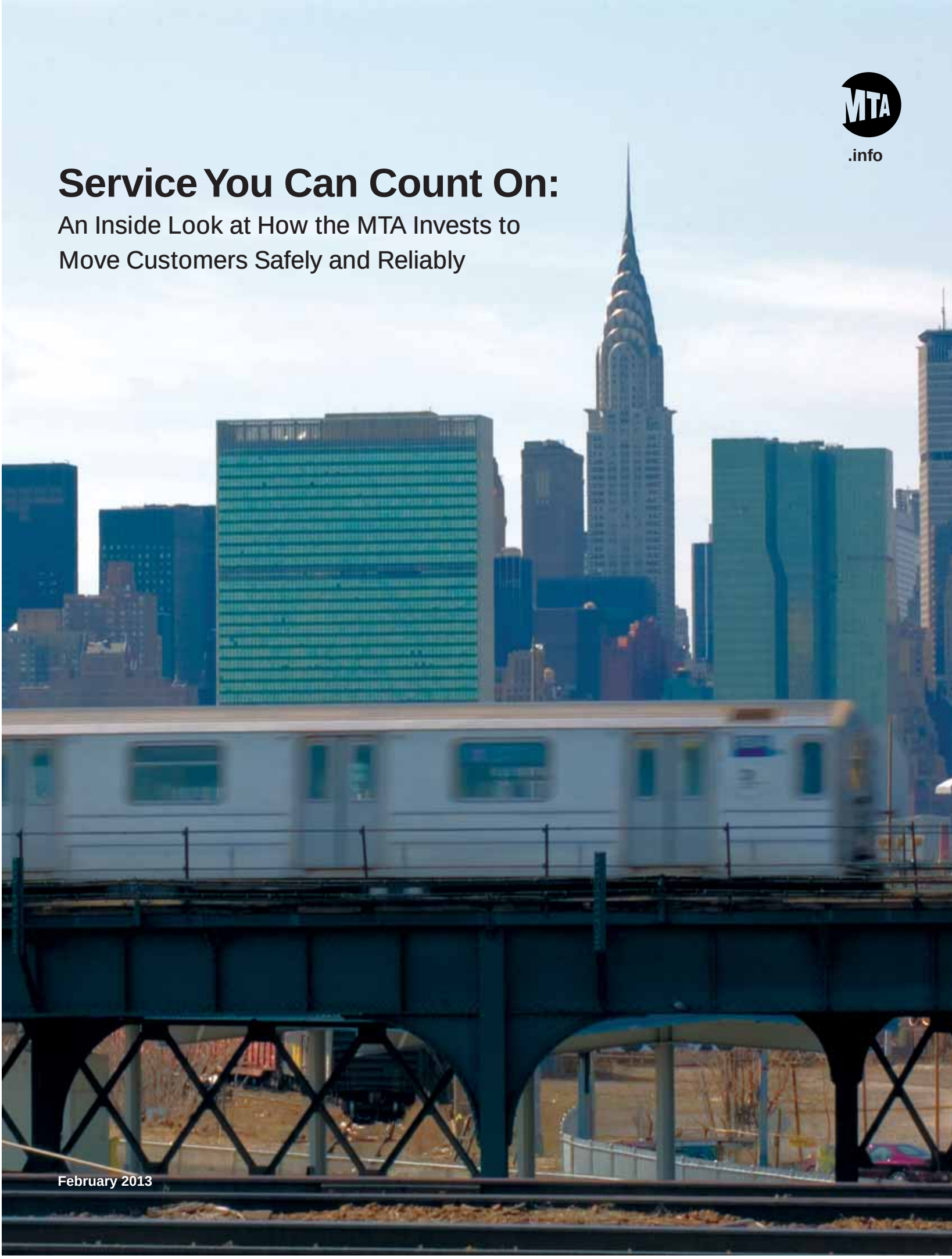

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Service You Can Count On:

An Inside Look at How the MTA Invests to Move Customers Safely and Reliably

February 2013

Reliable Service.

It means you can depend on the MTA to get where you need to go,when you need to get there. It means your train or bus arrives when you expect it, that it's warm in the winter and cool in the summer, and that your trip is always a safe one.

New Yorkers today know they can depend on our transportation system, but it hasn't always been that way. Over the past 30 years, the MTA has invested nearly $90 billion in the vital infrastructure that keeps New York moving. As a result, MTA ridership has grown 50 percent in the last 18 years, fueling the growth of our region's $1.4 trillion economy, which makes up a staggering 11 percent of our entire *nation's* GDP.

Sustaining this reliability—on a system that's more than 100 years old and runs 24/7—requires constant care and attention, and that means we can never stop investing. And we can't overlook many of the critical investments that make our system so reliable. Track, signals, vents, pumps, power… all of these components need to work to get you where you need to go. If any one of them fails, it's much more than a minor inconvenience.

In a place as crowded as New York, even a short delay on one train at rush hour can produce a massive ripple effect—leading to crowding on the platform, doors being held open, and ever-increasing delays for every train that follows. If that happened on a regular basis, the impact would be severe—for millions of riders, their employers, and our region's economy.

In the pages that follow, we make the connection between reliable service and capital investments. We'll show you some of the visible and invisible components that get you from here to there. And in the end, we hope you'll see that when a train or bus pulls into your station, it's the direct result of the investments we make in our system, and the hard work of 67,000 people across our organization.

So what does it take to provide reliable service?

Signals

Interlockings

Communications

Line Structures

Pumps

Power

Track

We know reliable service suffers on the weekends ...

That's because—unlike almost every other transit network in the world—our system runs 24 hours a day, 7 days a week, 365 days a year, and the best way to keep it reliable is to work on it when the least number of people are using it. It's the price we pay for a system that serves the needs of the city that never sleeps.

Line structures

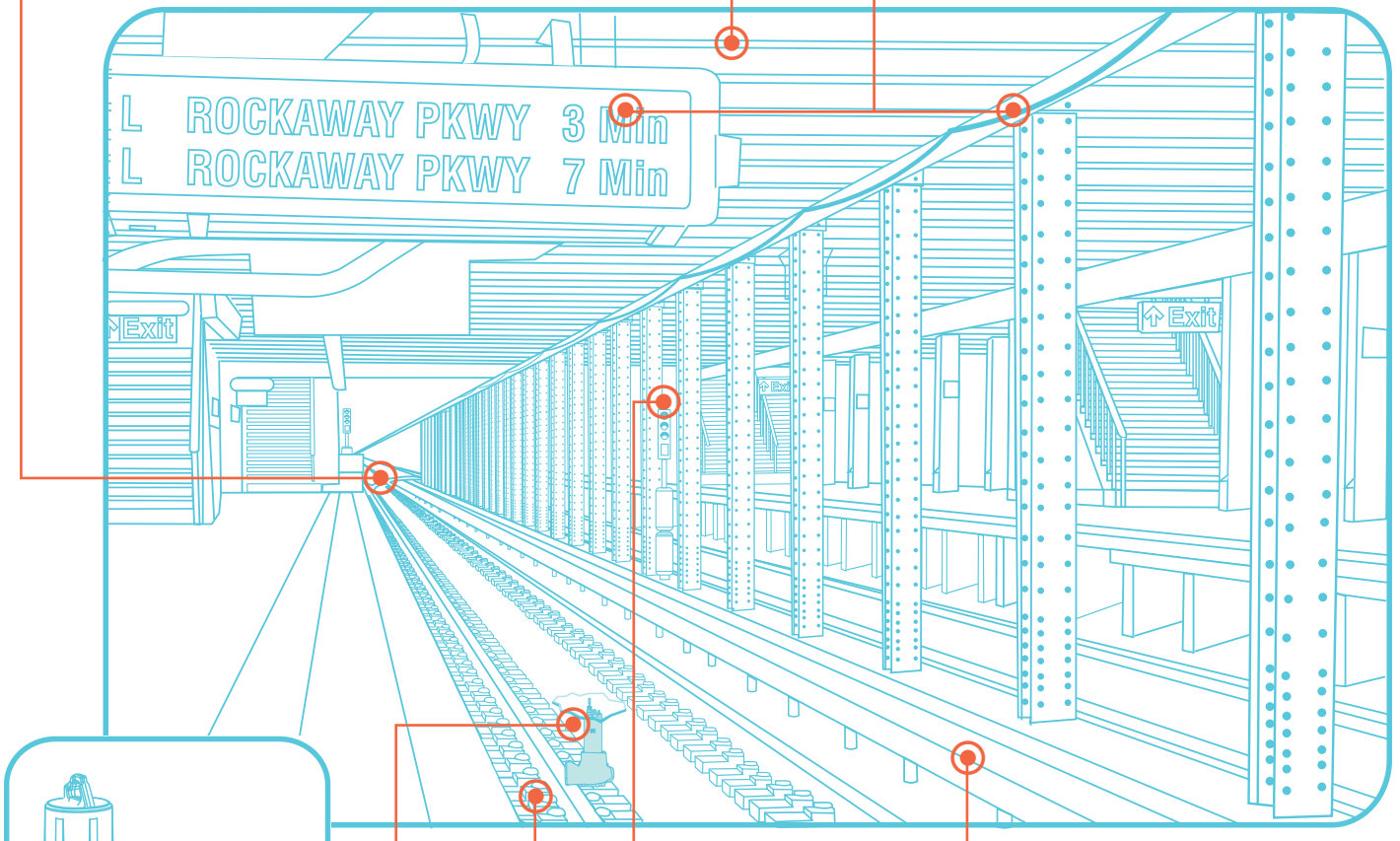
Line structures are the bridges and tunnels over or through which our railcars travel.

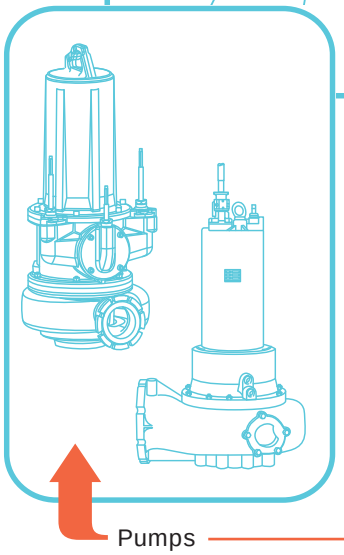
Interlockings

The areas where tracks meet or "switch"—known as interlockings—change a train's track depending on train traffic and where that train is going.

Communications

The MTA operates a vast communications network supported by wireless radio systems, more than 3,700 security cameras, and 975 miles of fiber optic cable.





Pumps

Subway pumps remove up to 13 million gallons of water from our system every day, rain or shine.

Track

The MTA network has over almost 2,000 miles of mainline track, which allows your train to move from here to there.

Signals

Similar to a stop light, signals display red, yellow, or green to let subway or train crews know when they can safely proceed.

Power

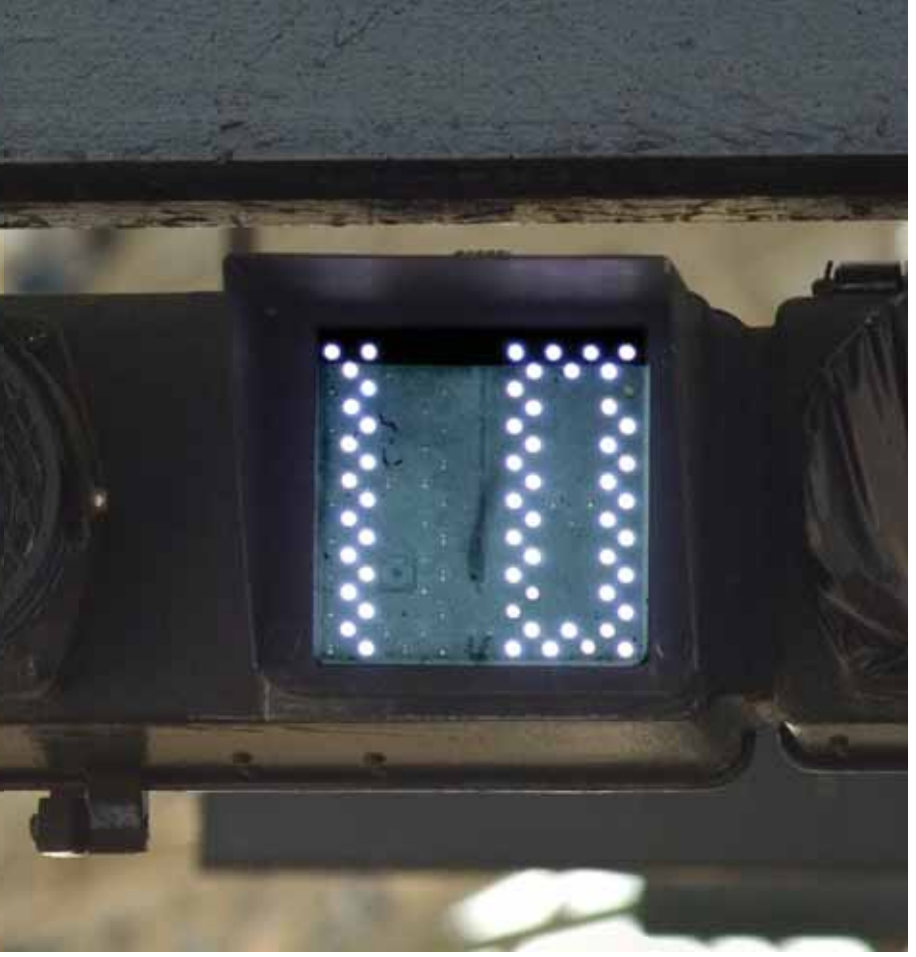
Through a complex process involving thousands of components, power is fed onto a track's third rail or into overhead wires, where a train picks it up and—like gas for your car—uses it to move.

Signals

Electrical circuits in the tracks detect a train's presence and communicate with signals to prevent trains from getting too close to one another. The signal may be located along the tracks or in the operating compartment of a train. If signal components or track circuits fail, trains and subways are slowed or stopped automatically. Our signal system's primary job is to keep customers safe, but it also allows us to space trains efficiently and provide reliable service.

Did You Know?

The MTA network has over 13,000 signals—more than all the traffic signals in Manhattan.



Signals

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As we modernize some signals, we're replacing others with a new computer-based system that knows the precise location of every subway train on the tracks and can automatically space trains closer together. This system—which is fully in place on our subway's L Line—allows us to run more trains and provide better service.

Interlockings

Interlockings all have mechanical "track switches" which enable trains to be guided safely from one track to another. Many of these switches are controlled remotely by operators in satellite towers, who manipulate them with the click of a mouse. Operators know when to change a switch based on schedule information, real-time updates, and large model boards that display a track's layout with lights to indicate a train's presence on the tracks. These boards—along with track switches and interlockings themselves—must be in perfect working condition to ensure that trains are safely moved to the correct track.

Signals

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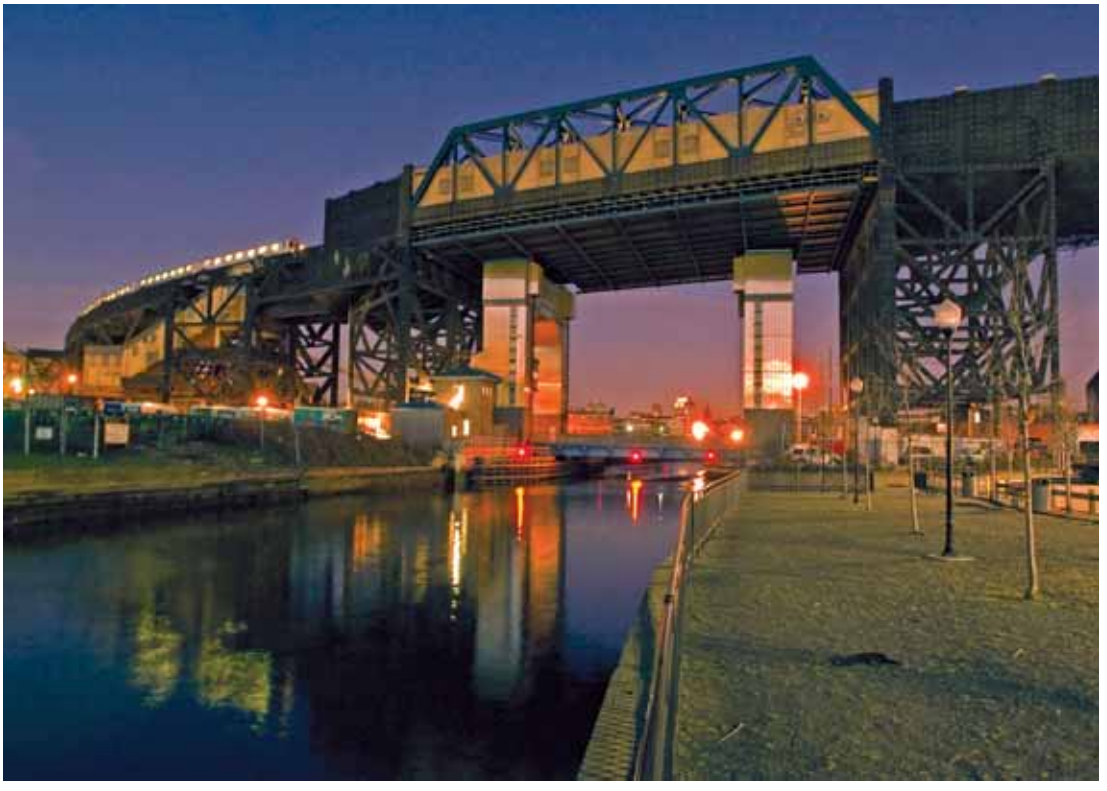
Communications

Our communications network lets us monitor, supervise, and control our entire system. The information we gather also allows us—through countdown clocks, in-station public address announcements, and closed-circuit TVs—to provide real-time customer service and information, consistent and reliable service, and to respond quickly to emergencies.


GA

Line Structures

We all know how important it is to maintain bridges and tunnels. Line structures—rail tunnels, elevated structures, viaducts, and railroad bridges—are the transit system's equivalent, and the backbone of our system. Just like bridges and tunnels, line structures are susceptible to water damage, corrosion, and normal wear-and-tear.



Two "Line Structures" Projects in the 2010-2014 Capital Program

- The **Atlantic Avenue Viaduct**—which has carried LIRR trains and customers between Jamaica and Downtown Brooklyn since 1901—recently underwent a major rehabilitation. This $206 million project restored a vital stretch of railroad infrastructure to a state of good repair, ensuring safe and reliable service to our customers and local residents for years to come.
- Spanning the Gowanus Canal, the **Culver Viaduct** supports four tracks, two subway lines, and two stations, including Smith-9th Streets—the highest elevated station in the world. This $273 million project included replacing all four tracks and repairing and waterproofing the concrete deck that supports the tracks.

Pumps

Smooth and reliable service depends on dry train tracks, but dry weather outside doesn't necessarily mean dry conditions on our tracks. Our subway system is far underground, where water abounds, and subway pumps remove at least 13 million gallons of water from our system every day. This water is fed through drains to pump plants, which empty into the city's storm-water system.

To keep pumps working well and to improve our ability to serve customers during intense rainstorms, we're now installing multi-purpose, raised grate "street furniture." This special furniture limits the flow of storm water into the subway and serves double-duty as public benches and bike racks.

Above: Control panels in a pump room, where MTA technicians control the flow of water moving through our subway system.
Right: A power substation, which converts alternating current (AC) power from ConEd or LIPA to direct current (DC), before sending it to the third rail.

Power

Generators send alternating current along high-tension cables to substations on various routes, where it's converted to direct current. The converted current is then fed onto the third rail through more than 3,400 miles of heavy traction power cables and almost 300 circuit breaker houses. Thousands of components in our power system need to be in good working order for trains to run at their full, safe speed—making investments in power essential. If anything isn't working properly, trains operate more slowly or not at all, and your service suffers.

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Did You Know?

New York State has the lowest per-capita energy consumption in the United States, thanks largely to the MTA's operations and the correspondingly lower rates of driving.

Did You Know?

The MTA's track would reach from New York to Santa Fe, New Mexico if laid straight from end to end.

90 miles of the older, standard track

About 370 miles of the more modern, standard track

160 miles of track used outdoors or on embankments

About 170 miles of specialized elevated track

Track

MTA track is traversed each day by thousands of trains carrying millions of people. To counter wear and tear and maintain reliability, we regularly replace track before it falls into disrepair. All tracks are inspected visually by trackwalkers twice weekly and scanned for internal defects using specialized railcars at least twice a year. Of course, we need track to move trains, but we also need *well-maintained* and *modern* track to move trains reliably.

4 Types of Track

Our subway system has four basic types of mainline track. One is standard for our system but it's old, so we're replacing it gradually with another type of more modern standard track. The third type is used outdoors or on embankments and the fourth is used for elevated track. We invest in track every single year because it is quite literally the foundation on which we provide reliable service.

Subways
Trains
Buses

The Vehicles That Get You Where You're Going

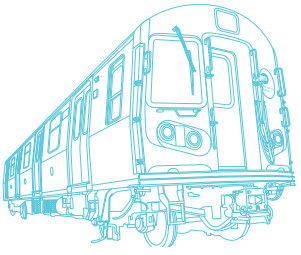
In the 1970s and early '80s, getting stranded on a subway, train, or bus was practically a rite of passage for newcomers to our region. That all began to change in 1982, when farsighted New York leaders created the MTA's Capital Program—a series of five-year investments through which we regularly maintain and improve our entire network.

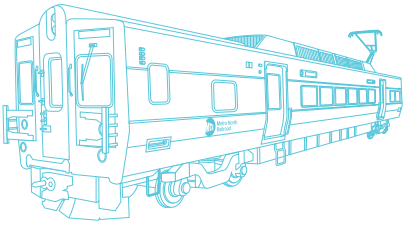
These investments have led to dramatic gains in the reliability of our fleet, but that's not the only perk of continuing investments. Capital investments allow us to give you the most comfortable, environmentally-friendly, and technologically-advanced vehicles in the business. Our latest subway cars and commuter trains boast more high-tech customer information than ever before. Our bus fleet may be the cleanest in the entire world, with nearly 1,700 Hybrid-Electric buses, more than 660 Compressed Natural Gas buses, and over 3,200 Clean Diesel buses operating on New York City streets. And this year, more than 1,500 of our buses will have security cameras, to help ensure that our customers and employees are kept safe on the road.

Overall, the MTA runs many types of subway cars, commuter trains, and buses. The following pages show off some of our latest. They are clear examples of how continued investments lead to more comfortable and reliable service, and help us keep our customers informed.

Capital investments have dramatically improved the reliability of MTA service over the past 30 years.

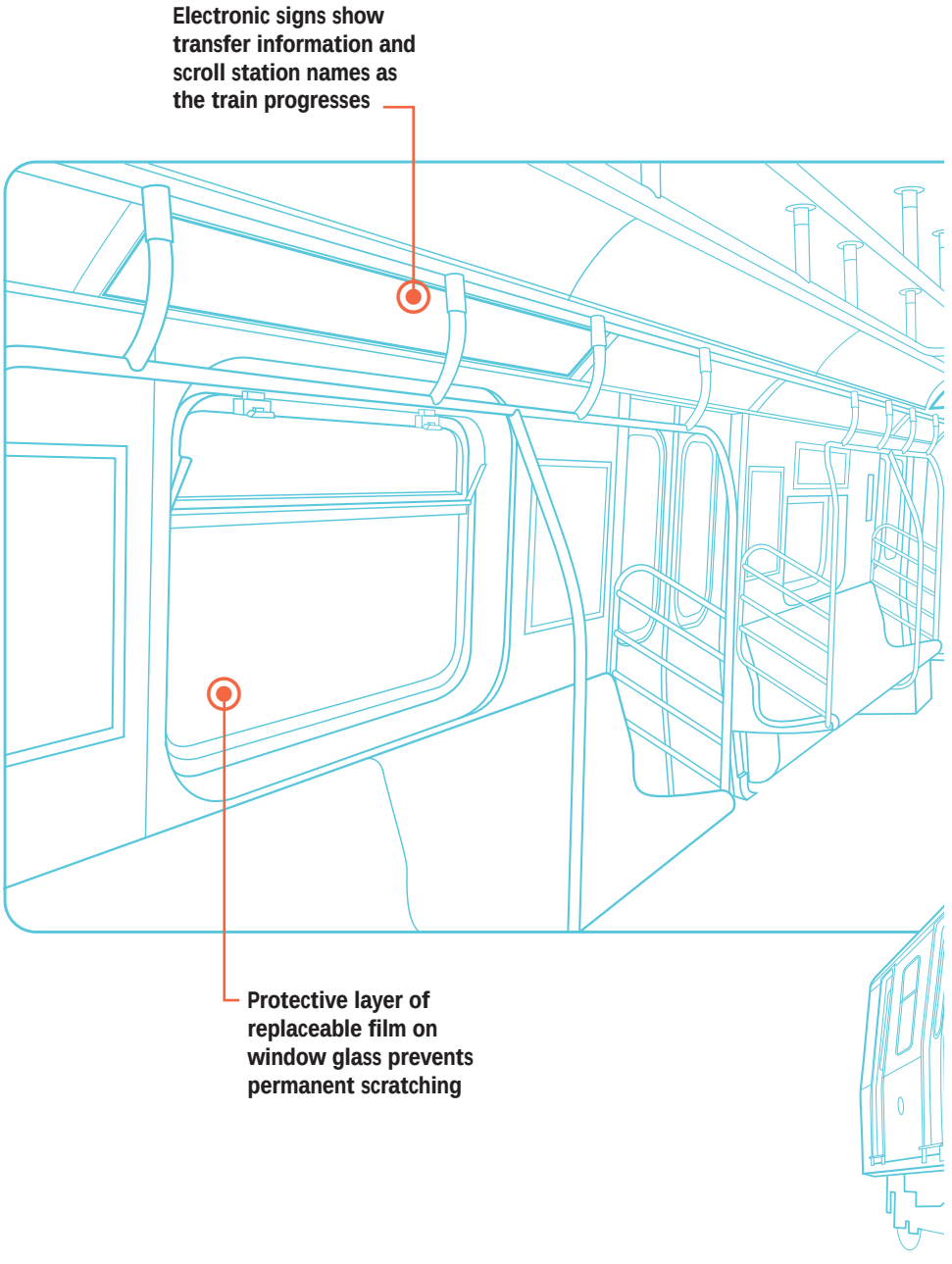
	1980s	Today
	Miles Between Breakdowns	
SUBWAY	6,800	164,500
TRAIN	15,500	179,800
BUS	1,100	4,680





Subways

MTA New York City Transit operates the largest subway system in the country, with a fleet of 6,300 railcars serving 468 stations and over five million customers every day. In 1980, the average subway car broke down once every 6,800 miles. Today, the distance between breakdowns is 164,500 miles. That means our subway fleet is almost 25 times more reliable than it was a little more than 30 years ago.



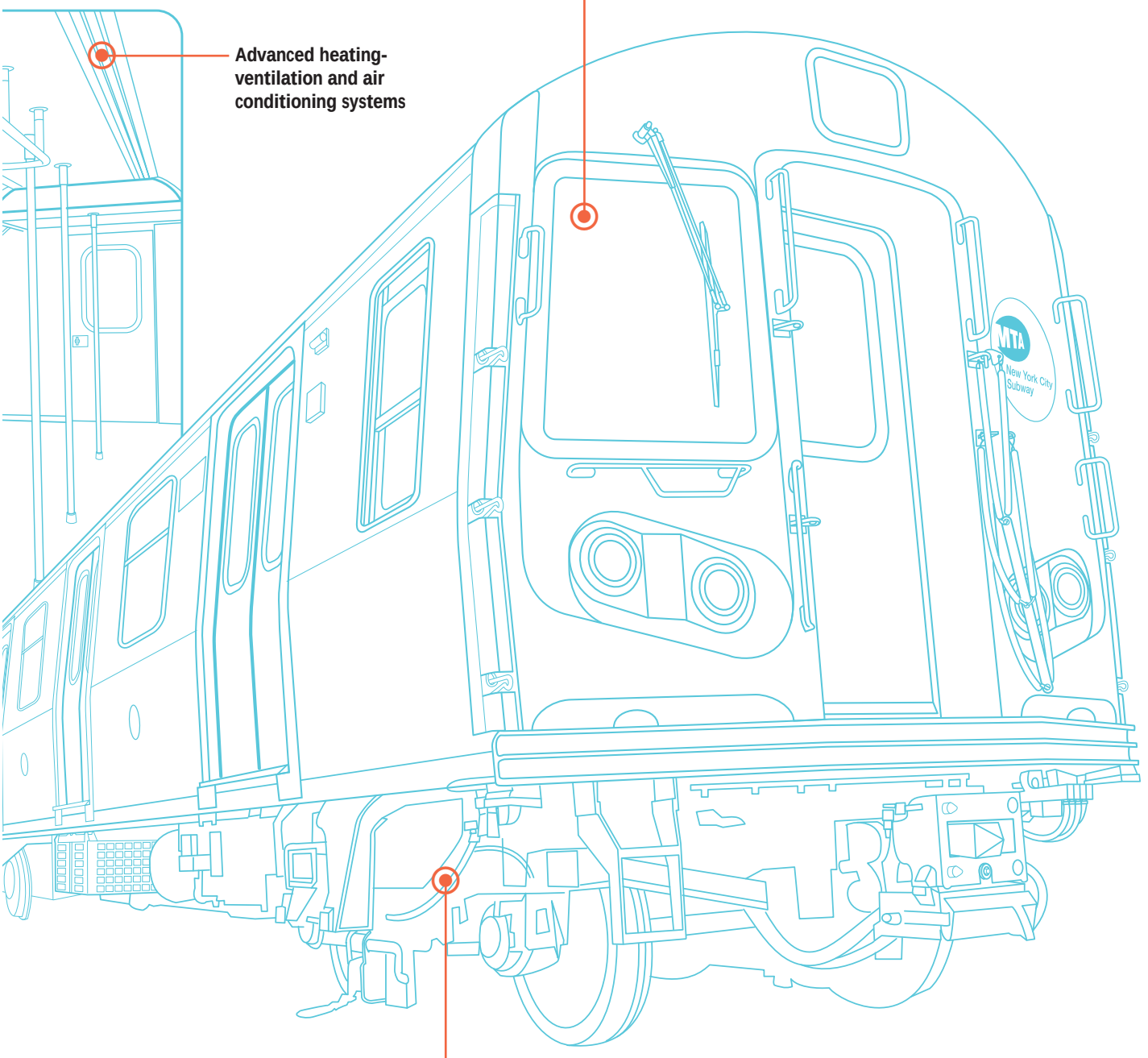
Subways

Trains

Buses

State-of-the-art monitoring and diagnostics system in each cab allows us to quickly identify and correct problems

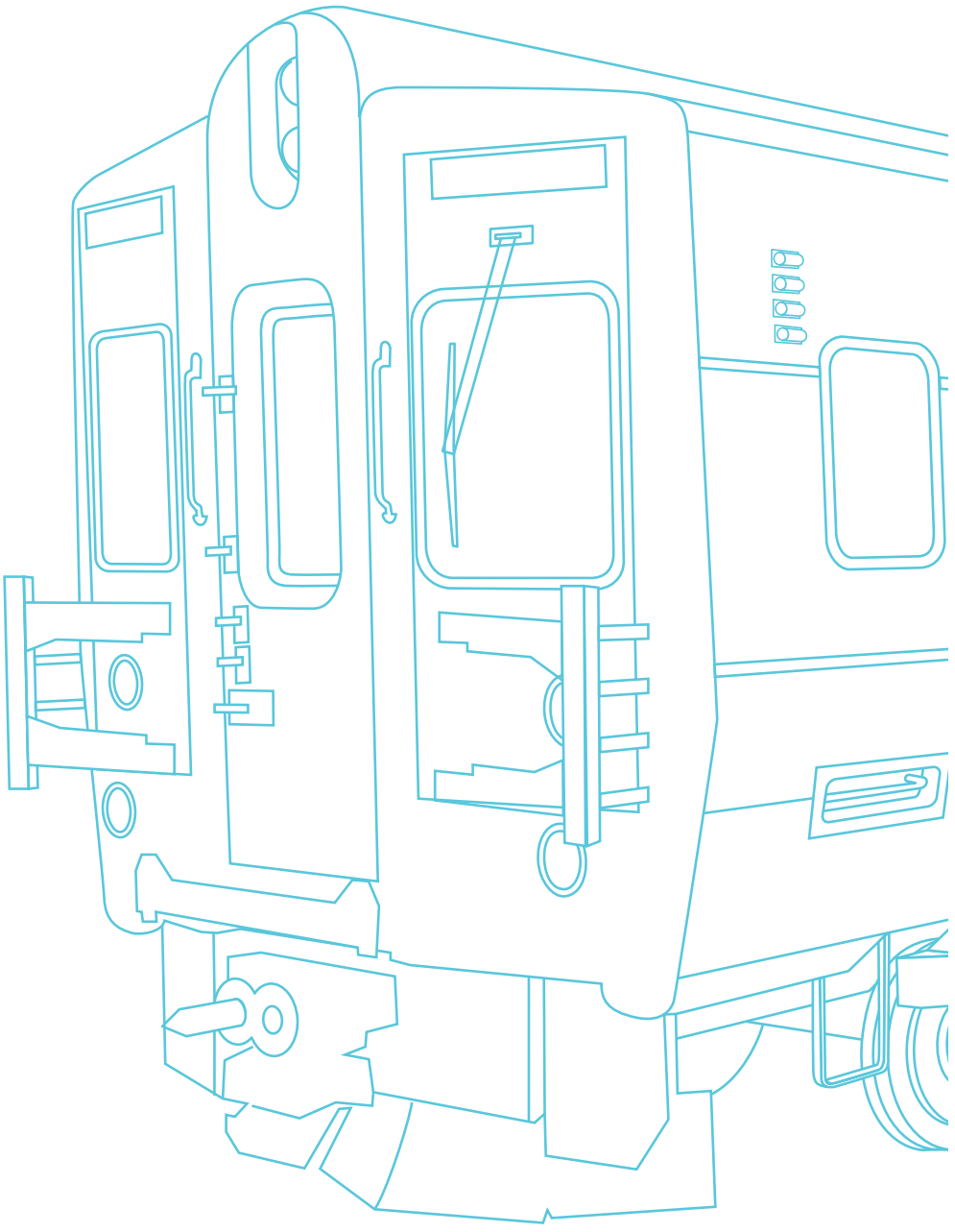
Advanced heating-ventilation and air conditioning systems

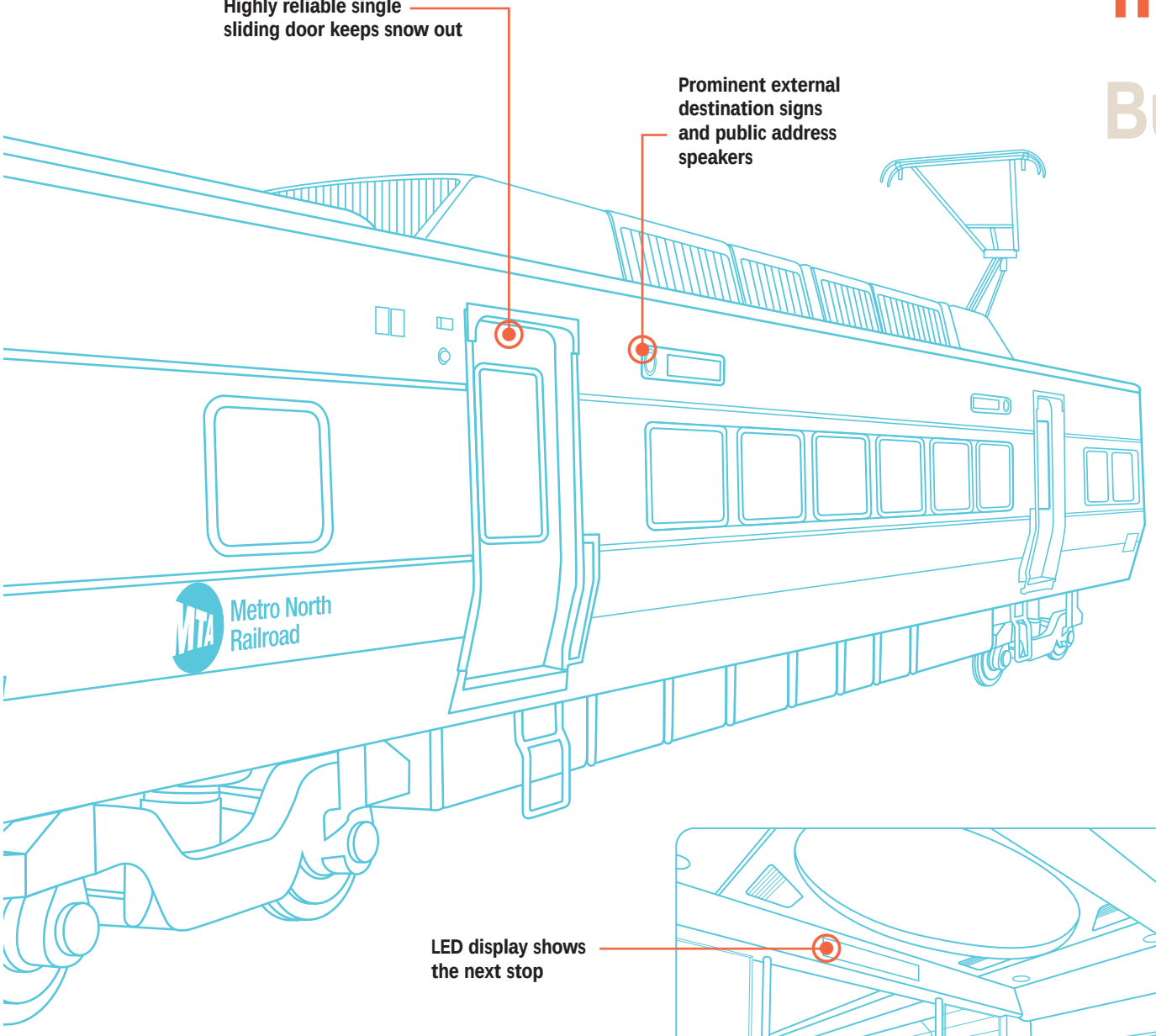


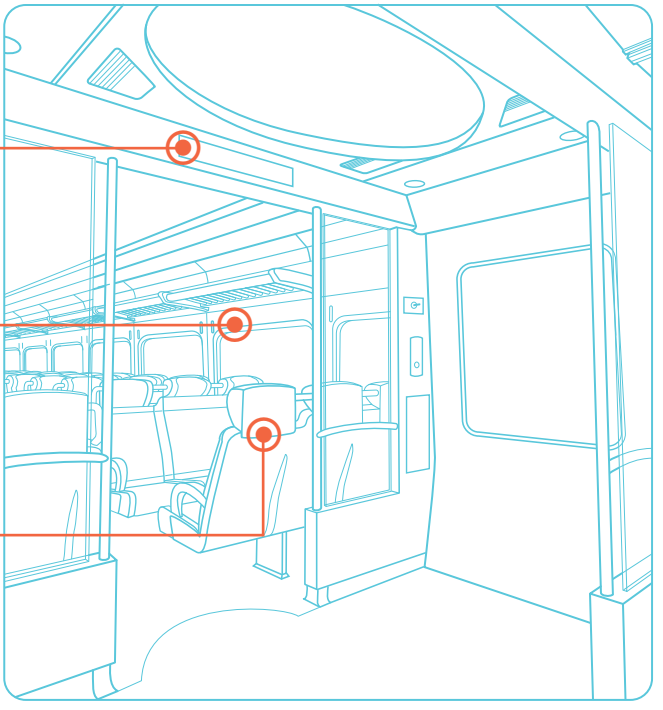
Computer network-controlled speed and braking system helps ensure consistent performance under all conditions

Trains

Our fleet of more than 2,400 commuter trains has become remarkably more reliable, lasting more than 11 times longer between breakdowns than in the 1980s. Metro-North's M-7 cars have raised the bar even higher, traveling more than 700,000 miles between breakdowns. Capital investments have played a key role in these gains, allowing us to buy new cars that shield critical components inside a train's body, so bad weather is much less likely to affect operations.

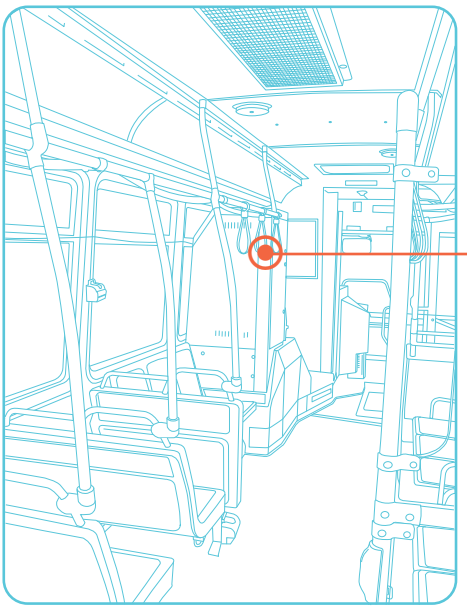



Highly reliable single sliding door keeps snow out
Prominent external destination signs and public address speakers
MTA
Metro North Railroad

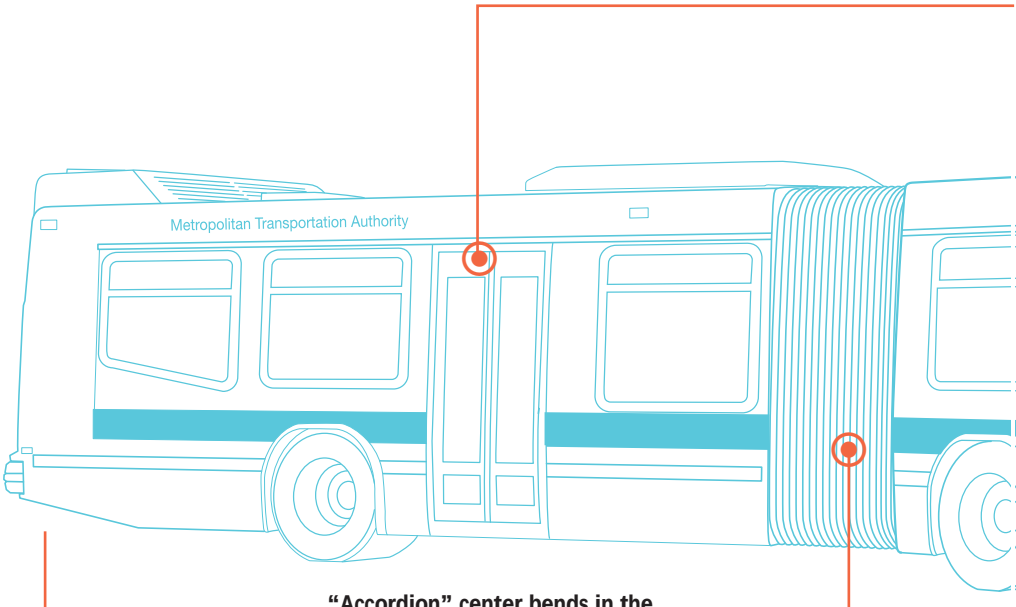

LED display shows the next stop
Each seat outfitted with electrical outlets, grab bars, coat hooks, and luggage racks
Roomy, high-back, contoured seats with individual headrests

Buses

The reliability of our bus fleet—today more than 5,600 strong—has more than quadrupled since the 1980s. Some of our newest buses have clean diesel engines and can accommodate more than 110 people, with 54 seated. These buses are part of our new Select Bus Service, where off-board fare collection, dedicated bus lanes, and bus lane enforcement cameras have reduced travel times by nearly 20 percent on two of the most heavily-used bus routes in the nation.



Electronic compartment houses special equipment for services like MTA BusTime, which gives customers real-time bus information via cellphone



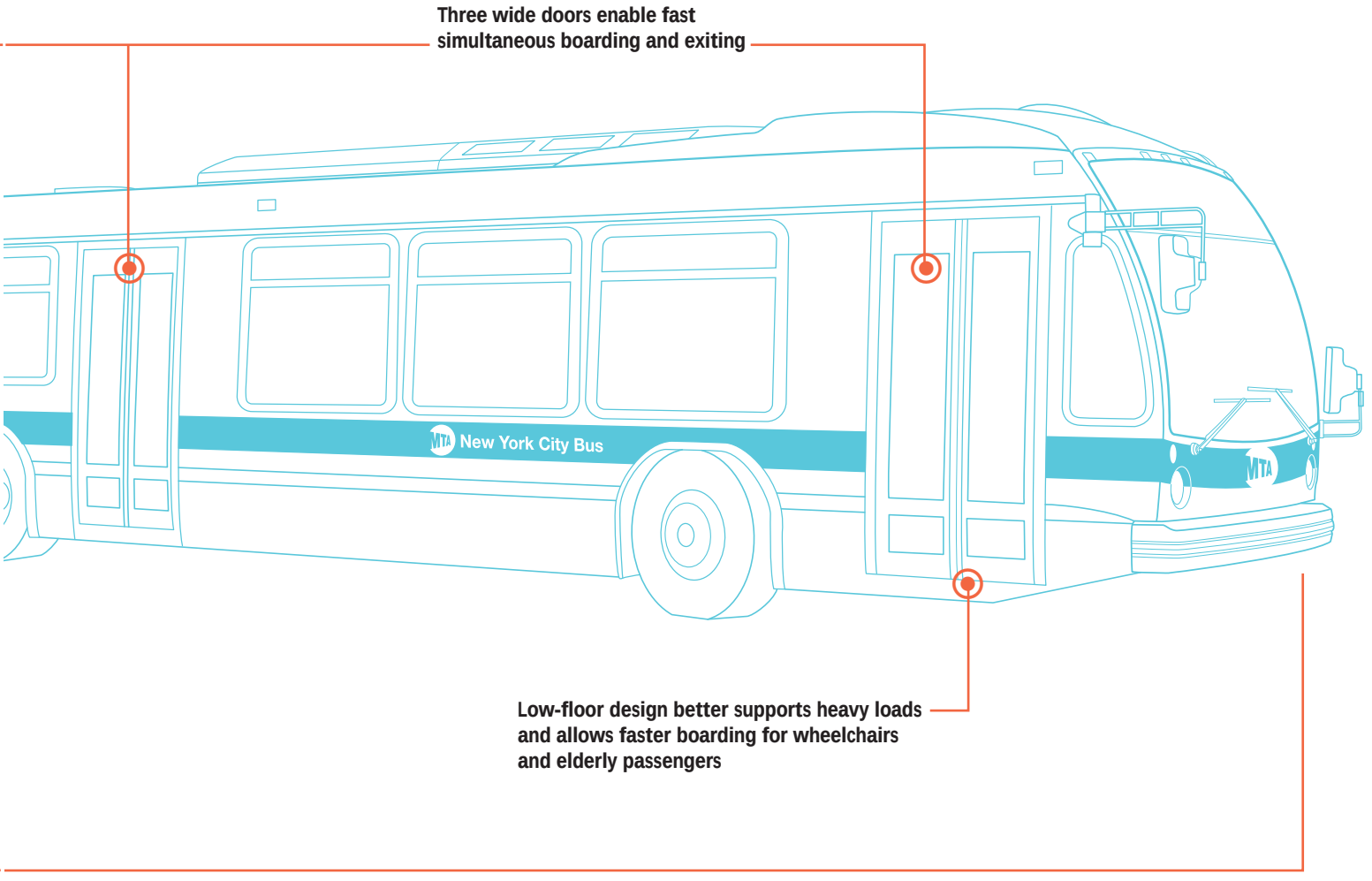
"Accordion" center bends in the middle, allowing high-capacity bus to turn within the same radius as a regular 40 foot bus

62 feet long—two feet longer than the standard-length car used on lettered subway lines

Subways

Trains

Buses



Expansion improves reliability

As you can see, thousands of components go into providing reliable service, and if any one of them isn't working, service can come to a halt. But there's another condition that threatens reliability at key places in the MTA's transportation network—even when the infrastructure is working exactly as designed. In some places—like Manhattan's East Side and coming into New York City from Long Island—our system was simply not built to handle the demand it's facing today as the region continues to grow. We're addressing these constraints by expanding our transportation network for the first time in over 60 years.

We've already made enormous progress on the three largest transportation projects in the entire country: Second Avenue Subway, East Side Access—bringing the LIRR into Grand Central Terminal—and the extension of the 7 subway line to Manhattan's Far West Side. Each of these projects will improve the reliability of our service by giving customers new ways to get where they're going—to, from, and within New York City.

The Second Avenue Subway will decrease crowding on the Lexington Avenue Line by as much as 13 percent, or 23,500 fewer riders on an average weekday.

East Side Access will increase the number of LIRR trains into Manhattan by 41 percent, reducing commuting times by as much as 40 minutes a day for about 160,000 Long Island and Queens customers.

The 7 extension will create a vital transit link to an underserved and rapidly growing neighborhood on Mahattan's Far West Side.


The MTA's Capital Program = safe, reliable service

As busy New Yorkers, it's easy to take today's reliable service for granted … to miss all the invisible things that need to go *right* to get us where we need to go.

Of course, when things go wrong, it becomes much more noticeable. And if breakdowns became the norm, our system would be almost unusable, as many of us witnessed firsthand in the days before the Capital Program began almost thirty years ago.

Today, by and large, we don't need to think about these things. We can depend on our system to get us where we're going, safely and on time. That's the true measure of reliable service and one of the key reasons why ridership and our region have flourished.

In the end, the reliability equation is a simple one: A healthy, well-funded Capital Program equals safe, reliable service you can count on every day.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