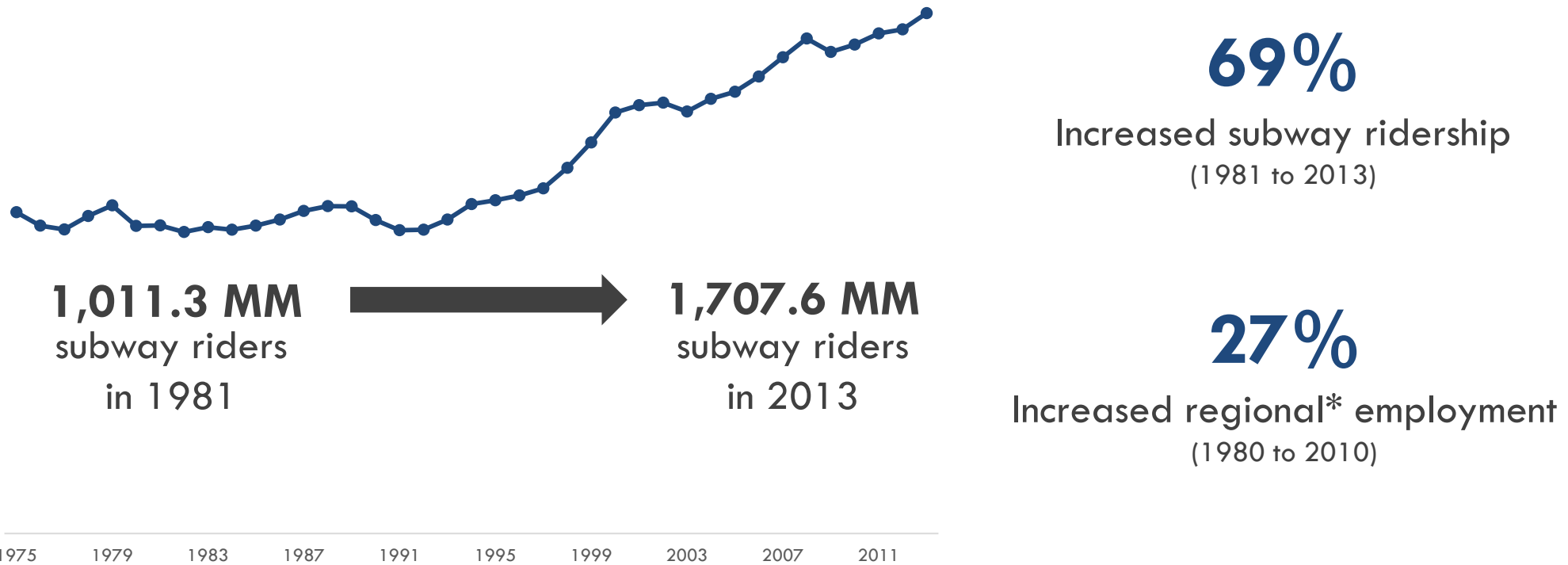
As a result of the Capital Program, failure rates and train delays on the LIRR dramatically decreased and on-time performance considerably improved. These needed improvements helped support continued growth in LIRR ridership.

	Before Capital Program (1982)	After Capital Program (2013)	Change
Ridership	70.4 MM	83.4 MM	19%
On-Time Performance	89%	94%	6%
Train Delays	7,852*	4,188	- 47%
Mean Distance Between Failure	16,168 miles	205,890 miles	1,173%

Source: MTA.

* As of 1996

Since 1982, the MTA Capital Program has transformed the region's public transportation system into a crucial economic asset.



Sustained investment in the MTA network has supported the continued economic growth of the New York region, helping achieve a global economic preeminence that few could have imagined in the economic crises of the 1970s.

Sources: MTA; Office of the New York State Comptroller

* Includes NYC, Mount Vernon, New Rochelle, Peekskill, Rye, White Plains, Yonkers

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WHY THIS CAPITAL PROGRAM MATTERS

Transit service, when safe, reliable, and effective, can sustain vibrant, walkable communities.



When the transit system fell into decline, negative perceptions replaced its amenity value and disincentivized adjacent development.



30 years later, the region's embrace of transit-enabled smart growth reflects the impact of the Capital Plan on development patterns.



New York City: Far West Side

Opening in 1986, the Jacob Javits Center did not embrace transit.



Built from 1980-1986 at the nadir of the MTA's decline, the Jacob Javits Center exemplifies a large-scale New York City development that did not embrace public transit. A neighborhood rezoning adjacent to the Javits Center was expected to catalyze development, but development did not materialize.

“Buses are the only mass transit serving the [Javits] center, which will anxiously experiment with shuttles. The nearest subway is three long, uninviting blocks away. Something must be done to square transportation and density planning with economic development.”

- The New York Times, 1986

Located at 12th Avenue between 34th and 40th Streets, the Javits Center is 15 minutes from the nearest subway station.

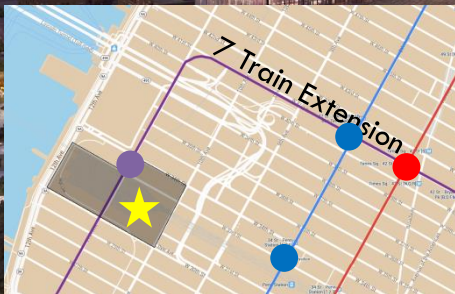
New York City: Far West Side

Public transit has catalyzed the redevelopment of Hudson Yards.

The largest private real estate development in the nation's history, Hudson Yards is a transformative redevelopment that has been made possible through a massive investment in public transit through a 1.5-mile extension of the 7 train to the Far West Side.

Developers have already committed to build over 20 MM square feet of office, 6,000 housing units, and 3,500 hotel rooms within the Hudson Yards District which is projected to also include a new school and over 12 acres of new open space.

This accessibility also extends transit to the Javits Center, nearly 30 years later.



New mixed-use projects at Hudson Yards will be anchored by a new subway station extending the 7 train to the West Side.

New York City: Downtown Brooklyn

The 1996 Atlantic Center mall prioritized drivers over transit.



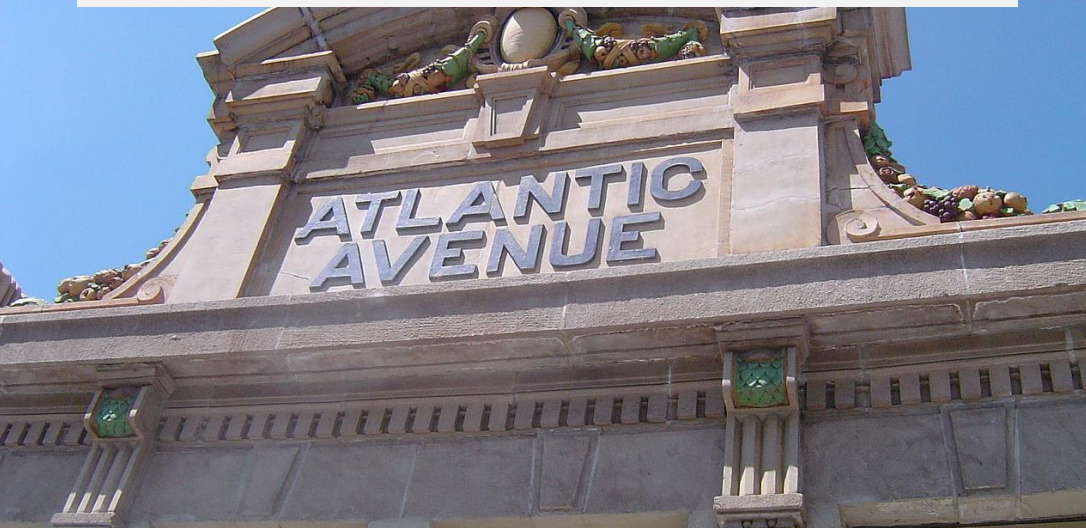
Photo: Forest City Ratner

Built in 1996 as an auto-oriented mall, parking at the Atlantic Center remains underutilized.

The 400,000 square foot Atlantic Center mall at the intersection of Flatbush and Atlantic Avenues, was the first big box retail development in New York City.

Consistent with practices at the time, the mall included 635 parking spaces – despite nearby subway and LIRR access at Jay Street, Atlantic Avenue, and Flatbush Terminals.

The parking spaces have remained largely underutilized. The developer confirms that the vast majority of mall patrons arrive on foot or via transit.



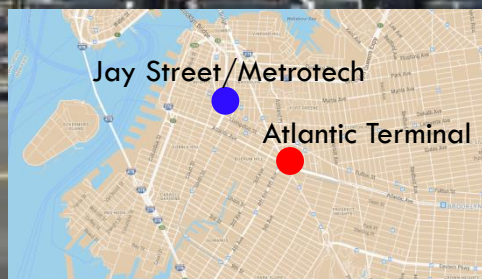
New York City: Downtown Brooklyn

Over the next 14 years, the MTA renovated major adjacent transit hubs.

The MTA's wholesale renovation of transit hubs in Downtown Brooklyn have greatly improved neighborhood accessibility and connectivity.

Jay Street/Metrotech: Complete renovation of A/C/F station and new free connection to R completed in 2010.

Atlantic Terminal: A comprehensive station renovation expanded and improved LIRR and NYCT facilities. Construction was completed in 2010.



New York City: Downtown Brooklyn

The Barclays Center has leveraged transit to achieve success.



Less than 10 years after completing Atlantic Center, Forest City built the 400,000 square foot Atlantic Terminal Mall as well as an additional 400,000 square foot office building – with no additional parking.

Purpose-built in 2012 with limited parking, the widely-recognized Barclays Center includes an \$80 MM direct integration with an adjacent transit hub that serves 11 subway lines and 11 bus lines.

A demand management plan was designed to encourage public transit, and LIRR ridership to Atlantic Terminal, adjacent to Barclays Center, has jumped 334 percent since the Barclays Center opened.

Hudson Valley / Long Island

Auto-oriented development dominated the decades following WWII.



Auto-oriented commercial development without convenient access to public transit, like that along I-287 in Westchester County and Route 110 in Long Island, contributed to suburban sprawl. These commercial corridors began to decline in the 1980s, leading to office park vacancy and closures in Long Island and Westchester County.

Hudson Valley / Long Island

New developments embrace commuter rail access and walkability.

Capitalizing on improved Metro-North Railroad and Long Island Rail Road service, Hudson Valley and Long Island are now embracing transit-oriented development.



In Westchester County, towns and cities along Metro-North lines like Yonkers and New Rochelle have developed active mixed-use downtowns that rely on transit access to attract new residents and visitors.



On Long Island, proposed transit-oriented developments are attracting significant investment in LIRR-connected cities such as Ronkonkoma, Wyandanch, Hempstead, Brentwood, and Farmingdale.

Investments in the MTA have generated economic benefits for communities across New York State.

The MTA Capital Program supports economic development throughout New York State, with major vendors opening plants to both fulfill the needs of the MTA as well as the needs of other major North American transit systems.



The Kawasaki plant in Yonkers has produced over 2,000 rail cars for the subway and commuter rail and continues to be a major provider of rolling stock to the MTA.

Source: MTA



In 2009, Nova Bus / Prevest opened a plant in Plattsburgh, which is fabricating hundreds of New York City Transit buses.

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WHY THIS CAPITAL PROGRAM MATTERS

The regional challenges of this new century will differ from the past.



Evolving growth patterns are reshaping the metropolitan area.

New Preferences for Urban Living

- Millennials are strongly preferring an urban lifestyle.
- For the first time since World War II, more residents are moving to New York City than to Long Island, New Jersey and southwestern Connecticut combined.

Changing Geography of Employment

- Growth in commutes to neighboring boroughs and counties has outpaced growth in traditional commutes to Manhattan.

Unprecedented Storm Damage

- Superstorm Sandy's unprecedented path and storm surge caused over \$25 billion in damage to the region.

Source: "Behind the Curb", Center for an Urban Future, 2011; "It's Clear Violent Crime Is Decreasing, But Less Clear Why", Huffington Post; "New York City's population growth exceeds the suburbs, AM New York

These changes pose new questions for policymakers and leaders.

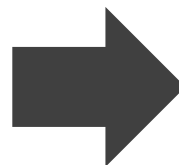
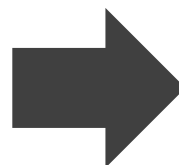
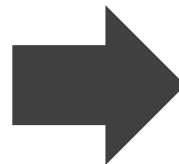
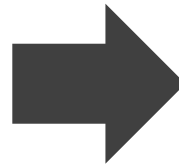
1980 Questions

Can the city's leaders restore law and order amidst urban poverty?

What can be done to reinforce the vitality of Midtown and the Financial District?

How can the region accommodate dramatic suburban growth?

Is it possible to reverse the decline of New York City?



2014 Questions

How can regional leaders ensure protection from the catastrophic impacts of climate change?

What can be done to support growth in the New York region outside of the traditional Manhattan CBD?

How can the suburbs attract a workforce that increasingly prefers walkable, less car-dependent living?

How will New York City manage new levels of population growth?

Four major regional challenges emerge from these trends.

***Destructive Impacts
of Climate Change***



***Changed Geography
of Employment***



***Crowding from
Growing Ridership***



***Increased Global
Competition***



Destructive Impacts of Climate Change



Destructive Impacts of Climate Change

Destruction from Superstorm Sandy brought New York City to a standstill.



- 43 deaths and \$19 billion in damage
- 17% of City land area flooded
- 2 million city residents without power
- Closure of 7 subway tunnels, and the Amtrak tunnels to Penn Station
- The destruction of South Ferry subway station the Broad Channel subway viaduct
- Corrosion damage to critical signal systems

Sources: "A Stronger, More Resilient New York," NYC Special Initiative for Rebuilding and Resiliency; MTA

Destructive Impacts of Climate Change

Sandy damage cut off the Hudson Valley and Long Island from the city.



Photo: MTA

Long Island

- \$7 billion in property damages
- Flooding of Amtrak tunnels to Penn Station cut LIRR service by 65%
- Long Beach LIRR branch washed out

Hudson River Valley

- Over \$700 million in damage
- Greatly restricted service to Grand Central
- Significant damage and washouts to West of Hudson Metro-North service

Sources: MTA; "Hurricane Sandy, one year later", New York Daily News;

Changed Geography of Employment



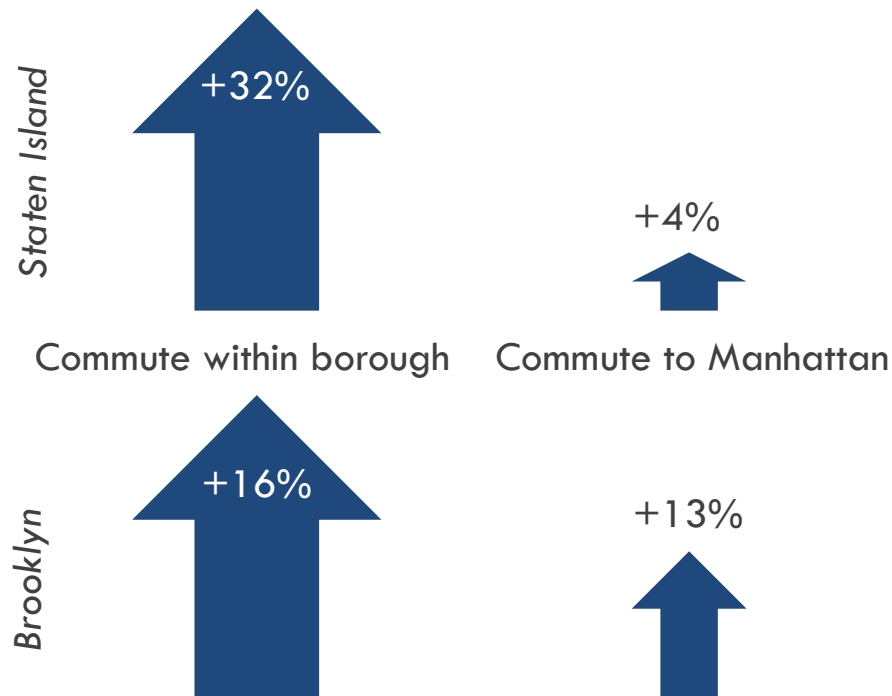
Stamford, Connecticut

Photo: Ritu Manoj Jethani, Shutterstock

Changed Geography of Employment

In New York City, outer-borough job growth exceeds that of Manhattan.

From 1990-2008, the number of Brooklyn, Bronx, Queens, and Staten Island residents commuting to non-Manhattan jobs grew at a faster rate than those bound for Manhattan.



New York City's transit system was not designed to support commuting patterns within and between boroughs outside of Manhattan, requiring flexibility and multimodal transit options.



Sources: "Behind the Curb", Center for an Urban Future, 2011

Median commute times for low-income NYC residents are among the nation's highest.

Changed Geography of Employment

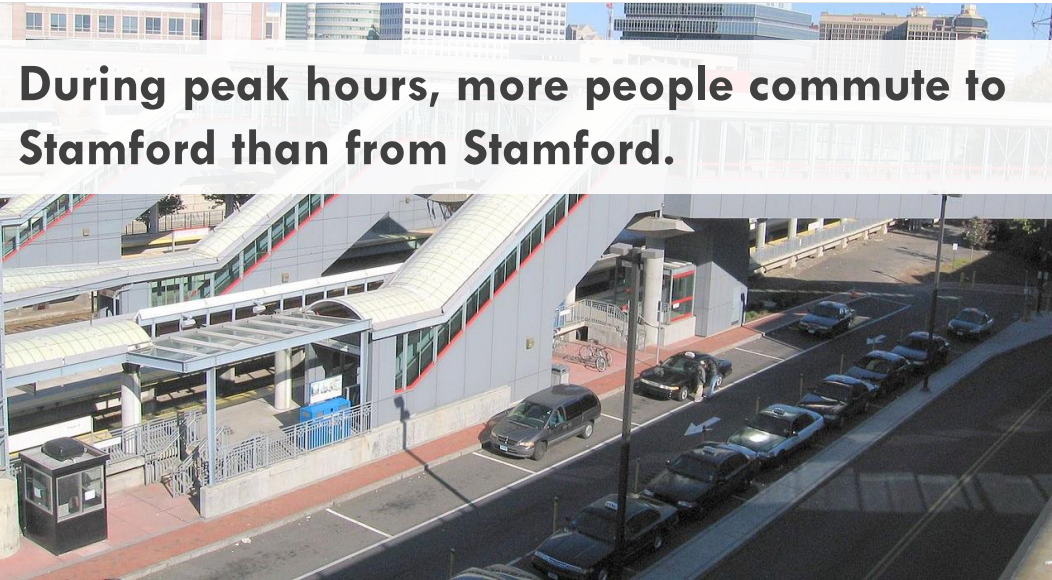
Reverse-commute ridership on Metro-North has quadrupled since 1985.

As of 2012, Metro-North service supports the nation's #1 reverse-commute market.

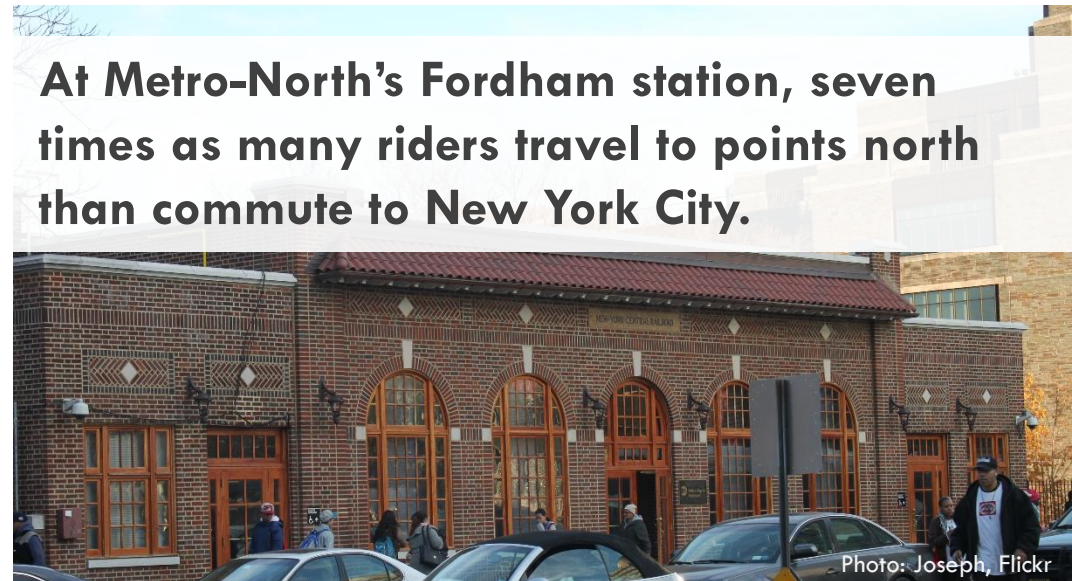
Suburban employment hubs comprise some of the highest Metro-North stations by ridership at peak hours during the weekday morning commute.

1. Stamford: 5,451 riders
2. White Plains: 3,280 riders
3. Greenwich: 1,553 riders
4. Port Chester: 549 riders

Source: MTA



During peak hours, more people commute to Stamford than from Stamford.



At Metro-North's Fordham station, seven times as many riders travel to points north than commute to New York City.

Photo: Joseph, Flickr

Crowding from Growing Ridership



Crowding from Growing Ridership

In New York City, record-level ridership has led to systemwide crowding.

Following decades of investment made possible by the Capital Program, ridership on NYC subways has never been greater.

65%

growth in daily transit ridership since 1992

1.7 billion

subway ridership, highest since 1949

Source: MTA; New York Metropolitan Transportation Council

This explosive growth has resulted in systemwide congestion and a worsening quality of service.



Photo: stockelements, Shutterstock

The Lexington Avenue Line carries 1.3 million riders each weekday, exceeding the combined transit ridership of San Francisco, Chicago, and Boston.

Planners estimate that by 2035 the population of the MTA region will grow by 1.6 million.

Crowding from Growing Ridership

Metro-North and the LIRR both face capacity constraints on growth.

Major increases in commuter rail ridership took place as investments from the Capital Program rejuvenated the networks.

Yet antiquated infrastructure and terminal facilities limit the ability of these railroads to further expand service.

83 million

annual ridership on Metro-North, 2013

83 million

annual ridership on LIRR, 2013

Source: MTA



Planners estimate that by 2035 the population of the MTA region will grow by **1.6 million**.

Crowding from Growing Ridership

Major economic costs result from the prevalence of regional congestion.

1.1 billion

hours of delay

152,000

fewer jobs

\$16 billion

lost output

Source: 2014 HR&A analysis, based on "Growth or Gridlock?," Partnership for New York City, 2006.

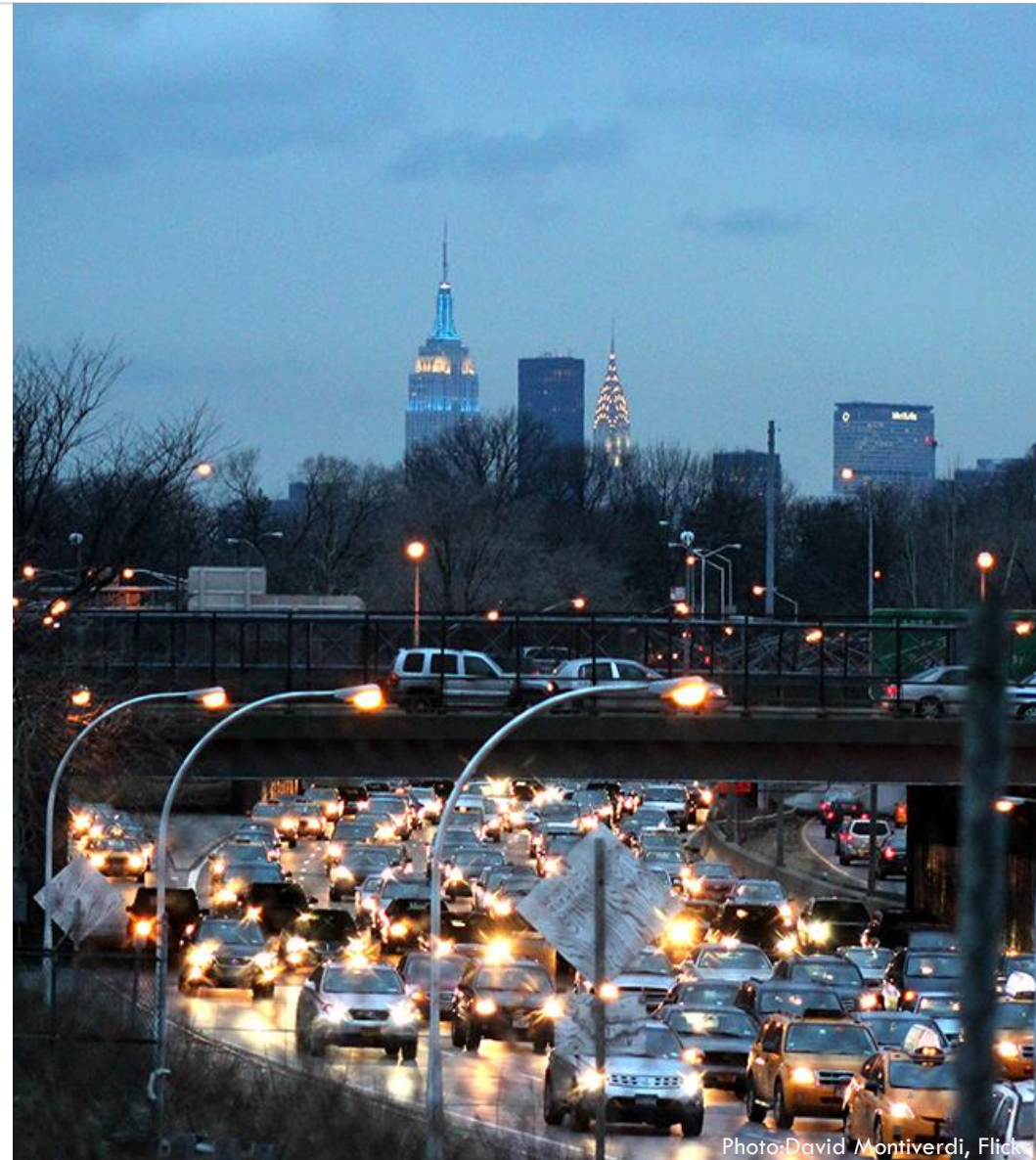


Photo: David Montiverdi, Flickr

Increased Global Competition



Increased Global Competition

London and other cities seek to unseat New York as a global leader.

Per a recent PriceWaterhouseCoopers study, although New York City outperforms most cities, the comparatively slow pace of capital investment in transportation prevent it from achieving global preeminence.



Photo: Tom Page, Flickr

	<u>NYC</u>	<u>London</u>
Overall ranking	#2	#1
Transportation & Infrastructure ranking	#16	#6



Source: Cities of Opportunity 6, Pricewaterhouse Coopers, 2014.

Addressing these challenges will require renewed commitment from the region's leaders.

Destructive Impacts of Climate Change



Infrastructure upgrades to ensure the resilience of the region's transit infrastructure

Changed Geography of Employment



Enhanced transit service to better support non-CBD and reverse commute travel

Crowding from Growing Ridership



Investments in transit facilities and service to accommodate projected regional growth

Increased Global Competition



A public commitment to robust capital funding of transit

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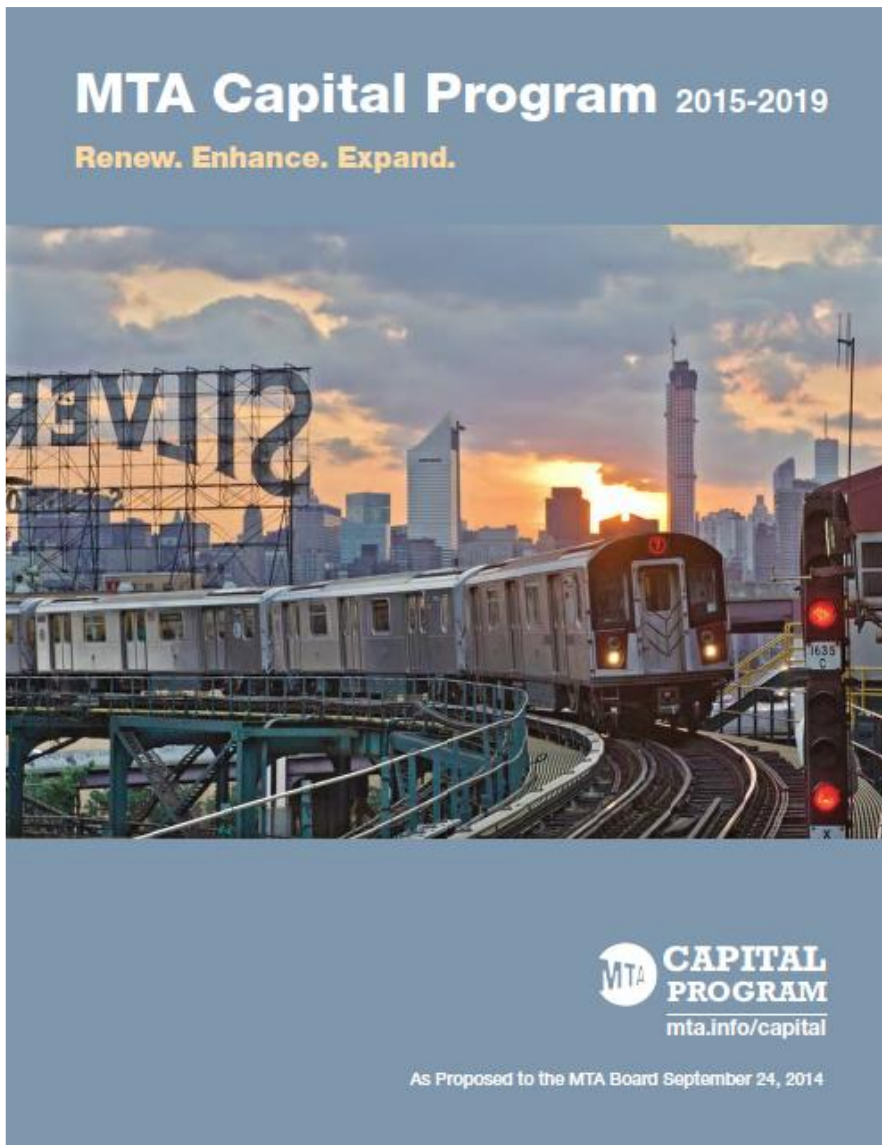
THE MTA CAPITAL PROGRAM: A LEGACY OF REVITALIZATION

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WHY THIS CAPITAL PROGRAM MATTERS

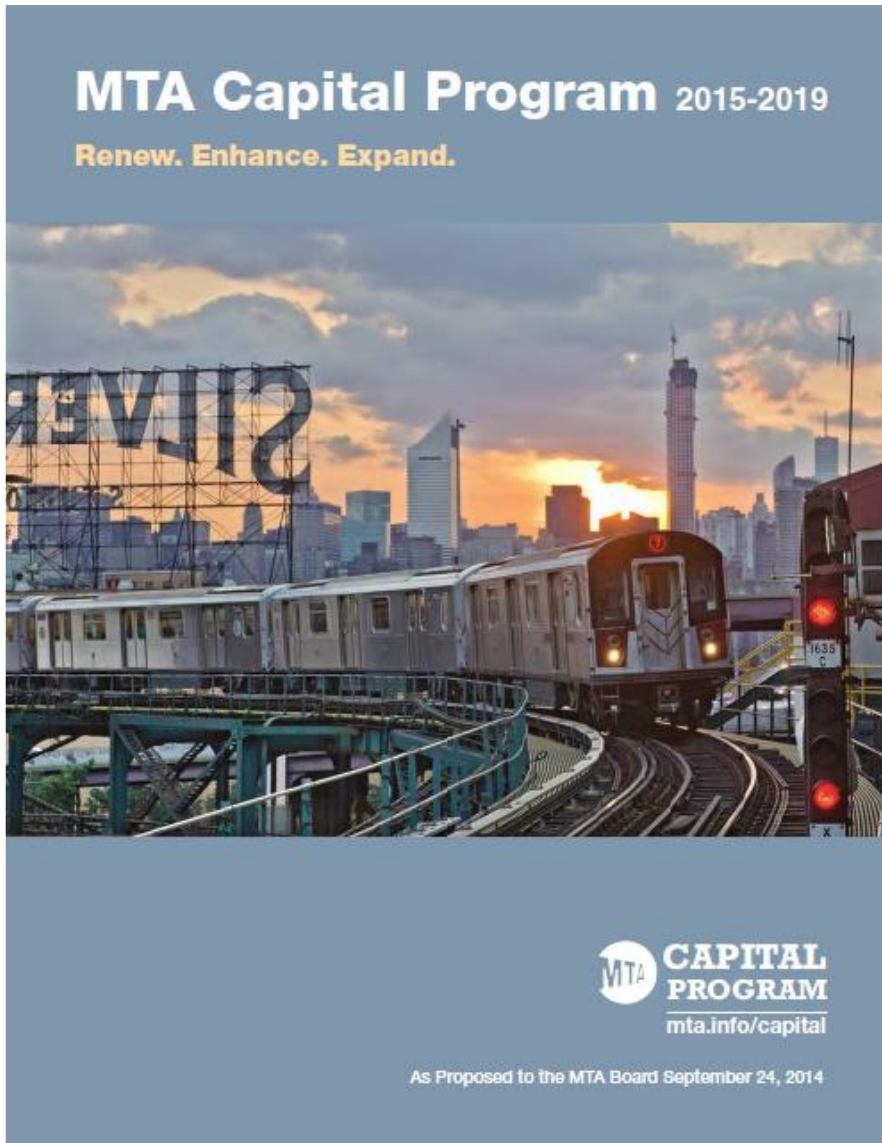
The 2015-2019 Capital Program reflects the strategic vision of the MTA.



Building upon its most recent 20-year needs assessment, and in full recognition of emerging regional challenges, the investments that comprise the 2015-2019 MTA Capital Program are designed to enable the region's continued growth.

The 2015-2019 MTA Capital Program

The MTA has framed its capital program around four primary themes.



RENEW

Protect the safety, reliability, and quality of existing MTA services.

ENHANCE

Improve the customer experience of the MTA network.

EXPAND

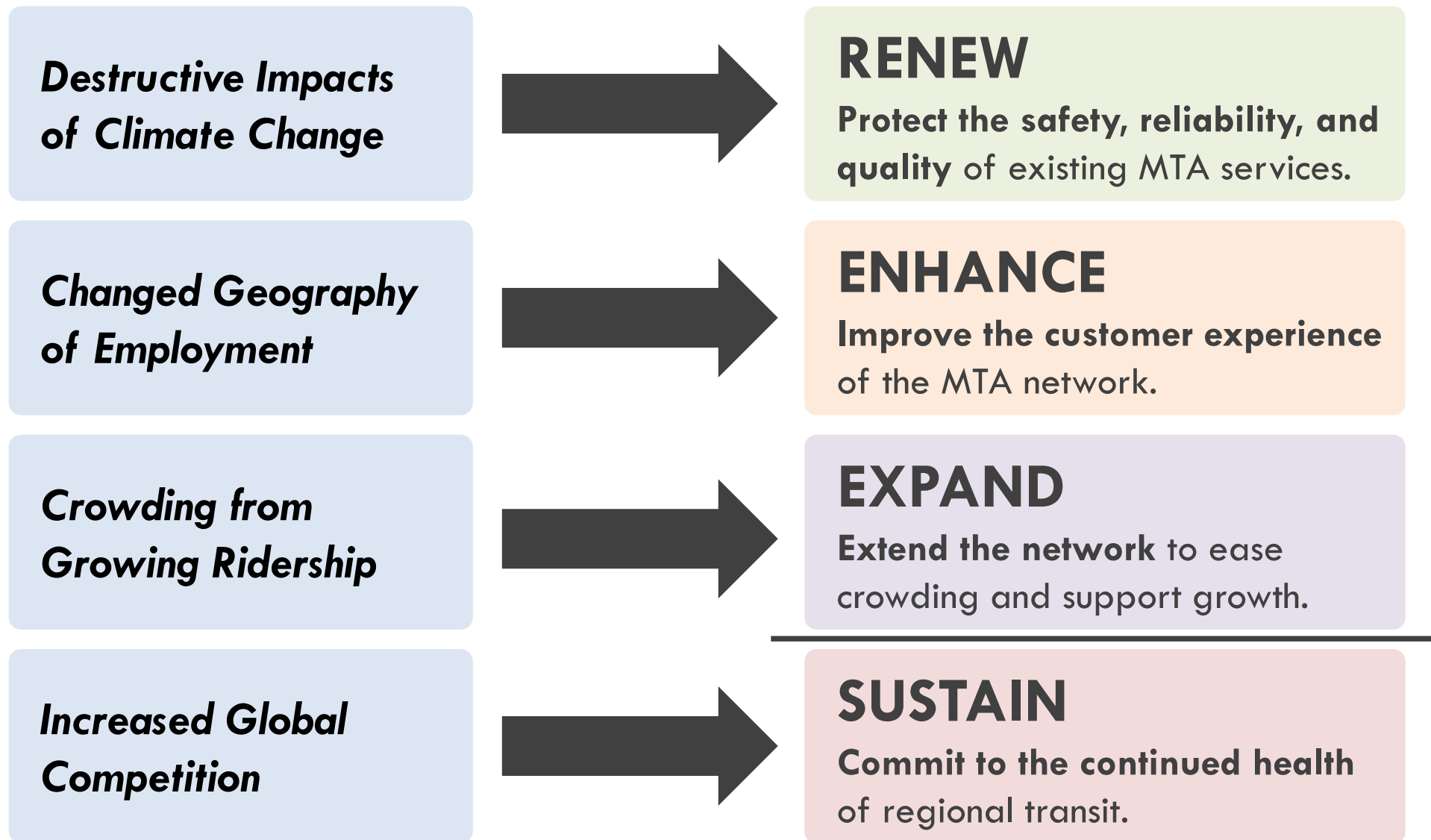
Extend the network to ease crowding and support growth.

SUSTAIN

Commit to the continued health of regional transit.

The 2015-2019 MTA Capital Program

These themes are aligned with the region's emerging challenges.



The 2015-2019 MTA Capital Program: New York City Transit

A comprehensive investment program will position the city for growth.

RENEW

Replace signals, track, switches, train cars and buses to reinforce the strength of the transit network.



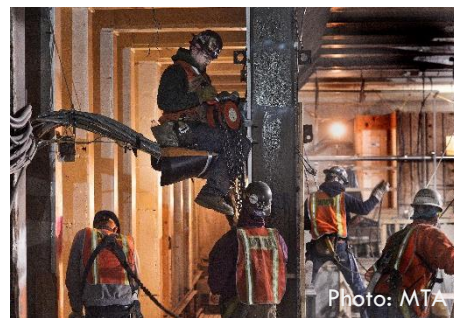
ENHANCE

Improve in-station communications, expand ADA accessibility, and elevate the customer experience.



EXPAND

Continue the Second Avenue Subway extension and expand Bus Rapid Transit across the city.



The 2015-2019 MTA Capital Program: New York City Transit

Staten Island will benefit from new equipment and improved amenities.

RENEW

ENHANCE

Staten Islanders throughout the borough will benefit from improved service and equipment upgrades.

- Replacement of entire rail fleet of the Staten Island Railway
- Upgrades to MTA Express Bus fleet, including Next Stop screens



Photo: Wikimedia Commons

The 2015-2019 MTA Capital Program: Long Island Rail Road

Expansion and capacity projects further extend the system's reach.

RENEW

Continued railcar replacement and an overhaul of the Jamaica interlocking will aid reliability.

ENHANCE

Renovating Babylon, Nostrand Avenue, and Hunterspoint Avenue will improve service quality.

EXPAND

East Side Access will enable service expansion.



Photo: MTA



Photo: MTA

The 2015-2019 MTA Capital Program: Long Island Rail Road

Nassau County will benefit from capacity investments and new train cars.

RENEW

EXPAND

Nassau County residents will benefit from increased capacity and updated infrastructure.

- Replacement of aging bridges, including the Buckram Road Bridge
- Replacement of power substations
- Procurement of new M-9 cars in preparation for service to Grand Central
- Modernization of signal systems



Photo: MTA

The 2015-2019 MTA Capital Program: Metro-North Railroad

MNR riders will benefit from modern signaling and Penn Station access.

RENEW

Renovation of the GCT trainshed and system-wide signal upgrades will boost system resiliency.



ENHANCE

Riders will benefit from restored Harlem Line stations and new GCT customer information technology.



EXPAND

Penn Access will provide new, fast rail service to Penn Station for residents of the Northeast Bronx.



The 2015-2019 MTA Capital Program: Metro-North Railroad

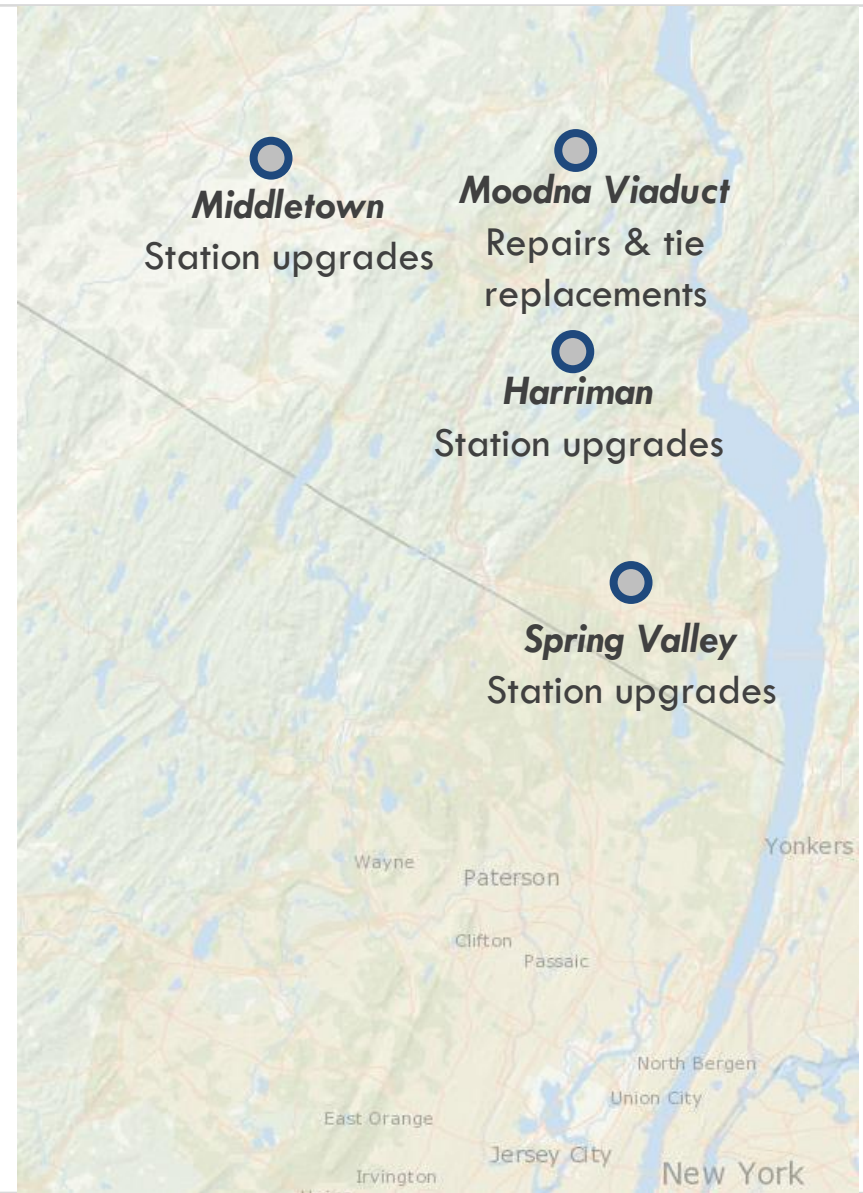
West of Hudson lines will benefit from improved stations and track.

RENEW

EXPAND

Riders on the Pascack Valley and Port Jervis lines will benefit from improved stations and rail infrastructure.

- Upgrades to Spring Valley, Harriman, and Middletown rail stations
- Maintenance and improvements to Moodna and Woodbury viaducts



The 2015-2019 MTA Capital Program: A \$32 Billion Investment

This renewed commitment will position New York City for future growth.

RENEW

Reliability

Fleet replacement, station renewals, etc.

\$9.2B

Safety

Track, signals, Help Points, etc.

\$13.0B

ENHANCE

Customer Experience

Real time information, station signage, etc.

\$0.3B

System Improvements

Station accessibility, new fare payment, etc.

\$4.0B

EXPAND

Network Expansion

East Side Access, Second Ave. Subway, Penn Access

\$5.5B

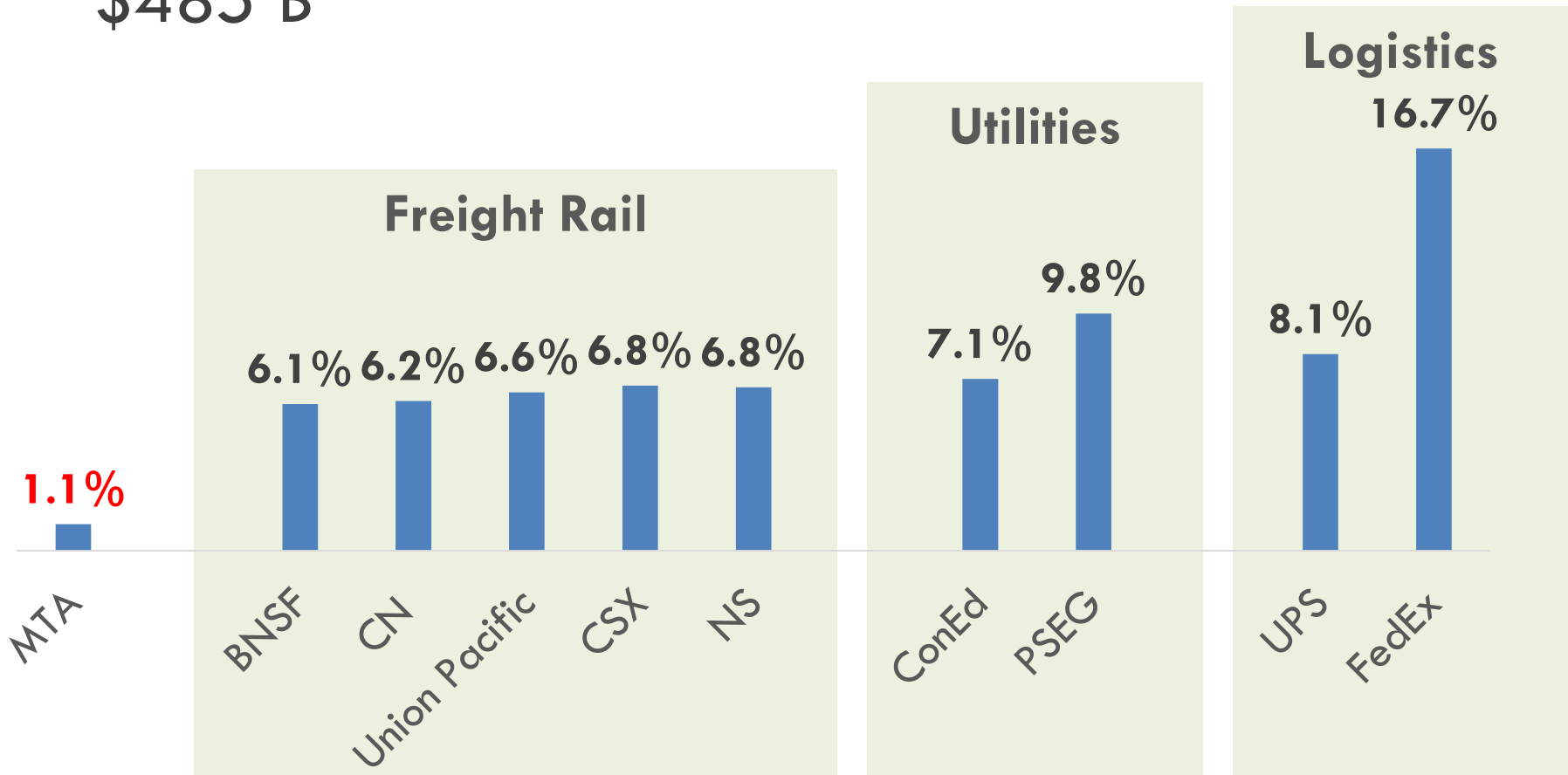
SUSTAIN

a sustained public commitment to
the future of the MTA and the region

\$32.0B

An initial examination suggests that MTA's rate of investment is significantly lower than those of comparable private firms.

$$\frac{\$5.3 \text{ B}}{\$485 \text{ B}} = 1.1\% \text{ annual reinvestment rate}$$



Source: HR&A analysis of Annual Reports/10-K for 2009-2013. HR&A estimates MTA's comparable asset base at approximately \$485 billion, which reflects a 35% depreciation rate to total assets of approximately \$880 billion, after deducting sunk costs estimated at \$134 billion. This analysis is limited to a comparison of non-expansion capital investment to total assets.

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WHY THIS CAPITAL PROGRAM MATTERS

The 2015-2019 MTA Capital Program

Why this Capital Program matters

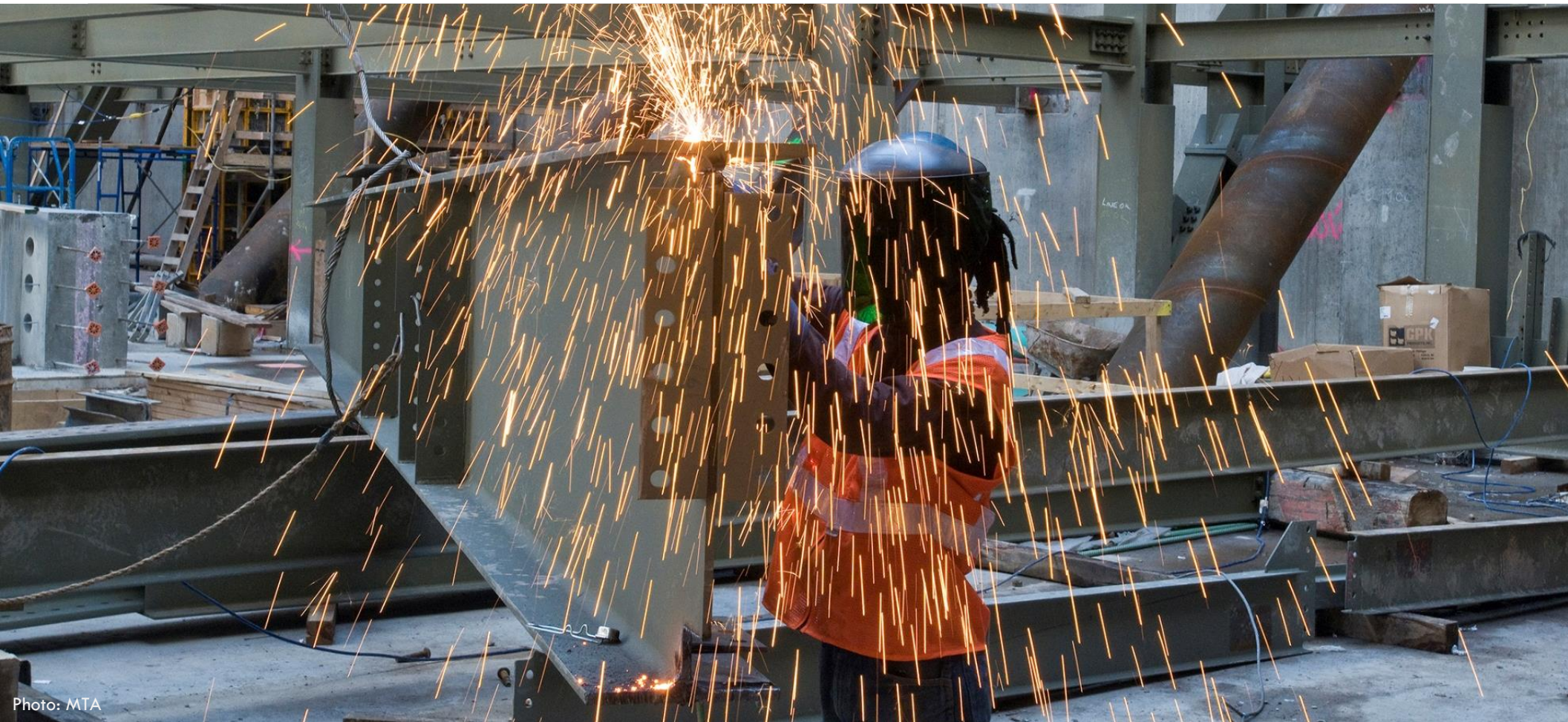


Photo: MTA

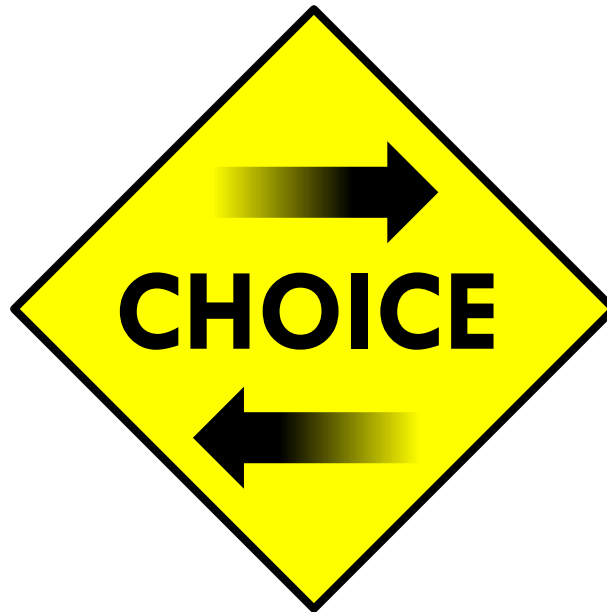
Continued investment in the MTA Capital Program is essential for the continued economic growth in both the metropolitan region and throughout New York State.

The 2015-2019 MTA Capital Program

Why this Capital Program matters

This winter, New York's leaders decide whether to fully fund the Capital Program.

**Investment
in the future
of the region**



**Disinvestment
in the region's
core needs**

Their choice will significantly shape the future of the New York metropolitan area.

The MTA Capital Program expands social equity.

Failure to fully fund this Capital Program puts the region's future at risk.

Limited ADA accessibility

Maintaining low fares and a single-zone network will ensure continued access to education and employment opportunities for all New Yorkers.



Degrading service

Large fare increases

Less Opportunity

The MTA Capital Program creates vibrant communities.

Failure to fully fund this Capital Program puts the region's future at risk.

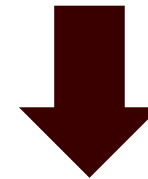
Rail investments to boost capacity and support reverse commuting will encourage transit-oriented development in the region's suburbs.

New Select Bus Service will improve access to emerging communities and support new mixed-income housing.

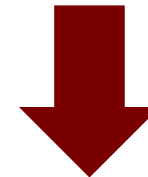


Within NYC

No new SBS routes



Longer commutes

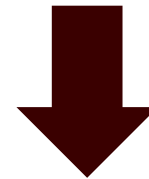


Under-utilized development sites

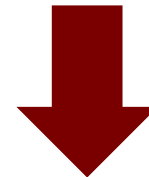


In the Suburbs

Limited off-peak service



Less value from transit



Inefficient land use

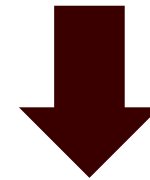
The MTA Capital Program sustains expanded tourism.

A robust and well-maintained network will encourage tourists to travel to emerging destinations and venues outside of Manhattan.

65% of international tourists to New York City – a group that contributes \$18 billion in annual spending to the city's economy – leverage the MTA network during their stay.

Failure to fully fund this Capital Program puts the region's future at risk.

Poor service quality



Decline of regional image



Slowdown in tourism



Fewer Tourism Jobs

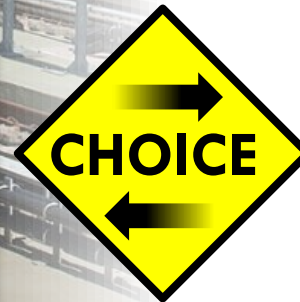


The MTA Capital Program supports economic growth.

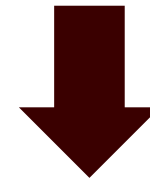
Failure to fully fund this Capital Program puts the region's future at risk.

New signals, trains, and buses will enable the MTA network to support population growth and changing employment patterns.

Reinforced stations and tunnels will protect the economy from climate change.



Crowded trains/buses



Longer commutes



Lost productivity



Stagnant Growth

Failing to fund the 2015-2019 MTA Capital Program **will risk the future of the New York metropolitan region** in the decades to come.



Funding the 2015-2019 MTA Capital Program positions the New York metropolitan region for continued success in the decades to come.



Keeping New York On Track

The Importance of the MTA Transit Network in a Changing World

February 11, 2015

Prepared by HR&A Advisors on behalf of and in coordination with:

The Permanent Citizens Advisory Committee to the MTA

Urban Land Institute – New York

with assistance from **New York University – Schack Institute of Real Estate** and **Hornick Consulting**



PCAC

PERMANENT CITIZENS
ADVISORY COMMITTEE TO THE MTA



Urban Land Institute **New York**

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