

AFFIRMATION OF AMY MCCAMPHILL, FOR RESPONDENT, IN SUPPORT OF CROSS-MOTION, DATED MAY 13, 2015 [53 - 55]

SUPREME COURT OF THE STATE OF NEW YORK
NEW YORK COUNTY

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In the Matter of the Application of

CARL E. PERSON,

Petitioner,

Index No. 100484/15
(Hunter, J.S.C.)

For Judgment Pursuant to CPLR Article 78

-against-

NEW YORK CITY DEPARTMENT OF
TRANSPORTATION,

Respondent.

**AFFIRMATION OF AMY
MCCAMPHILL IN SUPPORT
OF CROSS-MOTION TO
DISMISS THE PETITION**

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Amy McCamphill, an attorney duly admitted to practice before the courts of New York State, hereby affirms upon penalty of perjury:

1. I am a Senior Counsel at the Office of the Corporation Counsel of the City of New York, representing Respondent New York City Department of Transportation in the above-captioned matter. I make this Affirmation in support of Respondent’s cross-motion to dismiss the above-captioned Article 78 petition pursuant to New York Civil Practice Law and Rules (“CPLR”) sections 3211(a)(3), (5), and (7), and 7804(f).

2. The exhibits attached to this Affirmation are all public documents, available online. The limited purpose of this Affirmation is to provide the Court with these exhibits in support of Respondent’s cross-motion to dismiss. In particular, many of these exhibits show that

Petitioner's challenges to certain activities of Respondent are time-barred by the applicable four month statute of limitations. *See* CPLR § 217(1).

3. Attached as Exhibit A is a true and correct copy of the webpage "About PlaNYC," <http://www.nyc.gov/html/planyc/html/about/about.shtml> (last accessed May 8, 2015).

4. Attached as Exhibit B is a true and correct copy of the "Transportation" chapter from the report *PlanNYC: A Greener, Greater New York*; the full report is available at http://www.nyc.gov/html/planyc/downloads/pdf/publications/full_report_2007.pdf

5. Attached as Exhibit C is a true and correct copy of the "Mobility" and "Benchmarks" chapters of the report *Sustainable Streets*, available at http://www.nyc.gov/html/dot/downloads/pdf/stratplan_mobility.pdf; and http://www.nyc.gov/html/dot/downloads/pdf/stratplan_benchmarks.pdf, respectively.

6. Attached as Exhibit D is a true and correct copy of the progress report *Sustainable Streets: 2013 and Beyond*, available at <http://www.nyc.gov/html/dot/downloads/pdf/2013-dot-sustainable-streets-lowres.pdf>.

7. Attached as Exhibit E is a true and correct copy of the online news article "Bill de Blasio Says New Congestion Pricing Plan 'Has to Be Taken Seriously,'" by Ross Barkan, *Observer* (February 19, 2015), at <http://observer.com/2015/02/bill-de-blasio-says-new-congestion-pricing-plan-has-to-be-taken-seriously/> (last accessed May 8, 2015).

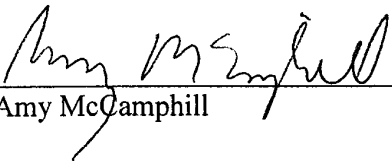
8. Attached as Exhibit F is a true and correct copy of the "Transportation" chapter of the report *One New York: The Plan for a Strong and Just City*, with the full report available at <http://www.nyc.gov/html/onenyc/downloads/pdf/publications/OneNYC.pdf>.

9. Attached as Exhibit G is a true and correct copy of *Sustainable Street 2009 Progress Report*, available at http://www.nyc.gov/html/dot/downloads/pdf/ss09_update_lowres.pdf.

10. Attached as Exhibit H is a true and correct copy of the New York City Department of Transportation webpage "Traffic Signals," <http://www.nyc.gov/html/dot/html/infrastructure/signals.shtml> (last accessed May 8, 2015).

11. Attached as Exhibit I is a true and correct copy of the online press release "'NYC DOT Announces Expansion of Midtown Congestion Management System, Receives National Transportation Award,'" June 5, 2012, at http://www.nyc.gov/html/dot/html/pr2012/pr12_25.shtml (last accessed May 8, 2015).

Dated: New York, New York
May 13, 2015



Amy McCamphill

EXHIBIT A TO MCCAMPBILL AFFIRMATION - WEBPAGE — “ABOUT PLANYC”

5/8/2015

PlaNYC - About

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NYC Mayor's Office of Sustainability

Mayor's Office of Recovery & Resiliency

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Originally released in 2007, PlaNYC is a groundbreaking effort to address New York City's long-term challenges including the forecast of 9.1 million residents by 2030, changing climate conditions, an evolving economy, and aging infrastructure. Over 25 City agencies and many outside partners in academic, business, civic, and community roles convened to outline specific goals (like 30 percent carbon reduction by 2030), initiatives, and milestones that address these challenges and ensure quality of life for New Yorkers in the years to come. The Mayor's Office of Long-Term Planning and Sustainability (OLTPS) oversees the development of PlaNYC and now shares responsibility with the Mayor's Office of Recovery and Resiliency (ORR) for ensuring its implementation. These offices will develop plan updates every four years and provide annual progress reports. This ensures perspective and accountability that extends beyond any one mayoral administration and allows for new ideas and circumstances to shape the plan.

PlaNYC has grown in both depth and scope since its inception, successfully meeting ambitious milestones in core areas like air quality and carbon reduction, while evolving to better meet new challenges. After Hurricane Sandy devastated New York City in 2012, it was clear that a long-term plan for resiliency was needed and the City released *A Stronger, More Resilient New York* (in PDF). The comprehensive plan contains actionable recommendations based on the best available science to protect our city's coastline, buildings, infrastructure, and communities from future climate risks.

PlaNYC's 2014 Progress Report (in PDF), released in April of each year, details the most recent OLTPS and ORR accomplishments in furthering New York City's sustainability and resiliency agenda.

Established by Local Law 17 in 2008, OLTPS coordinates with all other City agencies to develop, implement, and track the progress of PlaNYC and other issues of infrastructure and the environment, which cut across multiple City agencies. In addition to producing PlaNYC, OLTPS promotes the integration of sustainability and resiliency goals and practices into the work of City agencies and the lives of New Yorkers. Established in 2014, ORR expands this effort and provides overall coordination of New York City's entire infrastructure recovery and long-term resiliency programs.

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EXHIBIT B TO MCCAMPHILL AFFIRMATION -
"TRANSPORTATION" CHAPTER FROM THE REPORT PLANYC:
A GREENER, GREATER NEW YORK [57 - 83]

The logo for planNYC, featuring the word "plan" in a lowercase, sans-serif font with a vertical green bar to its left, and "NYC" in a larger, bold, uppercase, sans-serif font to its right. The background of the entire page is a dark blue map of New York City.

A GREENER, GREATER
NEW YORK



The City of New York
Mayor Michael R. Bloomberg

Transportation has always been the key to unlocking New York's potential. From our origins as a port city to the completion of the Erie Canal, from the construction of the Brooklyn Bridge to the creation of the subway system, New York's growth has always depended on the efficiency and scale of its transportation network. But for the last 50 years, we have underinvested in our most critical network: transit.

While we have made progress in the last two decades in maintaining and improving our existing infrastructure, we still need billions of dollars more to reach a full state of good repair. More significantly, almost all of our subway routes, river crossings, and commuter rail lines will be pushed beyond their limits by 2030.

Transportation is the greatest single barrier to achieving our region's growth potential. Only by strengthening our transit—which uses less land and creates less pollution than autos—can we meet this challenge, and provide a quality trip to those who drive. Our transportation plan will enable us to improve travel times across the region and achieve the funding necessary to meet our transportation needs through 2030 and beyond.

Transportation



Congestion

Improve travel times by adding transit capacity for millions more residents, visitors, and workers



State of Good Repair

Reach a full "state of good repair" on New York City's roads, subways, and rails for the first time in history



transportation

Credit: © 2008 Getty Images



Improve travel times by adding transit capacity for millions more residents, visitors, and workers



Reach a full "state of good repair" on New York City's roads, subways, and rails for the first time in history

Bryan Block rises at 6:30 am. By 8:00 am he is waiting at his local bus stop in Cambria Heights, Queens, watching for the bus to arrive. It lumbers to the Parsons/Archer subway station, where Block takes an E train that will be packed well before it reaches Manhattan.

By the time he reaches his office in Midtown Manhattan, his trip has taken an hour and a half. It used to be called a "two-fare zone." Now it's just too long.

"It's tiresome," said the 50-year old Block, who has been traveling from Cambria Heights into Manhattan for more than 20 years. "By the time I get to work I am fatigued. By the time I get home I am fatigued. If you live in Manhattan you can just jump on the IRT, my co-workers can walk to work, they can take a bus down

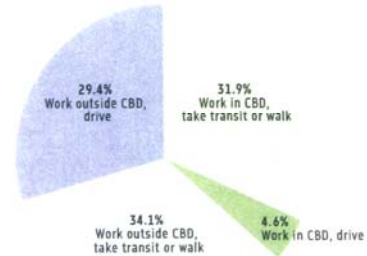
Fifth Avenue, a bus up from the Village. They don't understand. Once you live in southeast Queens and have to get to Manhattan you're tired when you get to work."

Block loves southeast Queens and the shared work ethic that binds together the neighborhood's cross-section of professions, from doctors to teachers to city workers. He has to remind himself of this on his way to work, especially during the wintertime. "It's cold, you're wet, you're freezing, you're angry, you're frustrated and you have to stand there and wait.

"You have no recourse," he said. "No choice."

Times Square, Manhattan

How New Yorkers Get to Work



Source: U.S. Census Bureau (2000)

CBD = Manhattan Central Business District

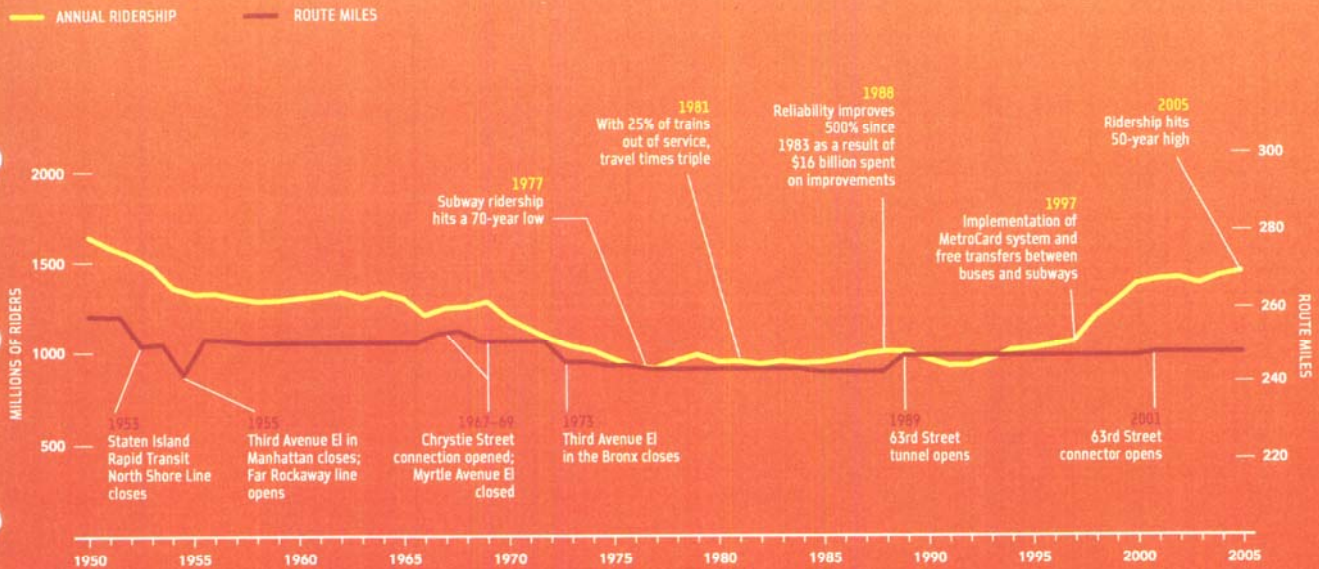
The lack of transit for Bryan and his neighbors in southeast Queens is not a new problem. As early as 1929, planners proposed to extend the subway to the area. But despite widespread agreement that it was necessary, the plan was halted because funding could not be found.

It is a story that has been repeated again and again in New York. Inadequate investment in the basic maintenance of our roads and transit system intensified until the 1970s when the entire network fell apart. A truck plunged through a hole in the West Side Highway. Track fires were common occurrences. Bridges were closed for fear they'd collapse.

In 1981, the Metropolitan Transportation Authority (MTA) halted all new transit expansion until the existing system could be restored. The City made a similar commitment to repave and reclaim its road network. And that has been the focus of transportation investment for the past 25 years: rebuilding, but not expansion.

The improvements are undeniable. In 1981, trains broke down every 6,600 miles; today they run for more than 140,000 miles. The MTA has made great progress in providing cleaner, safer stations, and implementing new technology such as the MetroCard. Our road network has also improved, although the quality of our streets has fallen below the levels achieved in 1999. The City's bridges have done better since the days when they were regularly closed for emergency repairs: in 2005 only four of the City's 787 bridges were deemed to be in poor condition, down from 48 as recently as 1996.

New York City Subway Ridership and Route Miles



Note: Route miles are non-directional; i.e., the distance from terminal to terminal. Several lines may share the same route.

Source: NYC Mayor's Office of Long-Term Planning and Sustainability; Robert Olmsted; Brian J. Cudahy

And yet, there is much more to be done. Today, more than half our stations are awaiting repairs; and 40% of our network's signal systems are obsolete, preventing new services like displays showing the arrival time of the next train. Altogether, we are more than \$15 billion short of achieving a full state of good repair on our transit and road networks.

But with population, jobs, and tourism all at record levels, our challenge is no longer simply maintaining the system—we also face an urgent need to expand it. In 2006, ridership on our subways soared to the highest levels since 1952—but during that time the subway network actually shrank by eight route miles. (See chart above: *New York City Subway Ridership and Route Miles*)

Failure to invest adequately in our transit system has had negative consequences for nearly all New Yorkers. Too many don't have access to mass transit; those who do find their trains increasingly crowded. Nearly half of our subway routes experience congestion at key times or are at capacity today.

It isn't just city residents who suffer. Over 70% of all Long Islanders who commute into Manhattan take the Long Island Rail Road (LIRR), but the tunnels into the city have reached their capacity.

Auto use has risen alongside transit use. In 1981, when subway service was at its low point, 31% of all people traveling to Manhattan's Central Business District (CBD) arrived

by car. In 2006, with the quality of subway service at modern-day record levels, that figure has remained essentially unchanged.

While only 4.6% of working New Yorkers commute to Manhattan by car, the congestion they fight through has increased. Rush hour has slowly stretched out over the past two decades, as people have started leaving earlier and arriving home later. This is true for drivers across the region, with local traffic on roads like the Hutchinson River Parkway, the Long Island Expressway, and Interstate 95 competing with cars heading for Manhattan. By 2030, rush hour conditions could extend to 12 hours every day.

It isn't just Manhattan-bound commuters who face the consequences of increasing road congestion—nearly seven times as many New Yorkers drive to jobs outside of Manhattan as to it. These commuters often have fewer transit alternatives, but face the same challenge of escalating traffic. (See chart on previous page: *How New Yorkers Get to Work*)

With every travel mode congested, it should come as no surprise that New Yorkers experience the longest commutes in the nation. Of all large counties in the United States, 13 of the 25 with the longest commute times are in the New York area. The four worst nationwide are Queens, Staten Island, the Bronx, and Brooklyn. (See chart on page 78: *Average Travel Time to Work*)

Road congestion costs all of us money—in higher store prices, because freight deliveries take longer; in higher costs for services and repairs, because delays mean repairmen visit fewer clients each day; in taxi fares, in wasted fuel, in lost revenue. One recent study estimated that traffic jams cost the New York City area \$13 billion every year.

And there are other consequences as well. Snarled traffic slows bus service. Emergency vehicles lose valuable response time. Finally, cars and trucks contribute 20% of the City's global warming emissions and a large part of the ozone—a serious pollutant that can cause respiratory illnesses like asthma—in our air.

By 2030, nearly a million more residents, 750,000 new jobs, and millions more visitors will put our system under new pressures. The increasing congestion, and the resulting economic costs, will reverberate throughout the region. (See map on page 78: *Demand for Travel into Manhattan's Central Business District*)

We know what must be done. There is general agreement on the strategy necessary to achieve the level of mobility our city and region need. We must finish repairing our roads and transit system and invest to provide more and better mass transit options. We must also proactively embrace strategies to reduce congestion on the city's streets.

The problem is that we do not have the resources to fund our needs. Although we

Second Avenue Subway

Second Avenue Subway groundbreaking in 1972. From left to right: Percy E. Sutton, Manhattan borough president; Senator Jacob J. Javits; John A. Volpe, United States Secretary of Transportation; Governor Nelson A. Rockefeller; and Mayor John V. Lindsay.



Second Avenue Subway currently under construction



Credit: Metropolitan Transportation Authority

know that the projects will prevent crippling congestion, collectively they face a monumental funding gap. As a result, improved transit will require new sources of funding.

The greatest factor in determining the success of our city in the 21st century may be whether we can summon the collective will to generate the funds necessary to meet the transportation demands of the future. New York City is prepared to make an extraordinary commitment to ensure that we do.

Our Plan

We benefit today from the foresight of past generations of New Yorkers: the street grid, laid out in 1811 for a city of a million at a time when New York only had a 100,000 residents; Central Park, built at a time when few lived above 23rd Street; a water system constructed with the capacity to last for centuries; and the subway system that reshaped the city.

But we seldom think about the fact that those New Yorkers made the decision not only to do those things, but to pay for them as well. In all of those cases, New Yorkers argued over who should pay what, but ultimately settled on financing approaches based on the principle that those who benefited should contribute.

We face a similar challenge today. The recent groundbreaking ceremony for the Second Avenue Subway marked the third time that same project has been started. Each time, New Yorkers were confident the project would be completed; the Second and Third Avenue El's were even dismantled in anticipation of the new route. But each time, the project stalled for lack of funds. This experience ought to have taught us one thing: If we

don't know exactly where funding will come from, it's a good indication that we may not get what we want. (See photos above: Second Avenue Subway)

Building the new transit we—and our entire region—need and achieving a full state of good repair will require over \$50 billion.

Only \$13.4 billion is already committed to these projects; we can reasonably expect another \$6.3 billion from Federal sources. That means that if we want to see those projects built, the region will have to raise an additional \$31 billion between now and 2030. That is why we seek to work with the State to create a new regional partnership, the Sustainable Mobility And Regional Transportation (SMART) Financing Authority. The SMART Authority's mandate will be to provide funding necessary to complete nearly every critical transportation project—and finally bring the full system into a state of good repair.

The Authority would have three dedicated revenue streams: the proceeds from congestion pricing; an unprecedented City investment; and a corresponding contribution from the State, all exclusively dedicated to funding improvements to the regional transportation network.

These dedicated revenue streams would support bond issues to ensure that our most critical projects are not delayed by a lack of funding. Over time, they would also generate enough excess revenues to launch a new wave of projects to improve mobility across the region even more.

The SMART Financing Authority would be governed by an independent and experienced board appointed by the City and State to incorporate a wide range of perspectives about transportation priorities for the region. It would not operate or build anything, but rather would invest in projects proposed by other transportation agencies. It would then monitor those investments, assuring accountability.

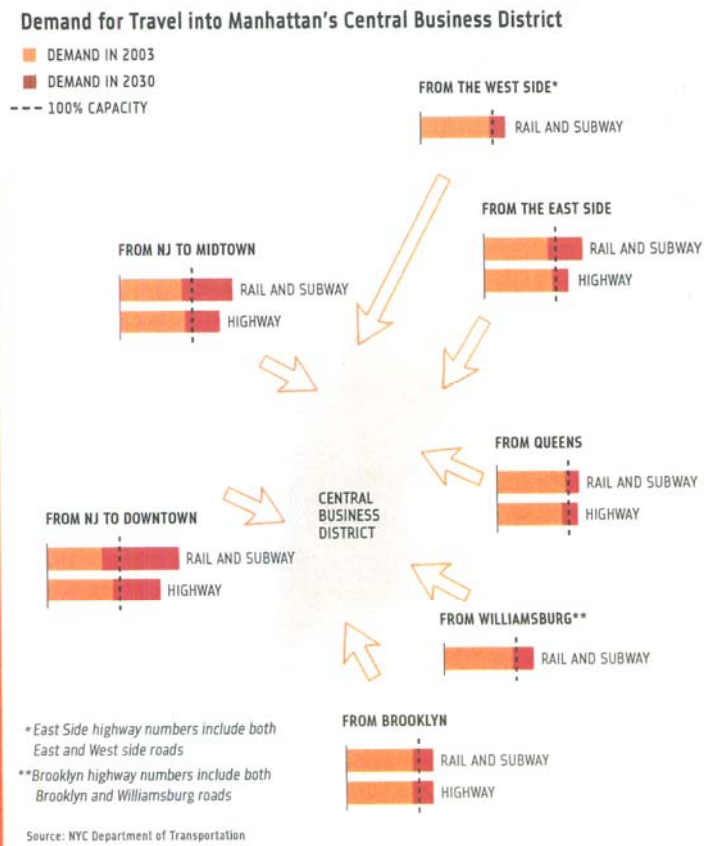
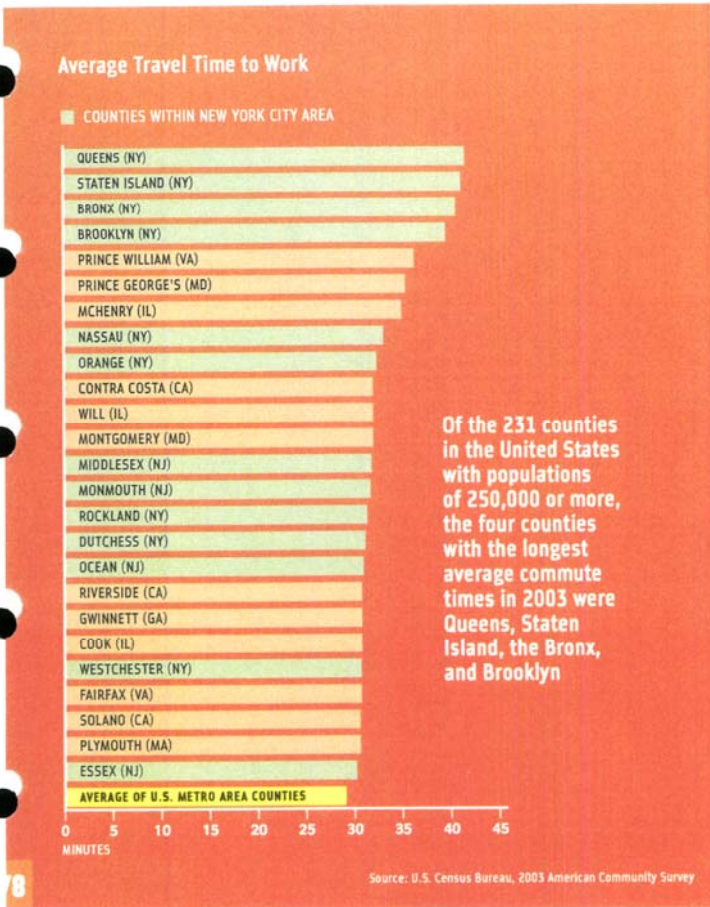
In addition to accelerating major transit expansions, we must also aggressively reduce congestion on the city's streets. Citywide, road travel is growing faster than population. Managing our roads better to improve traffic flow will help, but it won't be enough.

The time has come for New York to try congestion pricing: a carefully-designed charge for drivers in part of Manhattan during business hours. This solution is bold. It is also proven. Cities around the world have shown that congestion pricing can reduce congestion and speed travel times with no significant negative impact on economic activity.

Congestion pricing has three primary benefits. First, it has been proven to reduce congestion and improve travel times. Second, it would generate revenues dedicated to the SMART Authority, which would fund significant expansions and upgrades in transit across the city and the region. In the short-term, the focus would be on neighborhoods with limited mass transit options and high concentrations of drivers. But by reinvesting the proceeds in mass transit, nearly all New Yorkers can benefit, especially the 95% of New Yorkers who do **not drive** to jobs in Manhattan.

By encouraging mode shifting from private automobiles, it will stem the amount of pollution spewed from tailpipes on city streets, helping us meet our goals of reducing greenhouse gas emissions and achieving the cleanest air of any big city.

The potential benefits of congestion pricing are tremendous. And there is no reason we cannot turn the system off if we do not like it. That's why we propose to pilot congestion pricing for a period of three years. We expect a combination of Federal and private dollars could fully cover the initial investment. After three years, we will know whether it really works for New York.



By aggressively combating congestion, finding new sources of funding, and making smart choices about priorities for the coming decades, we can reach a state of good repair on our roads, rails, and subways for the first time ever, while expanding our transportation system to improve travel times and convenience for New Yorkers. (See map on facing page: *Transit Capacity Expansions*)

Mass Transit

Despite being the most transit-oriented city in the United States, when it comes to transit ridership, we still lag behind our strongest global competitors. Cities like London, Singapore, and Tokyo have recognized that providing more mass transit options creates a cleaner, healthier, more efficient urban environment—and have invested accordingly.

We must keep pace. That's why we have developed a mix of short-term and long-term solutions that will improve transit throughout the city. The result will be new or improved public transportation options for virtually every New Yorker. (See chart on page 80: *Public Transit Usage Per Capita*)

Our plan for transportation:

Build and expand transit infrastructure

- 1 Increase capacity on key congested routes
- 2 Provide new commuter rail access to Manhattan
- 3 Expand transit access to underserved areas

Improve transit service on existing infrastructure

- 4 Improve and expand bus service
- 5 Improve local commuter rail service
- 6 Improve access to existing transit
- 7 Address congested areas around the city

Promote other sustainable modes

- 8 Expand ferry service
- 9 Promote cycling

Improve traffic flow by reducing congestion

- 10 Pilot congestion pricing
- 11 Manage roads more efficiently
- 12 Strengthen enforcement of traffic violations
- 13 Facilitate freight movements

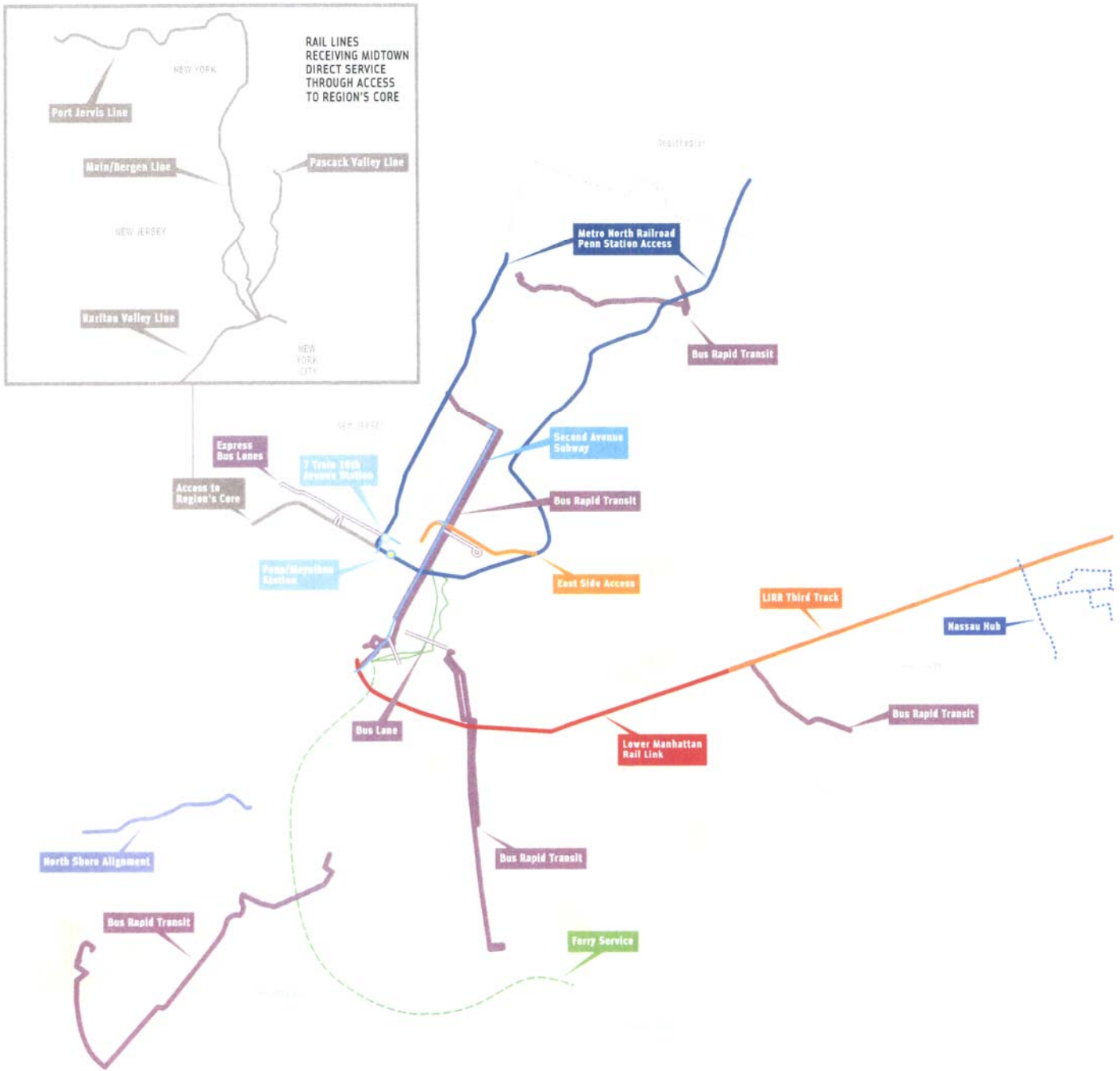
Achieve a state of good repair on our roads and transit system

- 14 Close the Metropolitan Transportation Authority's state of good repair gap
- 15 Reach a state of good repair on the city's roads and bridges

Develop new funding sources

- 16 Establish a new regional transit financing authority

Transit Capacity Expansions



Source: NYC Mayor's Office of Long-Term Planning and Sustainability

Build and expand transit infrastructure

Today, more people take the 4, 5, 6 trains every day than ride the entire Washington, D.C. Metro. The Lexington Avenue line is the most heavily used subway line in the country. Crowding not only makes the trip unpleasant; delays caused by people entering and exiting cars actually result in fewer trains running during rush hour.

For decades, planners have known the answer. The Second Avenue Subway was proposed in the 1920s to provide relief for the Lexington Avenue line and to replace elevated trains. The new subway line is one of 11 major transit projects that would help solve the region's transit congestion problem.

Some, like the Second Avenue Subway, will increase capacity on already clogged routes. Others, like East Side Access, will expand commuter rail options. Several will provide access to growing, but inaccessible communities. The rest will just make life for riders more pleasant. All share one thing: they are not fully funded.

In most cases, some funding is available, from Federal and other sources. But they are all missing the last set of contributions necessary for completion. We may have broken the ground for the Second Avenue Subway—but there is still a significant funding gap for the first of four phases. While the entire project is designed to travel from Harlem to Lower Manhattan, we are still nearly a billion dollars short of the funds needed to build just from 96th Street to 63rd Street.

Overall, the remaining funding gap for just these 11 projects is nearly \$21 billion. If we can fill this gap and realize these plans, we will prevent the transit and traffic congestion that threatens to choke our economy in the coming decades.



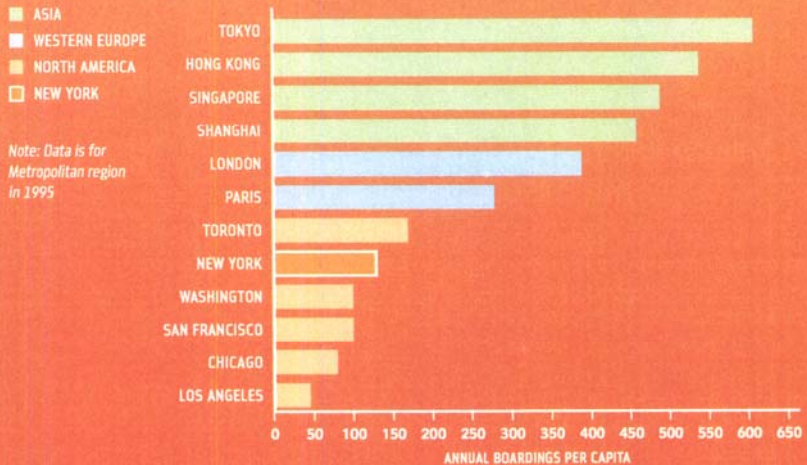
INITIATIVE 1

Increase capacity on key congested routes

We will seek to fund five projects that eliminate major capacity constraints

Five key projects will ease congestion on some of our most clogged routes into Manhattan—all of which will be pressed beyond their capacity by 2030 unless we act.

Public Transit Usage Per Capita



The **Second Avenue Subway** is one of our most urgent needs, for a wide range of travelers: workers from the Bronx, local travelers from the Upper East Side, commuters changing trains to get from Westchester to Wall Street. Its construction will be a massive undertaking and cost billions, but we cannot let funding run out on this critical project a third time. (See case study on facing page: *Yorkville, Manhattan*)

The addition of a **third track on the Long Island Rail Road (LIRR) Main Line** will enable the LIRR to run more trains, use its fleet better, and provide more service at local stations in Queens. It will especially serve reverse commuters, who live in New York City but work in Nassau County. Today, nearly 270,000 New York City workers commute to jobs outside city limits, up by 10% since 1990. Facilitating reverse commuting helps New York City residents expand their career options and suburban businesses broaden their worker pool.

Two projects will increase capacity for commuters west of the Hudson. **Access to the Region's Core (ARC)** will create a second trans-Hudson tunnel for New Jersey Transit (NJT), doubling the number of trains NJT can run into Manhattan and enabling direct service to New York on several lines for the first time. These and other Penn Station commuters will be able to get closer to the emerging Hudson Yards neighborhood through the **Moynihan Station Project**. The station will also restore a grand entrance to the west side of Manhattan.

Even more New Jersey commuters arrive by bus than by train—making the **Express Bus Lane** through the Lincoln Tunnel one of the region's most important assets. The Port Authority's plan for a second dedicated **Express Bus Lane** through the Lincoln Tunnel will allow expanded service for communities not on the NJT rail network.



INITIATIVE 2

Provide new commuter rail access to Manhattan

We will seek to expand options for rail commuters

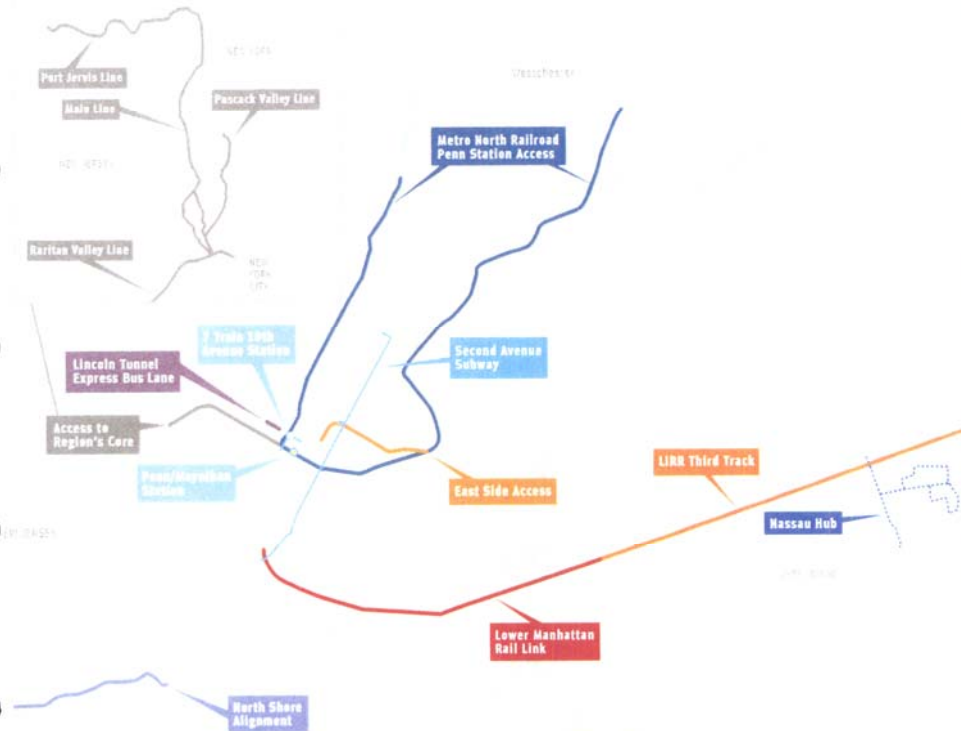
Today's commuter rail service is excellent, but increasingly strained. Rising ridership has meant more crowded rail lines. For thousands of commuters, their trains do not even take them where they need to go. Nearly half of all LIRR riders work on the East Side, but are dropped off every morning at Penn Station; 23% of Metro North riders have jobs on the West Side, but arrive daily in Grand Central Terminal. Traveling across town lengthens their daily commute—and takes up additional subways, buses, and street space. (See map on facing page: *New and Expanded Transit Infrastructure*; see commuter profile on page 85: *Co-op City to Lower Manhattan*)

Finally, rail lines that run through the Bronx and Queens do not provide as much service to residents as they could, in part because the trains can't fit more riders. Three projects will address these issues.

East Side Access was first planned in the 1960s to offer LIRR riders better access to Grand Central. Its construction will free up track space for **Metro North service to Penn Station**. Combined, these projects will reduce subway crowding and provide most commuters with two Midtown rail options. (See commuter profile on page 82: *Bayside, Queens to Manhattan's East Side*)

They would also improve service to Queens and the Bronx. Additional tracks will allow for a station at Sunnyside Yards (serving Long Island City), and make it easier for additional trains to serve stations in eastern Queens. Metro North will also be able to extend service to new stations—providing residents of

New and Expanded Transit Infrastructure



Source: NYC Mayor's Office of Long-Term Planning and Sustainability

Co-op City and Hunts Point with fast, direct rides, and helping to reduce auto commuting to job centers in West Harlem.

Long Islanders who work in Midtown are more likely to take the train than those who work in Lower Manhattan or downtown Brooklyn. Those who drive contribute to traffic delays in Brooklyn and Nassau County. Those who do take the train have to transfer to subways to get to their jobs. Further, the lack of good airport access hinders the competitiveness of both areas for job growth. By connecting Jamaica, Brooklyn, and Lower Manhattan, the **Lower Manhattan Rail Link** will address all of these challenges.



INITIATIVE 3

Expand transit access to underserved areas

We will seek to provide transit to new and emerging neighborhoods

Two areas of the city offer immediate opportunities to add new transit options where none currently exist. The 5.1-mile **Staten Island North Shore Alignment**—an abandoned rail line linking directly to St. George and the Ferry Terminal—has been unused since 1953. A study will examine the potential

for either rail or a dedicated road for buses to give the area its first rapid transit service in two generations.

The second area of opportunity is on Manhattan's West Side: as the 7 train is extended to reach the Javits Center, it will pass through an area that is growing fast but lacks transit. A new **10th Avenue Subway Station** will meet a strong, emerging need at West 41st Street.

But transit-oriented development isn't limited to the city: developing transit hubs around suburban railroad stations can achieve a similar purpose. One such project, the **Nassau County Hub**, envisions a transit loop connecting LIRR stations and several existing and emerging employment centers in Mineola, Hempstead, and Garden City. Serving local riders, inbound commuters, and reverse commuters, the project will help reduce congestion on Long Island and create opportunities for the entire region.

These three projects should only be the beginning of a new era of rapid transit planning in New York. We will work with the MTA to review other potential transit expansions in the city, and we will support other regional efforts to explore local and longer-distance opportunities.

COMMUTER PROFILE Yorkville, Manhattan

Crammed into the uncomfortable intimacy of New York City's morning rush, passengers on the Lexington Express train play the subway version of Twister to keep from falling. Riders squeeze into spaces between elbows and handbags, breathing in smells of the passengers pressed against them.

Jocelyn Torio confronts this crowd combat every morning.

"A train passes me by once or twice a week and I get stuck waiting on the platform," she said. "They are just too crowded for me to fight my way in."

The 4 and 5 lines start high in the Bronx, extend through Harlem, down to the tip of Lower Manhattan and then through Brooklyn.

There are few other mass transit options for reaching Manhattan's east side; Torio experimented with the bus down Second Avenue from her apartment at 83rd Street to her office on 26th Street and Park Avenue.

"I even got a seat, but it just takes so much time," Torio said.

As early as 1929, planners have known that a Second Avenue Subway was a big part of the solution. But lack of funding has stalled the project for decades.

A Second Avenue Subway would shorten Torio's commute to work and alleviate rush-hour traffic on East Side subways and buses. But the subway won't be her only new choice. By 2009, one of the city's five new Bus Rapid Transit (BRT) lines will be implemented on First and Second Avenue, giving commuters the option of a bus that zooms downtown in its own lane, bringing with it a 22% increase in travel-time savings.

"There's definitely a need for a new way to handle the increasing population," Torio said. "Having that Second Avenue subway line would just make everyone's commute much easier."

COMMUTER PROFILE Bayside, Queens to Manhattan's East Side

Karin Werner has given up on Bayside. Although the Bayside Long Island Rail Road (LIRR) station is closest to her house in Queens, she drives an extra few minutes to the Auburndale stop instead.

"I never got a seat, and there were always eight to ten of us stuck standing in the middle of the car," she said. "I will not take Bayside in the morning."

When she gets off the train, she is in the wrong place. That's because Werner is one of the nearly 45% of all LIRR commuters who work on Manhattan's East Side, but are dropped off at Penn Station every morning.

The extra 25 minutes spent trekking across town means that she has to leave her house at 6:15 every morning. She's tried driving, but afternoon traffic often leaves Werner sitting in gridlock. And inevitable parking prices make costs prohibitive.

But her transit choices today are not much more cost-effective; she pays over \$150 for a LIRR monthly pass and \$76 for a monthly MetroCard.

By 2012, Werner's ride could be transformed. The LIRR's East Side Access project would bring east side commuters directly into Grand Central Terminal.

She'll have a seat, and she'll keep it all the way to Grand Central—just like she'll keep that \$76 in her pocket.

"So it's not just the 25 minutes," she said. "Though being able to sleep in a little longer would be great."

Improve transit service on existing infrastructure

While these longer-term projects are crucial, transit improvements do not have to wait for major new construction. Through targeted near-term investments and closer partnerships between the city and the MTA, we can improve transit options for all New Yorkers in just a few years.

These improvements are especially important for neighborhoods where subway access requires a long walk or a bus transfer. Almost 30% of New Yorkers live more than a half mile from a subway station. And in 22 areas across New York, the lack of good transit access has led to concentrations of Manhattan-bound commuters who drive.

We have many measures at our disposal to meet the needs of these neighborhoods. We can improve the speed and reliability of our bus network, make better use of existing rail systems like the LIRR, and create better connections to—and among—transit services. Taken together, these steps can provide significant service improvements without major capital investments, and usually without increasing operating costs.

The key barriers to these improvements have been largely organizational. We need to work in closer cooperation with the MTA to develop detailed implementation and financing plans for these improvements. (See map on page 86: *Short-term improvements to transit service*; see table on page 86: *Potential improvements in 22 neighborhoods with concentrations of Manhattan-bound drivers*.)



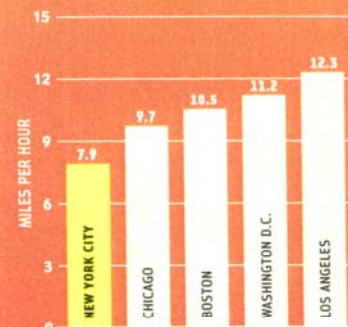
INITIATIVE 4

Improve and expand bus service

We will work pursue a variety of strategies to improve and expand bus service

New York City has the highest bus ridership in the United States, but the slowest buses. As the city grows and vehicles compete for the same road, more riders board buses, causing buses to operate at even slower speeds. Between 2002 and 2006 alone, bus speeds across the city slowed by 4%. (See chart above: *Bus Speeds*)

Bus Speeds 2004



Source: Federal Transit Administration, National Transit Database; revenue bus miles/revenue bus hours

Because traffic routinely delays buses, travelers are often stranded at bus stops with no way to gauge whether to keep waiting or move on. Even on the best days, every rider has experienced the feeling of watching a bus pull away seconds before reaching the stop, knowing that the posted schedule may not be any guide to when the next one will arrive.

Yet buses retain enormous appeal. They offer flexibility that subways cannot match; the capital costs to start a bus service are small compared with rail transit; and they can be up and running in months, not years. With new technology already in use by the MTA, they are environmentally friendly. Many senior citizens, and others, prefer the bus to the subway to avoid climbing stairs. And buses are the most efficient use of our limited road space: one bus takes the same amount of road space as two cars, but can carry 70 people.

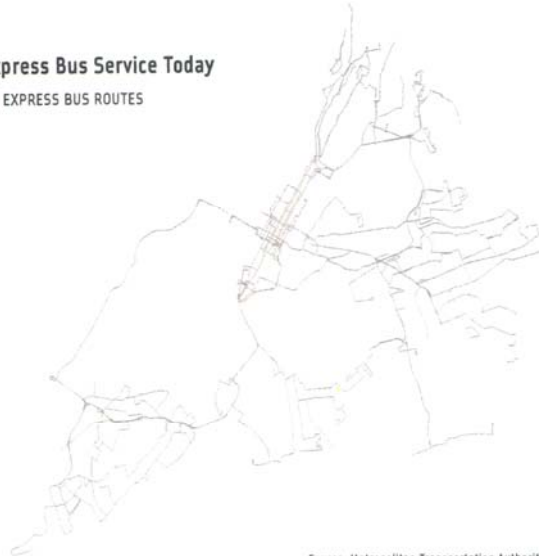
The key is to improve speeds and reliability. Cities around the world have begun embracing the benefits of bus travel while addressing the issues that have traditionally undercut buses' effectiveness. Dedicating bus lanes, and enforcing their exclusive use, is an important step. Another strategy is Bus Rapid Transit (BRT), an overall approach that has been implemented in cities around the world. BRT uses dedicated bus lanes, fewer stops, time-saving technologies, and additional efficiency measures to make bus travel fast, reliable, and effective. (See case study on facing page: *Bus Rapid Transit Around the World*)

We will initiate and expand Bus Rapid Transit

Within two years, New York City and the MTA will launch five BRT routes, one in each borough. We will incorporate many of the most successful proven features from domestic and international systems, including establishing dedicated bus lanes with bright, distinctive signage. The lanes will be marked with red paint to distinguish them from regular traffic

Express Bus Service Today

■ EXPRESS BUS ROUTES



Source: Metropolitan Transportation Authority

lanes, and their exclusive use by buses will be enforced rigorously. To strengthen our enforcement ability, we will seek the approval of the State Legislature to use cameras to issue fines to drivers who violate these lanes. (See photo: *New York City Bus Rapid Transit Stop*)

BRT service will run along the same routes as traditional buses; but, more buses will run along the routes, and stops will be spaced farther apart than local service, with stations every 10 to 15 blocks. (By contrast, regular buses often stop every two to three blocks.) Electronic message boards will provide riders with real-time updates on arrival times. As illustrated below, the savings in terms of travel times will be significant.

FIVE INITIAL BRT ROUTES

ROUTE	DAILY CORRIDOR RIDERS*	DAILY BRT RIDERS*	TRAVEL TIME IMPROVEMENTS (% FASTER)**
First and Second Avenue (Manhattan)	27,100	12,900	22%
Fordham Road/Pelham Parkway (Bronx)	14,700	7,000	8%
Nostrand Avenue (Brooklyn)	20,000	5,300	20%
Merrick Boulevard (Queens)	21,800	2,600	16%
Hylan Boulevard (Staten Island)	4,700	2,800	22%

*Includes other buses that will also benefit from bus lanes

**End to end travel time savings compared to existing local service

Source: NYC Department of Transportation; Metropolitan Transportation Authority

By 2014, we will expand BRT service by at least five additional routes. We will also implement new technologies, including giving BRT vehicles signal priority—which means traffic lights recognize approaching buses and either turn or stay green so that the buses remain on schedule. We are already working with the MTA to test this technology on Victory Boulevard on Staten Island.

Where possible, we will build sidewalk extensions that allow buses to stop without pulling over to the curb—and provide more waiting room for riders who might otherwise

impede passing pedestrians. (These are being installed in Lower Manhattan this year.) We are also investigating ways to allow passengers to board and exit buses more quickly. Potential ideas include electronic smart cards and letting passengers pay their fares before boarding buses. If successful, all of these technologies could be implemented system-wide, not only on BRT routes. (See *commuter profile* on following page: *Staten Island to Brooklyn*)

We will dedicate Bus/High Occupancy Vehicle (HOV) lanes on the East River bridges

As neighborhoods in Brooklyn and Queens grow, congestion on some subway lines across the East River worsens. Crowding is felt most acutely at the stations nearest Manhattan, where rush hour riders are increasingly forced to let packed trains go by before finding one they can squeeze into. That's why bus service across the river would be an attractive alternative for many of these riders.

We will create new or improved bus lanes on the Manhattan, Williamsburg, and Queensboro Bridges to allow the MTA to expand local service to and from Manhattan. These lanes could also serve express buses and carpoolers. We will work with the MTA to identify the bus routes that will benefit most from these lanes, and particularly alleviate crowding on the E train, L train, and 7 train.

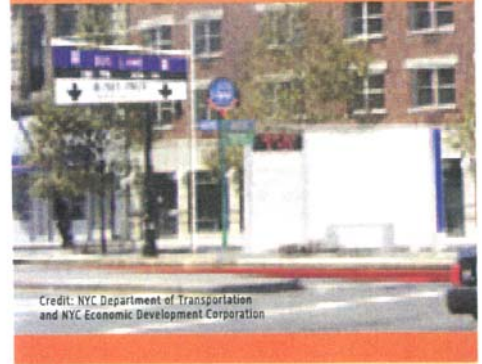
We will explore other improvements to bus service

Further opportunities to improve bus service across the system exist. Many of the technologies that will be used for BRT—traffic light priority, electronic message boards, bus bulbs—could be used by regular buses as well. Opportunities besides the East River Bridges may exist where dedicated bus lanes could significantly improve service. Adjustments to service patterns—skip-stop

Congestion Impacts on Express Bus Service

The MTA's system of express buses is designed to provide direct service to Manhattan for neighborhoods at the ends of subway lines or without subway access. Over 100,000 New Yorkers ride these buses every business day. Like any road vehicle, they suffer from congestion. One of the longest runs, X22 from Tottenville, Staten Island, to Midtown, takes an hour and 17 minutes at its earliest departure, but an hour and 44 minutes at the height of rush hour—a loss of 27 minutes each morning for its riders, and an increase in operating costs of over 25% due to fuel, driver time, and wear and tear on brakes and other components.

New York City Bus Rapid Transit Stop rendering



Credit: NYC Department of Transportation and NYC Economic Development Corporation

CASE STUDY

Bus Rapid Transit Around the World

It was in the mornings that Ottawa's Bus Rapid Transit (BRT) system really made the difference for Andrew Harder.

"I don't know how I would've gotten to work," said Harder. "Because of BRT, I didn't have to get up at 5 a.m."

BRT gives commuters the option of taking mass transit to work, without the sacrifices that bus riders sometimes make to turtle-paced traffic.

Over the last two decades, Bus Rapid Transit has become a popular tool, used by cities like Bogota, Boston, Sydney, Jakarta, Miami and Seattle to alleviate congestion. Today, Miami's BRT system shuttles around 18,000 passengers each day. Seattle's BRT serves 46,000 weekday commuters, and Boston gives 4,500 commuters a ride during morning rush hour.

Since 1983, Ottawa has installed 28 stations and nearly 20 miles of exclusive busways—the most extensive system in North America. The 900-bus fleet carries more than 200,000 riders every day.

BRT buses frequently receive priority at traffic signals, allowing them to travel through intersections without delay. In Ottawa, message boards at select passenger stations give riders updates on when to expect the next bus, a system that New York City will be adopting for its first five BRT routes, which launch in 2007.

Off-vehicle fare collection is another improvement New York City is exploring. In Curitiba, Brazil—which pioneered BRT routes in 1974—features like these reduce waiting time at the station by at least 20 seconds per stop.

"It's a lot like riding the subway," Harder said. "But with fewer stops, and sunlight."

Commuter Rail Service

Number of inbound trains during morning rush hour (6–10am)

■ TERMINALS
● STATION



Source: Metropolitan Transportation Authority and Mayor's Office of Long-Term Planning and Sustainability

COMMUTER PROFILE

Staten Island to Brooklyn

Tony Licciardello laughs when asked how long he has commuted from his home in New Dorp, Staten Island, to his job as a court officer in Downtown Brooklyn.

"Oh, a long time," he says. "At least 20 years."

In that time, Licciardello has gotten his daily drive down to a science—one based on the desire to avoid the complex subway and bus route commute that links his borough to Brooklyn.

There is currently no direct transit option to shuttle the more than 2,600 New Dorp residents who commute outside Staten Island every day. Today, if Licciardello wants to leave his car at home, he has to take a local bus to the Staten Island Ferry, which drops him in Lower Manhattan, and then take the subway or bus to Brooklyn. The trip would take 90 minutes—and add an entire borough to his commute.

He opts for his car's relative ease over transfers and inevitable wait times—even though the travel time is roughly the same. But if there was a simpler transit route, Licciardello would leave his car, ending his constant search for parking and cutting down gas costs.

He will be getting the choice soon. A new Bus Rapid Transit (BRT) option from Hylan Boulevard in Staten Island—set to launch in 2007—will provide Licciardello with direct service to the subway—and shave 15 minutes off his commute time.

Congestion pricing would give Licciardello a faster drive, too, removing some of the Manhattan-bound traffic that he battles with each day.

"Now it's just more convenient for me to drive," Licciardello said. "But I would definitely take public transit instead—even if it took a little bit longer."

Express Bus service, for example, or stopping some Express Buses in Downtown Brooklyn—might also increase ridership and help to reduce congestion. Changes in traffic patterns, signal timing or street alignment might eliminate "hot spots" where buses routinely get delayed. Because they rely on City-owned streets, good bus service requires close cooperation between the City and the MTA. The City will invite the MTA to work with it to identify a wide range of opportunities, big and small, where joint efforts might provide better transit service. (See map on previous page: *Express Bus Service Today*)



INITIATIVE 5

Improve local commuter rail service

We will seek to expand local use of Metro-North and Long Island Rail Road (LIRR) stations

For some neighborhoods in the Bronx, Brooklyn, and Queens, commuter rail is the best transit option. But local service at many of these stations is infrequent, and commuter rail costs even more even than express buses—especially if a transit transfer is necessary. Of the 33 commuter stations in the city, 15 do not have rush-hour service frequencies comparable to local stations in suburban counties. (See map above: *Commuter Rail Service*)

Capacity constraints drive some of this shortage; in some cases, expanding service will only be feasible after new projects such as East Side Access are complete. At others, higher ridership can come from improved connection from local buses. We will seek to work with the MTA to identify innovative ways that commuter rail service can serve Queens, Brooklyn and the Bronx.



INITIATIVE 6

Improve access to existing transit

We will facilitate access to subways and bus stops citywide

Every transit trip requires the passenger to get to the subway station or bus stop. But in many cases across the city, that can be almost as difficult as the journey itself.

Three main challenges prevent transit stops from being used to their full capacity: subway stations where the sidewalks are congested; bus stops where riders have to wait in the street under elevated rail structures; and bus stops along city streets that lack sidewalks. By making it easier for people to reach and use our existing transit system, we can encourage a broader mode shift in every borough.

All over New York are sites that require simple improvements to make existing transit options more accessible. For example, in the burgeoning neighborhood of Williamsburg, commuters increasingly ride bicycles to the L train. Today the line of bikes at the Bedford Avenue subway station stretches down the block, spilling across the narrow sidewalk. To relieve this condition, we will remove parking spaces, expand the sidewalk, and install more bicycle racks.

After evaluating all 468 subway stations, we have identified 24 areas in Brooklyn, Queens, and the Bronx that are not yet equipped to handle the rise in sidewalk congestion. These sites were selected in 2000, and work is underway to complete all of them by 2019.

In 42 other sites across the city, bus stops are tucked under elevated structures near subway stops. The columns interfere with traffic patterns especially when combined with high volumes of pedestrians. Buses cannot weave through the columns to reach the curb, which forces waiting riders to step into traffic to see if a bus is approaching. When the bus arrives, boarding frequently takes place on the street. To date, we have built raised islands that serve as bus stops at four locations. By 2021, we will complete work at all 42 locations. These upgrades can also include sidewalk extensions to make it easier to get to the stop.

In other cases, there is no sidewalk to the bus at all. For example, at Staten Island's Hylan Boulevard and Fairlawn Avenue, dozens of adults and school children need to cross the road daily to walk to school, work, or the bus stop, but there is no sidewalk along the eastern side of the road leading to the crosswalk or the bus stop.

The Sidewalks to Buses initiative focuses on providing sidewalks, crosswalks, bus waiting areas, and other pedestrian safety improvements to improve access at these locations. Priority will be given to areas where pedestrians are exposed to high-speed or high-volume traffic on their way to and from bus stops. On average, each location will require a quarter mile of sidewalk to provide a safe route. We plan to complete work at up to 15 different stops each year.

TRANSIT ACCESS INITIATIVE

INITIATIVE	LOCATIONS	COMPLETED/ UNDERWAY
Subway/Sidewalk Interface	24	2
Bus stops under Els	Up to 42	4
Sidewalks to Buses	2 pilots identified	0
TOTAL	68	6

Source: NYC Department of Transportation



INITIATIVE 7

Address congested areas around the city

We will develop congestion management plans for outer borough growth corridors

The vast majority of trips made in New York are not to Manhattan; even among commuters, nearly twice as many outer borough residents work outside of Manhattan as inside—1.56 million versus 841,000. As neighborhoods across the city grow, we must develop targeted plans to diffuse congestion across the city.

The main commercial stretch along Brooklyn's Church Avenue is one such area. This vibrant commercial district attracts shoppers arriving by car and transit, as well as local truck traffic. Double parking causes even more delays between Coney Island Avenue and Utica Avenue, and the B35 bus is slowed by traffic, encouraging more to drive rather than take transit.

We have identified nine corridors that experience this kind of road and transit congestion:

- Fordham Road (Bronx)
- White Plains Road (Bronx)
- Church Avenue (Brooklyn)
- Nostrand Avenue (Brooklyn)
- West 96th Street (Manhattan)
- West 181st Street (Manhattan)
- Northern Boulevard (Queens)
- Woodhaven Boulevard (Queens)
- Amboy Road (Staten Island)

Over the next two years, we will undertake an intensive study of each area, evaluating traffic congestion, truck traffic, pedestrian mobility, transit service, and current and future land use potential. When each study is finished, we will work with affected communities to complete customized plans that reduce traffic congestion, improve air quality, provide a safer environment for vehicular and pedestrian traffic, and improve quality of life.

Actions under consideration will include new bus, pedestrian and bicycle enhancements, changes to the road design, modification to parking rules to free up curb space, and technological upgrades like computerized signaling systems to facilitate traffic flow. Broader improvements, such as taxi or for-hire vehicle stands, increased transit service, and targeted traffic enforcement, could also be part of the solutions.

We will also identify broader congestion "Growth Areas" across the city, potentially spanning entire neighborhoods, and develop neighborhood-specific strategies using many of the same tools.

Promote other sustainable modes

Despite our dependence on subway, bus, and commuter rail service, opportunities exist to expand the use of two other modes of transportation: ferries and bicycles. Today only 55,000 people reach Manhattan island by ferry daily. And although many New Yorkers own bicycles, most consider cycling to be recreational, not a mode of transportation. As a result, we will work to expand ferry service and integrate it into the transit system, and promote broader bicycle use across the city.

For different reasons, bikes and ferries are highly sustainable modes of transportation. Ferries require little infrastructure and make use of space that is already there—our waterways. With modern engines and pollution control equipment, they can also be low-polluting forms of transportation. Nothing is as low-polluting as the human-powered bicycle, which can give many New Yorkers an alternative to the auto for short trips and a way to get exercise as well.

COMMUTER PROFILE

Co-op City to Lower Manhattan

Oscar Alvarado spends at least 720 hours—the equivalent of one month every year—commuting.

On weekday mornings, he leaves his apartment in Co-op City and boards the QBx1 bus, which takes him to the Pelham Bay station. From there, he rides the 6 train to 125th street, where Alvarado waits for the 4 or 5 train. Almost every morning, he lets one train go by—it's always too packed—and gets on the next, which takes him to Lower Manhattan.

"But I'd rather wait than get to work rumpled and frustrated," he said. "I don't get how other people push into the car like that."

In Co-op City, a neighborhood of 50,000 people living in 15,000 apartments, transportation is a serious topic. On any given morning, almost 14,000 people who work in Manhattan, like Alvarado, pour out of the Co-op City complexes and onto crowded local and express buses.

"The whole community here is a little isolated—and transportation improvements are really important," said Oscar Alvarado, climbing onto the bus.

Alvarado has lived in Co-op City for eight years, and his commute to work is 90 minutes each way. He has tried driving in, but the prospect of finding parking around his office in Lower Manhattan is too daunting. He has also tried commuting by express bus, but the ride only brings him to 23rd street.

"And then, I'd have to get off the express bus and walk to the 6 train, anyway," he said. "It's not an easy transfer, and not really a viable alternative."

Alvarado's voice perks up, though, when he is asked about the possibility of a new Metro North line. By 2013, Metro North trains could leave from Co-op City, a quick shuttle ride from Alvarado's home. With the new service, it would take commuters just 30 minutes to glide into Penn Station from Co-op City. Riding Metro North would cut Alvarado's commute time by a third. The project is relatively low-cost for rail transit—under \$2 billion—but it cannot happen until the LIRR's East Side Access project frees up space in Penn Station.

"Going straight to Penn Station, right near all the lines that take me to work, would be just like a regular transfer," Alvarado said. "And it would be quicker, and more comfortable. That would be a major improvement."

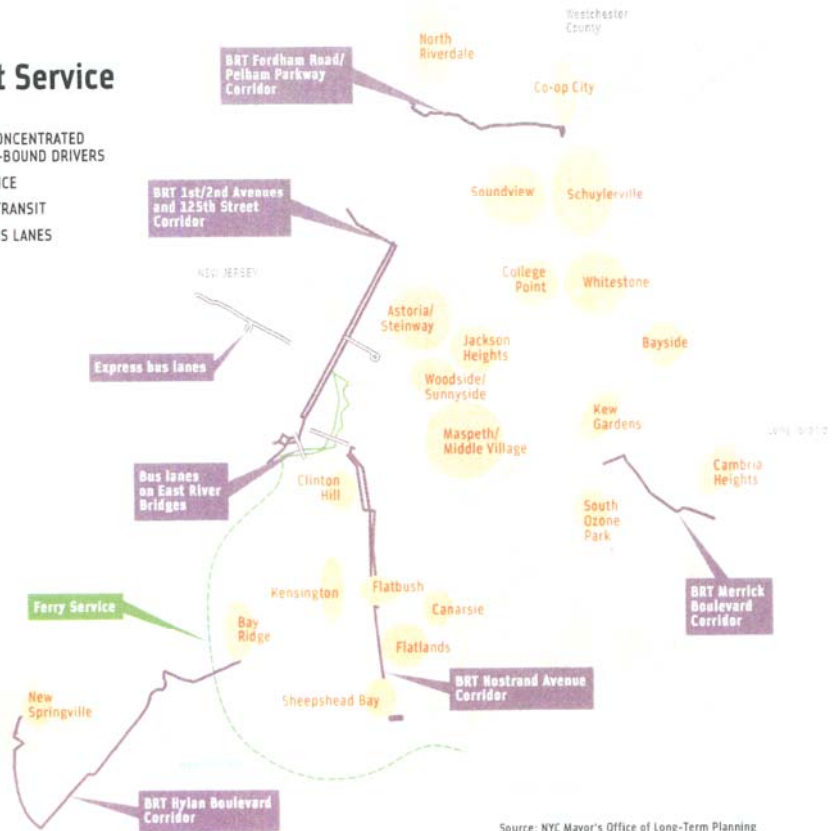
Near-Term Improvements to Transit Service

In all New York City neighborhoods, a majority of Manhattan-bound commuters take transit. But the areas shown in this map have higher concentrations of drivers to Manhattan than any other parts of the city. Many of these areas do not have rail transit service; others have subway or rail service that does not meet all residents' needs. With only slight enhancements to the system more people in these areas would choose transit over driving. These enhancements would emphasize connections to the subway or commuter rail system where feasible; minimize transfers; improve reliability; and use existing bus routes and corridors where possible.

Intermodal connections improve the timing or the location of bus stops to make an existing two-seat ride more convenient. **Rerouting existing bus routes** can bring buses closer to potential riders or make routes more direct. **Bus prioritization** can change traffic lights when buses approach to speed bus travel. **Improving subway and rail station access** can cut walking distances or make entrances easier to navigate. On some routes, **bus frequency** is too low for the potential demand and could be increased; on others, frequency is sufficient to allow **skip-stop** or **limited-stop service** that would cut travel times. **New bus routes** would increase options within the system—but are the most expensive of these short-term measures. In addition, many of these neighborhoods will benefit from **other projects** outlined in this plan, ranging from new commuter rail service to BRT.

The table below outlines which of these strategies we would recommend for each neighborhood.

- AREAS OF CONCENTRATED MANHATTAN-BOUND DRIVERS
- FERRY SERVICE
- BUS RAPID TRANSIT
- EXPRESS BUS LANES



Source: NYC Mayor's Office of Long-Term Planning and Sustainability, U.S. Census Bureau

Potential Improvements for 22 Neighborhoods with Concentrations of Manhattan-bound Drivers

NEIGHBORHOOD		INTERMODAL CONNECTION	RE-ROUTING OF EXISTING BUS ROUTE	BUS PRIORITIZATION	SUBWAY AND RAIL STATION ACCESS	INCREASE BUS FREQUENCY	SKIP STOPS/ LIMITED STOPS	NEW BUS ROUTE	OTHER PROJECTS
BRONX	Co-op City	●							Metro-North to Penn Station; BRT
	North Riverdale	●							Metro-North to Penn Station
	Schuylerville	●		●					
	Soundview	●		●	●				
BROOKLYN	Bay Ridge		●	●			●		
	Canarsie	●	●			●			Nostrand BRT
	Clinton Hill	●			●				Bus Lane on Manhattan Bridge
	Flatbush	●		●					Nostrand BRT
	Flatlands	●		●		●	●		
	Kensington				●				
	Sheepshead Bay				●				Nostrand BRT
QUEENS	Bayside	●	●			●			LIRR East Side Access
	Cambria Heights	●	●	●					Merrick Blvd BRT
	College Point	●		●				●	
	Jackson Heights	●	●		●	●	●	●	Bus Lane on Queensboro Bridge
	Kew Gardens	●	●	●					LIRR East Side Access
	Maspeth / Middle Village / Ridgewood		●		●				
	South Ozone Park	●	●	●	●				
	Astoria / Steinway		●	●	●				Bus Lane on Queensboro Bridge
	Whitestone			●					
	Woodside / Sunnyside	●						●	LIRR East Side Access
STATEN ISLAND	New Springville						●		Hylan Blvd BRT

Source: NYC Mayor's Office of Long-Term Planning and Sustainability



INITIATIVE 8

Expand ferry service

We will seek to expand service and improve integration with the city's existing mass transit system

Along Newtown Creek, which separates Brooklyn and Queens, the transformation of New York's waterfront is clear. To the north, apartment buildings are rising and land is being cleared for thousands of additional units of housing at Queens West, many of which will be affordable to middle-income families. To the south sit the low-lying factories and warehouses of Williamsburg and Greenpoint, which are being converted into a waterfront esplanade, parks, and housing.

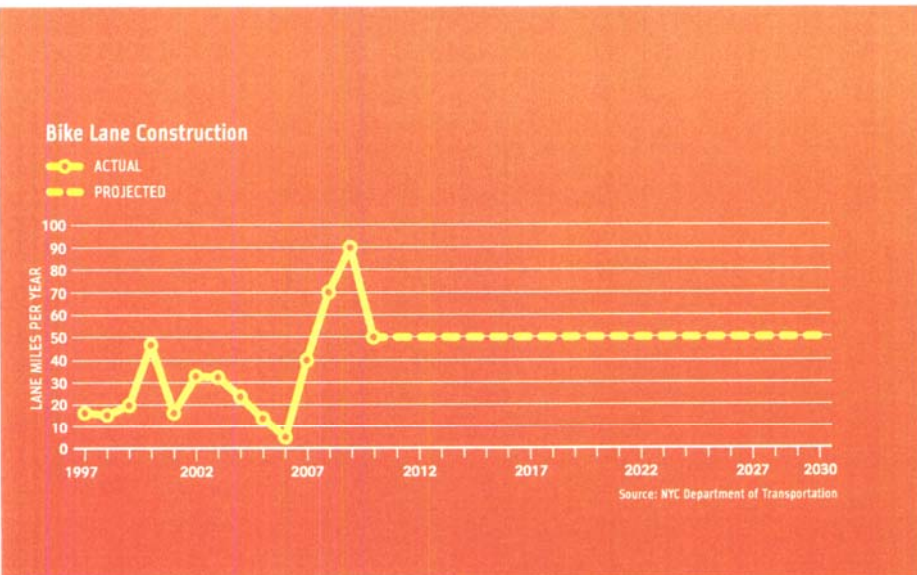
Across the city, more than 60 miles of largely-abandoned waterfront land is being reclaimed for recreation and new communities. But some of these neighborhoods lack the basic transportation infrastructure required for sustainable growth. In some areas, the nearest subway stop is more than three-quarters of a mile away. Where there is service, the trains and buses are increasingly crowded as growing numbers of commuters use stations closest to Manhattan.

Ferries and water taxis can help solve both of these problems. In addition, ferries have proven that they can provide critical backup transportation for the city during emergencies, as they did on 9/11 and during the 2003 blackout.

That's why we will seek to expand ferry service to emerging neighborhoods across the city and seamlessly integrate it into the city's transportation network.

The City will seek to initiate a new privately-operated ferry system along the East River that will connect developing areas of Brooklyn and Queens with Midtown and Lower Manhattan. This new service would connect ferry landings at Queens West, Greenpoint and North and South Williamsburg, with landings at Pier 11 (Wall Street) and East 34th Street in Manhattan. In addition, we will seek to pilot service between Manhattan and the Rockaways in Queens. Other parts of the city where ferry service may make sense—such as southern Queens, the south shore of Staten Island, and the Bronx—will be evaluated based on potential ridership and financial flexibility.

Ferry service is most effective when it connects riders with land-based transit bringing them close to their inland destinations. That is why we will work with the MTA to extend bus routes to ferry docks from Midtown. We



will also explore the possibility of using BRT or other fast service on crosstown routes for more efficient connections, especially across 34th Street and 42nd Street.

Finally, for ferries to be considered an effective component of the city's mass transit system, they must be treated that way. That is why ferry passengers must be able to use their MetroCards for ferries and the connecting bus service. We will work with the MTA and the ferry companies to achieve this intergration.



INITIATIVE 9

Promote cycling

We will pursue strategies to encourage the growth of cycling across the city

Cycling also offers an environmentally-friendly and space-efficient way to travel around the city. Other cities have embraced cycling as emission-free, low-cost travel mode that promotes a healthy lifestyle—and one that New Yorkers are increasingly embracing. Cycling in the city is estimated to have increased 75% from 2000 to 2006. But there is still plenty of room to grow; less than 1% of New Yorkers commute to work by bicycle. (See case study: *Cycling Emerges Around U.S.*)

We will complete the city's 1,800-mile bike master plan

In order to reduce traffic and reach our clean air and greenhouse gas reduction goals, New Yorkers should be given the option of reaching their jobs and major city destinations through cycling. That is why we will dramatically accelerate the implementation of the City's 1,800-mile bike lane master plan, to ensure that the entire system is in place before 2030. (See chart above: *Bike Lane Construction*)

CASE STUDY

Cycling Emerges Around U.S.

When Brean Martin needs a ride across Chicago, he plops his bike on a rack between a bus's headlights.

"Now, every bus has carriers," said Martin. "I get the feeling it helps bus drivers be more careful about bikers on the road."

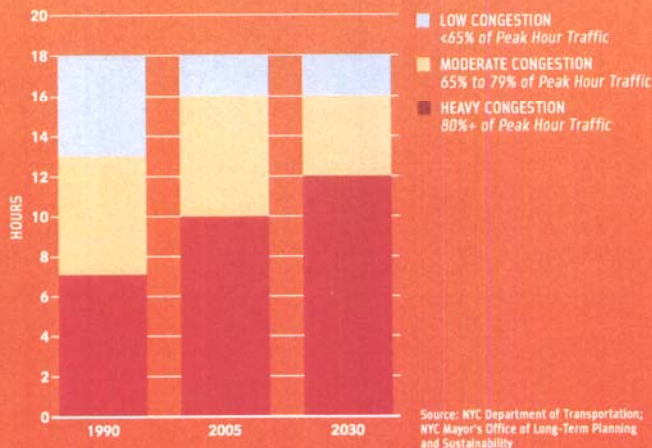
Cities across the nation are looking to the two-wheeler as a key to creating sustainable, enjoyable public transportation. They're planning miles of bike paths, starting public bicycle programs, and zeroing in on safety measures. Seattle, Portland, and Boulder have instituted major networks. Baltimore and Philadelphia are on the road to better biking, too.

By 2015, Chicago wants at least 5% of all trips less than five miles to be on bicycle. The city has discovered that shifting trips to bikes can become a congestion management strategy. It has already installed more than 160 miles of bike lanes throughout the city.

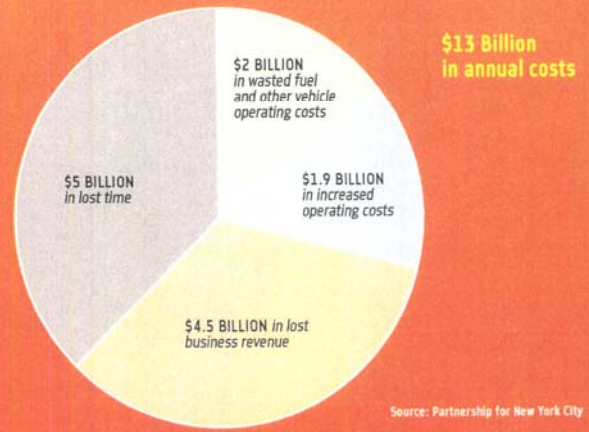
Brean Martin thinks car congestion has already lightened up.

"It used to be that I'd go flying on my bike through dead-stopped traffic," said Martin. "Now, the cars actually move."

Hours of Congestion



Annual Cost of Congestion to the New York Region



The plan includes 504 miles of separated bike paths (Class 1 facilities) and 1,296 miles of striped bicycle lanes or markings reminding drivers and cyclists to share the road (Class 2 and 3). To date, only 420 miles have been constructed.

We will complete Phase 1 of the plan in 2009, which will add 200 lane miles in targeted areas across the city—with the first 40 finished by June 2007.

We will prioritize areas with high demand, building connections between existing portions of the network, and strengthening access to parks through special bike paths known as greenways. These greenways not only offer their own recreational benefits such as biking, skating, and walking throughout our city's park system; they can also open up new areas of parkland.

Phase 2 and beyond will complete the remaining bike lanes, resulting in 1,800 total lane miles of bicycle facilities in New York City.

BIKE MASTER PLAN STATUS

LANE MILES	CLASS 1	CLASS 2	CLASS 3	TOTAL
Built	200	176	44	420
Planned for 2030	42	1,076		1,380
TOTAL	504	1,296		1,800

Source: NYC Department of Transportation

We will facilitate cycling

In addition to implementing the master plan, we must provide support for city cyclists and encourage New Yorkers to explore this form of transportation. That means improving public education on the benefits of cycling and on safety issues, increasing necessary bicycling infrastructure such as bike racks and lockers, and improving observation of traffic and bicycling laws.

Cyclists often point out that their main concern is having safe places to store their bikes. To solve this problem, the City's Depart-

ment of Transportation (DOT) will continue the CITYRACKS program by installing 1,200 additional on-street bicycle racks throughout the City by 2009, and commit to that level of installation until every neighborhood has adequate bike parking. We will also pursue legislation to require that large commercial buildings make provision for bicycle storage either on site or reasonably nearby.

Improve traffic flow by reducing congestion

The city's quality of life and economic prosperity depend on a transportation system that can meet demand. That means we must use our streets more efficiently if we are to absorb millions of new residents, workers, and tourists.

To achieve this goal, we will expand proven strategies to smooth traffic flows; and we will encourage commuters to shift from their cars onto an improved transit system, while providing better service for those who choose to continue to drive. (See charts above: Hours of Congestion and Annual Cost of Congestion to the New York Region)



INITIATIVE 10

Pilot congestion pricing We will seek to use pricing to manage traffic in the Central Business District (CBD)

Over the last 30 years, even significant improvements in our subway system have not substantially changed the way New Yorkers get to Manhattan. Despite enhancements in safety,

efficiency, and aesthetics, the percentage of drivers has remained essentially unchanged.

On a given workday, the Manhattan CBD is home to nearly 2 million workers from around the region, hundreds of thousands of tourists, and several hundred thousand residents. Cars compete for the road with buses, trucks pedestrians, cyclists and taxis. Vehicles trapped in traffic spew pollution into the air, putting the health of those living near congested roads at risk; and the resulting jams cost the region more than \$13 billion dollars every year. As our population grows by another 900,000 people, we add more than 20 million visitors annually, and 750,000 new jobs—many concentrated in the CBD—the consequences of congestion will become ever more severe.

The strategy that has emerged around the world as the most effective tactic to this gridlock is congestion pricing, a system that charges drivers a fee for entering a city's center. London, Stockholm, and Singapore all employ congestion pricing. Here in the United States, the U.S. Department of Transportation has also encouraged cities to undertake market-based congestion reduction initiatives. (See case study on facing page: London Congestion Pricing)

In every case where it has been implemented, congestion pricing has been successful at reducing traffic both within the "congestion zone" and outside it, speeding bus service, decreasing delivery times, improving air quality, and cutting greenhouse gas emissions, with no material impact on the economy, including retail activity in the zone in which the charge applies.

Key to the success of congestion pricing in those cities—and the widespread acceptance of initially reluctant businesses and residents—is the fact that congestion pricing is only one part of an overall commitment to increase investment in mass transit.

That is what we propose for New York. We believe a thoughtfully designed congestion pricing program should be part of a solution to the regional and city-wide transportation gridlock we will be facing. Its proceeds would be dedicated to funding billions of dollars of transportation improvements, including immediate enhancements to some of New York's least transit accessible communities. (See following page: *New York City's Congestion Pricing Plan*)

Summarized below is an illustrative example of how congestion pricing could be implemented and its impact. The details would have to be determined through a collaborative process between the City and the State, because State legislation would be needed to enable the City to impose a fee and give the City the right to fine violators. State law could authorize the City to define the pricing area, the amount of the charge, the hours it would apply, and the fines for failure to pay, or it could specify those details in the legislation. The legislation would also need to specify the type of environmental review that would be necessary.

Given its successful track record in other major global cities, we seek to pilot congestion pricing in New York for a test period of three years. The best way to predict whether it will work—and whether the benefits outweigh the inconveniences—is to try it. Further, we believe that a pilot could be undertaken with no outlay of City or State funds, but leveraging Federal and private dollars.

Operating congestion pricing

Passenger vehicles entering or leaving Manhattan below 86th Street during the business day (weekdays 6 am to 6 pm)—with the exception of the FDR Drive, the West Side Highway, and West Street—would pay an \$8 daily fee. Trucks would pay \$21. Autos that drive only within “the Zone” would pay half price. The charge would apply to all vehicles, except emergency vehicles, those with handicapped license plates, taxis, and for-hire vehicles (radio cars).

Vehicles using E-Z Pass that travel through MTA or Port Authority (PA) tolled crossings on the same day would pay only the difference between their MTA or PA tolls and the congestion charge, so that drivers don't have an incentive to detour across free bridges. Because roads on the periphery of Manhattan will not be in the Zone, trips around the Zone (for example, from Harlem to Brooklyn) would not be charged.

Payment would involve no toll gates or waiting areas. The technological backbone of the system would be E-Z Pass, which relies

on high-speed sensors, and is used by more than 70% of New York area drivers. The charge would appear on drivers' E-Z Pass statements.

For those drivers without E-Z Pass, their license plates would be checked automatically by cameras mounted on traffic light poles, with payment options available through Internet, the telephone, or at participating retail outlets. Drivers would have two days to pay the charge.

Impact of congestion pricing

The main benefit of congestion pricing would be reduced traffic congestion. Traffic within the Zone would decrease 6.3%. Speeds are projected to increase 7.2%. The impact would also be felt in the other boroughs, since the number of cars passing through other neighborhoods on their way to Manhattan will decline. This is especially the case on key thoroughfares leading to bridges, including Flatbush Avenue in Brooklyn and Queens Boulevard in Long Island City. (One study suggested that 43% of all traffic in downtown Brooklyn and 57% of rush-hour traffic in Long Island City is bound for Manhattan). Overall, travel speeds in all four boroughs would get better due to congestion pricing in Manhattan.

The 4.6% of New York City residents who drive to work in the Zone would pay a daily charge less than the cost of commuting by Express Bus, and they would have a faster commute than today. Everyone who drives, especially in Manhattan, would experience the benefits of reduced traffic and higher speeds. Workers and companies whose income depends on providing services in Manhattan would be more productive. A plumber who currently spends a quarter of his day sitting in his van in Midtown traffic traveling from site to site would be able to do more work every day—increasing his income far more than the \$8 fee he pays. Delivery firms would have fewer packages delayed. Buses would run faster. Taxi drivers would carry more fares in a shift. These benefits would lower costs of doing business in the city, and benefit all New Yorkers.

The implementation of short-term improvements would be essential to the success of any congestion pricing program and to the transit infrastructure described earlier in this chapter, including: bus rapid transit, improved express bus service, dedicated bus lanes on bridges, and new ferry service, especially to areas of the city that lack convenient mass transit access to Manhattan today. In many cases, these improvements would be put in place prior to implementation of congestion pricing.

CASE STUDY

London Congestion Pricing

In 2000, headlines often compared the speeds of central London traffic to Victorian horse-and-buggies. And so did Londoners.

“Some days, it took me almost an hour to drive six miles from home to work in the morning,” said Gregory Phillips, an architect who works in the city's West End.

But when Mayor Ken Livingstone introduced an internationally proven congestion-mitigation strategy he was named the city's “Deadliest Enemy” by the *London Daily Telegraph*.

The strategy was congestion pricing—a plan to charge drivers a daily fee for the use of London's busiest roads during business hours.

Opponents of the congestion charge argued the charge would “strangle retailers” in the area. More than half of Londoners believed that the fee would make no difference in traffic patterns at all. Westminster City Council called on the High Court to order a full-scale public inquiry into the program, and more than 60% of the city's population stood against the idea.

Despite the skepticism, in February 2003, London began charging cars £5 (\$10) to access central London's most congested streets.

Traffic delays in London have plunged substantially—by 30%. Road speeds have increased 19% from the introduction of congestion pricing. A feared drop in retail spending never materialized.

Since the program started, more than \$360 million has been funneled into expansions and improvements of mass transportation—improvements that are attracting more Londoners to public transit. Bus ridership has increased 30% during peak periods. The extra road space has been reshaped into stunning public spaces like the new plaza at Trafalgar Square.

Now, Gregory Phillips rides his bicycle to work. “Since the introduction of the congestion charge, I find that I cycle in almost every day, and I love it,” he said.

In fact, Phillips said, his commute has actually become much quicker. “If I'm cycling, I can get into the office in 35 minutes.”

Now that's an improvement.

CHANGE IN TRAFFIC WITHIN LONDON'S CHARGING ZONE AFTER CONGESTION PRICING

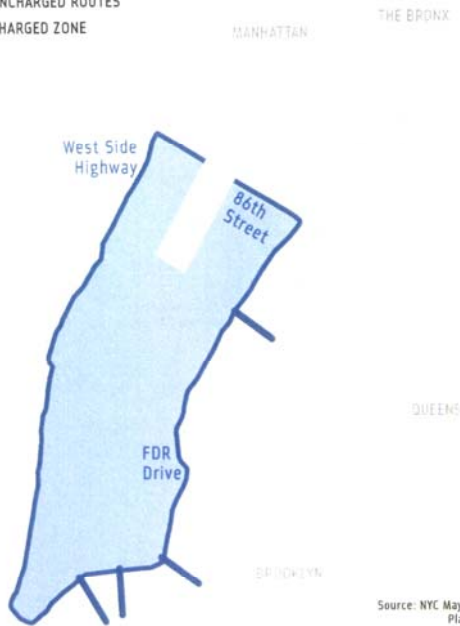
Automobiles	-34%
Heavy trucks	-7%
Vans	-5%
Buses	+21%
Taxis	+22%
Bicycles	+28%
ALL VEHICLES	-12%

Source: Transport for London

New York City's Congestion Pricing Plan

Congestion Pricing Zone

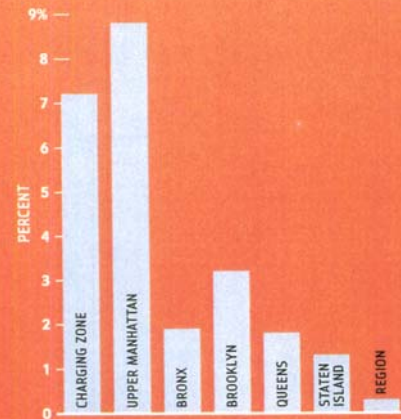
- UNCHARGED ROUTES
- CHARGED ZONE



Source: NYC Mayor's Office of Long-Term Planning and Sustainability

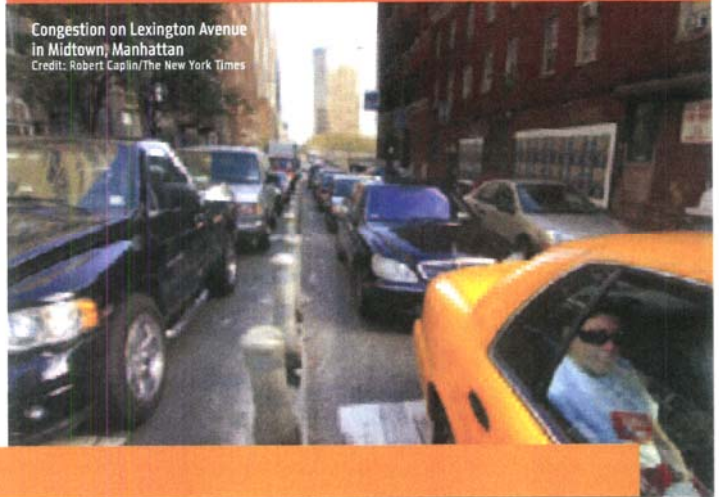
Traffic Improvement After Congestion Pricing

Increase in average speed over 24 hours



Source: NYC Mayor's Office of Long-Term Planning and Sustainability

Congestion on Lexington Avenue in Midtown, Manhattan
Credit: Robert Capin/The New York Times



CONGESTION PRICING FEATURES

Zone boundaries	Manhattan below 86th Street, except <ul style="list-style-type: none"> • West Street and West Side Highway • FDR Drive • Battery Park Underpass • Queensboro, Williamsburg, Manhattan and Brooklyn Bridges and their approaches.
Hours	6 am - 6 pm, Monday - Friday (no charges on weekends)
Charges: autos	\$8 daily charge to enter, leave, and move within the zone during charging hours \$4 daily charge for travel only within the zone during charging hours
Charges: trucks	\$21 daily charge to enter, leave, and move within the zone during charging hours \$5.50 daily charge for travel only within the zone during charging hours
Trips bypassing the Zone	Drivers do not pay unless they enter the zone. For example, driving from Brooklyn to the Bronx on the Brooklyn Bridge and FDR Drive would still be free
Toll rebates for E-Z Pass users	E-Z Pass users paying bridge and tunnel tolls to enter the zone will be credited the amount of their round-trip tolls that day, up to \$8. For example, an E-Z Pass driver who now uses the Battery Tunnel to enter and leave Manhattan will pay no additional charge, because the current round-trip toll they pay is already \$8
Exemptions	No charges for: <ul style="list-style-type: none"> • Handicapped license plates • Emergency vehicles and transit buses • Yellow taxis and livery cabs
Collection technology	At-speed E-Z Pass readers will allow fee collection without slowing vehicles down. Vehicles not equipped with E-Z Pass will be recorded by cameras and drivers can pay the fee by phone, internet or at participating retailers within 48 hours.
Revenues	All net revenues will be dedicated 100% to transportation investments through the SMART Financing Authority
Operating entity	NYC Department of Transportation will control the system, which will be built and maintained by a contractor yet to be selected

Source: NYC Mayor's Office of Long-Term Planning and Sustainability

Over time, more and more commuters would benefit from the longer-term investments in mass transit, 50% of which would be funded by the nearly \$400 million net revenues of congestion pricing in its first full year.

Although areas near the congestion pricing zone should experience reductions in traffic due to fewer drivers passing through on their way to the Zone, we would work with local communities if it seems that they would be impacted by drivers seeking to avoid the congestion pricing charge. Possible solutions include parking permits for residential neighborhoods and an expansion of the Muni meter program in commercial areas.

Overall, 94,000 travelers are projected to take advantage of new and improved transit choices, achieving the city's first significant mode shift in decades. Only 1.4% are expected not to take the trip into the Zone at all because of the congestion charge. The majority of these will travel instead to destinations in Upper Manhattan and the outer boroughs, helping businesses in those areas. As a result, the overall economic impact of the congestion charge is expected to be neutral to positive, consistent with the experience of cities where congestion pricing is in operation.



INITIATIVE 11

Manage roads more efficiently
We will increase the use of Muni meters within the city and develop an integrated traffic management system for our regional transportation network

We will expand the use of Muni meters

Muni meters, first introduced in New York in 1996, offer numerous advantages compared to traditional single-space parking meters. For drivers, they increase parking capacity by allowing cars to park closer together. They also enable the city to improve traffic flow by charging vehicles progressively higher fees for longer stays, encouraging shorter stays and more turnover. This increased turn-

over reduces double-parking and cuts the amount of time drivers spend "cruising" for a parking space. The meters also allow for more flexible payment options, accepting coin, credit card or city parking cards, and they create more sidewalk space for pedestrians—one Muni meter can replace up to six single space meters.

While Muni meters are currently only in use in certain areas, DOT will introduce them in business districts across the city, completing installation in all possible locations by 2011.

We will create an integrated traffic management system

The region's congestion problems are compounded by inefficiencies and lack of coordination among agencies and travelers. Poorly timed signals can cause backups, and drivers are often not alerted to traffic jams until they are actually sitting in them.

That's why the City has launched a five-year plan to unify and expand the information systems on our transportation network and enhance coordination throughout the region. Although we have utilized Intelligent Transportation Systems (ITS) for years through the use of cameras and electronic signage on highways, the real benefits can only be achieved when the information is centralized and coordinated.

Also in 2008, the New York Police Department, New York State Department of Transportation and the City's DOT will open the Joint Transportation Management Center, in Long Island City, which will enhance our ability to track and coordinate responses to traffic incidents.

But coordination is only the beginning; significant improvements require significant investments in technology. We will continue technological upgrades. By 2009, we will electronically control the timing on more than 70% of the city's traffic signals, allowing us to respond in real-time to emerging traffic conditions; by 2012, all of the city's highways will be equipped with ITS technologies.

Expanded technology and coordination will improve our ability to respond to traffic incidents, manage traffic congestion, and deliver information to drivers in real time.



INITIATIVE 12

Strengthen enforcement of traffic violations
We will improve our ability to enforce traffic laws

The number of vehicles is not the only contributor to congestion. Drivers who violate traffic laws make congestion worse. While the City undertakes focused efforts to increase enforcement, we must make broader, more systematic changes to enhance enforcement. We will undertake two initiatives and advocate for State action on a third to ensure that many drivers do not suffer from unnecessary congestion due to the illegal behavior of a few.

We will expand the number of Traffic Enforcement Agents

There are an estimated 800 intersections around New York City—in all five boroughs—where the presence of traffic enforcement agents (TEA) will be beneficial—not as ticket writers, but as traffic directors. The NYPD currently has approximately 500 "level 2" traffic enforcement agents whose main role is to direct traffic. But on any given day, the majority wind up not controlling the flow at busy intersections, but ensuring the movement of traffic around construction sites and other disruptions. To provide the coverage that will keep traffic moving, the NYPD will increase the force of level 2 TEAs by 100 agents this year, to be followed by further increases in the future.

We will enable all TEAs to issue blocking-the-box tickets

A major cause of true gridlock is drivers choosing to "block the box"—to cross an intersection even if there is no room on the other side. But writing a "blocking-the-box" ticket is currently a state-regulated moving violation, which may only be issued by police officers and selected traffic enforcement agents. We will seek to create a new parking violation that will allow both police officers and all TEAs to write block-the-box tickets faster, which will encourage more vigilant ticketing of violators.

We will expand the use of traffic enforcement cameras

Along with blocking the box, another significant cause of congestion—and a major safety hazard—is the running of red lights. Currently, New York State law allows the City to use only 100 red light cameras among the city's 12,000 signalized intersections. Further, cameras are not allowed to be used for speeding violations.

To improve the flow of traffic and to improve safety on our streets, we will seek state authorization to expand the use of red light cameras dramatically, and to begin using them to enforce speeding laws. We will also use the cameras more effectively, by rotating them around the city, so that drivers will not be able to predict where they are located. In this way, we will change driver behavior and at the same time minimize the chance that drivers will cause accidents by stopping short at the last minute in order to avoid receiving a summons.

2



INITIATIVE 13

Facilitate freight movements

We will work to expand options for freight movements

One of the major ways that New Yorkers bear the costs—economic, health, and social—of congestion is in the movement of freight. Delays to deliveries increase the cost of the goods sold in New York stores. Congestion—and inconsistent tolling policies—lead trucks to take circuitous routes through neighborhoods. Deliveries require curbside space, and when trucks can't find it they often cause more congestion, either by cruising for a space or by double parking. Congestion is even threatening the status of John F. Kennedy International Airport (JFK) as one of the nation's leading airfreight hubs—and the airport is one of the largest employers in Queens. Still, for the vast majority of deliveries to New York businesses and homes, trucks are the only viable option, even in the long term.

The City and its regional partners are undertaking several efforts to improve freight access across the region. In some cases, capacity would be added; more often, we would be attempting to manage the capacity we have more wisely, for the benefit of the truckers and the neighborhoods they drive through. For example, the results of the DOT's Truck Route Study will improve the overall manage-

ment of truck traffic in New York City leading to improved efficiency of truck traffic, while at the same time working to keep non-essential truck traffic out of residential neighborhoods. Muni-meters will create curbside space to allow truckers to make deliveries more easily. Better traffic management and information will speed up all types of traffic. Congestion pricing will apply to trucks, but will also create an incentive for night time deliveries and eliminate the practice of trucks passing through Brooklyn and Manhattan to avoid the one-way tolls on the Verrazano-Narrows Bridge.

Two additional initiatives will be specifically focused on freight movement, but will also have benefits for other travelers.

We will improve access to JFK

Congestion en route to JFK is bad and getting worse, making the city less convenient and business-friendly. It also reduces the airport's competitiveness: in the last decade, JFK has been losing cargo business to airports outside the region, primarily due to delays and congestion on the road leading to the airport.

In June 2006, the City, in partnership with the Port Authority, created a private/public task force focusing on improving roadway access to JFK for passengers, employees and cargo. It has recently issued several short-term recommendations. These include: marketing the Cross Island Parkway as alternative to the Van Wyck Expressway for non-commercial vehicles; improvements to the Van Wyck Expressway; allowing 53' trailer access to JFK; and providing a southern route to JFK for commercial vehicles. We will pursue these recommendations, and explore the long term solutions the task force recommends in the future.

We will explore High-Occupancy Truck Toll (HOTT) Lanes

Around the world and in several states, truck traffic has been accelerated by the creation of new lanes dedicated to trucks, which pay for themselves through tolls charged for traveling on these lanes. In many cases, high-occupancy vehicles are allowed access for free, and in some, those driving alone can choose to pay a variable toll to travel on them. Thus, they are referred to as "HOTT" Lanes—for High-Occupancy Truck Toll.

On several of New York City's main highways, the opportunity exists to explore this concept, using medians and in some cases service roads for additional lanes. Key bottlenecks where trucks encounter—and cause—congestion include the Cross-Bronx Express-

way, the Staten Island Expressway, the Van Wyck, and the Brooklyn-Queens Expressway.

The City will work with and support the New York State Department of Transportation (NYSDOT), which controls these roads, to explore these self-financing lanes.

Achieve a state of good repair on our roads and transit system

We have come a long way toward improving the condition of our aging and fragile transportation network. But we must not forget that we have not achieved the state of good repair on our roads, subways, and rail network that we have sought for 30 years. In fact, the need for additional capital is serious, if largely unseen. (See map on facing page: *Condition of New York City Subway Stations*)

That's why, even as we meet our new expansion needs, we must continue to vigilantly pursue a state of good repair—and preserve the progress that has been made. Doing so will not only prevent the breakdowns that cause crippling delays, but also contribute to our complementary goal of increasing capacity and improving travel times.

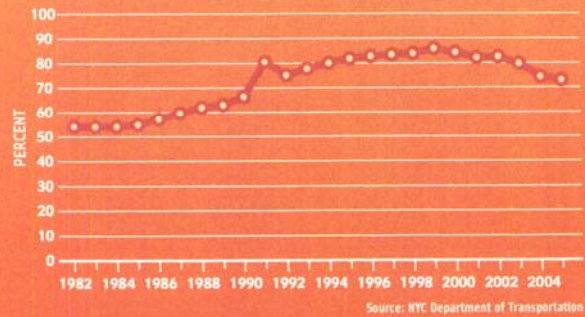
Condition of New York City Subway Stations

- STATIONS NOT YET AT STATE OF GOOD REPAIR
- STATIONS IN GOOD REPAIR



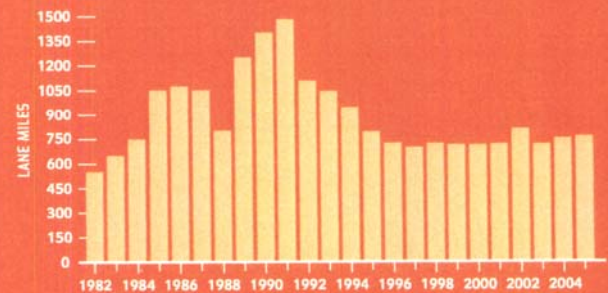
Source: Metropolitan Transportation Authority

Lane Miles in Good Repair in New York City



Source: NYC Department of Transportation

Lane Miles Resurfaced Per Year in New York City



Source: NYC Department of Transportation



INITIATIVE 14

Close the Metropolitan Transportation Authority's state of good repair gap

We will seek a grant from the SMART Authority to cover the MTA's funding gap

In 1981, the MTA halted all expansion projects until the transit system could be brought back into a state of good repair. The goal was to restore all system components so that they could start being upgraded on a normal replacement schedule—before they started to fail. The next year, the MTA launched its first five-year capital plan—an attempt to establish long-term priorities for renewing our deteriorated transit system. Since that decision, New York's transit network has undergone a renaissance. The dedication of the MTA's leadership and staff have made it one of the core components of New York City's recovery.

But even with the progress that has been made, the MTA system is still nearly \$15 billion away from a state of good repair, only \$5.5 billion of which has a dedicated source of funding—leaving a gap of \$9.5 billion that will begin in 2010. More than 60% of our subway stations remain in disrepair. Fan plants, which

remove smoke from tunnels during fires and other emergencies, won't be fully upgraded until at least 2028. Almost half of our tunnel lighting does not meet current lighting safety standards, or have additional power sources to stay on in case of a blackout. Last October, there were 514 weekday train delays due to "signal trouble."

Obsolete equipment has capacity consequences as well; older signal technology allows fewer trains to be run safely on the same track than modern systems. Modernizing these could dramatically improve service on crowded lines such as the E train. The MTA has invested \$288 million to test its first computerized signaling system on the L line—including electronic messaging boards alerting passengers of train arriving times—but we are billions away from modernizing the full system.

The challenge is that the MTA is chronically under-funded. Every five years, it develops a capital plan and then has to ask the State for the funding sources to cover the costs. We believe that achieving good repair is as fundamental as expanding the system, and will seek to have the SMART Authority provide the MTA with a one-time grant to cover its unfunded need to achieve a full state of good repair.



INITIATIVE 15

Reach a state of good repair on the city's roads and bridges

We will seek a grant from the SMART Authority to fund accelerated capital repairs and upgrades

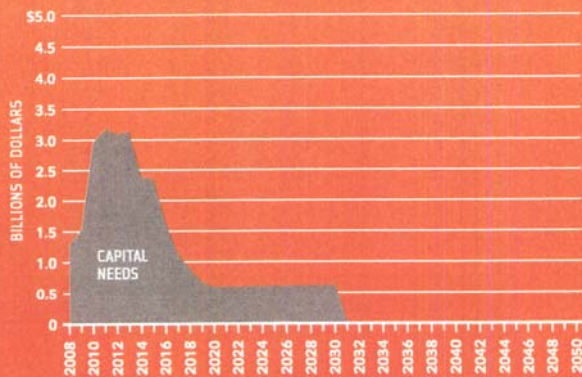
During the 1970's fiscal crisis, the City's road resurfacing efforts virtually stopped. Repaving was limited to our principal arterials, which received a lower quality of resurfacing than would be acceptable today. New layers of asphalt were simply laid over the older, damaged sections and sealed up. Each new layer caused the road level to rise closer to the curb. To avoid having streets at the same level as the sidewalks, repairs were simply avoided longer.

As the city's budget crisis eased, New York restored funding for street repair. Using new equipment, as well as additional personnel and private contractors, resurfacing increased through 1991, and the roads steadily improved. (See chart above: Lane Miles Resurfaced Per Year in New York City)

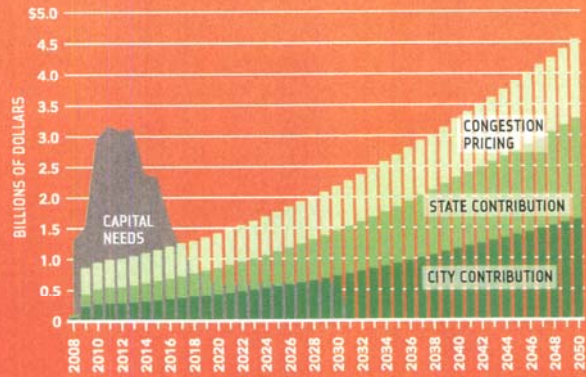
But since then, the average yearly resurfacing has fallen back below what was needed to maintain the quality of the city's streets. To keep pace with the wear of daily travel, we must resurface approximately 1,000 lane

How the SMART Financing Authority Would Fund Regional Transportation Projects

Expenditures



Expenditures and revenues



miles of its roads per year. In the past 15 years we have averaged only 800 lane miles. This under-investment has resulted in a consistent decline in street assessment ratings, to a current low, where only 69.9% of our streets are rated “good” or better. (See chart on previous page: Lane Miles in Good Repair in New York City)

We will reverse this trend by increasing the City’s street resurfacing output with a limited SMART grant paid out over 20 years.

We will also seek to improve our efficiency by increasing the use of recycled asphalt pavement (RAP). With RAP the City takes the asphalt that is about to be removed and recycles it as fresh asphalt. RAP has the potential to replace as much as 50% of the new material we use for asphalt. In addition to reducing our waste disposal needs, this will cut down on truck trips and on the need for new aggregate and asphalt cement.

The City has done a better job at maintaining the 787 City-owned bridges and tunnels that connect the five boroughs. After the Williamsburg Bridge was closed in 1988 for emergency repairs, the City began a significant rehabilitation program and is in the process of completing all deferred maintenance. But with more traffic every year, the City’s bridges require significant periodic capital upgrades and replacement. We will not substitute that work for routine maintenance, but we will seek a SMART Fund grant to provide enough capital to allow the needed, but costly upgrades necessary to keep our bridges safe.

Develop new funding sources

There is wide agreement on a series of projects that would bring mobility to our city. But despite impressive recent funding commitments, none of them has actually secured enough financing to be completed. For all the projects outlined in this plan, the combined budget gap is \$30.9 billion. And the longer it takes to fund these projects, the higher the costs—so the combined budget gap will grow. (See chart on facing page: Projects Financed through the SMART Fund; see maps on page 96: Rail and Subway Conditions)

Good planning is not enough to secure the future of our city, we must be willing to identify, organize, and raise the financing that is required to build the things we need. To that end, we will work to create a dedicated, regional fund to finance our needed transportation infrastructure, tapping new sources of revenue as well as dedicated commitments from existing sources.



INITIATIVE 16

Establish a new regional transit financing authority

We will seek to create a SMART Financing Authority to advance new projects and achieve a state of good repair

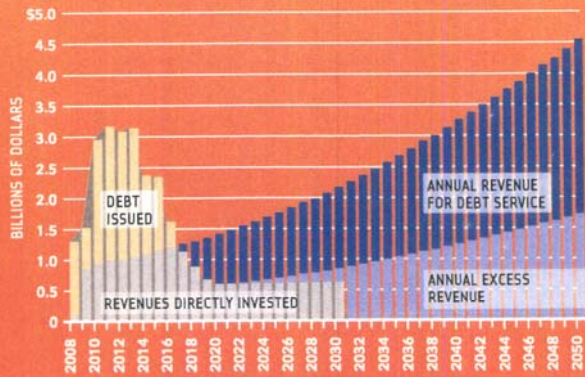
We will seek to work with the State to establish the Sustainable Mobility and Regional Transportation (SMART) Financing Authority, which would serve as a transportation infrastructure bank for the region. This authority would be funded through dedicated revenue streams that could be bonded against to advance critical capital expansions that improve connections between the city and the surrounding region. (See charts above: How the SMART Financing Authority Would Fund Regional Transportation Projects)

Revenues

For two generations, our inability to raise sufficient funds for transportation investments has undermined the mobility of our region. That is why we must tap new sources of funding if we are to make our goals a reality. Further, that funding responsibility must be borne equitably.

All of these projects serve New York City in some way, so the City must share in funding them. Virtually all of them—even those wholly within the five boroughs—serve the region’s commuters as well, and so non-city residents should also contribute. That is why we will seek to partner with the State to establish three dedicated revenue streams that split the contributions evenly between city and non-city resident commuters.

Financing Capital Plan Through 2050*



*Note: Debt fully paid off in 2050.

Additional projects eligible for SMART Fund financing include:

- Improvements and extensions to the region's subway, light rail, and commuter rail networks
- Improved local transit systems serving transportation centers and business districts in the city and the region
- Improved transit access to the region's airports
- Enhanced, high-speed intercity rail services

Source: NYC Mayor's Office of Long-Term Planning and Sustainability

Projects Financed Through the SMART Fund

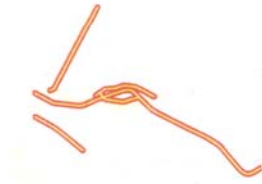
PROJECTS	TOTAL PROJECT COST (DOLLARS IN MILLIONS)	CONSTRUCTION		EXISTING FUNDING		GAP COVERED BY SMART FUND
		START	END	AVAILABLE	EXPECTED	
7 Train - 10th Avenue Station	\$450	2013	2017		\$225	\$225
Access to the Region's Core	\$7,381	2009	2016	\$2,580	\$1,111	\$3,691
Bicycle Lanes	\$23	2008	2030		\$12	\$12
BRT: First Five Routes	\$438	2008	2014	\$ 60	\$159	\$219
BRT: Five Additional Routes	\$527	2010	2016		\$264	\$264
Congestion Pricing	\$224	2009	2009			\$224
East River Bus/HOV Capacity	\$43	2009	2010		\$21	\$21
East Side Access	\$6,350	2007	2013	\$4,382		\$1,968
Express Bus Lane to Lincoln Tunnel	\$1,300	2010	2011	\$100	\$550	\$650
Ferry Service	\$40	2011	2013		\$20	\$20
LIRR Third Track	\$770	2010	2013	\$416		\$354
Lower Manhattan Rail Link	\$7,500	2010	2015	\$2,960	\$790	\$3,750
MNR Penn Station Access (Hudson Line)	\$455	2012	2013		\$228	\$228
MNR Penn Station Access (New Haven Line)	\$357	2012	2013		\$178	\$178
Nassau County Hub	\$738	2010	2013		\$369	\$369
North Shore Alignment	\$350	2012	2016		\$175	\$175
Penn / Moynihan Station	\$1,000	2008	2015		\$500	\$500
Second Avenue Subway (Phase 1)	\$3,838	2007	2013	\$2,864		\$974
Second Avenue Subway (Phase 2)	\$3,400	2011	2018		\$1,700	\$1,700
State of Good Repair (MTA)	\$13,681	2010	2030			\$13,681
State of Good Repair (NYC Roads & Bridges)	\$1,722	2009	2029			\$1,722
TOTAL FIRST PRIORITY PROJECTS	\$50,222			\$13,362	\$6,302	\$30,925

Note: Costs are nominal, year of construction. Where available, agency's year-of-construction estimates are used. Otherwise, annual construction industry inflation estimates used. Existing funding includes Federal, state, local, and agency funding; "expected" is based on reasonable expectation based on past trends. Second Avenue Subway Phase 1 estimate assumes receipt of Federal Full Funding agreement. MTA SGR estimate based on unfunded remaining state of good repair gap after current MTA Capital Plan.

Rail and Subway Conditions

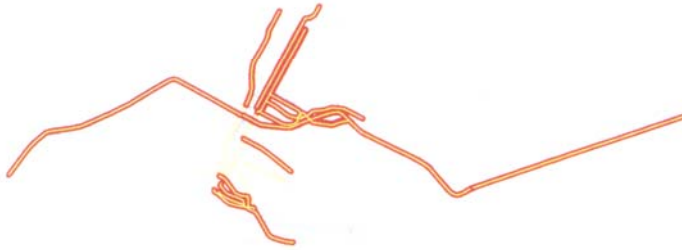
Today

- AT CAPACITY
- NEARING CAPACITY
- LINES WITHOUT CAPACITY CONSTRAINTS



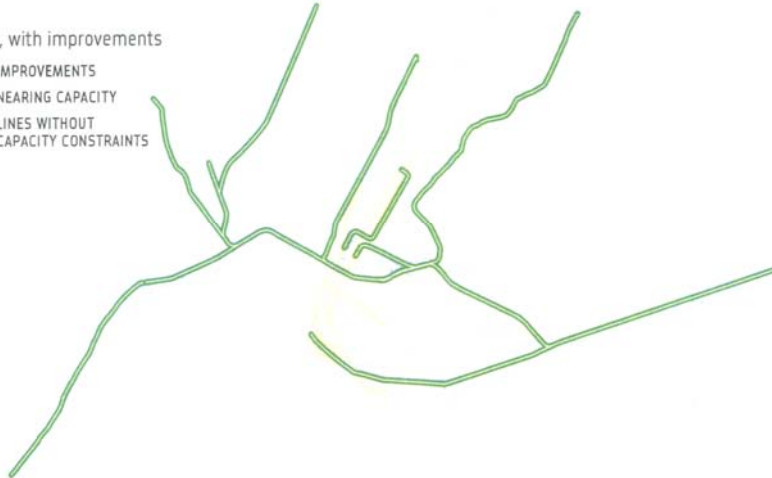
2030, without action

- AT CAPACITY
- NEARING CAPACITY
- LINES WITHOUT CAPACITY CONSTRAINTS



2030, with improvements

- IMPROVEMENTS
- NEARING CAPACITY
- LINES WITHOUT CAPACITY CONSTRAINTS



City and State Contributions

The City proposes a matching partnership with the State. The City will commit \$220 million to the SMART Authority in an annual payment starting in 2008, rising to \$275 million in 2012 and increasing at the growth rate of the City's personal income tax thereafter.

The City contribution will be contingent on the State matching these funds. To ensure that the SMART Financing Authority is able to issue bonds against these revenues, both commitments must be enshrined in law. The State could determine any source of funds for this contribution.

Congestion Pricing

Congestion pricing is projected to generate net revenues of \$380 million in the first year of operation, increasing to over \$900 million by 2030. Based on traffic patterns, roughly half the revenues from congestion pricing would be paid by New York City residents, and the other half by non-city residents.

Investment criteria

Regional, state, and city transportation agencies would apply for funding for specific projects. These projects would be evaluated by a board of directors with representatives from around the region and appointment criteria to ensure a balanced and impartial perspective. The board would be supported by a professional staff that would analyze funding requests, undertake independent assessments of regional transportation needs, and develop financing structures for selected projects. Once a project has been chosen, the SMART Authority would monitor its progress to ensure that investments are being spent efficiently and as promised.

Although regional priorities may change over time, the SMART Authority will only provide support to two broad categories of projects:

Expansions or improvements to our regional transit system

Meeting the following criteria:

- **Capital investment** to expand or improve transit infrastructure in the New York City Metropolitan region, with all projects needing to provide either direct or indirect service to New York City
- **Ready-to-go projects** that have received all required legislative, local, and environmental approvals
- **At least 50% funded** so as to use the SMART Fund to provide a match to local, State, agency, and Federal funding already in place

Achieving a state of good repair on city streets and the transit system

A series of **one-time block grants** would be awarded to the MTA and the City's DOT to achieve a state of good repair as the need was identified in 2005. These grants would be conditional on the agency's certification each year that it is replacing infrastructure on a normal cycle and conducting preventative maintenance at a level to prevent a relapse into disrepair.

Financing

The series of urgent capital projects—such as Second Avenue Subway, East Side Access, and ARC—are sufficiently far along in their planning and construction that the need for investments over the next several years will exceed even the revenues projected here. To provide the resources needed *when* they are needed, the SMART Authority would issue debt secured by its three revenue streams. Based on extensive modeling, not only should we be able to meet all of our identified needs, but there would also be excess funding available. Beginning in 2022, this could be used for the final phases of the Second Avenue Subway and a next wave of regional projects, such as subway extensions and expansions, commuter rail lines, and providing transit on a new Tappan Zee Bridge.

Governance

With its revenues split between City and State sources, the SMART Financing Authority should be governed by a Board that is similarly evenly split. Further, to ensure the independence of the Board, the enabling legislation should state that Board members must not be government employees; that membership terms should be staggered; and that expertise in finance, planning or transportation be a prerequisite for membership.

Implementation

Multiple legislative actions will be required in order to establish the SMART Financing Authority. The State Finance Law must be amended to establish the entity and empower it to issue debt and allocate funding to regional projects. In order to bond against future revenues, a dedicated funding source must be secured. That means the identified revenue streams must be protected to the extent possible by State law and bond covenants.

Conclusion

We can accept increasing congestion and the damage it will inflict on our economy and quality of life. Or we can act to reshape our transportation network and ensure that New York maintain its position as the world's premier city. That means providing every New Yorker, visitor, and worker with transportation that is as attractive, efficient, and sustainable as possible.

As a result of the policies outlined above, New Yorkers like Bryan Block will experience reduced travel times, more comfort, and more reliable rides, whether they are going to work, going shopping, attending cultural events, or visiting family and friends. By accelerating long-delayed projects, implementing smart, short-term improvements, and embracing a new set of transportation priorities, New York can achieve a new standard of mobility.

EXHIBIT C TO MCCAMPBILL AFFIRMATION -
“MOBILITY” AND “BENCHMARKS” CHAPTERS
OF THE REPORT SUSTAINABLE STREETS [84 - 97]



Sustainable Streets
Safety
Mobility
World Class Streets
Infrastructure
Greening
Global Leadership
Customer Service
**Strategic Plan
for the New York City
Department of
Transportation
2008 and Beyond**

MOBILITY

Improving Travel in a Thriving City

Improving mobility is crucial to the vitality of New York City and New Yorkers. NYCDOT is responsible for the mobility of residents and visitors to the City and must maintain and improve the experience for the millions of motorists, bus riders, bicyclists and pedestrians who travel on our streets, roadways, ferries, and bridges every day. Improving mobility will require mode shifts, new policies, and infrastructure improvements so we can ensure people and goods can reach destinations reliably.

Over the next three years, DOT will implement bus priority measures on our roads and provide more opportunities for commuting by ferry and bicycle. We will reduce congestion in burgeoning business corridors in all five boroughs, create new parking management policies and high occupancy vehicle lanes.





Getting Buses Moving

Faster, more reliable buses are key to providing high quality transit service to neighborhoods beyond the subway's reach and in areas where subways are already crowded. Cities around the world have added capacity and normalized bus travel times by using Bus Rapid Transit (BRT), a system of smart route planning, rider information systems, dedicated rights-of-way, pre-boarding fare collection and state-of-the-art vehicles. In partnership with NYC Transit, DOT will launch two BRT projects and a new Midtown bus priority corridor in 2008. Together we will roll out five additional BRT projects by 2011.

In addition, we can use BRT elements to make regular buses operate more effectively on existing routes. We will install bus bulbs, colored bus lanes and signal prioritization at many more locations to make bus boarding faster, encourage motorists to stay out of bus lanes and move buses more quickly through traffic.

York, Ontario Bus Rapid Transit combines dedicated rights-of-way, easier to board buses, and pre-board fare collection to make bus travel times faster and more reliable



New York City Department of Transportation

MOBILITY POLICIES

Implement Bus Rapid Transit

DOT will work with NYC Transit to create bus rapid transit lines. In cities around the world, BRT has been shown to have carrying capacities similar to that of light rail lines. BRT will make bus travel times more reliable and improve the rider experience. It also cost-effectively extends the reach of the City's rapid transit network.

Test and deploy widespread "better bus" applications

We can use elements of BRT on bus routes around the city to speed and smooth bus travel and to discourage motorists from driving in bus lanes or blocking bus stops.

Implement citywide strategies to reduce congestion

We will implement programs to reduce traffic congestion and promote more sustainable modes of transportation.

Expand the bicycling network —double bicycle commuting by 2015

New York's flat terrain and dense development make it an ideal city for cycling, but bicycles currently carry a small percentage of all trips in the city. We will provide safer, well-connected facilities and install and promote bicycle parking to increase the use of this green, healthy and space-efficient mode of transportation.

Reduce congestion along key commercial corridors

Congestion has negative effects on many of the City's commercial corridors outside of the Central Business District. We will make these districts more accessible by bus, improve the sidewalk experience, better manage parking and deliveries and re-engineer the streets where necessary to reduce congestion with locally-appropriate solutions.

Bikes: More than Just Child's Play

New York's high density and flat terrain make it an ideal city for cycling. New York City DOT is creating safer bicycle facilities and more bicycle parking to protect existing cyclists and attract new ones. Based on our bicycle counts, we estimate that commuter cycling has grown by 77% between 2000 and 2007, but cycling still accounts for less than 1% of all commuter trips in New York City. Our goal is to double the number of bicycle commuters by 2015 and triple it by 2020.



To promote cycling, we will build 200 new lane miles of bicycle facilities by 2009 and 1.5 miles of protected bike lanes by 2010. We will also work to ensure completion of the city's 1,800 mile bicycle master plan and install 5,000 new CityRacks by 2011. We are also pursuing legislation that will require large commercial buildings to provide indoor bike parking. We are committed not just to quantity but also quality. Our innovative new designs for on-street protected bicycle lanes prevent double parking and promote more awareness of cyclists. We are also reclaiming street space for bicycle parking in heavily-cycled areas that need it the most.

An HOV Network for New York

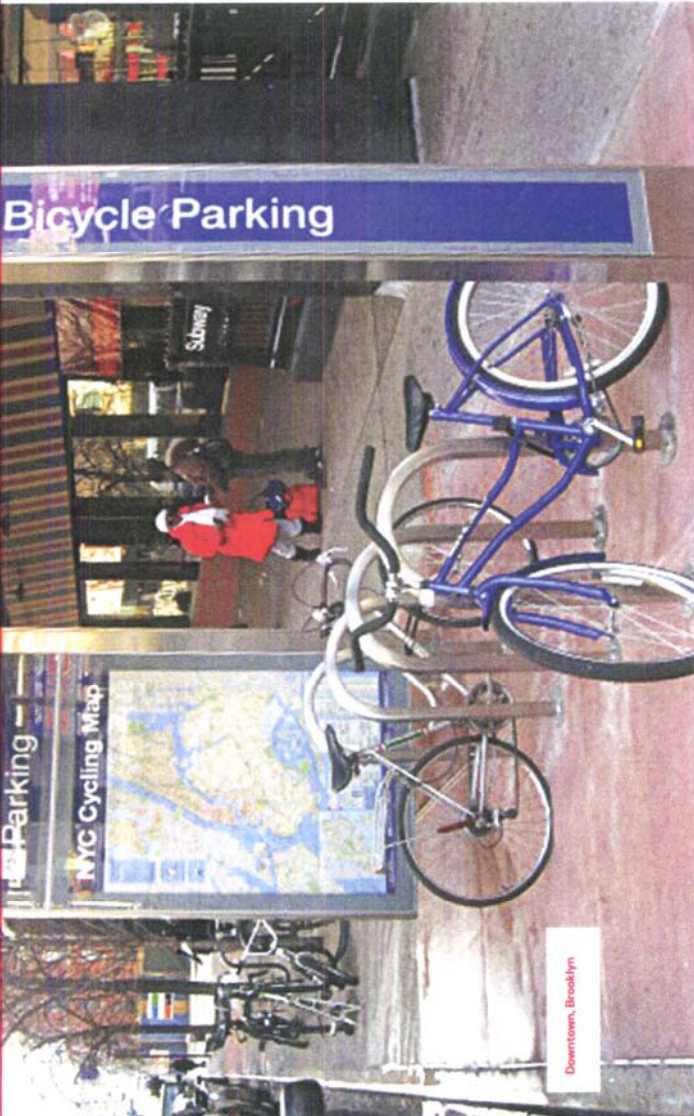
Adding strategic High Occupancy Vehicle lanes encourages car-pooling and reduces the overall vehicles on the road. HOV lanes can also be used to speed buses through congested areas.

In fall 2007, DOT created a rush hour HOV2+ lane on the Manhattan Bridge for Manhattan bound buses and carpools. DOT also put in place new truck access regulations to reduce congestion and improve safety during the afternoon rush hours. The Manhattan Bridge HOV lane joins an existing network of HOV facilities citywide including HOV3+ lanes on the Long Island and Gowanus Expressways, a morning HOV2+ lane on the South Upper Roadway of the Queensboro Bridge and bus-only lanes on the Staten Island Expressway.



Staten Island Expressway 2008 and Beyond

Install 5,000 CityRacks and 37 bicycle parking shelters by 2011.



Downtown, Brooklyn

MOBILITY ACTIONS

Implement Bus Rapid Transit

- With NYC Transit, launch the city's first BRT project and three new Midtown bus priority corridors in 2008. Roll out five additional BRT projects by 2011.
- Implement queue jumps and traffic signal priority, bus bulbs on BRT corridors.
- Campaign for authorization of bus-lane camera enforcement system in Albany.

Improve streets for existing bus network

- Target bus routes for improvement with NYC Transit, especially bus transit hubs.
- Address bus hot spots through queue jumps, signal improvements and other measures.
- Expand testing of new bus-priority elements, e.g. "soft separation," colored lanes, and bus signal priority.
- Implement bus stop improvements: create safer, more comfortable bus stops at 37 locations under elevated trains by 2011, and new sidewalks at 15 bus stop locations in 2008-2009.

Manage parking to control congestion

- Launch pilot parking pricing program aimed at greater curbside vacancy rates.
- Complete conversion of all multi-space meters to accept credit cards.
- Initiate demonstration project to provide real-time space availability information in municipal lots.

Expand commercial parking pricing districts

- Develop and pilot an in-vehicle device for use in the municipal parking lots of existing queue jump permits. Also introduce a real phone payment option for use in these parking lots.

Make bicycling safer and more convenient

- Double number of bicycle commuters by 2015 (from 2007 count). Triple 2007 level by 2020.
- Install 200 new bicycle lane-miles 2007-2009.
- Test new lane designs, expand implementation of designs that work well.
- Install 15 additional miles of protected on-street bike lanes by 2010 and 30 miles from 2011-2015.
- Install 37 bicycle parking shelters and 5,000 CityRack bike parking racks by 2011.

Improve freight movement

- Per NYCDOT's recent study of truck routes, expand access by appropriately-sized trucks to limited-access parkways.

Use technology to fight congestion

- Finalize testing of transit signal priority (TSP) for buses on Victory Boulevard. Implement TSP on other bus rapid transit and better bus corridors through the city.
- Implement Bus TSP on Fortham Road.
- Install a combination of in-roadway sensors and in-vehicle transponders to demonstrate applications such as in-vehicle signing, warnings and traveler information in conjunction with the 2008 ITS World Congress in New York City.

Improve travel along congested corridors

- Develop recommendations and implementation plans by 2010 for five corridors with significant congestion problems.

Ferry services

- Make City-owned ferry landings more accessible to pedestrians and transit riders.
- Work with the NYC Economic Development Corporation to launch new routes/services.

Upgrade East 34th Street ferry facility to accommodate new ferry services.

- Work with regional partners to explore further expansion of ferry network.

Expand the HOV network

- Implement Manhattan Bridge HOV lane.
- Establish interagency working group to implement Southbound Gowanus bus/HOV lane.
- Identify additional HOV opportunities on City and State owned roadways.

Improve freight movement

- Per NYCDOT's recent study of truck routes, expand access by appropriately-sized trucks to limited-access parkways.

Use technology to fight congestion

- Finalize testing of transit signal priority (TSP) for buses on Victory Boulevard. Implement TSP on other bus rapid transit and better bus corridors through the city.
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Benchmarks

ACTIONS	2007-2008	2010 AND BEYOND	Lead Divisions	Supporting or Adjacent	Action, the DOT
Reduce traffic fatalities	STREET DESIGNS TO MAXIMIZE PUBLIC SAFETY				
Implement More Safe Routes to Schools	<ul style="list-style-type: none"> Complete capital construction at 12 priority schools Continue slow speed school zones pilot project Short term measures at 135 schools complete Evaluate and initiate studies at 40 high schools 	<ul style="list-style-type: none"> Cut traffic fatalities by 50% by 2030 	<ul style="list-style-type: none"> ED 	<ul style="list-style-type: none"> NY STATE THRU 	<ul style="list-style-type: none"> ED
Launch Safe Streets for Seniors	<ul style="list-style-type: none"> Identify 35 Senior Pedestrian Focus Areas (SPFAs) based on top senior pedestrian crashes in the five boroughs Implement early action measure in five pilot locations like signal timing for seniors, upgraded signage, marking and pedestrian refuge islands Study, develop improvements, and implement early action items at 20 SPFAs 	<ul style="list-style-type: none"> Complete design of 20 SPFAs 	<ul style="list-style-type: none"> ED 	<ul style="list-style-type: none"> ED 	<ul style="list-style-type: none"> ED
Make traffic safety measures a focus of engineering and transportation studies	<ul style="list-style-type: none"> Develop scope of work templates that focus on traffic safety deliverables 		<ul style="list-style-type: none"> ED 		
Streamline traffic calming projects	<ul style="list-style-type: none"> Create recommendations to speed project planning and delivery, create project management toolkit Implement recommendations including completion of Downtown Brooklyn Phase A 	<ul style="list-style-type: none"> Downtown Brooklyn Phase B 	<ul style="list-style-type: none"> ED 	<ul style="list-style-type: none"> ED 	<ul style="list-style-type: none"> ED
Expand and improve safety-oriented signal strategies	<ul style="list-style-type: none"> Expand test of pedestrian countdown signals and evaluate results Re-engineer leading pedestrian intervals (LPIs) giving 9 additional seconds for pedestrians to cross intersections Implement one-way corridor signal timing patterns to increase pedestrian crossing time and discourage speeding 	<ul style="list-style-type: none"> Double the number of LPIs (using 2007 benchmark) 	<ul style="list-style-type: none"> ED 		
Complete bus stop upgrades and transit improvements	<ul style="list-style-type: none"> Finalize installation of raised concrete medians at 3 bus stops under requested permits 	<ul style="list-style-type: none"> Complete installation of raised concrete medians at remaining 37 bus stops under elevated permits identified for safety improvements (2012) 	<ul style="list-style-type: none"> ED 	<ul style="list-style-type: none"> ED 	<ul style="list-style-type: none"> ED
SAFETY ENFORCEMENT	Expanded automated enforcement	<ul style="list-style-type: none"> Pursue legislation for additional red light cameras and introduction of speed cameras 	<ul style="list-style-type: none"> ED 		<ul style="list-style-type: none"> ED
	Fund additional NYPD traffic enforcement	<ul style="list-style-type: none"> Assess enforcement and equipment needs 	<ul style="list-style-type: none"> ED 	<ul style="list-style-type: none"> ED 	<ul style="list-style-type: none"> ED

ACTIONS	2007-2008	2010 AND BEYOND	Lead Divisions	Supporting Divisions or Agencies	Action Coordinate DOT
<p>Improve construction zone safety for pedestrians</p> <ul style="list-style-type: none"> Establish strong and explicit pedestrian safety measures in all Maintenance and Protection of Traffic (MPT) plans Launch enhanced safety monitoring unit for construction sites with high pedestrian volumes 	<p>2007-2008</p> <ul style="list-style-type: none"> Establish strong and explicit pedestrian safety measures in all Maintenance and Protection of Traffic (MPT) plans Launch enhanced safety monitoring unit for construction sites with high pedestrian volumes 	<p>2010 AND BEYOND</p> <ul style="list-style-type: none"> Adopt state-of-the-art bridge cable monitoring Deploy new monitoring technologies, including sonar Institute underwater bridge inspection program Create additional public safety campaigns targeting specific problems (e.g. speeding) 	<p>NYSDOT</p>	<p>NYSDOT</p>	<p>NYSDOT</p>

BRIDGE INSPECTION

Implement "Safe Spans" Bridge Inspection Program

Increase frequency of bridge component inspection

CHANGE PUBLIC BEHAVIOR

Expand Marketing Campaigns

Expand "Look" marketing campaign that includes pedestrian and motorist themes

Revise and expand Safety City education programs

Update materials, branding, and overall message to engage school children

Undertake studies regarding collisions

Complete study of pedestrian accident data

Improve pace and flow of detailed crash information

Complete study of traffic calming techniques and their effect on collisions

EMPLOYEE SAFETY

Implement enhanced roadway safety measures

Implement enhanced work zone safety measures agency-wide

Evaluate safety of DOT employees at all facilities

Conduct hazard assessments for all DOT job functions and facilities

Implement truck-related safety initiatives

Expand overweight truck permitting unit

ACTIONS	2007-2009	2010 AND BEYOND	Lead Divisions	Supporting Divisions or Agencies	Action Coordinate DOT
<p>BUS RAPID TRANSIT</p> <p>Implement Bus Rapid Transit</p>	<p>2007-2009</p> <ul style="list-style-type: none"> Launch two BRT corridors Finalize testing and implement queue jumps and traffic signal priority (TSP) in BRT Corridors Initiate legislative campaign for authorization of bus camera enforcement system 	<p>2010 AND BEYOND</p> <ul style="list-style-type: none"> Launch three additional BRT Corridors (2011) 	<p>NYSDOT</p>	<p>NYSDOT</p>	<p>NYSDOT</p>

BETTER BUS LANES

Improve streets for existing bus network

Launch 2 new Midtown bus priority corridors with NYC Transit

Manage curbside parking more effectively

Launch pilot parking program aimed at greater curbside efficiency

Manage municipal lots more effectively

Develop demonstration project to provide real-time space availability information in municipal parking lots

BICYCLING

Make bicycling safer and more convenient

Test new lane designs and expand miles of protected bike network

Expand commercial parking pricing districts

Develop and pilot an in-vehicle device for use in the municipal parking fields in lieu of existing quarterly permits

Continue rapid expansion of bike network

Install 300 additional miles of protected on-street bike lanes

Continue CityRacks installations using new designs

Install 15 additional miles of protected on-street bike lanes



ACTIONS

2007-2009

2010 AND BEYOND

MOBILITY

CONGESTED CORRIDORS

Improve mobility and access for all modes in congested corridors

- Identify 10 corridors for study to address mobility, traffic congestion, truck traffic, pedestrian mobility, safety, air quality, and quality of life
- Conduct studies, public meetings, develop recommendations, and administration plans for first 5 corridors
- Implement early action measures at first 5 corridors
- Initiate study for final 5 corridors

Implement long-term improvement measures in all ten study areas

Priority

Priority and
Collaborative

Public

Supporting
Initiatives or
Programs

Agency
Director
DOT

FERRY SERVICES

Improve the quality and availability of ferry services

- Improve access for all users of City-owned ferry services
- Open up 5 in the Battery Maritime Building
- Work with EDC to launch new routes and services

Upgrade East 34th Street ferry facility in partnership with EDC

Public

Priority

Public

Supporting
Initiatives or
Programs

Agency
Director
DOT

HOV NETWORK

Expand the HOV Network

- Implement Manhattan Bridge HOV lane
- Establish interagency working group to implement Southbound Gowanus bus/HOV lane and Verrazano Bridge bus lanes

Identify and implement additional HOV opportunities on City and State-owned roadways

Priority

Priority

Priority

Supporting
Initiatives or
Programs

Agency
Director
DOT

IMPROVE FREIGHT MOBILITY

Expand access for appropriately-sized trucks to limited-access parkways

- Review Grand Central, Henry Hudson, and Belt Parkways as possible candidates

Implement Belt Parkway access plan following bridge projects

Priority

Priority

Priority

Supporting
Initiatives or
Programs

Agency
Director
DOT

TECHNOLOGY

Use technology to fight congestion

- Enable testing of transit signal priority (TSP) pilot project on Victory Boulevard
- Implement bus TSP on Franklin Road
- Test iVii TestBed that demonstrates such applications as in-vehicle signing, warnings, traveler information

Identify and implement additional opportunities for TSP and new traffic management systems

Priority

Priority

Priority

Supporting
Initiatives or
Programs

Agency
Director
DOT



ACTIONS	2007-2009	2010 AND BEYOND	Lead Divisions	Supporting Agencies or Divisions	Action-Related BOE
ADOPT COMPLETE STREETS DESIGNS TO ACCOMMODATE ALL USERS Develop a Main Streets public life program	<ul style="list-style-type: none"> Use complete streets designs to create or repurpose public space in commercial districts Move Main Street design templates into early action engineering projects Begin implementation of first set of projects from Public Life report Create temporary projects, such as weekend pedestrian streets 	<ul style="list-style-type: none"> Broadway, Fordham Road, and Main Street, Flushing as world class main streets for pedestrians 	Transportation	DOT, MTA, MTA Bus, MTA Subway	Priority
Improve street design process and methods	<ul style="list-style-type: none"> Partner with city agencies to make public life/streetscape improvements Streamline design review process for capital construction Define public life/streetscape improvements as a necessity 		Transportation	DOT, MTA, MTA Bus, MTA Subway	Priority
Construct and improve pedestrian ramps	<ul style="list-style-type: none"> Continue rapid progress towards full construction of pedestrian ramps at street corners 	<ul style="list-style-type: none"> Implement ADA ramps at 1.00% of street corners 	DOT		Priority
PUBLIC PLAZAS Develop and implement plaza program	<ul style="list-style-type: none"> Develop plaza maintenance strategies Create community-based process for development of 4 new plazas per year 	<ul style="list-style-type: none"> Continue to expand plaza program to four new community boards each year Oversee existing pipeline projects Full build out of temporary plazas 	Transportation	DOT, MTA, MTA Bus, MTA Subway	Priority
ENJOYING THE CITY Showcase alternative uses for public space	<ul style="list-style-type: none"> Implement temporary pedestrian and bike corridors on weekends Initiate temporary art program Launch Bike the Falls bike route in conjunction with NYC Waterfalls project Reduce car use in major city parks Agree on design a highway program with landscaping projects Coordinate repairs in neighborhoods with other city agencies 		Transportation	DOT, MTA, MTA Bus, MTA Subway	Priority
Increase beautification efforts throughout the city	<ul style="list-style-type: none"> Agree on design a highway program with landscaping projects Coordinate repairs in neighborhoods with other city agencies 		DOT		Priority
URBAN DESIGN Continue to improve street improvements	<ul style="list-style-type: none"> Install over 1,500 CEMUSI subject bus shelters and 371 new parking shelters and 9 automatic pay toilets Launch CityBeds design competition Re-open historic Water Street Arch at the Manhattan Bridge 	<ul style="list-style-type: none"> Install 1700 bus stop shelters, 120 newspaper racks, and 8 automatic pay toilets Initiate permanent Art Program 	Transportation	DOT, MTA, MTA Bus, MTA Subway	Priority
LOWER MANHATTAN PEDESTRIANIZATION Implement Lower Manhattan pedestrianization plan	<ul style="list-style-type: none"> Develop pedestrianization plan in conjunction with NYPD Secure funding and support for the plan with city and district leadership and state and federal partners Define locations for pilot projects and begin implementation 	<ul style="list-style-type: none"> Initiate Phase I of the pedestrianization plan Complete pedestrianization improvements in Lower Manhattan 	Transportation	DOT, MTA, MTA Bus, MTA Subway	Priority

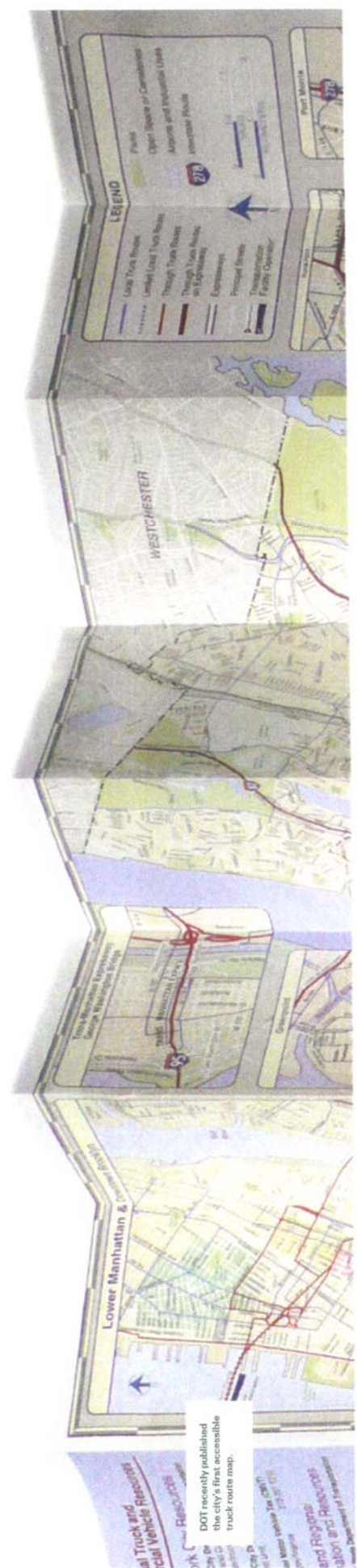
INFRASTRUCTURE

ACTIONS	2007-2009	2010 AND BEYOND	Lead Divisions	Supporting Divisions or Agencies	Facilities Owned by DOT
FERRY MAINTENANCE AND REPAIR Issue restructured contract for ferry dry-docking Issue RFP for fleet overhaul and replacement Increase preventive maintenance program for ferry fleet, the Congaree, the ferry maintenance facility, and the support facilities	<ul style="list-style-type: none"> Carry out all scheduled dry-dockings on schedule Issue RFP Implement preventive maintenance program for the ferry fleet, the Congaree, the ferry maintenance facility, and the support facilities at Whitehall, St. George, and the ferry maintenance facility, and the fuel pier 	<ul style="list-style-type: none"> Integrate all boats, terminals, and auxiliary vehicles into master maintenance schedule Implement the recommendations of the ferry maintenance benchmarking study by increasing maintenance and repair positions 			
AGENCY VEHICLE REPLACEMENT Review fleet, productivity problems of worn vehicles, and adopt new policy	<ul style="list-style-type: none"> Begin normal replacement cycle for DOT vehicles 				

ACTIONS	2007-2009	2010 AND BEYOND	Lead Divisions	Supporting Divisions or Agencies	Facilities Owned by DOT
STORM WATER Develop and implement innovative storm water management techniques	<ul style="list-style-type: none"> Coordinate with DEP to create streets that drain a maximum volume of storm water Increase the use of permeable surfaces and porous pavements to decrease runoff As part of our greenstreets program, in coordination with DPR, create planted medians, curb extensions, and traffic triangles to capture storm runoff 	<ul style="list-style-type: none"> Include clean, fuel-high MPG/clean engine technologies in all DOT vehicle procurements and rentals 			
CLEAN FUEL Expand alternative fuels program	<ul style="list-style-type: none"> Install and upgrade emission reduction technology on all Staten Island Ferry passenger ferries 	<ul style="list-style-type: none"> All Staten Island Ferry passenger ferries operating on Ultra Low Sulphur Diesel Install diesel oxidation catalysts (DOCs) on all Staten Island Ferry passenger ferries Develop competitive bidding program for all private ferry operators requesting landing permits and licenses from DOT 			

ACTIONS	2007-2009	2010 AND BEYOND	Lead Divisions	Supporting Divisions or Agencies	Facilities Owned by DOT
VEHICLE REDUCTION Reduce vehicle idles by DOT employees	<ul style="list-style-type: none"> Review city-wide parking placards and policies Reduce agency parking placards by 30%, possibly with vehicle pool or car sharing Adopt an at-work agency travel policy urging DOT employees to use the most sustainable possible method of work-related transportation 	<ul style="list-style-type: none"> Identify innovative technologies to track placard use 			

ACTIONS	2007-2009	2010 AND BEYOND	Lead Divisions	Supporting Divisions or Agencies	Facilities Owned by DOT
GREENING	<ul style="list-style-type: none"> Increase capacity for curb replacement and curb openings to increase storm water capture Allow for connected tree pits to provide better surface drainage Develop maintenance agreements to ensure that streetscape improvements are carefully maintained 				

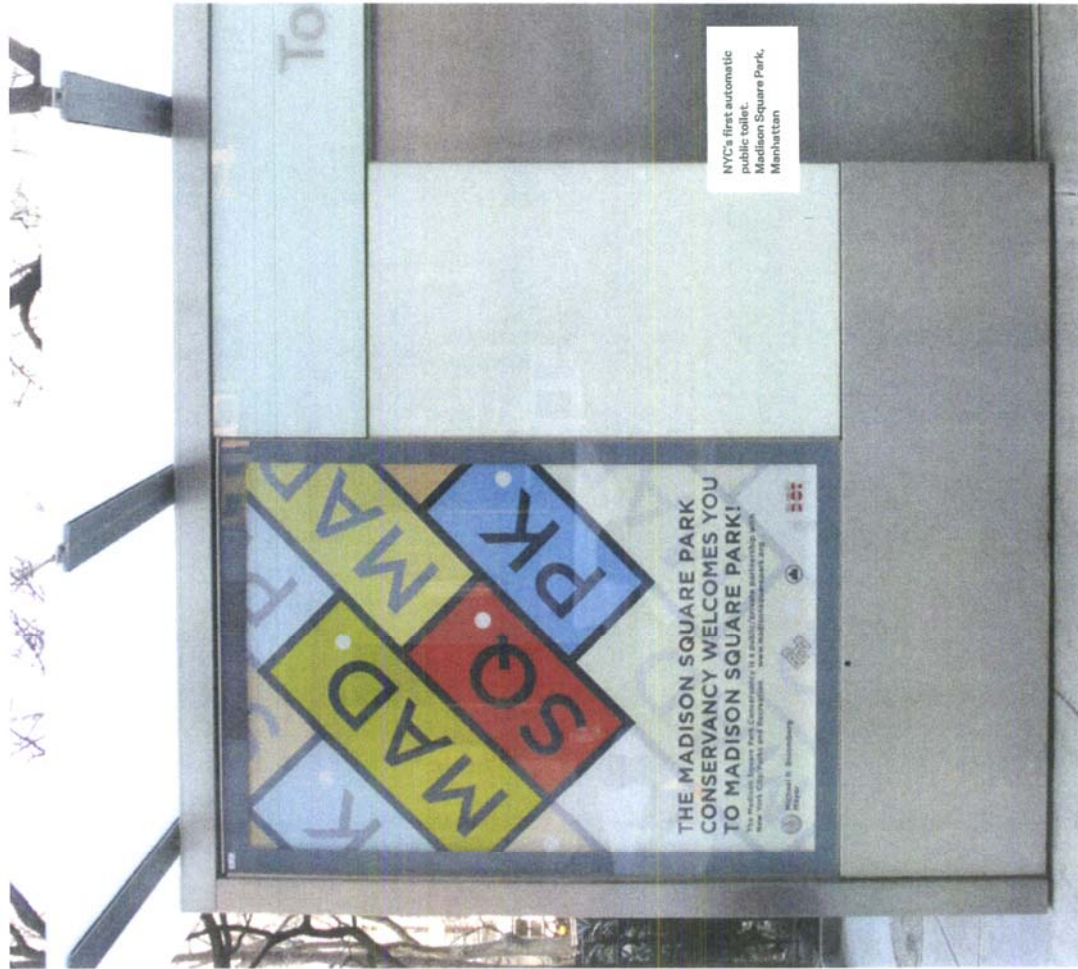




ACTIONS	8007-8009	8010 AND BEYOND	Level Divisions	Supporting Divisions or Agencies	Action, Division or DOT
REDUCE ENERGY AND RESOURCE CONSUMPTION Reduce energy demands of DOT facilities	<ul style="list-style-type: none"> Conduct annual audits and generate reports for all DOT facilities to maximize reduction of electricity use, air pollution, and water use Activate photovoltaic system at the new 55 Water Street office building to sustain "Living Roof" at the St. George Ferry Terminal 	<ul style="list-style-type: none"> Certify Webster Avenue facility as LEED existing building status 	8007-8009	Energy, Air Quality	Energy, Air Quality
Increase efficiency of street lights and traffic signals	<ul style="list-style-type: none"> Replace street lights throughout Brooklyn and Queens with energy-efficient LED lamps Replace 250-watt lamps with 150-watt lamps along highways Identify new DOT projects to reach citywide goals of 30% energy reduction 	<ul style="list-style-type: none"> Replace street lights throughout the Bronx, Manhattan, and Staten Island with lower-wattage bulbs Replace 67- and 150-watt incandescent lamps in amber signal displays with LED amber lenses Ongoing participation in Mayor's energy task force to reduce energy consumption of electricity, fuels, and emissions 	8007-8010	Mayor's Office	Energy, Air Quality
Reduce DOT's resource consumption	<ul style="list-style-type: none"> Cease purchasing plastic water bottles at the new 55 Water Street offices Explore the feasibility of switching to energy-efficient lighting at the new 55 Water Street and other DOT leased facilities as building maintenance contracts permit 	<ul style="list-style-type: none"> Work with Mayor's Office of Contracts to ensure the use of energy-efficient lighting at City-owned facilities 	8007-8010	Energy, Air Quality	Energy, Air Quality
RECYCLED ASPHALT PAVING Expand in-house and vendor use of recycled asphalt	<ul style="list-style-type: none"> Maximize use of recycled asphalt pavement (RAP) to avoid use of nearly 840,000 barrels of oil and 321,000 local truck miles 	<ul style="list-style-type: none"> Incorporate 50% RAP in all in-house asphalt production Require all vendors to use 25% RAP in DOT contracted asphalt production Develop environmentally sound and cost-effective strategies for incorporating RAP into all DOT projects at the local and regional municipalities 	8010	Energy, Air Quality	Energy, Air Quality
SPILL PREVENTION Achieve compliance with local, state, and federal regulations	<ul style="list-style-type: none"> Implement spill prevention control and countermeasure plans at 14 DOT locations Conduct location specific training to emphasize proper waste management and spill prevention practices 	<ul style="list-style-type: none"> Identify and implement best practices at all 14 DOT facility locations 	8010	Energy, Air Quality	Energy, Air Quality



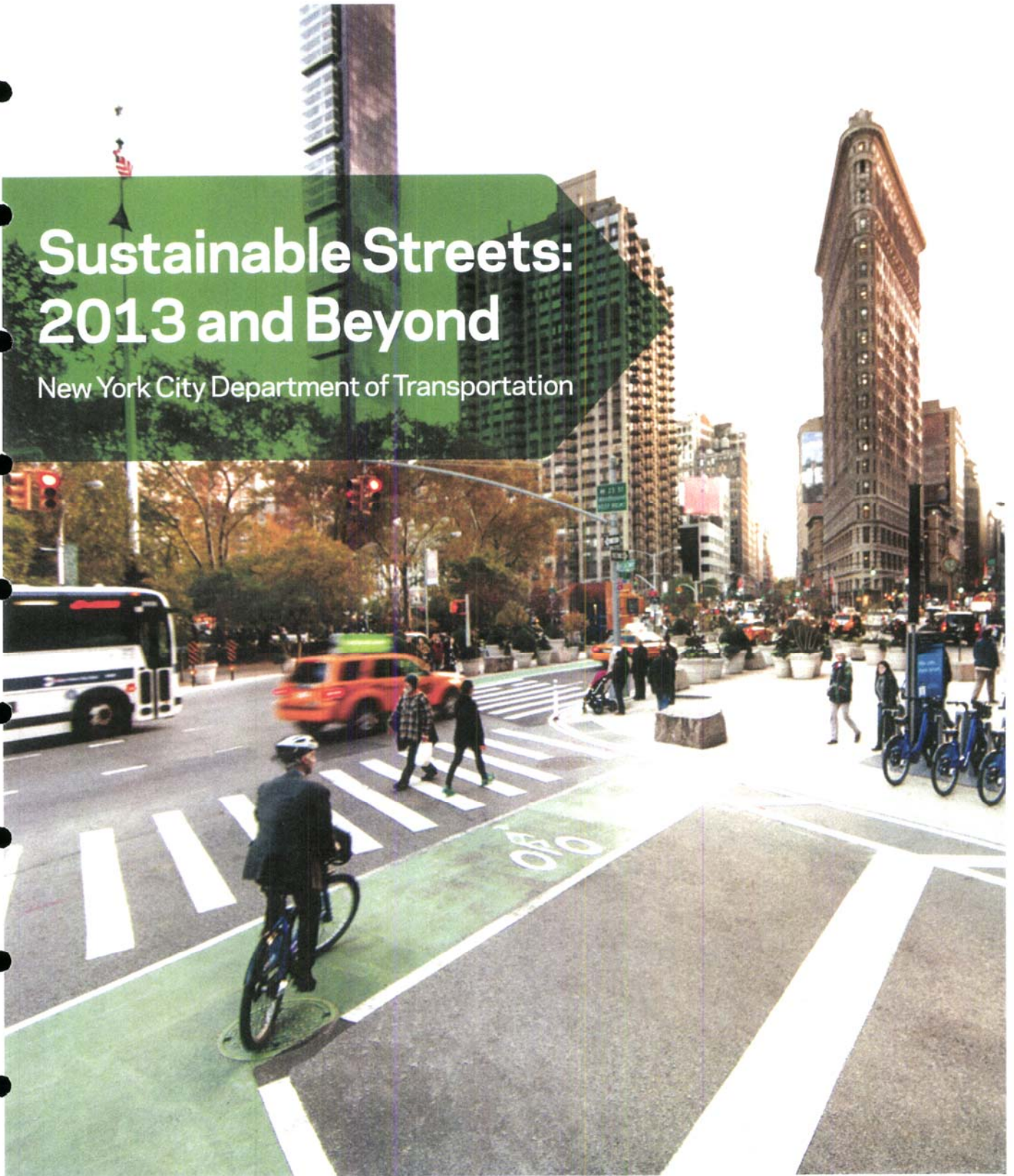
ACTIONS	2007-2008	2010 AND BEYOND	Lead Divisions	Supporting Divisions & Agencies	Action Data DOT
INCREASE CAPACITY FOR PLANNING, RESEARCH, AND COMMUNICATIONS Build staff capacity of division of Planning and Sustainability	<ul style="list-style-type: none"> Created new units, Public Plans, and Urban Air and Design Enhance and align strategic planning and alternative fuels units with new division strategies. 	<ul style="list-style-type: none"> Incubate new projects and spin-off into operations units 	DOT, NYCT, MTA		NYCT, MTA
Elevate the profile of research in policy and operations	<ul style="list-style-type: none"> Inventory major research activity within the Department, compile and distribute Initiate an episode featuring DOT personnel and guests, both within the department and in conjunction with other institutional agencies & universities Develop forward looking research agenda and begin outreach to universities to explore collaboration 		DOT, NYCT, MTA		DOT, NYCT, MTA
Create strategic communications strategy	<ul style="list-style-type: none"> Create communications working group with Dept. staff and outside experts to promote DOT's safety and sustainable Issue press for ad agencies to create campaign content and adopt criteria to measure campaign efficacy 		DOT, NYCT, MTA		DOT, NYCT, MTA
IMPLEMENT AGENCY WIDE PROJECT MANAGEMENT PROCEDURES	<ul style="list-style-type: none"> Identify appropriate project managers and enrol staff in certification coursework Initiate project management tracking systems Streamline design, procurement and grant administration process for on-schedule project and service delivery 		DOT, NYCT, MTA		DOT, NYCT, MTA
OVERHAUL DATA COLLECTION	<ul style="list-style-type: none"> Develop and implement data tracking systems for operations and BRT Conduct public life surveys at selected spots 	<ul style="list-style-type: none"> Review key agency wide, divisional, and city transportation performance measures Create new internal performance measures Develop systems of collecting and reporting additional data Aver Citywide Performance Reporting indicators with new agency initiatives 	DOT, NYCT, MTA		DOT, NYCT, MTA
Create new performance measures	<ul style="list-style-type: none"> Work with partner agencies to bring shared data such as accident reports closer to real-time 		DOT, NYCT, MTA		DOT, NYCT, MTA



ACTIONS	2007-2009	2010 AND BEYOND	Lead Divisions	Supporting Divisions or Agencies	Action Deadline
FOSTER COLLABORATION WITH COMMUNITIES Use web site to better engage citizens	Post information on all current and ongoing projects Develop online feedback forms for all planning projects Develop regular "Ask the Commissioner" feature Update online "report a problem" forms Test text pilot	Implement 511 information services on the web Finalize web-based construction permits Explore text alerts	2008 2009	2008 2009	2008 2009
Coordinate all constituent databases	Plan for consolidated system including 311, CCM, and BC systems		2008 2009	2008 2009	2008 2009
TRAIN COMMUNITY LEADERS Deploy program to educate and train	Develop training materials and pilot with one Community Board in each borough Develop training materials for train community board chairs, district chairs and heads of CB transportation committees	Refine program as necessary and offer program to elected officials	2008 2009	2008 2009	2008 2009
NEIGHBORHOOD TRANSPORTATION STUDY PROGRAM Develop new neighborhood transportation study program	Review strengths and weaknesses of current and recent neighborhood efforts Recommended steps to strengthen such efforts Develop program framework for implementing study findings	Define and announce new program	2008 2009	2008 2009	2008 2009
EMERGENCY RESPONSE Enhance emergency response capabilities	Ensure dissemination of emergency information in a critical situation via street-level electronic roadway signage Continue to work with NYPD, OEM, Fire Department New York, and the NYC Department of Environmental Protection Develop training of information technology staff Improve signage and other facility with NYSDOT and NYPD	Update emergency response based on best practices	2008 2009	2008 2009	2008 2009
IMPROVE CUSTOMER SERVICE FOR FERRY PASSENGERS Enhance services and outreach to ferry passengers	Continue working with EDC to lease but not own retail space to high quality providers Improve communication options for Staten Island Ferry passengers	Develop and implement innovative art and entertainment programs for the ferry Develop WiFi services	2008 2009	2008 2009	2008 2009
Augment services and outreach to stakeholders and customers	Continue meetings with Ferry Riders' Association and other relevant stakeholders Develop bi-annual Ask the Ferry program		2008 2009	2008 2009	2008 2009

Sustainable Streets: 2013 and Beyond

New York City Department of Transportation



Sustainable
Streets:
2013 and
Beyond



New York City Department of Transportation

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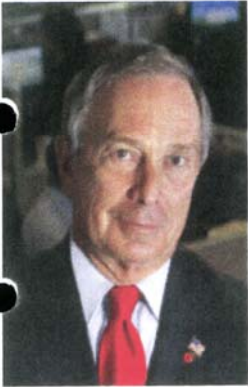
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Letter from the Mayor

Dear Friends:



This progress report from the New York City Department of Transportation caps a remarkable period of progress and innovation. I want to thank and congratulate Commissioner Sadik-Khan and the entire DOT workforce for their untiring efforts to provide safe, attractive streets and to keep New Yorkers moving.

The city enjoyed rapid growth and development in the 2000s and has weathered the Great Recession better than much of our country. We have a bright, prosperous future ahead, in part because we have striven to manage growth in ways that improve our quality of life and reduce congestion. That is why our long-range plan for sustainable development, PlaNYC, called for new priorities in transportation, which the Department of Transportation has delivered.

New York cannot grow without becoming more efficient, and the good news is that public transit has accommodated most of our growth in travel over the past decade. We need to ensure that this trend continues, and that we continue to develop travel options that take maximum advantage of the city's density. Our Select Bus Service is speeding travel and attracting riders in all five boroughs, at relatively low cost. Local bike lanes and CitiBike stations expand the reach of public transit—bike parking demand is heavy at many subway stations, and about half of CitiBike users say they ride to or from a transit stop. A transportation system that offers more choices and allows New Yorkers to better tailor the means of travel to the trips they need to make creates a more efficient, attractive, and stronger city.

The economic case for safer, more attractive, and functional streetscapes could not be stronger, as the extensive documentation developed by DOT around its projects makes clear. Creating more attractive city streets adds value—retail rents in Times Square, for example, have more than doubled since we created major new public spaces there in 2009. DOT has shown that this is equally true in other areas where we have implemented better bus service, safe cycling networks, and new public spaces.

The innovations launched by DOT are now seen around the world. Chicago has fully adopted our design for protected bike lanes. Buenos Aires uses our techniques for making intersections safer and simpler. “Overnight” pedestrian plazas can be found in Philadelphia, Los Angeles, and Mexico City. If all the world's a stage, New York is certainly at its center. As this report makes clear, the Department of Transportation has helped position New York City as a global leader in the growing effort to create thriving, livable, and sustainable 21st century cities.

Sincerely,

A handwritten signature in black ink that reads "Michael R. Bloomberg". The signature is fluid and cursive, with the first name being the most prominent.

Michael R. Bloomberg
Mayor

Commissioner's Introduction

Dear fellow New Yorkers:

It has been a unique honor to serve as the City's Transportation Commissioner for the past six and a half years. At the Department of Transportation, we have sustained and expanded the never-ending work to repair streets, sidewalks, bridges and ferries. We have also implemented extensive changes in City policy, remaking streets and intersections for greater safety, providing efficient right-of-way for buses and bicyclists, and treating streets as places whose design and appearance matter.

I want to offer my profound gratitude, admiration and respect for the men and women of the Department of Transportation who have brought these efforts and innovations to life, and made New York City a better place. From superstorm Sandy to CitiBike, from the Staten Island Ferry to the safest streets in the City's history, every division and unit within DOT has overcome tough challenges, delivered world-class projects and kept the City moving each and every day.

The innovative work we have done together has been widely acknowledged and acclaimed. One of the greatest testaments to our success is the large number of cities across the country and world adopting New York's designs for city streets, and our techniques for implementing changes quickly. Indeed, methods pioneered in the five boroughs are the foundation for a new urban street design guide issued by America's 15 largest cities.

Most importantly, New Yorkers themselves have embraced and adopted the policies and programs delivering safe streets, new public spaces, Select Bus and the bike lane network. They have made CitiBike their own, generating some of the world's highest bike share usage rates just a few months after the system's launch. Nothing happens in New York without vigorous conversation and some degree of contention, but all indicators, from the heavy use of new space and travel options to the number of applications and requests for projects and survey after survey of New Yorkers' views of our policies, shows very high support.

This book chronicles the implementation and the effects of these popular NYCDOT programs, and looks ahead to how they can be extended and strengthened in the future. We have made a tremendous start in forging a 21st Century streetscape and transportation system. If the past six years are any indication, New York's future is unquestionably bright.

Sincerely,



Janette Sadik-Khan
Commissioner





Introduction



44

acres red painted
bus lanes since 2007



141

acres of bike
lanes since 2007



39

acres of road
repurposed for plazas,
public seating, refuge
islands, painted
extensions, medians,
and bulb outs since
2007

NYCDOT's 2008 Sustainable Streets Strategic Plan promised an innovative transportation policy that would deliver more varied and safer streets, improved mobility, more travel choices and progress on environmental sustainability. DOT's plan elaborated on Mayor Bloomberg's call in PlaNYC 2030 for a thriving, world-class 21st Century city based in part on more efficient transportation and a revitalized public realm.

DOT has not only delivered on this promise, it has created a new template for transportation policy that is being discussed and emulated across the world. During the past six years, NYC DOT has undertaken and implemented the most thorough rethinking and implementation of urban transportation priorities and streetscape design in a large American city in several generations.

Major achievements of this effort have been the reduction of annual traffic fatalities to the lowest levels ever seen in New York City, repurposing of extensive roadway area into public space, traffic calming features and additional room for pedestrians, creation of a new model of city bus service and large-scale expansion of bicycle transportation, as well as unprecedented levels of investment in the city's basic roadway, bridge and ferry infrastructure.

NYCDOT's initiatives have generated a heightened public conversation about street design and transportation policy. Ultimately, New Yorkers have embraced them with



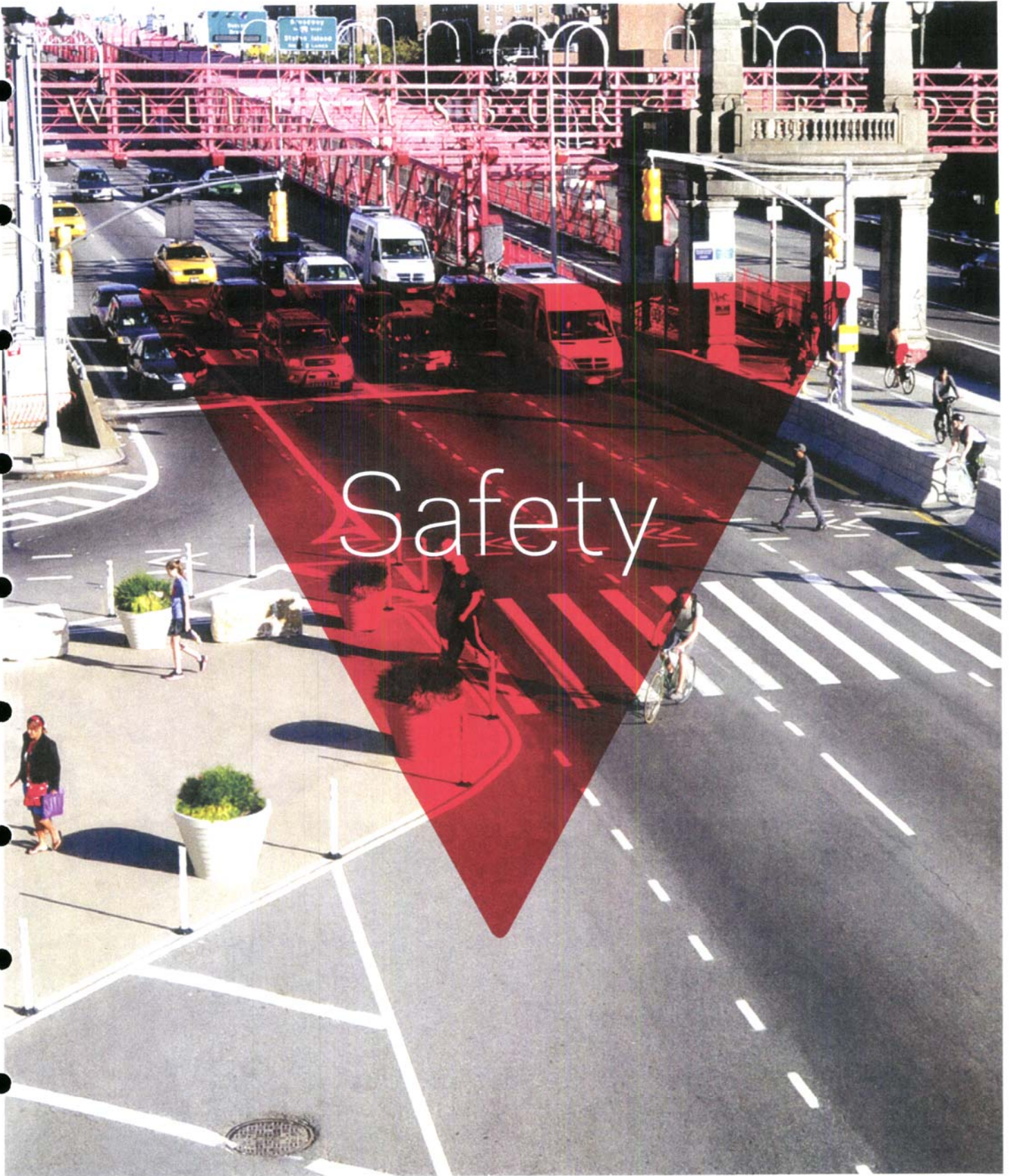
tremendously positive responses. Demand for new public space and additional street safety improvements by elected officials and local stakeholders has filled project pipelines to overflowing. New public spaces are heavily used throughout the Five Boroughs, as is Select Bus Service wherever it has been implemented. Bicycle lanes are heavily used, with new routes in demand in many districts. Where professional pollsters have asked New Yorkers to weigh in on new DOT initiatives, from pedestrianizing Times Square to CitiBike, they have without exception responded with large majorities in the affirmative.

A major factor in winning public support has been DOT's innovative delivery of streetscape changes in the infrastructure equivalent of real time. Where traditional practice wades through years or even decades of planning studies and trial balloons which take the public completely out of the project development process, NYC DOT has pioneered the use of paint, planters and stone blocks to redefine street spaces virtually overnight. The proof of concept is not a computer model or engineering study, but real world performance that can be observed, debated, refined and adjusted before being built-out with permanent materials. This approach has changed urban street planning and practice forever, in both rich and poor cities. Today, one can find painted road-beds transformed into plazas or pedestrian safety areas in over a dozen U.S. cities, from Philadelphia to Los Angeles.

Addressing transportation, traffic safety and other challenges on New York City streets is a set of tasks with no beginning or end. In addition to chronicling the changes and successes of NYC transportation programs since the release of PlaNYC, this report looks ahead to future needs and issues. For example, as traffic fatalities and severe crashes become fewer in number, finding patterns that DOT can address with its programs becomes a greater challenge. Public demand for improvements like Select Bus routes, slow speed school and residential zones, public plazas, bicycle lanes and greater coverage for the CitiBike program are increasing. Infrastructure funding, including resources to replace temporarily defined street-space with permanent materials, is likely to be a persistent challenge, as the federal government continues its general retreat from its historic role as a major source of investment for roadways, bridges and mass transit, and as the City adds disaster resiliency to its already considerable list of priorities.

The Bloomberg Administration and NYC DOT have shown that updating and refocusing a large city's transportation policy is possible and need not to take decades to carry out. This report presents the methods, practices, designs and results from the street policies implemented in New York from 2007 to 2013. We believe these methods are highly replicable or adaptable to a wide variety of urban contexts around the world, and invite the reader to consider the content here in that vein.

In addition to the content presented in this document, DOT's accomplishments can be viewed online at nyc.gov/dot and, in map format, at sustainablestreets.info.



SAFETY

30%

decline in citywide
traffic fatalities since
2001

Introduction

Public safety is the primary mission of government, and traffic safety on NYC streets is the over-arching mission of the New York City Department of Transportation. Improving safety performance permeates all of the work that the Department undertakes on City streets, highways, intersections and ferry infrastructure.

NYCDOT has established a remarkable record of success in traffic safety. The streets of America's largest city are dramatically safer than they were 20 and 10 years ago. From 1990 to 2012, annual fatalities involving all road users have dropped by 61%, and by 30% from 2001 to 2012. Most impressively, since 2004, the number of annual traffic deaths has been lower than 1910 levels, the first and previously lowest count on record. In 2011, the City experienced 246 traffic fatalities, an all-time record annual low.

DOT's challenge is to continue this success indefinitely, using all the analytical, engineering and regulatory tools at its disposal to deliver ever-safer streets.

In developing its 2008 Sustainable Streets strategic plan, the NYCDOT adopted clear goals for reducing traffic fatalities in New York, with the understanding that street design and other strategies can significantly affect the safety performance of a city street network. Cities and countries with strong, goal-oriented safety policies have increasingly assigned responsibility for such performance to the designers of the transportation system, rather than to its users.

SAFETY

Sustainable Streets set the goal of reducing annual traffic fatalities by 50% from 2007 to 2030. This provided New York City's street designers with clear annual targets—an average of a 3% annual drop in fatalities—that they strive to meet. Since 2007, DOT has embraced this mandate by undertaking the most ambitious and comprehensive set of traffic safety initiatives in the city's history, and in any large U.S. city. With hundreds of traffic calming projects, education campaigns, technological applications and stronger regulations such as lower speed limits, DOT has successfully reduced traffic fatalities to record low numbers.

One thousand New Yorkers are alive today who would not be if annual traffic fatalities had remained at the same levels seen in NYC a decade ago. Traffic risk per resident in New York City is lower than it has ever been before, even in the face of NYC's increasing population. At 3.1 fatalities per 100,000 in 2012, New Yorkers experience a fraction of the risk to residents of other big American cities, substantially lower than any of the next 20 largest U.S. cities.

Yet the costs of traffic crashes in NYC remain high. Most of those killed are in prime productive years and often have dependent family members. Traffic crashes are the third most frequent cause of death of New Yorkers ages 5 to 24, and second highest cause of injury deaths among adults over 45. Safety risks also tend to limit pedestrian trips for

Safer streets across New York City since 2007:

- Implemented safety design on 137 street corridors and 113 intersections
- Installed 772 new traffic signals and 241 all way stop controls
- Implemented leading pedestrian intervals at 100 intersections to give pedestrians extra time and visibility when crossing the street.
- 39 acres of road repurposed for plazas, public seating, refuge islands, painted extensions, medians, and bulb outs
- 29 implemented or planned slow speed residential zones
- 189 schools with reduced speed zones
- Added red light cameras at 50 intersections and new speed radar cameras at 20 locations

SAFETY



High Crash Locations



Traffic Calming



Safe Routes to School



Slow School Zones



Residential Slow Zones



Safe Streets for Seniors



Bike Lane Network



Intersection Daylighting



Safe Routes to Transit



Public Campaigns



DOT Education

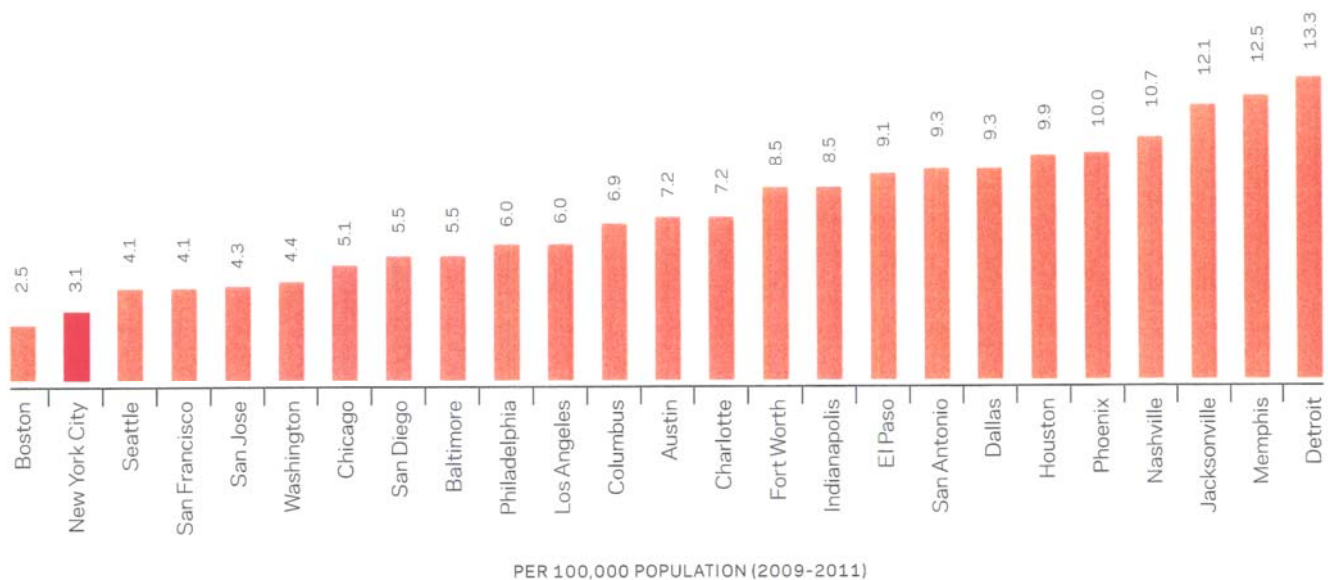
SAFETY

children and the elderly. On the other hand pedestrian-friendly streets promote walking and a higher likelihood of physical activity and healthy body-weight. They have also been linked to strong home values, a key factor in middle class retention.

Improving street safety is critical to the transportation policies adopted in PlaNYC. In transportation, safety and sustainability go hand in hand. The City's policies to make

walking, cycling and transit use (which depends on walking) more widespread and attractive will only succeed as long as the environment for these activities is seen as safe by the public. As we chronicle throughout this report, New York is succeeding in these areas, in many cases dramatically so, but much work also remains. Continuing to meet the City's goal for progressively lower fatalities will require ongoing and steadfast commitment, analysis and innovation.

TRAFFIC FATALITY RATES OF 25 LARGEST US CITIES





Chapter 1

Designing Safe Streets

City streets are full of design cues that tell users what to do. Large, straight streets with wide lanes and minimal markings tell drivers that higher speeds are expected and hindrances to fast driving are not. Streets with proximity to high pedestrian activity and high-visibility crosswalks, sidewalks built out at corners, and markings that indicate the presence of buses and cyclists send a different message, not only to drivers but to all those who navigate the city streetscape. Street design can tell people outside of cars they are not welcome, or it can create a vibrant urban neighborhood, cultural district or place of commerce. When it comes to safety and how streets affect vehicle speeds and the interaction of vehicles, pedestrians and other street users, street design can literally make the difference between life and death. Designing safe streets for pedestrians and other vulnerable road users is critical for New York, where the large majority of street users and also most of the victims of traffic crashes are outside of motor vehicles.

In neighborhoods throughout the five boroughs, NYCDOT has undertaken street improvement projects meant to keep vehicle speeds within safe limits, to provide designs that increase the predictability of each type of street user and provide more and better-defined room for people on foot and using bicycles.

In total, NYCDOT has implemented 250 safety-focused street redesign projects, averaging 42 per year, since 2007. These elements are all defined in detail in NYC's official *Street Design Manual*, in its chapter on Street Geometry (see *Street Design Manual* in Infrastructure Section). Combining these features into plans that meet specific street conditions requires substantial traffic planning expertise. This work is carried out by NYCDOT's Traffic and Planning Division, which plans street geometry and is

SAFETY

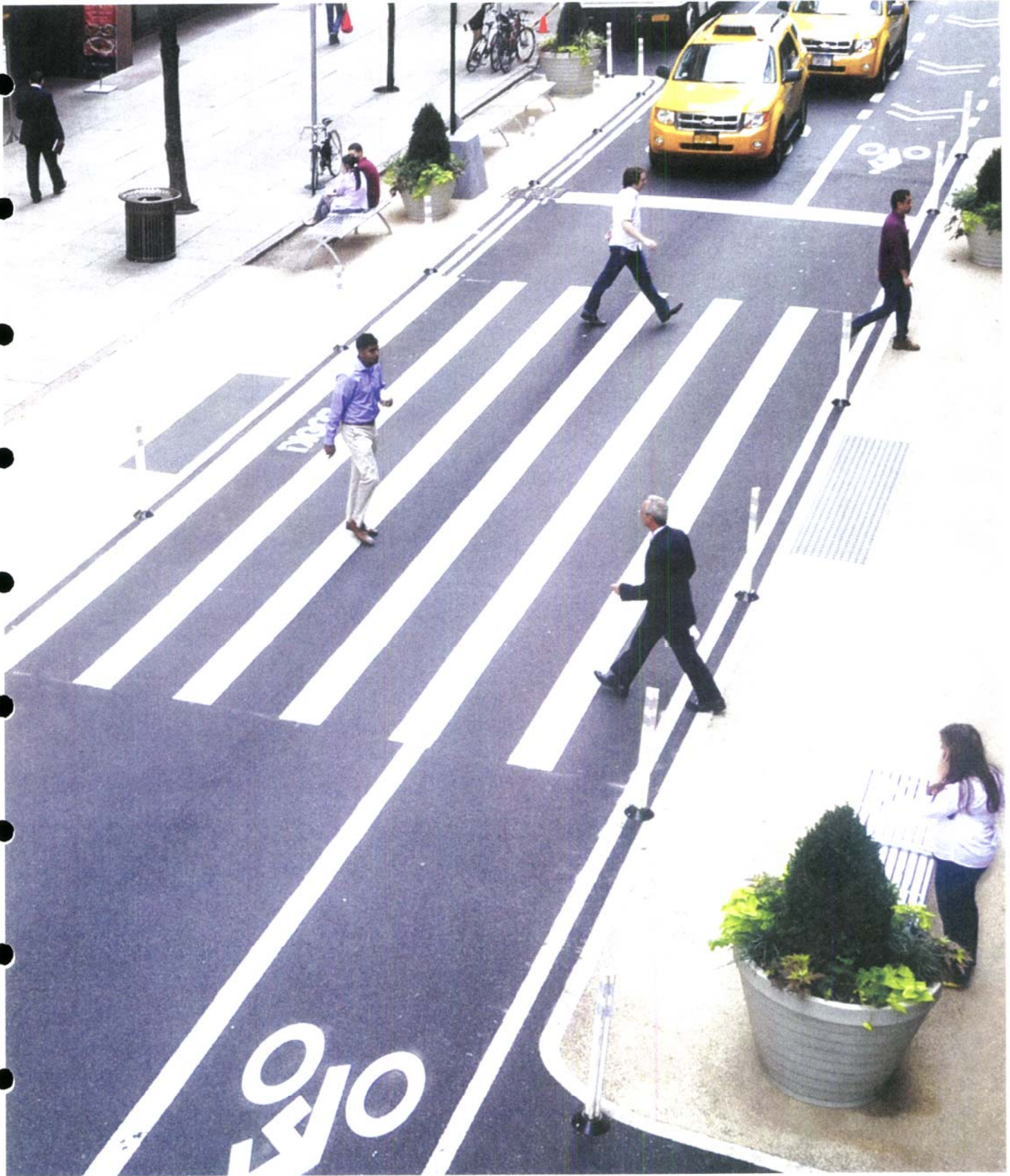
At locations where major engineering changes have been made, fatalities have decreased by 34% since 2005

Standard features of NYCDOT safety projects:

- Intersection simplification
- Raised medians and or refuge islands
- Sidewalk extensions and widening
- Narrowing roadways with built or painted medians and wide parking lanes
- Bicycle network expansion
- Speed reducers
- High visibility markings and changes to signal timing

responsible for street markings, signage, traffic signals and speed reducers, and by DOT's Citywide Concrete program. The Traffic division also works with DOT's Capital Projects program to plan reconstruction projects that undertake more difficult and long-term projects such as moving curb-lines (to widen sidewalks or otherwise change street widths) that affect drainage and other assets below the street surface, to build these safety features into the permanent street infrastructure.

Street improvement projects with these features have worked. At locations where major engineering changes have been made, fatalities have decreased by 34% since 2005, twice as quickly as at all other locations. NYCDOT projects—ranging from the redesign of complex intersections to the implementation of pedestrian plazas and bus and bicycle lanes—have created tremendous safety benefits.



SAFETY



14%

decrease in crashes
after Southern Blvd
improvements

EXEMPLARY PROJECTS

The following descriptions show how DOT's traffic experts combine street safety elements into create projects tailored to very specific conditions and issues in particular intersections and corridors on the streets of New York.

1 SOUTHERN BOULEVARD

Long crossing distances, vehicle pedestrian conflicts, traffic congestion and the complicated geometry of this South Bronx intersection made it particularly dangerous before 2010, when DOT implemented a thorough set of safety treatments. The junction of Southern Boulevard, Hunts Point Ave, and East 163rd Street created a five legged intersection at Crames Square. The area has bus and subway stops that generate high pedestrian volumes. In response to community concerns about pedestrian safety and access, DOT conducted a public workshop and developed a plan to address dangerous conditions.

The project combined several traffic calming elements to improve safety, better connect pedestrian destinations, beautify the area, and reduce traffic congestion. In some

instances, pedestrians crossing distances were reduced by as much as 40 feet.

Following implementation, the number of crashes declined by 14% and travel speeds improved by 35% in the evening rush.

The work narrowed Southern Boulevard and installed painted medians, pedestrian refuge islands and left turn bays. The pedestrian plaza at Crames Square was expanded, shortening pedestrian crossing distances. DOT simplified signal phasing and eliminated low volume turns in Crames Square and converted Hoe Avenue to one way. The project demonstrates how signal timing changes and relatively inexpensive materials such as pavement markings and carefully placed concrete can significantly improve pedestrian access and safety.



SAFETY

Speeding decreased dramatically and safety was greatly improved as a result of the changes on East 180th Street



BEFORE: Thompson Avenue



AFTER: Thompson Avenue

2 EAST 180TH STREET

East 180th Street was the fifth highest crash location per mile in the Bronx, with 19 severe injuries or fatalities between 2004 and 2008. Extra wide travel lanes of 17 feet and low traffic volumes encouraged drivers to speed along the 1.2 mile corridor.

To calm traffic, DOT narrowed each of the moving lanes from 17 to 11 feet. The excess space allowed the creation of a 10 foot painted center median with 21 left turn bays and wide parking lanes. DOT also upgraded the crosswalks with high visibility markings.

The changes reduced speeding dramatically, with major improvement in safety performance. Only 1% of vehicles in the eastbound direction and 8% of vehicles in the westbound direction were found to be speeding after implementation, compared to 30% and 40% before. Pedestrian injuries fell by 67% after the improvements, from an average of 14.3 per year to 4.8 per year.

3 SKILLMAN, 43RD AND THOMPSON AVENUES

Two DOT projects made a high traffic area in Queens safer for pedestrians, cyclists, and drivers. They led to a 65% reduction in the number of crashes involving injuries to pedestrians and 49% reduction in crashes with injuries to motor vehicle occupants.

Skillman Avenue and 43rd Avenue were used by motorists as an alternative to Queens Boulevard, creating dangerous conditions for pedestrians. In 2009, DOT narrowed travel lanes, installed on-street bike lanes, and made signal modifications to give pedestrians more time to cross the

street. The improvements reduced average vehicle speed by 18% in the mornings.

Additional changes were made nearby, at the intersection of Skillman and Thompson, after a reckless driver killed a 16 year old boy and injured 5 other people, including 4 college students. The intersection was improved with left turn bans, and a slip street was closed and turned into a public plaza to reduce turning conflicts and provide additional space for pedestrians. New planters in the plaza helped beautify the intersection.

SAFETY

21%

decrease in crashes
after Delancey Street
improvements

DELANCEY STREET

In response to crash data and community calls for a safer street, DOT implemented comprehensive safety and traffic flow improvements for Delancey Street.

The upgrades included shortening many crosswalks along the corridor with neckdowns, clarifying and delineating travel lanes, improvements to traffic signal timing and a new plaza and streetscape treatments at the entrance to the Williamsburg Bridge. Nine months after the project, total crashes decreased by 21%. The busy street is a key east-west artery for Manhattan and serves Williamsburg Bridge traffic.

Projects such as those profiled here are identified and developed through continual analysis of safety performance on NYC streets, including screens for crash history, severity and causes. This analytic work is described in depth in Chapter 2 below.



BEFORE: Delancey Street



AFTER: Delancey Street

SAFETY

PROTECTING VULNERABLE STREET USERS

NYCDOT maintains safety programs designed specifically to improve the safety of groups with special vulnerability in traffic.



Pedestrian crossing distance significantly reduced on Fort George Avenue

Crashes have fallen 60% since Safe Streets for Seniors was implemented in the Lower East Side

SAFE STREETS FOR SENIORS

DOT launched Safe Streets for Seniors in 2008 to respond to the disproportionate number of New Yorkers over age 65 in the City's traffic fatality totals. Where people over 65 make up 12% of New York's population, seniors on foot represented 36% of traffic fatalities in 2012. Safe Streets for Seniors aims to counter this imbalance, and has succeeded in reducing the city-wide rate since 2008, with marked gain in some districts.

The effort began by combining demographic analysis with data on intersection and corridor crash histories to identify districts where senior pedestrians are most at risk on City streets. The initial analysis identified 25 areas throughout the five boroughs for priority street redesign and other work. Improvements in these areas included 154 new pedestrian

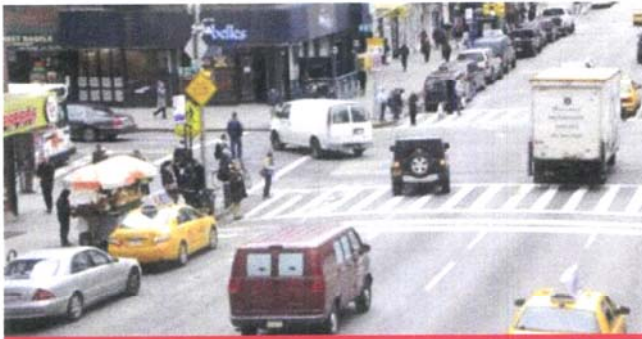
safety islands and new or expanded medians to shorten crossing distances and provide safe spaces for slower moving pedestrians. DOT extended curbs at 13 points for similar reasons. Another 16 roadway segments were narrowed with new markings, including painted medians, to calm traffic.

Senior pedestrian fatalities in the City are down since the program was launched. The 2012 level was 18% below that in 2008. Additionally, the crashes that lead to traffic fatalities are down significantly in many of the program's focus areas. Along Rutgers Slip in the Lower East Side, crashes leading to injuries are down by 42%, while all crashes have fallen 60% since implementation of Safe Streets for Seniors improvements. At Bowne Street in Flushing, injuries have fallen 43% since program implementation.

SAFETY

84%

decrease in pedestrian injuries at 7th Ave and W 23rd St



BEFORE: 23rd Street and 7th Avenue



AFTER: 23rd Street and 7th Avenue

17%

decline in injuries on W Fordham Road



BEFORE: Flatbush and Ocean Avenue



AFTER: Flatbush and Ocean Avenue

Project Examples

In the Fordham/University Heights senior pedestrian focus area, DOT closed a slip lane, extended curbs and added two pedestrian refuge islands in the junction of Sedgwick Avenue and West Fordham Road in 2010. Injuries at the intersections are down

by 17% since the improvements.

In 2011, DOT installed two pedestrian islands, separated left turns from mixed traffic, installed audible pedestrian signals and increased pedestrian time at crossing signals at 7th Avenue and West 23rd

Street in Chelsea. All injuries at the intersection have dropped 93% since the improvements, with pedestrian injuries down 84%.

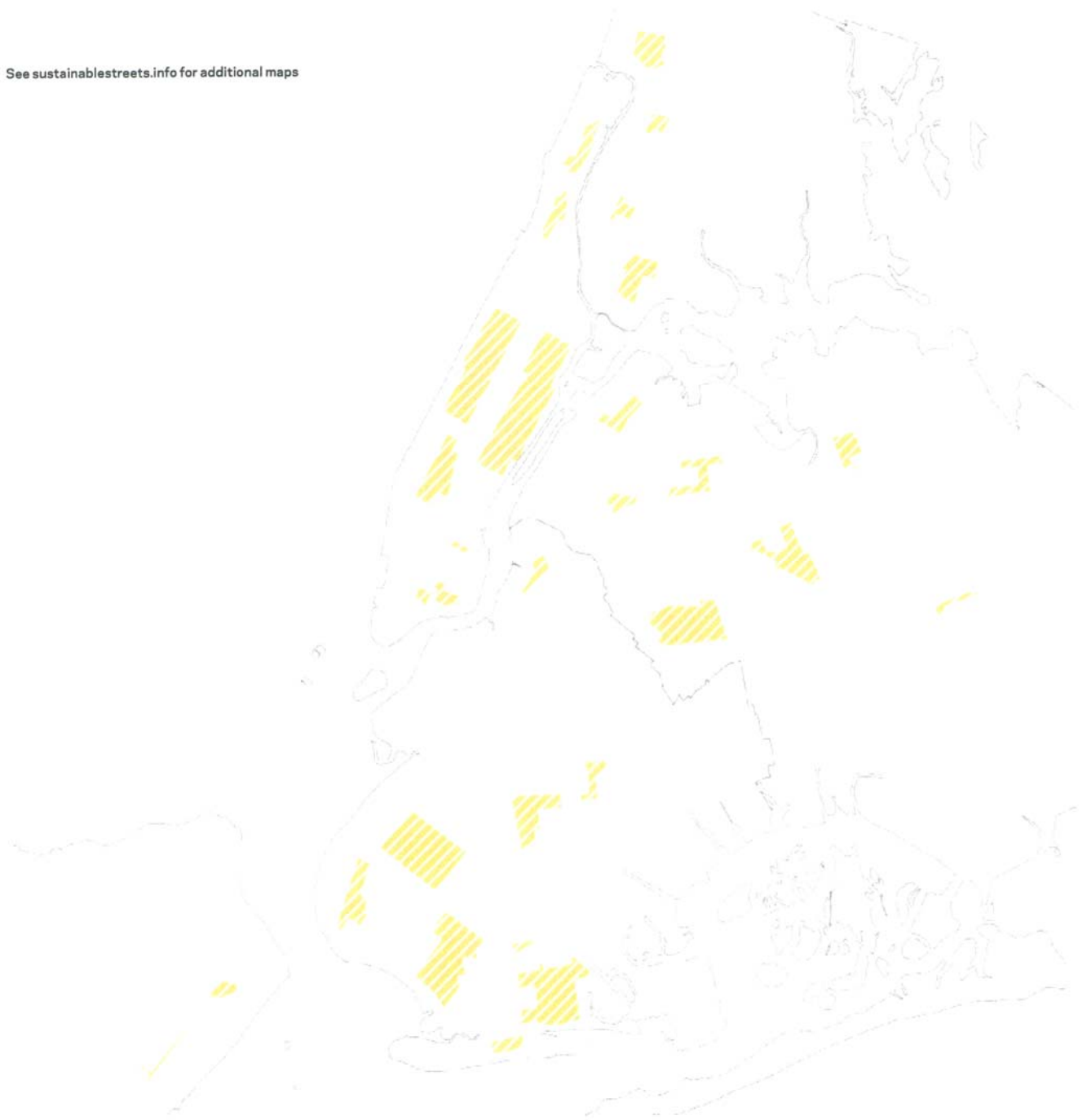
DOT expanded Safe Streets for Seniors in 2012 adding senior focus areas for pedestrian safety

improvements in Kingsbridge, Bronx, Manhattan Valley, East Harlem and the Upper East Side in Manhattan, Astoria, Forest Hills and Middle Village in Queens, Flatbush, Bay Ridge, Bath Beach and Kings Bay in Brooklyn and South Beach in Staten Island.

SAFETY

SAFE STREETS FOR SENIORS FOCUS AREAS

See sustainablestreets.info for additional maps

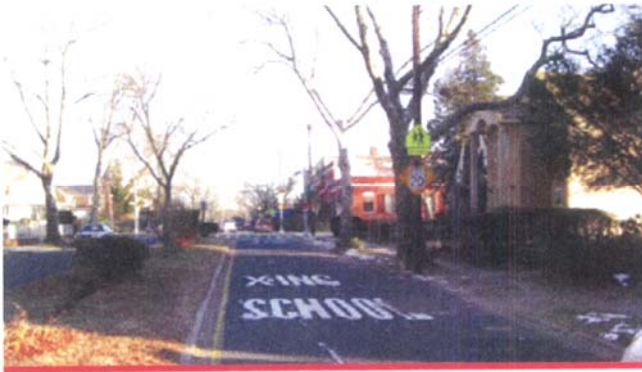


SAFETY

“Interventions to make the built environment safer can greatly reduce injuries to children as they walk to school”

—Charles DiMaggio, Columbia University

SAFE ROUTES TO SCHOOL



NYCDOT has also been a pioneer in improving safety around schools. DOT's multifaceted approach seeks to protect children from speeding and aggressive driving through a combination of street design changes, new regulations, better enforcement, and innovative education programs.

DOT inaugurated the first Safe Routes to School effort in the United States in the Bronx in 1997, with parents and safety advocates. A citywide Safe Routes to School program began in 2002.

Major street work for Safe Routes to School occurs in cycles because of its capital-intensive nature, such as moving curbs and

realigning road-beds. Capital improvements—such as sidewalk extensions, pedestrian islands, raised medians and sidewalk widening projects at the 135 schools identified by DOT as top safety priorities are underway. Shorter-term safety improvements at these schools are complete. They include new traffic and pedestrian signals, the addition of exclusive pedestrian crossing time, speed humps, speed boards, high visibility crosswalks and new parking regulations. These design changes are strongly reinforced with speed regulation in school zones, described below in Chapter 2.

DOT has identified an additional group of 175 public, private and parochial elementary middle and high schools as Safe Routes to School priorities. Individualized planning studies are underway or complete for each school and short term improvements have started. The schools were selected after DOT staff evaluated conditions at the city's 1,700 primary and secondary schools. The program includes partnership with parents, teachers and students

New York's Safe Routes to School program has been highly successful. According to a Columbia University School of Public Health study published

in 2013, Safe Routes to School measures reduced child injury rates during peak times by 44%. The research looked at crash data encompassing 169,000 pedestrian injuries from 2001 to 2010 to assess the effectiveness of the program for children ages 5 through 19. "Interventions to make the built environment safer can greatly reduce injuries to children as they walk to school", said the study's lead author Charles DiMaggio, research director of Columbia's Center for Injury Epidemiology and Prevention at Columbia.

SAFETY

City installation of speed bumps has accelerated dramatically

SPEED REDUCERS



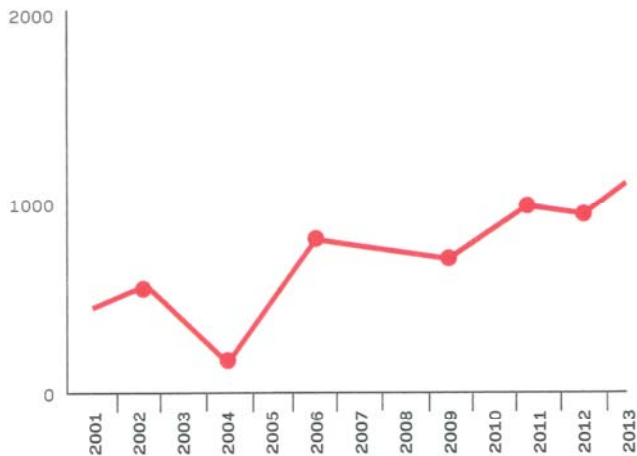
Speed bump installation

Speed bumps or speed reducers are a street safety feature designed to deter speeding that NYCDOT can deploy quickly and without otherwise redesigning a city street.

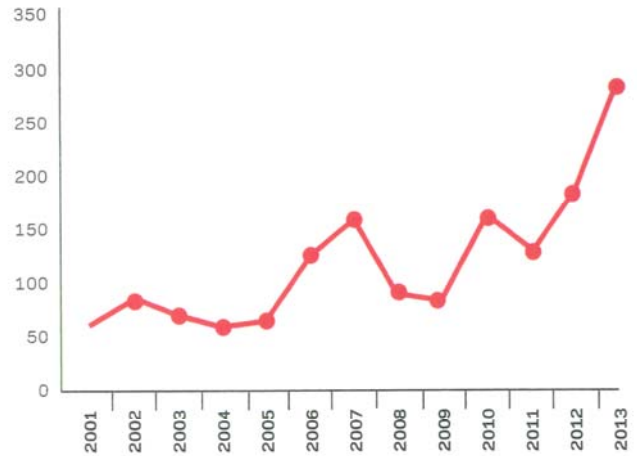
NYCDOT before/after studies found an average of 19% reduction in speeds where speed humps are in place. They have been shown to reduce crashes as well; DOT analysis has found that speed reducers reduce injury crashes by approximately 40%.

Speed reducers are key components of DOT's school safety and residential slow zone programs, as well as being available on demand where appropriate by citizens, community boards and elected officials (guidelines for locations and requests are available at nyc.gov/dot). New Yorkers' awareness of the speed bump program has increased significantly, driving requests to new highs. As a result of these needs and demands, the number of speed bumps on city streets today is at an all-time record.

SPEED BUMP STUDIES (FISCAL YEAR)



SPEED BUMPS INSTALLED (FISCAL YEAR)



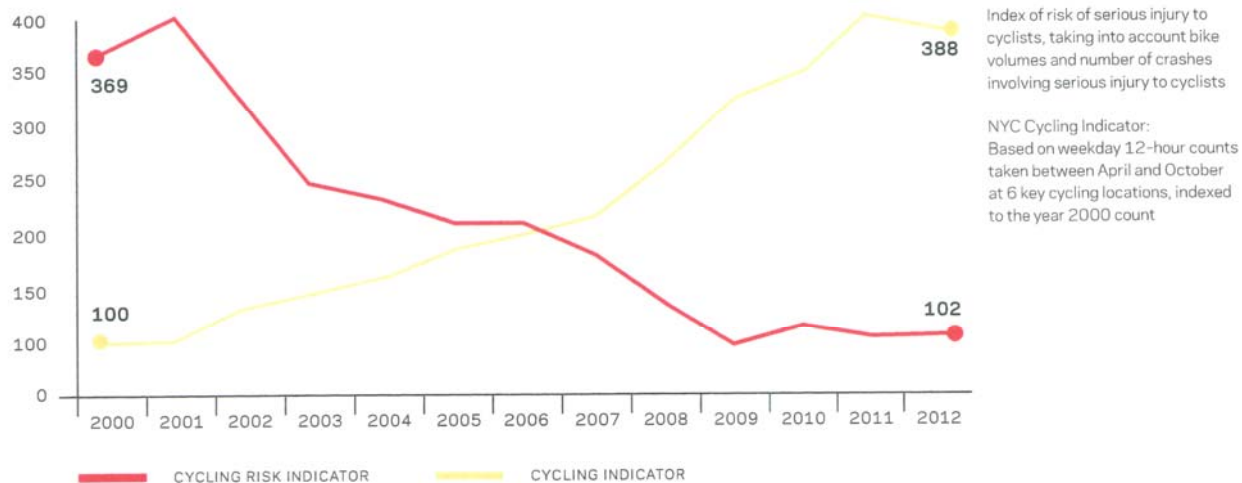
SAFETY

73%

decrease in risk of
serious cycling injuries
since 2000

CYCLING SAFETY

NYC CYCLING RISK INDICATOR



Mayor Bloomberg's 2007 PlaNYC sustainability program called for an increase in bicycle transportation. Converting most would-be cyclists into actual bike users requires streets designed with cycling safety in mind. NYCDOT's bicycle network program has been tremendously successful in this regard, encouraging a rapid increase in cycling from 2007 to 2012 without any corresponding rise in bicycling injury crashes. NYC's expanded bicycle network also provided the foundation for the launch of CitiBike in 2013. CitiBike has created another major increase in NYC bicycle use along with a salutary safety record during its first season in operation.

Because cycling has increased significantly while cycling injuries have remained flat, the rate of crashes per cyclist and per mile pedaled has fallen dramatically from 2000 to the present. DOT calculates a 73% decline in the average risk of serious cycling injury over this time frame.

The City's bike lane network itself is one prominent reason for this major gain in cycling safety. Corridor data from the City's parking-protected bicycle lanes—pioneered on 9th Avenue in Manhattan in the Fall of 2007—show marked safety improvements in every case, even where an older design of bike lane was in place prior to implementation of the improved protected lane.

Bicycle lanes, either protected or more traditionally-designed, also have a general traffic calming and safety effect. Total traffic

SAFETY

Study after study around the world has found that greater bicycle use in a city, town or country coincides with a stronger cycling safety record



fatalities in the city have reached historic lows at the same time that the cycling network has reached its largest extent. Controlling for other factors, serious pedestrian crashes on streets with bike lanes are 40% less deadly as crashes on other streets. On Allerton Avenue in the Bronx, speeding declined 7% eastbound and 4% westbound after implementation of painted bike lanes. The installation of bike lanes usually involves a narrowing of the motor vehicle portion of the roadway and indicates to drivers that they need to watch for other road users. These changes lower vehicle speeds and increase driver attention.

In addition to safety created by innovative street designs, the large increase in cycling that the bicycle lane network has helped to propel has a feedback effect that increases cycling safety.

Study after study around the world has found that greater bicycle use in a city, town or country coincides with a stronger cycling safety record. A greater presence and visibility of cyclists on city streets habituates motorists, pedestrians and cyclists themselves to the presence of regular bicycle traffic. Interactions involving bicycles become a predictable part of the traffic norm, with better safety outcomes for all. The CitiBike program may be accelerating this effect. Though CitiBike has generated over 5 million bicycle trips in Manhattan and Brooklyn since its launch on May 27, reported injury accidents involving CitiBike riders are fewer than 30, with no fatalities. As of October 2013 city-wide bicycle fatalities are on track for a below-average annual total, with no cyclist fatalities within the bike share service area.

SAFETY

Parking protected bike lanes save lives

DOT's on-street protected bicycle paths, first implemented on Manhattan's 9th Avenue in 2007, improve safety by clearly organizing the different streams of traffic and giving each type of user dedicated space. The changed lane design also embodies significant traffic calming features, narrowing roadways with surplus capacity. They make intersections predictable and increase safe space for crossing pedestrians. The design gives cyclists secure routes through the heart of Manhattan.

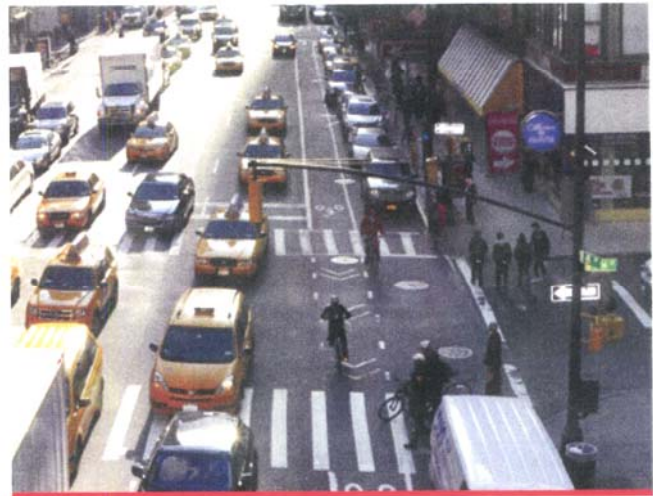
In three years since implementation of the protected bike lane, 9th Avenue saw 43% fewer crashes with injuries than in the three years prior to the project. Cyclist volumes are up substantially, but injuries to cyclists are 36% less frequent than before the lane was installed.

Similar analysis for the 8th Avenue bike lane, implemented in 2008, shows total crashes down by 11% and crashes with injuries down by 20%.

Following implementation of protected bicycle lanes on Allen and Pike Streets in the Lower East Side of Manhattan, both motor vehicle and bicycle crashes declined by 35%.

Total crashes fell 22% after installation of a protected bike lane on First Avenue.

36%
decline in frequency
of injuries despite
growth in cycling



BEFORE: 8th Avenue and 56th Street



AFTER: 8th Avenue and 56th Street





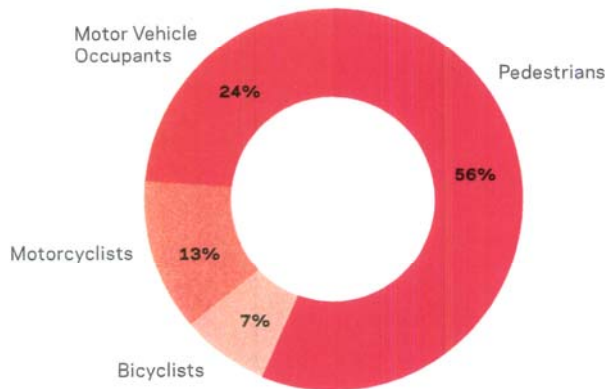
Chapter 2 The Science of Safety

DOT's concerted work to re-engineer streets with above-average crash histories, to meet community concerns about traffic safety and to meet its own strategic goal of reducing traffic fatalities each year relies on ongoing and painstaking analysis. NYCDOT collects and analyzes more information about the causes of traffic deaths and injuries than ever before, and applies the agency's resources to develop site-specific responses to that information.

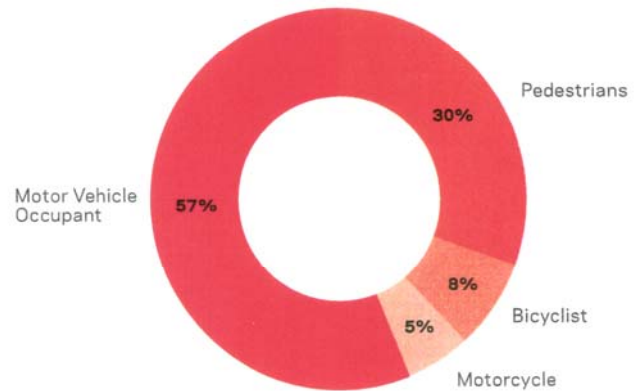
Data and design analysis have been key factors in DOT's success in pushing traffic deaths to historic lows, and

drives safety policy and projects to an unprecedented degree. The main effort sustains ongoing analysis of the highest-crash corridors and intersections so those areas can be addressed by DOT's traffic safety experts and engineers. This work also focuses resources on particular groups of at-risk pedestrians. The Safe Streets for Seniors and Safe Routes to Schools programs described in Chapter 1 are based on crash statistics that identify and address safety problems experienced by specific vulnerable groups.

TRAFFIC FATALITIES (2008-2012)



TRAFFIC INJURIES (2007-2012)



SAFETY

Data and design analysis have been key factors in DOT’s success in pushing traffic deaths to historic lows

A NEW ANALYTIC FOUNDATION

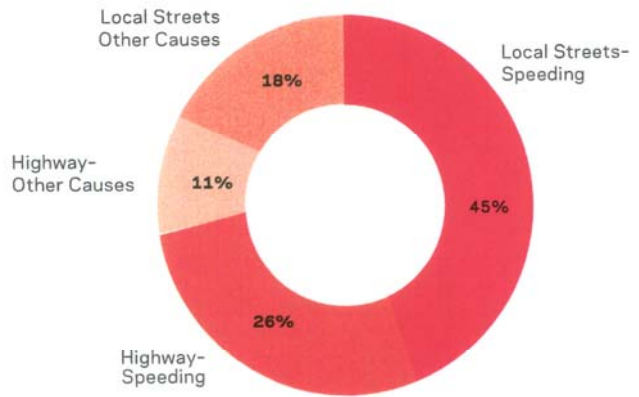
NYCDOT established a new basis for safety analysis with its seminal 2010 Pedestrian Safety Study & Action Plan. NYCDOT researchers examined dozens of factors and a wide variety of datasets from over 7,000 severe and fatal pedestrian crashes in New York City during 2002-2006 that could be associated with each pedestrian injury and with the number of injuries in given geographic areas. Variables with significant levels of correlation with pedestrian crashes were identified, then used to build a carefully designed statistical model. Experts from NY University, Rensselaer Polytechnic Institute and SUNY Buffalo supported the effort.

The state-of-the-art data statistical modeling techniques used attempted to control for pedestrian exposure to crashes, using factors like population, vehicle registrations, presence of traffic signals (generally located at higher-volume intersections) and transit usage. The study used two distinct approaches to modeling: crash frequency analysis and crash severity analysis. Crash frequency analysis aims to determine the causes of a high frequency crash location, while crash severity analysis aims to determine why some crashes resulted in a severe injury, while others resulted in a fatality.

The vast size and diversity of New York City’s street network and neighborhoods presented a robust opportunity for this advanced analysis, as crash rates could be compared across neighborhoods that differ by a wide variety of characteristics but contain very similar geometric dimensions and engineering treatments.

The Action Plan accompanying the pedestrian safety study summarized its findings, some of which are shown here. The analysis continues to inform DOT’s annual set of street improvement projects.

MOTOR VEHICLE OCCUPANT FATALITIES BY CAUSE AND LOCATION, 2012



PEDESTRIAN ACTION AT TIME OF CRASH

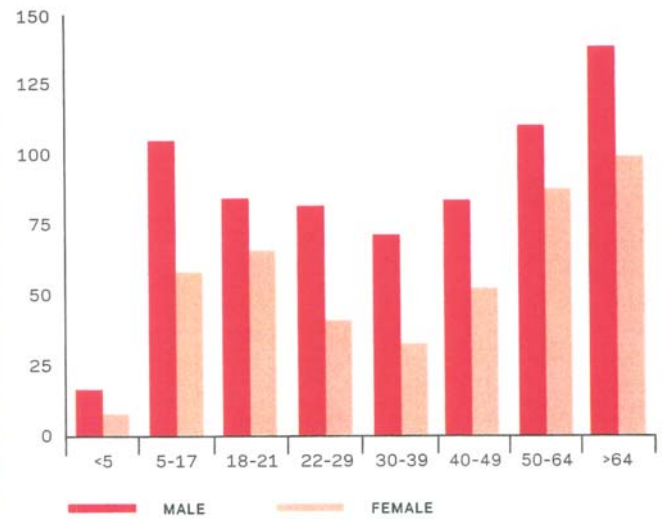
PEDESTRIAN ACTION	SEVERE	FATAL	TOTAL	%TOTAL
CROSSING WITH SIGNAL	1,589	123	1,712	26.9%
CROSSING, NO SIGNAL OR SIDEWALK	1,338	168	1,506	23.6%
CROSSING AGAINST SIGNAL	1,155	146	1,301	20.4%
OTHER ACTIONS IN ROADWAY	399	83	482	7.6%
EMERGED FROM BEHIND PARKED VEHICLE	401	38	439	6.9%
CROSSING, NO SIGNAL, MARKED CROSSWALK	327	37	364	5.7%
NOT IN ROADWAY	204	30	234	3.7%
PLAYING IN ROADWAY	88	3	91	1.4%
GETTING ON/OFF VEHICLE	83	1	84	1.3%
WORKING IN ROADWAY	66	5	71	1.1%
ALONG HIGHWAY WITH TRAFFIC	41	6	47	0.7%
ALONG HIGHWAY AGAINST TRAFFIC	24	5	29	0.5%
CHILD GETTING ON/OFF SCHOOL BUS	8	1	9	0.1%

SAFETY

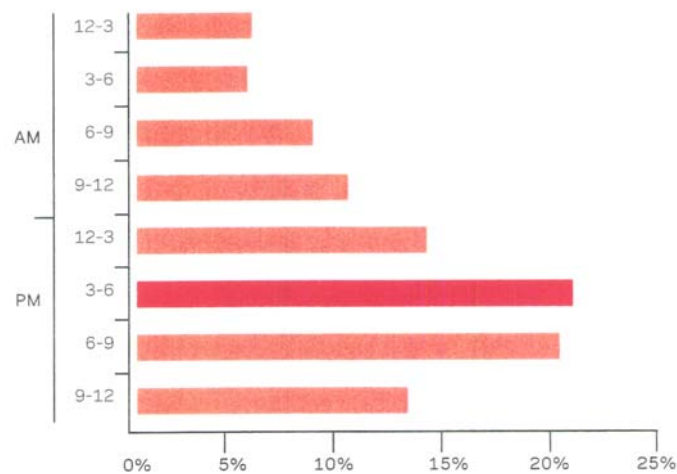
CONTRIBUTING FACTORS TO CRASHES

APPARENT FACTOR	CASES (n=7,354)	% OF TOTAL
DRIVER INATTENTION	2,647	36.0%
PEDESTRIAN'S ERROR/CONFUSION	1,578	21.5%
FAILURE TO YIELD RIGHT OF WAY	1,512	20.6%
UNSAFE SPEED	610	8.3%
BACKING UNSAFELY	506	6.9%
VIEW OBSTRUCTED/LIMITED	382	5.2%
ALCOHOL INVOLVEMENT	352	4.8%
TRAFFIC CONTROL DEVICES DISREGARDED	344	4.7%
OTHER (VEHICLE)	342	4.7%
AGGRESSIVE DRIVING/ROAD RAGE	280	3.8%
PAVEMENT SLIPPERY	277	3.8%
DRIVING EXPERIENCE	240	3.3%
GLARE	212	2.9%
PASSING OR LANE USAGE IMPROPERLY	119	1.6%
OUTSIDE CAR DISTRACTION	81	1.1%
REACTION TO OTHER UNINVOLVED VEHICLE	70	1.0%

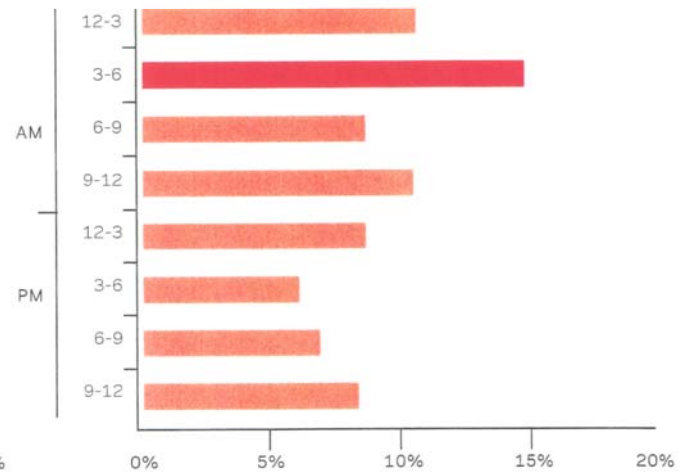
RATES OF PEDESTRIAN FATALITIES+SEVERE INJURIES PER 100K POPULATION



PEDESTRIAN KSI BY TIME OF DAY (2002-2006)



PEDESTRIAN KSI BY TIME OF DAY PERCENT FATAL (2002-2006)





SAFETY

PROJECT DEVELOPMENT



Most of DOT street improvement projects result directly from this ongoing analysis of safety conditions as well as input from elected officials and the public, especially those meant to protect pedestrians and cyclists. Following location identification, DOT undertakes field inspections and audit reports. A wide range of safety improvements are considered: signal timing changes, markings installations, turn restrictions, parking/loading and other sign installations, lane designations and concrete construction. Based on the appropriate improvement, data is ordered to analyze, support and verify the treatment. A design is then drafted and submitted for internal approvals and community review. This process could take between six months to a year, based on the complexity of the intersection or corridor and the proposed improvement.

BEFORE-AFTER TRACKING

Continued success in making New York City streets safer requires learning from experience to identify and implement the most effective approaches to street design. During the past six years, NYCDOT has dramatically stepped-up results tracking from changes in street design. DOT's annual Sustainable Streets Index and the 2012 Measuring the Street report are manifestations of this sustained work

Until NYCDOT began to systematically implement and evaluate street improvement projects, there was relatively little data available, locally or nationally, showing the effectiveness of projects that combined traffic engineering and the newer traffic calming techniques, particularly in large, dense urban street networks like that of NYC. As NYCDOT projects were completed, however, agency planners were able to systematically evaluate the effectiveness of each project on a broad range of evaluation metrics, including traffic safety.

Continual research and review feeds back into future project design and provides NYCDOT and the public with the opportunity to make highly informed choices about the future of the City's streetscape, especially in making our streets safer.





SAFETY

Chapter 3

Tools for Safe Streets

New York City complements street design changes and police traffic law enforcement with updated technology and regulations, and has substantially accelerated innovation in this regard over the past six years. From automated law enforcement to changes in parking rules to improve visibility in intersections, NYCDOT has continually expanded the range of traffic safety tools at its disposal.

SAFETY

SCHOOL SPEED ZONES

To complement long term construction and roadway realignment near schools, NYCDOT has dramatically increased its work to lower speed limits and signify the presence of students on foot around school zones with signs and street markings. This effort, combined with the Safe Routes to Schools program described in Chapter 1, comprises the most comprehensive and effective school safety program in the United States.

NYCDOT's School Speed Zones use signage, regulation, flashing lights, high visibility street markings and, where appropriate, speed humps to slow drivers in areas around schools. Speed limits in the zones are as low as 15 miles per hour.

Since 2008, DOT has improved the street markings and signage around nearly 1,500 primary and secondary schools.

NYCDOT has approved 305 blocks around schools low speed limits, with 189 implemented with flashing lights and regulatory changes imposing 15 or 20mph speed limits. The 108 additional slow speed blocks are in the implementation pipeline, while analysis is underway for additional schools.



School Slow Zone

SAFETY

NEIGHBORHOOD SLOW ZONES



Inwood Neighborhood Slow Zone

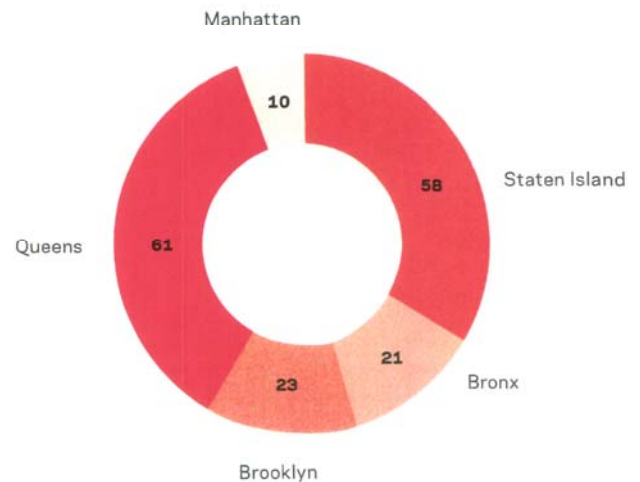
Neighborhood Slow Zones is a community-driven program launched in 2011 that reduces the standard speed limit from 30 mph to 20 mph and adds traffic calming features in definable residential areas. Slow Zones also seek to enhance quality of life in residential neighborhoods by reducing cut-through traffic and traffic noise.

Neighborhood Slow Zones are established in small, self-contained areas that consist primarily of local streets. Gateways consisting of signs and markings announce the presence of a Slow Zone. The zone itself is a self-enforcing, reduced-speed area with speed humps, "20 MPH" street markings and other traffic calming treatments. Slow Zones are implemented in areas with low traffic volumes and minimal through traffic, where reducing the speed limit will not cause traffic congestion.

DOT creates Neighborhood Slow Zones in response to applications from communities. Following selection, DOT works with the community to devise a plan to install the Slow Zone. Slow Zones must be approved by the Community Board that contains the area

DOT and NYPD observations indicate that speeds have lessened in the first Neighborhood Slow Zone implemented

NEIGHBORHOOD SLOW ZONES APPLICATION TOTAL (2012-2013)



defined in the application, which must also demonstrate local support for establishing the zone. DOT does not approve zones that contain fire stations and hospitals or are traversed by truck routes.

Like the demand for the speed reducer program described in Chapter 1, the extremely strong demand for Neighborhood Slow Zones that NYCDOT has experienced since the program's inception indicates dramatic public support for traffic safety and control of speeding on City streets. 173 neighborhoods across the city applied to the program in the first two years.

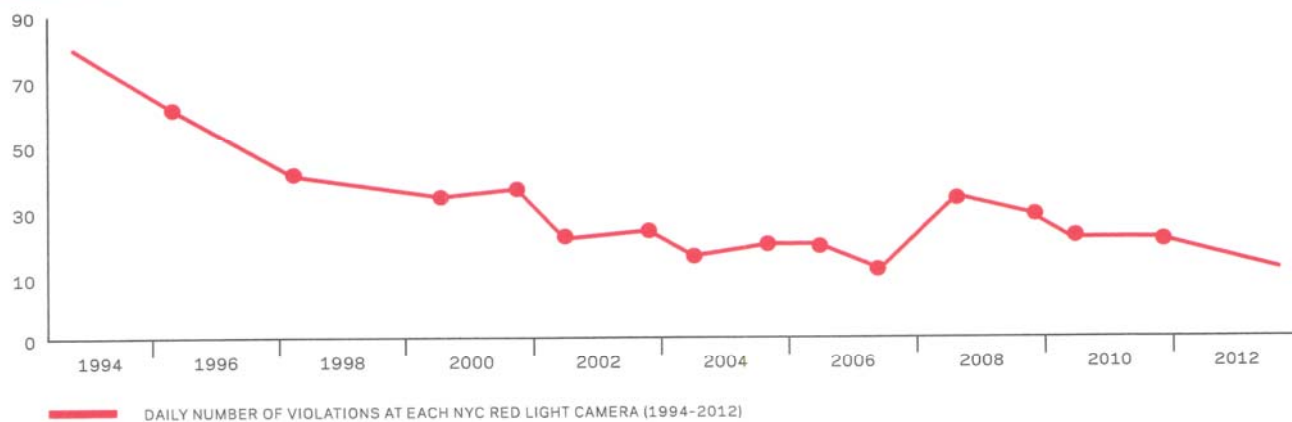
Although the program is not yet old enough to have created a strong database, DOT and NYPD observations indicate that speeds have lessened in the first 20mph Neighborhood Slow Zone, implemented in the Claremont section of the Bronx in 2012. During 2013, DOT is implementing a further 13 Neighborhood Slow Zones. In London, the introduction of 20 mph zones was associated with a 42% reduction in injuries, as compared to untreated areas. In the UK, average speeds in 20 mph zones have been reduced by 9 mph.

SAFETY

As the number of red light cameras expanded, fewer drivers received automated violations for running red lights

RED LIGHT CAMERAS

ENFORCEMENT CAMERAS WORK TO REDUCE RED LIGHT RUNNING



Since the 1980s, NYCDOT has used red light cameras to help reduce red light running and improve safety. The program works to reduce crashes and their severity. DOT has successfully persuaded the NY State Legislature to expand the program several times. It is now at its greatest extent, but should be expanded further as the City seeks ever-safer streets.

Red light cameras have been an enormously effective traffic safety measure in New York. Since the program's inception in 1988, cameras have issued over 4 million violations. In 2011 alone, 821,483 violations were issued to passenger vehicles, buses, trucks and taxicabs running through red lights.

These citations have improved street safety: intersections where red light cameras were installed saw a 20% decline in all injuries, a 31% decrease in pedestrian injuries, and a 25% decrease in serious injuries over the three years after the cameras were installed. Red light running at intersections where the cameras are installed has declined by as much as 40% to 60%. Citywide, the number of

violations has also declined over time—fewer drivers are getting red light tickets as the cameras deter violations. Violations issued declined by 22% from 2010 to 2011. The City does not make red-light camera locations public in order to extend the cameras' deterrent effect beyond the small number of locations where they are installed.

The decline in NYC red light violations correlates with studies conducted by the Insurance Institute for Highway Safety a well-recognized research organization. Reviews by the Institute conclude that cameras reduce red light violations by 40-50 percent.

The NY State Legislature has extended the duration of the demonstration program six times since 1991, gradually increasing the number of intersections where the cameras can be installed. Today, New York has 190 red light cameras at 150 intersections, less than 2% of NYC's total of 12,000 signalized intersections. The advent and expansion of the program broadly coincides with the City's dramatic improvement in street safety since the mid-1990s.

SAFETY

Across the United States, introduction of speed cameras has reduced injuries and fatalities by 40 to 45 percent

SPEED CAMERAS

Based on the success of its red light camera program and overwhelming evidence that vehicle speed remains the main killer on City streets, NYCDOT has pursued speed enforcement cameras as a way to encourage safer behavior among drivers. Following several terrible and well-publicized traffic crashes involving high speeds early in the year, Albany lawmakers approved the introduction of speed-radar cameras at 20 New York City locations at the end of the 2013 state legislative session. The law requires the cameras to be deployed within one-quarter mile of a school. Issuance of \$50 speeding summonses is set to begin at the end of 2013, after adoption of rules by the NYC Dept. of Finance.

Over 100 cities and towns across the country have installed speed cameras and the results are clear. Speed cameras reduce speeds and save lives. In New Orleans, speed cameras led to an 84% drop in speeding. In Montgomery County, Maryland, the proportion of drivers exceeding speed limits by more than 10 miles per hour declined by 70% after speed cameras were installed. Across the United States, introduction of speed cameras reduces injuries and fatalities by 40 to 45 percent.

LOCATIONS WITH DOCUMENTED SPEEDING WITH 1/4 MILE OF A SCHOOL



SAFETY

COMMERCIAL CYCLIST ENFORCEMENT

Cyclists who make deliveries for businesses and restaurants, either directly or through a messenger service, are a fixture on New York City's streets. These hardworking men and women provide a valuable service for New Yorkers and the City's economy, and do so in an environmentally sustainable and congestion-beating manner. But if they fail to obey traffic rules or lack necessary bicycle safety equipment they pose danger to themselves and to others.

In response to community and elected official requests, DOT launched a comprehensive education and enforcement campaign in summer 2012 to educate businesses on requirements of the commercial cycling rules. While City law has long mandated that restaurants display posters about safe cycling, outfit bikes with lights and bells, provide helmets and safety vests to delivery cyclists, few were complying.

COMMERCIAL CYCLIST OUTREACH TO BUSINESS, BY BOROUGH

BOROUGH	STORES VISITED
MANHATTAN	2,891
BROOKLYN	547
QUEENS	370
BRONX	284
TOTAL	4,092

DOT launched the City's first-ever commercial cyclist outreach and enforcement unit, a six-person team of DOT inspectors to travel door-to-door to ensure that businesses comply with the law. Between summer 2012 and spring 2013, the inspectors visited over 4,000 businesses and then began enforcement in spring of 2013.

In addition, DOT held 36 educational forums reaching near 5,000 attendees, handing out helmets, bike bells, reflective vests, and sample ID tags for businesses and their employees.

DOT staff visited 4,000 businesses prior to enforcement of the strengthened commercial cyclist law



Commissioner Sadik-Khan greets commercial cyclists with new reflective vests



City officials announce the commercial bicyclist safety effort.

DOT also partnered with the City Council to revise the commercial cycling law and make compliance simpler for businesses and less burdensome on delivery cyclists.

The education, enforcement and legislative effort had a noticeable effect on delivery cyclists' compliance with the law. Now cyclists across the City can now be seen wearing reflective vests with the name of the business they represent.

SAFETY

TRAFFIC SIGNAL IMPROVEMENTS

In addition to continually evaluating streets and intersections for conditions that may warrant additional traffic controls, NYC DOT is implementing several innovative signal program:

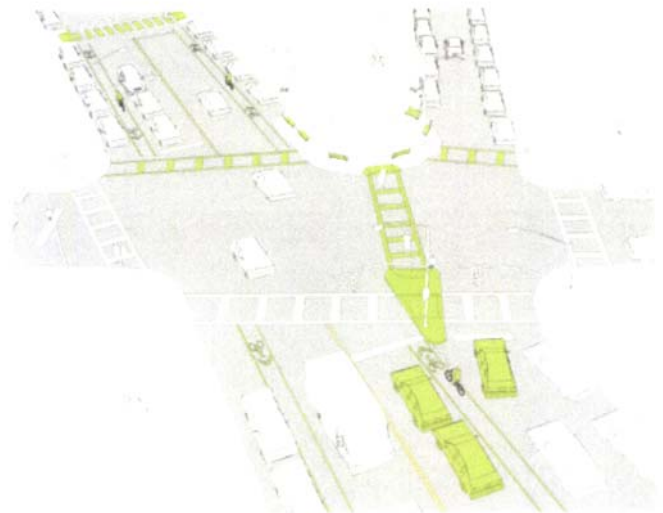
Signal timing helps improve mobility and safety by regulating traffic flow and speed, and giving pedestrians more time to cross. This has been widely used by DOT in neighborhoods throughout the city to improve safety.

Pedestrian countdown signals tell people on foot how many seconds they have to cross the street. DOT before/ after analysis of pedestrian countdown signals installed at 1,800 intersections during 2011 and 2012 found that total crashes were reduced by 5%, and injuries to pedestrians also declined by 5%. DOT will have installed 8,000 of these signals representing two-thirds of City intersections by the end of 2015.

Leading pedestrian intervals show a walk sign for pedestrians before showing a green light for drivers. LPIs have been installed at 100 intersections citywide since 2007.

Accessible pedestrian signals help low vision and blind people cross the street by making noise when it is safe to cross. They have been installed at 53 intersections citywide.

Overall, NYC DOT has installed new signals at 772 intersections and new 4-way stop controls at 241 intersections since 2007. Both treatments reduce right-angle crashes and improve pedestrian access.

PARKING AND TURN RESTRICTIONS

“Daylighting” is the removal of curbside parking spaces at the approach to an intersection. It prevents parked vehicles from impeding the sight-lines of both pedestrians and drivers. Visual obstacles in busy intersections can lead to pedestrian-vehicle crashes.

Prohibiting certain turns in busy intersections simplifies traffic patterns, giving drivers and pedestrians fewer points to check when proceeding. NYC DOT has installed 175 left turn bans citywide since 2007.





SAFETY

Chapter 4

DOT's Public Conversation on Street Safety

Safety themes and improvements permeate DOT's goals, programs, projects and overall dialogue with New Yorkers. It's not an exaggeration to state that New Yorkers both inside and outside of government are pulling together to deliver safer streets. Elected officials, community groups and many other associations and stakeholders routinely approach the Department with ideas for improving street safety, and as we have documented in the chapters above, DOT's application-based safety programs such as slow speed zones and speed reducers are heavily subscribed. City Council legislation has codified major elements of DOT's safety improvement project development and analytic procedures, for example, mandating an update of the 2010 Pedestrian Safety and Action Plan every five years (Local Law 11 of 2008).

The status of the public dialogue over traffic safety augurs well for future gains. DOT's safety work with stakeholders in particular locations is strongly collaborative, and in recent years the agency has developed the communications capacity to help expand a culture of street safety to the general public.

SAFETY

41%

decrease in crashes at
Harlem River Park

PROJECT DEVELOPMENT THROUGH INPUT AND DIALOGUE

HARLEM RIVER PARK GATEWAYS

DOT was approached in 2008 by the Harlem Community Development Corporation and other stakeholders to discuss pedestrian access routes to the relatively new Harlem River Park. Although there were pedestrian overpasses to take park-goers across Harlem River Drive, the access points were adjacent to intersections and Harlem River bridge connections with heavy traffic and difficult to reach for many residents. DOT safety and traffic experts worked with

local groups and the NYC Parks Department to improve pedestrian access at East 135th Street and Madison Avenue, East 138th Street and 5th Avenue, East 139th Street and 5th Avenue and 142nd Street and 5th Avenue. The projects created over 2,400 square feet of new space for pedestrians and have shown strong results for all street users, reducing crashes with injuries to pedestrians by 10% and crashes with injuries to motor vehicle occupants by 48%.



BEFORE: Harlem River Park Gateway



AFTER: Harlem River Park Gateway

SAFETY

JACKSON HEIGHTS

In 2011, DOT carried out a comprehensive set of improvements in the heart of Jackson Heights, the culmination of a community-driven planning process that started in 2009. Local residents, business owners and elected and civic leaders had expressed a range of pressing transportation concerns and worked with DOT to guide the development of solutions. DOT created a robust set of opportunities for public participation, including community workshops, neighborhood walk-throughs, an innovative web portal that allowed DOT staff to receive and respond to comments at any time, and a Community Advisory Committee to facilitate ongoing involvement of key stakeholders.

The project addressed traffic safety, as well as sidewalk crowding, vehicle congestion, parking availability, slow bus service and a lack of public open space. Focused on the

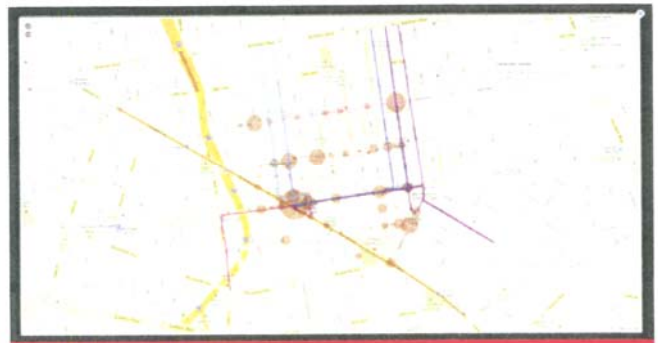
area where 73rd Street, 37th Road, Broadway and Roosevelt Avenue converge, the core improvements were carried out in the second half of 2011. Updated curb regulations were introduced in spring 2012, offering a better use of space for deliveries and customer parking. Further parking improvements were implemented in 2013 with the introduction of the variable-rate PARK Smart program.

There are fewer injury-causing crashes; problematic traffic bottlenecks have been eliminated; buses are faster and more efficient; and the 37th Road plaza is a popular gathering spot year-round, home to frequent public events and a boon to adjacent businesses. Safety performance in the area has improved markedly since implementation—total crashes with injuries have declined by 26%.

DOT created a robust set of opportunities for public participation in Jackson Heights



Online portal for participation in Jackson Heights



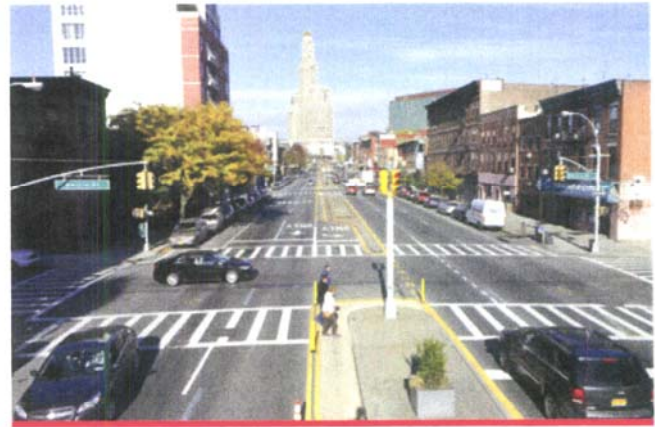
Online portal for participation in Jackson Heights

SAFETY

FOURTH AVENUE, BROOKLYN



Residents discuss 4th Avenue safety improvement in Park Slope



4th Avenue, after improvements

DOT has implemented major design changes to reduce speeding on 81 blocks of Brooklyn's Fourth Avenue, with one more segment under consideration as of October, 2013. Overall, the project ranges for much of the length of Brooklyn, from Bay Ridge to the Barclay's Center. The project is generally widening medians, narrowing pedestrian crossing distances and restricting some turns. Implementation began following intensive public dialogue and collaboration. Discussion in the corridor continues today.

In 2011, in partnership with a task force convened by the Brooklyn Borough President, DOT began holding community workshops for sections of Fourth Avenue to develop design ideas for improving safety and traffic operations. Safety on Fourth Avenue has long been a concern of DOT and the people who live and work along the corridor. In 2009, the NY Police Department's 72nd Precinct requested a safety project along the Fourth Avenue corridor. Community Board 7 also approached DOT with requests

for safety improvements along the avenue in Sunset Park.

All three segments of the project have been subject to an extensive dialogue and discussion. As in Jackson Heights, presentations, open houses, workshops, community board hearings, walk-throughs and an interactive on-line portal were part of the varied repertoire for discussing and developing an accepted action plan for the corridor. In Park Slope and Bay Ridge, DOT used a new tool that lets community members anonymously post notes on

street views of each intersection in the study area to suggest improvement ideas. Park Slope Council Member Brad Lander wrote that it "is one of the best examples of online interactive government I've seen."

DOT's Safety Education division also engaged parents, teachers and students in meetings and workshops on the basics of safety design at a total of 35 public and private schools along the corridor.

SAFETY

PUBLIC CAMPAIGNS FOR TRAFFIC SAFETY

NYCDOT complements its street design projects and safety-oriented technology and regulations with clear, hard-hitting safety education campaigns. From traditional billboards to new apps and online portals, DOT has pioneered a variety of communication methods to explain the dangers of drunk driving, speeding and distraction to a wide audience.



Prior to 2007, the agency's capacity for public communication was limited. In the past five years, DOT has developed robust contracting capacity, funding streams, expertise to develop, review and select effective communications campaigns, including associated social media efforts to deliver a strong public message on behalf of safer streets.



BE THE MAN

DOT's "You the Man"/"Be the Man" anti-drunk driving campaign used research and focus group insights to develop messages targeted towards the New Yorkers most likely to drink and drive: young men ages 21-39. This age group was responsible for 63% of alcohol related deaths in 2008. This audience is aware that drinking and driving is wrong, but has become relatively immune to traditional government warnings, and many still fail to make a plan to get home safely at the end of a night out.

"Be the Man" lionizes the role of the designated driver from a peer-group point of view, and emphasizes practical steps to ensure a safe conclusion to a night out.

Rather than launch traditional television ads, the campaign sought its audience via media

that is present during nights out: smart-phones, radio spots, posters and coasters in bars and clubs and beer cups at Staten Island Yankees and Brooklyn Cyclones games. Promotions included an innovative phone app with a "find-a-ride" feature using the phone's GPS to identify the closest Taxi and Limousine Commission-registered car services and subway stations and free-ride-home MetroCards and taxi coupons distributed in a variety of holiday periods and during March Madness.

DOT tracking surveys showed that Be the Man was reaching its target audience. DOT found that the campaign was recognized more by 21 to 35 year olds than by other groups. One third of the 21-35 group were aware of the campaign, with highest acknowledgement in Staten Island.

SAFETY

One quarter of New Yorkers surveyed recognized the 2012 LOOK! campaign

LOOK



LOOK is NYCDOT's general traffic safety rubric, urging New Yorkers through a variety of media to take extra care to watch out for each other on City streets. The LOOK brand now has a wide range of applications, combining innovative street markings, taxi window decals, ads, and videos to send a life-saving message, reminding New Yorkers to be alert, whether on foot, bike or behind the wheel. 25,000 LOOK-themed backpacks have been distributed

to children who work with DOT Safety Education.

At over 100 selected street corners, distinctive street markings spell out "LOOK", with eyes looking in the direction of oncoming traffic.

Street markings are reinforced by ads created for TV, radio, outdoor, and internet that have so far generated over 130 million impressions. LOOK display ads have appeared on telephone kiosks, bus shelters, billboards and the backs of NYC Transit buses.

LOOK was launched in 2007 after a multi-agency study found that driver and cyclist inattention was the number one reason for bicycle and pedestrian crashes.

LOOK returned to the theme of cycling safety in 2012. 26,000 eye-catching, orange-and-white window stickers reading "LOOK! For Cyclists" were made available to the city's 13,000 yellow-taxi fleet. A video placed on Taxi TV called on New Yorkers to "Take out their boss/Take out a date/But

don't take out a cyclist'. Display ads anticipating the launch of CitiBike reminded New Yorkers of the cardinal traffic rules.

Pop up LOOK smartphone ads on distracted driving in popular apps such as Words With Friends and NYTimes mobile

Fully one quarter of New Yorkers acknowledged the 2012 LOOK campaign in a fall survey.

SAFETY



THAT'S WHY IT'S 30

DOT's research in 2009 showed that two-thirds of New Yorkers are uncertain what the City's standard speed limit is, and nearly 7 in 10 New Yorkers say that speeding is a safety problem in the city. To raise awareness of the speed limit and highlight the danger of excessive speed, DOT created an advertising campaign of pointed television and radio ads and hard-hitting public billboards.

The ads explain the reason why the standard city speed limit is 30mph: if a pedestrian is hit by a car traveling 40 m.p.h. or faster, there's a 70% chance that a struck pedestrian will be killed. At 30 m.p.h., there's an 80% chance that the pedestrian will live. Billboards were in Spanish and English

Display and TV ads were further complemented with message cards with That's Why it's 30 themes

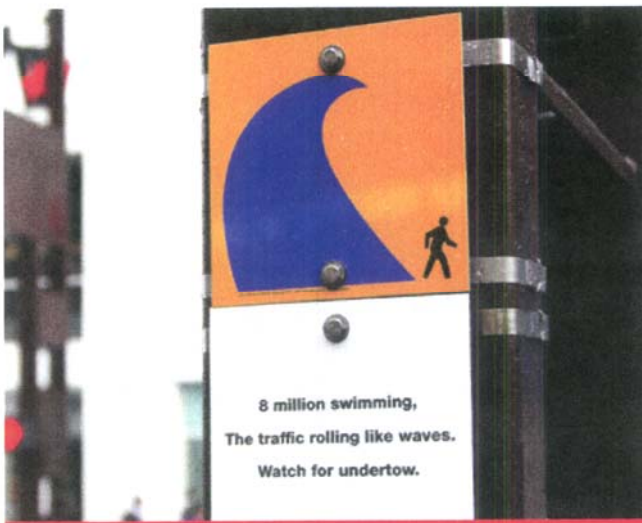
that were included in NY State Dept. of Motor Vehicle mailings for driver license renewals. DOT further reinforced the campaign theme with specially-programmed speedboards that produced varying imagery depending on speed of the vehicles

In follow up surveys, That's Why it's 30 had the highest campaign identification and recall among New Yorkers of all of NYCDOT's

advertising efforts. 1 in 3 survey respondents said they had seen the ads and 2 of 3 viewers said the campaign caused them to understand that speeding is a serious issue. Over half of survey respondents who had seen the ads said they were less likely to drive 10mph over the speed limit.

SAFETY

Curbside Haikus generated a buzz about street safety issues



CURBSIDE HAIKUS

Generating talk on the street and a buzz in the press is one way to broadcast a stronger culture of safety on City streets. DOT succeeded in the winter of 2011/2012 with its Curbside Haiku campaign, whose set of twelve bright, eye-catching designs by artist John Morse was heavily covered and discussed around town. Each sign, which are still installed on City streets today, is accompanied by a haiku poem. The “Curbside Haiku” installation

encompassed 144 signs across the City to promote road safety. Each design and haiku delivers a safety message by focusing on a transportation mode. In many locations, the haikus were embedded in a QR code on the sign, readable with smartphone apps, making the safety messages interactive and fun to discover. In others, the signs are hung in pairs with the image and text from its accompanying haiku.

DON'T BE A JERK

DOT’s “Don’t Be A Jerk” bike safety campaign humorously highlighted the essential dos and don’ts of safe, responsible biking. DOT launched the effort as cycling numbers in the City skyrocketed. With more bikes on the road, smart cycling is even more crucial to making New York City’s streets safer for everyone using them.

The simple message of “Don’t Be A Jerk”: Always follow traffic laws by yielding to pedestrians, riding with traffic, and riding on the street not the sidewalk (unless you’re 12 or younger).

SAFETY

FREE HELMET, LIGHT AND BELL PROGRAMS

DOT complements cycling safety message campaigns with promotional and practical programs about safe cycling equipment. Every fall, as daylight wanes, DOT staff promote use of bicycle lights by handing out a limited number of front and rear lights that clip easily to bike seatposts and handlebars. Each spring as cycling picks up in better weather, DOT also distributes free bells, reminding cyclists that being heard is preferable to being hurt. Both lights and bells are required on bicycles by law in New York City.

Bicycle helmets are required by law for children age 13 or younger and commercial cyclists.

The DOT has partnered with elected officials, other city agencies, and community groups to give away over 100,000 helmets to New Yorkers of all ages. DOT staff trained to properly fit bike helmets to New Yorkers of all ages run the helmet giveaway events. City Council funding allocations, totaling more than \$60,000, have significantly augmented the program.

100,000 free bicycle helmets have been given away by NYCDOT to New Yorkers of all ages

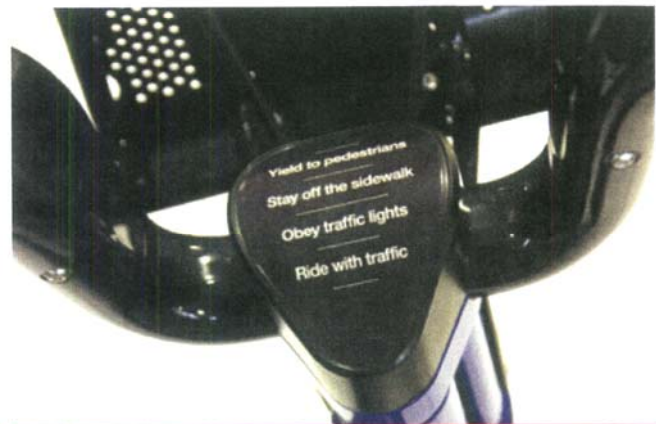


DOT staff fits free helmets for members of the public

CITIBIKE: A PLATFORM FOR CYCLING SAFETY

The CitiBike system is itself a platform for messages about bicycling safely on NYC Streets. From the messages facing the rider on the handlebars of every CitiBike to similar notices in multiple languages on the kiosk screens at hundreds of stations, riding advice at the CitiBike website

and the discount helmet coupon sent to every annual subscriber, hundreds of thousands of New Yorkers and visitors are exposed to easy-to-understand rules of the road. Unsurprisingly, CitiBike has recorded an impressive safety record in its first five months, which have seen over 5 million rides.



Citi Bike handle bars remind riders to follow the rules of the road

SAFETY

SAFETY EDUCATION

DOT also conducts safety education and outreach programs for children, parents, educators, senior citizens and all New Yorkers. DOT's Division of Safety Education visits 600 schools and 100 senior centers a year. The unit works with kids and teachers to collect data on speeding and distracted driving and envision safer designs for streets. The DOT's five Safety City projects use a variety of education methods to teach children safety walking and biking habits. The facilities have mock versions of streets, so children can practice crossing the street safely in a variety of situations.

Safety Education targets special corridors where crashes are high and schools and Senior Centers are many. In 2011 we piloted this work on Adam Clayton Powell from 135th to 153rd street and continued the work in the 2011-

2012 school year using Manhattan Safety City as a base. Safety Educators worked with students in schools along the corridor to collect data about speeding, distracted driving and other safety conditions near school on ACP. Students requested a speed board which was put in place in May of 2011 to educate the community about the prevalence of speeding. When DOT presented plans for traffic calming and other measures, Safety Education staff worked at the tables. Meetings were held with principals and other administrators in schools and with Senior Centers to review the plans and many submitted letters in support of the changes. In 2012-2013, we focused the work from 135th to 117th streets. We worked with a total of 25 schools and 4 Senior Centers along this corridor.

The DOT's 5 Safety City facilities teach safe streets skills to 30,000 children and adults annually



Commissioner Sadik-Khan, City Councilmember James Vacca, and friends check traffic speeds

WORKZONE SAFETY

The U.S. Department of Transportation and the Federal Highway Administration present National Work Zone Awareness Week each spring, to bring national attention to motorist and worker safety in work zones and to call Albany's attention to potential NY State legislation that could lessen the problem of danger in work zones.

NYCDOT participates to raise driver awareness and decrease the number of persons, including members of DOT, killed and hurt in motor vehicle crashes in work zones. 7 NYCDOT workers have

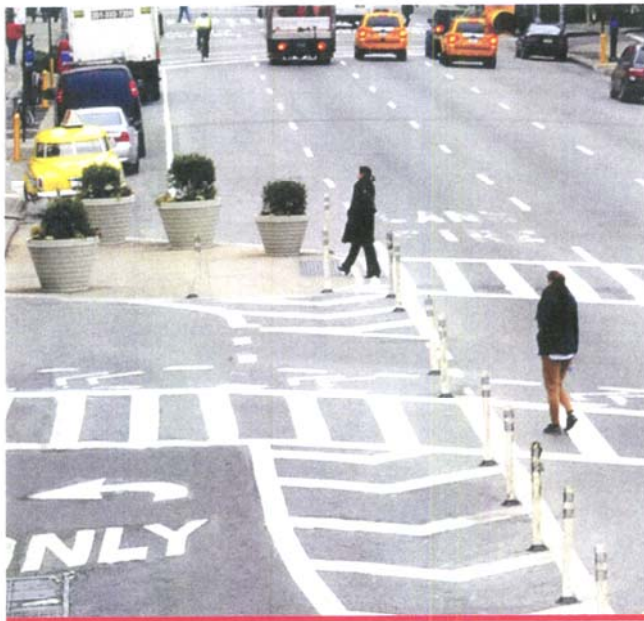
died in work zone incidents in the last two decades, while 22 have been injured in work zone incidents since 2009. DOT places work zone safety ribbon magnets on all DOT vehicles and runs print, radio and outdoor ads to promote work zone safety in both New York City and in Albany.

NYCDOT favors state legislation to intensify penalties against drivers who are convicted of either killing or injuring construction workers in work zones. A proposed bill to serve as a deterrent to driving carelessly in a work zone was not acted upon by the State Legislature.

SAFETY

LEGISLATIVE CODIFICATION OF DOT SAFETY EFFORTS

One mark of the progress of the public dialogue on street safety is the amount of legislation the NYC City Council has approved to validate and ensure the continuation and longevity of NYCDOT's analytic and practical approaches to street safety, distraction to a wide audience.

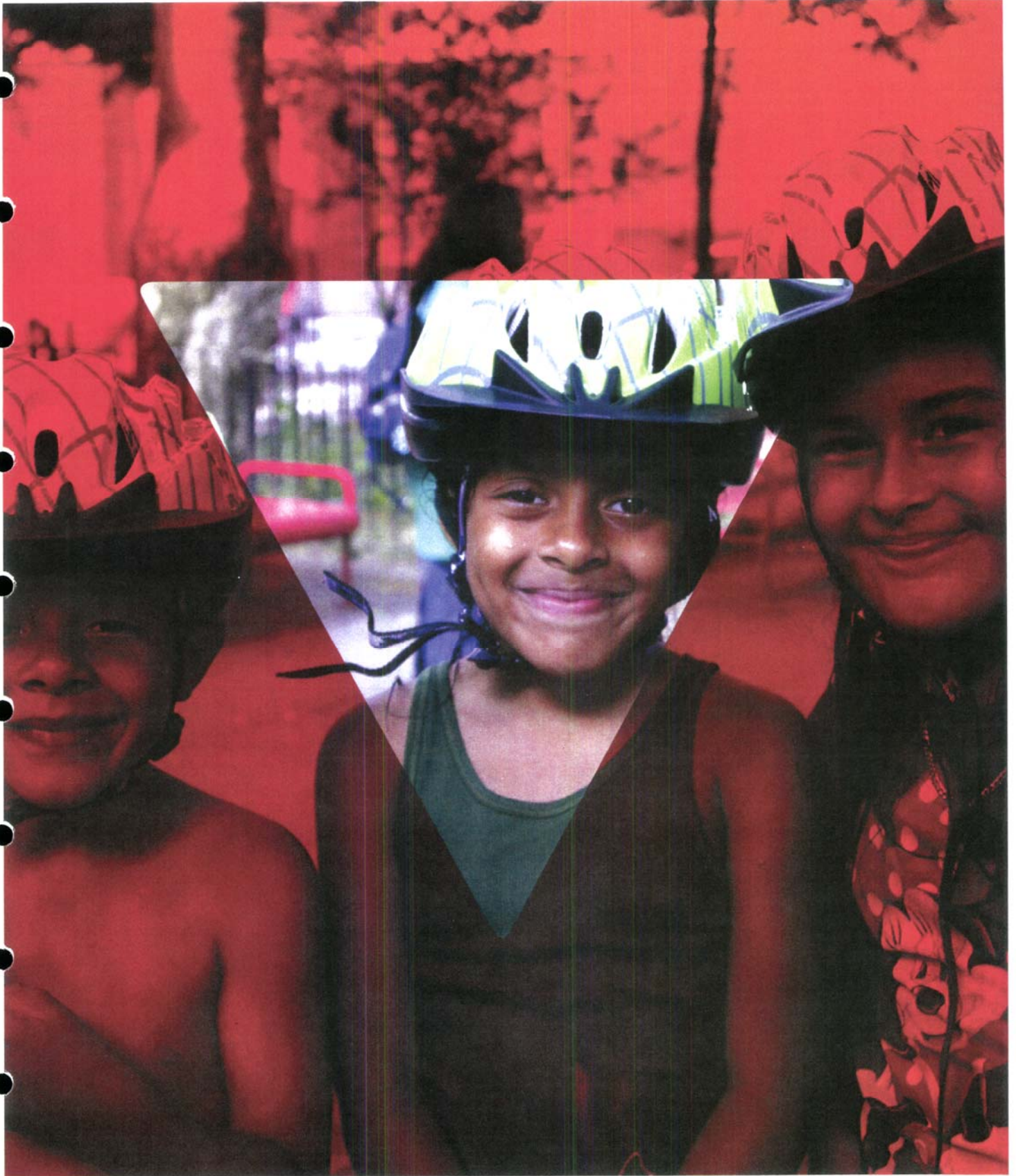


Local Law 11 of 2008 requires DOT to identify the twenty highest crash locations based upon a ranking of the total number of crashes involving pedestrians, and to provide information on safety improvements that have been implemented at identified locations.

Local Law 23 of 2008 requires DOT to develop, monitor and report on a set of indicators that allow the agency to implement a performance driven transportation policy, geared toward achieving the sustainability, mobility, infrastructure and quality of life goals set forth in Mayor Bloomberg's PlaNYC 2030 initiative. DOT does this with its annual Sustainable Streets Index, which provides extensive before after information on implemented safety projects.

Local Law 12 of 2011 requires DOT to publish an update every 5 years of its 2010 Pedestrian Safety Study and Action Plan, identifying the causes, common factors and geographic distribution of pedestrian crashes in New York City.

Local Law 66 of 2011 requires DOT to report on traffic and safety related data for three years before and one year after a project that realigns a City roadway for four or more consecutive blocks, or 1,000 consecutive feet of street. DOT closely tracks the impact of its projects.



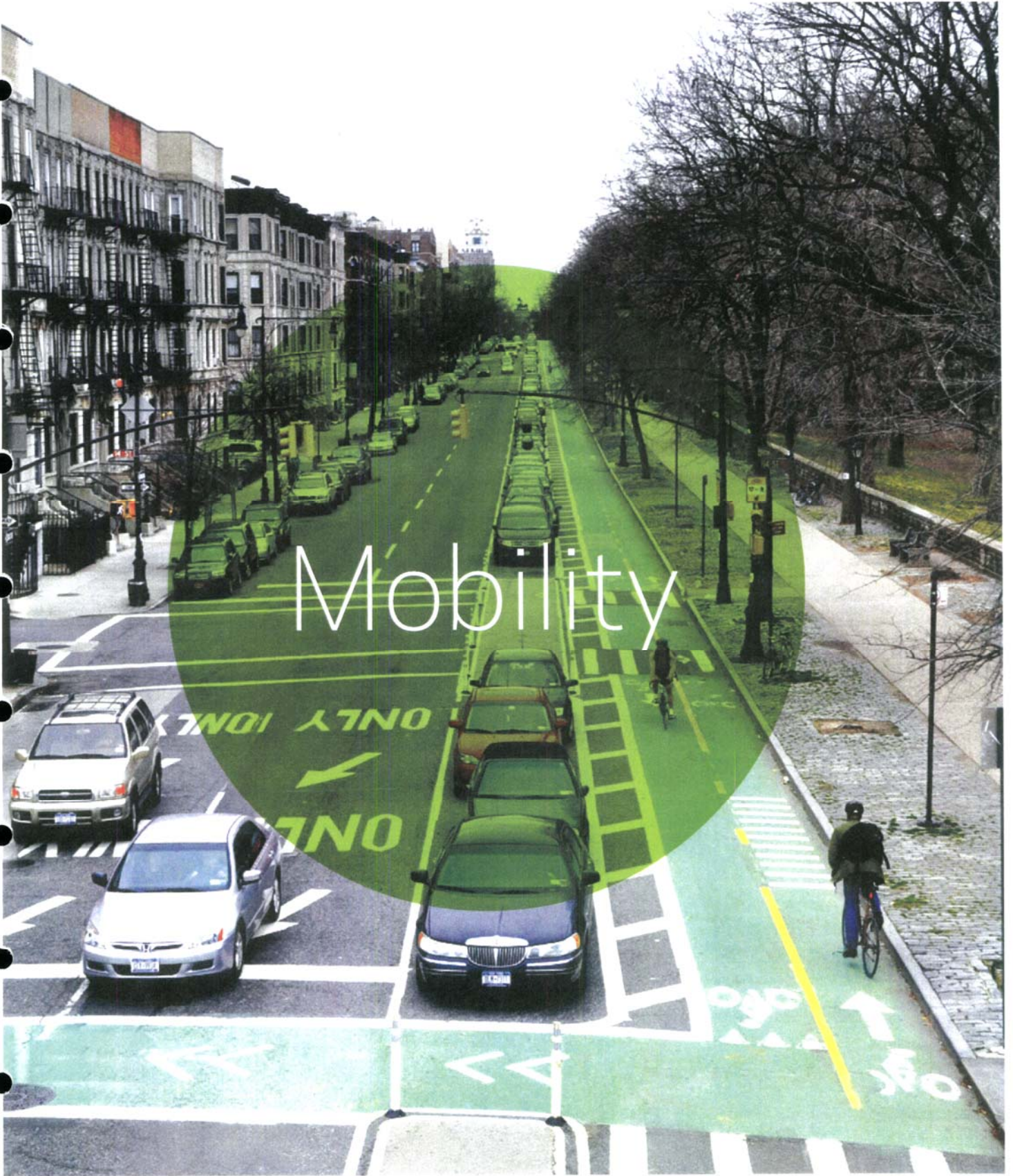
Looking Ahead

New York City must be relentless and innovative in seeking ways to continually improve its traffic safety performance. Gone are the days when concerted efforts in obviously dangerous corridors like the Queens Boulevard or Grand Concourse of the 1990s can quickly drive crash and fatality numbers down. As City streets have become markedly safer, clustering of crashes and injuries is less pronounced, and thus more difficult to address. With the targets of safety policy becoming more diffuse, broader strategies such as deploying higher numbers of automated enforcement devices such as red light and speed-radar cameras are likely to become more important. The State Legislature will need a stronger understanding of these facts and trends to become a full partner in driving down NYC crashes, injuries and fatalities. The next opportunity to further develop this understanding and partnership presents itself very soon—the City's red light camera program must be legislatively renewed in 2014. Ideally, the Legislature would unfetter camera enforcement programs altogether and allow the City to determine the right size and applications for both red light and speed enforcement camera programs.

The diffusion of crash clusters notwithstanding, making large arterial streets safer remains the City's largest safety challenge. Slow speed zones, speed humps and other improvements suited to smaller streets are highly popular and have quality of life as well as safety benefits, but larger projects similar to the recent realignments of Adam Clayton Powell Boulevard in Manhattan and Fourth Avenue in Brooklyn will have greater impact on the City's overall safety performance. This fact may become even more pronounced as New York's population continues to age. Such projects require extensive local support, explanation and outreach. The high receptivity and demand by New Yorkers for every type of street safety improvement program and feature augurs well for further improvements in this vein.

Steady erosion of the federal commitment to transportation may have impacts on safety programs that future City leaders will have to grapple with. In 2012, Congress eliminated the federal Safe Routes to Schools funding program, and it is unclear how NY State DOT, which administers Federal Highway Administration aid in New York, will regard ongoing funding requests from local safe routes to schools programs like New York's. U.S. traffic safety funding is also very constrained in its uses. NYCDOT's safety ad campaigns would have a greater impact if they were able to be deployed and broadcast far more broadly, but FHWA safety funds are confined to hardware regardless of local safety needs, and in some degree distributed at the discretion of NY State. Broadening the uses of federal safety funds, and providing direct FHWA funding to large cities, as strongly advocated by the National Association of City Transportation Officials, would in small part make up for the declining amount (in both real and nominal terms) of federal transportation aid for safety and in other areas (see the Infrastructure section).

- **Remove state legislative restrictions on automated enforcement cameras that improve safety, including red light, speed, and bus lane cameras. Allow the Mayor and City Council to decide the appropriate scope of these programs.**
- **Focus additional resources on remaining high crash corridors, especially long, wide arterial streets where safety issues persist.**
- **Provide more city resources for programs and street treatments that are popular with New Yorkers, such as speed humps, Neighborhood Slow Zones, and other traffic calming techniques.**
- **Change federal law to allow direct federal highway aid to cities and a broadened use of federal safety funds.**




 Introduction

Introduction

New York's rapid population and economic growth during the 1990s and 2000s presented City government with major challenges. Prosperity and vitality are obviously desirable, but how to improve the City's basic systems, including transportation, while serving more people and activity? PlaNYC's answer was to take much greater advantage of the City's historic orientation to walking and public transit.

Although New York City's renaissance was in large measure built upon the reconstruction of the subway system beginning in the 1980s, there had been few City policies put in place to reinforce and support this investment. The Bloomberg Administration changed that, taking active steps such as rezoning targeted areas to direct growth rather than respond to it after the fact. In transportation, PlaNYC emphasized improved performance and efficiency from assets that had long gone overlooked, especially City streets and NYC's huge bus system.

New York's density makes it a natural walking and cycling city. These options are also strong complements to the City's public transit systems, provided people regard them as safe and convenient. NYCDOT's work to implement the transportation policies of PlaNYC have reinvented bus service, made bicycling a mainstream option for navigating the City and made pedestrians the focus of traffic planning and engineering. Delivering these results and implementing "complete streets" that safely and efficiently promote the travel of bus riders, cyclists, pedestrians and motorists has required numerous design and engineering innovations.


 44

acres of painted
bus lanes since
2007

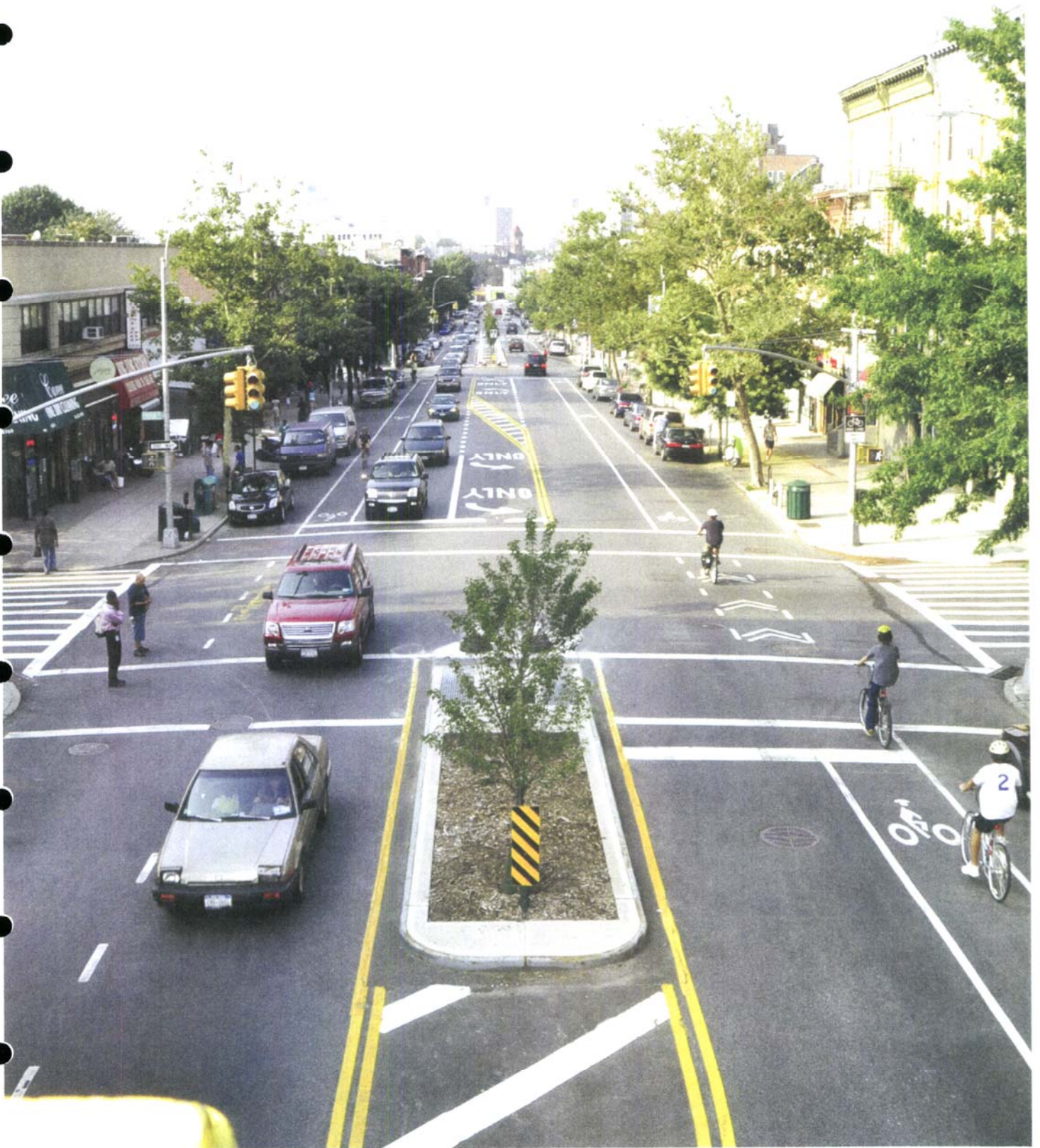

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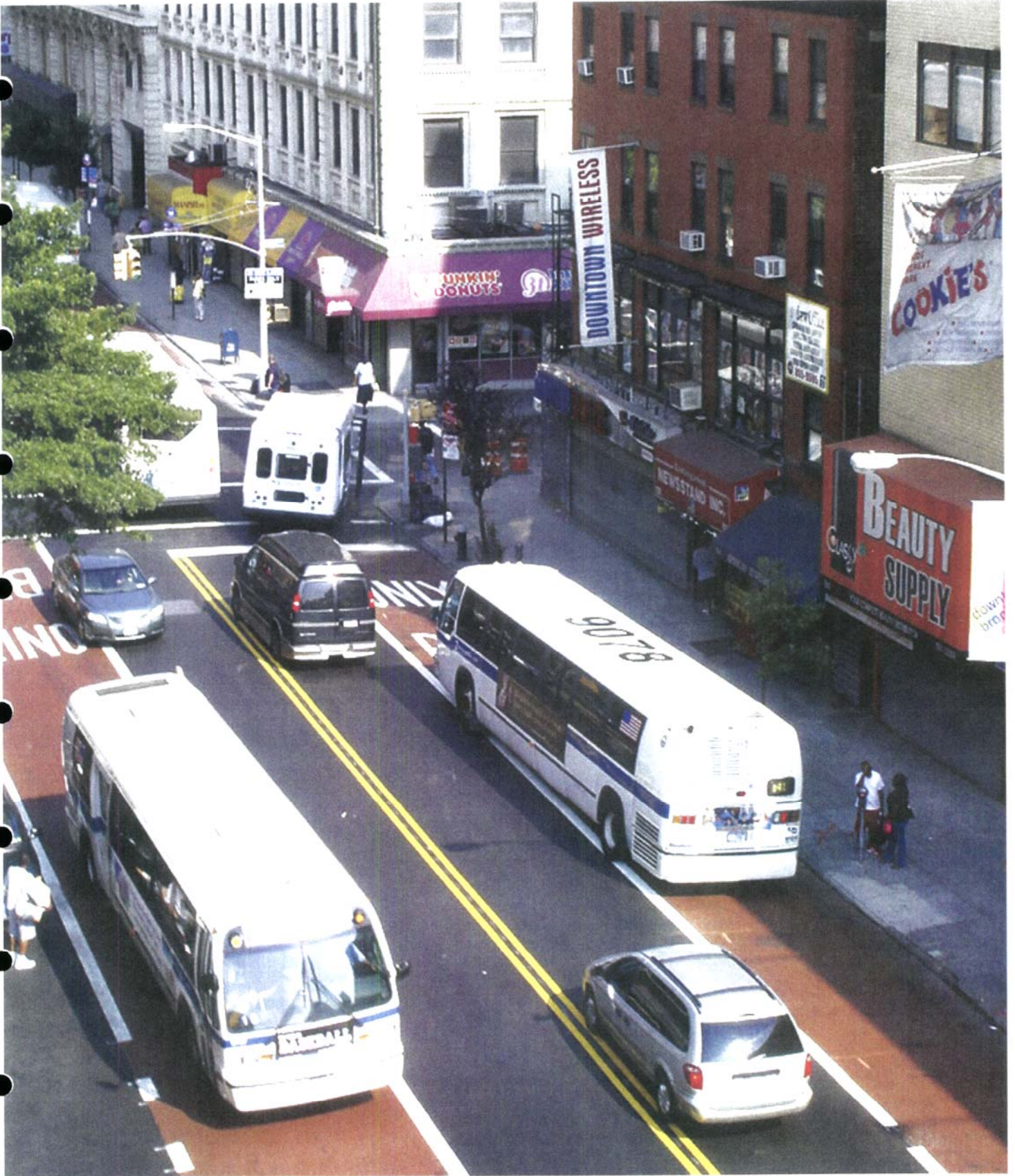
acres of new bike
lanes since 2007

MOBILITY

These are now well documented and are being increasingly adopted by cities across the United States and the world. One key to their success has been the ongoing update of traffic engineering and traffic management technology to ensure that street changes do not increase vehicular congestion. NYCDOT has shown that creating complete streets is not a zero sum exercise between different types of street users.

The development of better bus service, better cycling and walking conditions and the availability of CitiBikes, along with other options the Bloomberg Administration has created or promoted such as East River Ferry service and borough "green" taxis adds many new elements to the City's already-rich menu of transportation options. People are increasingly embracing transportation choice and variety, from new intercity bus services to car-sharing companies.

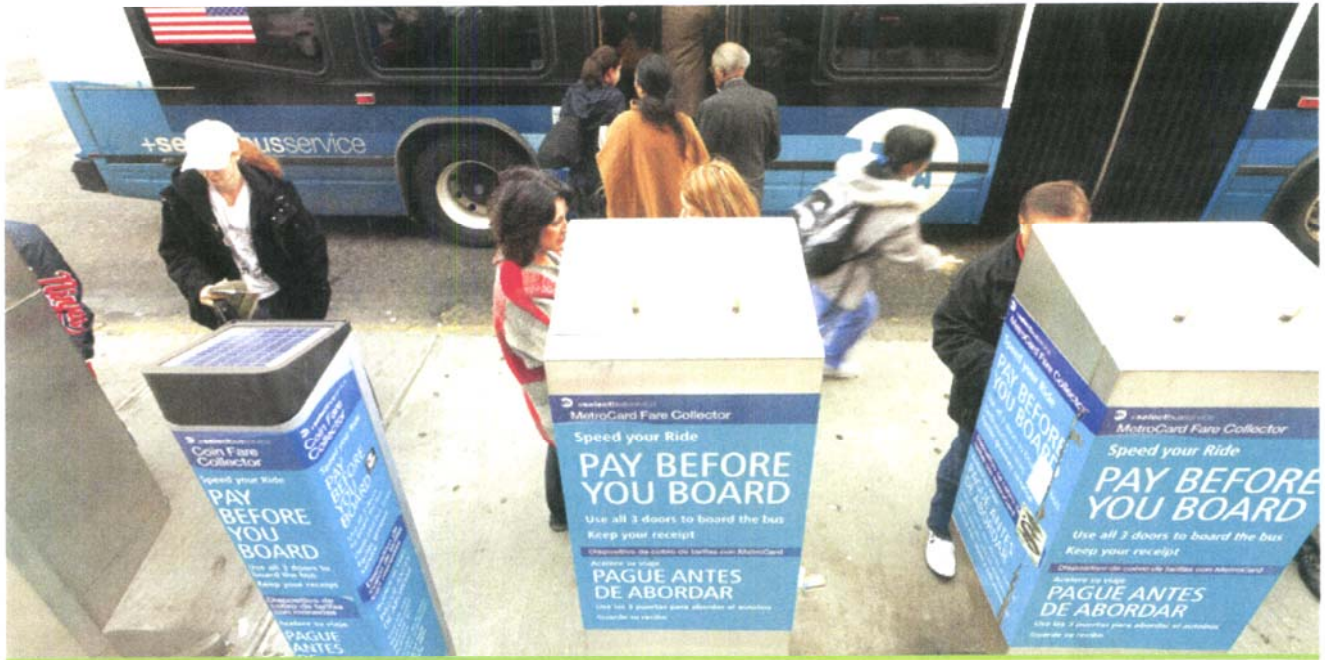




Chapter 5 Better Bus Service

New York City's bus system offers tremendous potential for efficient and environmentally friendly movement of people. Buses serve 2.6 million riders each weekday citywide. But with an average speed of eight miles per hour, many routes are frustratingly slow. Improving bus speeds and customer experience is one of the quickest ways to build mass transit capacity in the city, especially in areas far from subway stops and in dire need of speedier transit options.

Since 2007, NYCDOT has worked closely with its partners at NYC Transit to unlock the potential of streets. A new model of bus service has laid the foundation for a citywide bus rapid transit network to supplement subway service.



50

hours saved
annually for each
SBS rider

SPEEDING BUSES IN A THRIVING CITY

In 2007, PlaNYC gave a clear mandate to vastly improve bus service to give New Yorkers more sustainable transit options and prepare for future population and economic growth. Mayor Bloomberg appointed top NYCDOT officials who embraced his vision and had experience in transit planning and management. New DOT management revamped bus rapid transit and instituted an extensive outreach processes to effectively engage communities along transit routes. New directors at the MTA and at NYCTransit were similarly committed to improving bus service—a strategic alliance developed between the agencies. Within months, bus projects started to move forward quickly.

The result was NYCDOT and NYC Transit's Select Bus Service (SBS) program, which improves speed, reliability, and customer experience for bus riders. SBS uses elements of bus rapid transit (BRT), a cost-effective approach to transit service that cities around the world have used to make

riding the bus more like riding rail transit. Off-board fare collection, designated bus lanes, safer, more attractive station areas, and signals that prioritize buses over other vehicles are combined along each route. Development of the service involved unprecedented collaboration with the MTA NYC Transit and intense partnership with local community boards and civic groups.

The first Select Bus Service started in 2008 along Fordham Road in the Bronx. Since then, five other routes have launched, including 34th Street and 1st and 2nd Avenues in Manhattan, Nostrand Avenue in Brooklyn, Webster Avenue in the Bronx, and Hylan Boulevard in Staten Island. A seventh route, along 125th Street in Harlem and travelling to LaGuardia, will begin in 2014.

By the end of 2013, these SBS routes will serve 215,000 bus riders daily and lay the groundwork for a more extensive five borough bus rapid transit network.



Community planning for Select Bus



98%

of riders satisfied
with Fordham Road
Select Bus Service

Fordham Road Bus Service

The Fordham Road-Pelham Parkway Bx12 Select Bus Service (SBS) replaced Bx12 Limited service from the Inwood neighborhood in Manhattan to Co-Op City in the Bronx in June 2008. New York City's first SBS route, the Bx12 SBS offers transfer opportunities to all of the subway lines and Metro-North lines in the Bronx as it travels east-west through the borough.

The project resulted in 20% improvement in travel times, with 98% of riders "satisfied" or "very satisfied" with the service. The new route experienced a 10% increase in ridership.

23%

decline in bus travel
times along 34th
Street

34th St Select Bus Service

The 34th SBS project improved traffic, transit speeds, pedestrian safety and curb access on a corridor that extends for two miles from the 34th Street Ferry Terminal on the East River to Twelfth Avenue. 34th Street is a key transit corridor, accommodating over 33,000 bus trips a day.

The 34th St SBS project has been implemented in phases. Bus lanes were implemented first in 2008, followed by more extensive sidewalk improvements.

Since initial improvements in 2008, bus travel times on 34th Street have declined 23% or by over 7½ minutes, and ridership is up over 12%.





10%

increased ridership
on the M15 Select
Bus

1st/2nd Avenues Select Bus Service

NYCDOT and MTA/ NYC Transit launched Select Bus Service along First Avenue/Second Avenue SBS (M15 SBS) in October 2010 serving riders between South Ferry and 125th St. The project was implemented in phases—off board fare collection machines and red bus lanes were installed first, followed by transit signal priority and the construction of 12 bus bulbs along the corridor in 2013. This route was the first to have bus enforcement cameras to help keep lanes clear. A separated bicycle path was implemented concurrently along portions of the corridor greatly improving safety for all users.

This service has since increased ridership on the M15 by 10% and improved speeds by 15 to 18%. Further, as part of the project, offset and curbside bus lanes were paired with pedestrian and bicycling safety enhancements. For those sections with the full treatments, we've seen a 21% decline in traffic injuries.



MOBILITY

Select Bus Service in the Bronx, Manhattan and Staten Island has improved local and express bus travel time and reliability, traffic flow at congested intersections, and enhanced safety for all corridor users



BEFORE: Webster and Tremont Ave.



AFTER: Webster and Tremont Ave.

Hylan Boulevard Select Bus Service

S79 SBS started in September 2012, connecting Hylan Boulevard, Richmond Avenue, and Bay Ridge, Brooklyn. The project improved local and express bus travel time and reliability, traffic flow at congested intersections, and safety for all corridor users. As part of the study, DOT and NYCT analyzed through and turning traffic on the corridor, surveyed parking activity, analyzed

transit ridership, surveyed local merchants and conducted extensive public outreach for feedback from stakeholders. The project corridor includes bus lanes in certain areas, including two miles of bus lanes to the Verrazano Bridge, extended medians, and transit signal priority. Travel times have improved by 12% since SBS was introduced.

Nostrand Avenue Select Bus Service

The Nostrand Avenue SBS project extends 9.3 miles across Brooklyn from Sheepshead Bay to Williamsburg and offers a cost-effective way to improve bus service for 44,000 daily riders. The project includes dedicated bus lanes, transit signal priority, construction of bus bulbs, and off-board fare collection. These improvements will reduce travel time and attract additional riders who currently avoid bus service due to slow speeds and a lack of reliability. The service started in November 2013.

Webster Avenue Select Bus Service

Webster Avenue is a major residential and commercial corridor in the Bronx, yet it has been underserved by transit, with most of the corridor a long walk from the subway. MTA and DOT identified this project due to high ridership on existing bus routes—serving 69,000 trips a day—and community support. After an extensive public engagement process, the project was implemented in June 2013.

PROJECTS

Additional Bus Priority Projects

Elements of the bus rapid transit, such as painted bus lanes and traffic signals that speed buses through traffic, have also been used to improve bus service in selected corridors throughout the city including the ones listed below.

LaGuardia Airport Access

DOT worked with the MTA to help plan the new Q70 bus. The new limited service speeds trips to the airport from Jackson Heights and Woodside commuter and subway stations by up to 40%.

Livingston Street

Through the addition of upgraded bus lanes and signal changes, DOT and MTA improved bus speeds 12%-14% along this corridor in Downtown Brooklyn.

Jamaica

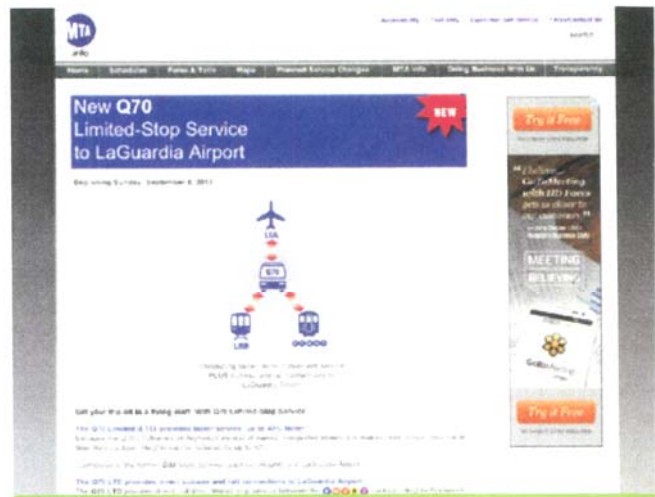
DOT worked with MTA to improve and extend bus lanes along Archer and Jamaica Avenues, realign intersections, move bus stops and change parking to improve bus speeds and reliability.

Queensboro Bridge

Operational changes on the Ed Koch Queensboro Bridge made travel between the boroughs quicker and more efficient. These included reconfiguring 60th Street to provide additional bus lanes and stops, and changing signal timing to reduce pedestrian and bus conflicts.

Utica Avenue

DOT and NYC Transit are planning the addition of bus lanes from St Johns Ave to Church Ave, and the addition of signal changes including transit signal priority.



Q70 information on mta.info

15%

fewer obstructions
in bus lanes with
enforcement
cameras

Transit Signal Priority

Transit signal priority (TSP) gives precedence to buses at traffic lights. By keeping signals green or turning them green when buses approach, TSP speeds buses through traffic and improves travel time for riders. By allowing buses to move at a more consistent speed, TSP reduces times a bus has to stop and accelerate. In turn, fuel consumption and emissions reduction savings are achieved.

Transit signal priority is part of Select Bus Service routes, but the technology has the ability to be more widely used, and speed buses on routes throughout the city. In addition to SBS routes, NYCDOT has worked with the MTA NYC Transit to install TSP on three corridors with a goal of reaching at least 17 routes—including SBS—in all five boroughs. Along Victory Boulevard in Staten

Transit signal priority along Victory Blvd in Staten Island reduced travel time by 16% during the morning rush

Island, a TSP test on 300 buses successfully cut travel time by 16% during the morning peak and 11% during the evening peak. The program was funded by the US Department of Transportation and supported by the Staten Island Borough President's Transportation Task Force. In fall 2012, NYC Transit started a TSP pilot on 50 buses along the M15 Select Bus Service route on 1st and 2nd Aves.

Widespread application of TSP has the potential to greatly improve bus service throughout the five boroughs, with limited cost and physical infrastructure.

Bus Lane Enforcement Cameras

Enforcement of bus lanes is necessary to keep bus lanes clear and buses moving quickly. To supplement NYPD officers, the city sought state legislative approval for enforcement cameras.

In summer of 2010, New York City and the MTA were given authorization to begin operating a camera-based bus lane enforcement system. The legislation allows camera-based enforcement on specifically named Select Bus Service (SBS) corridors, six in total, and also names specific restrictions regarding the time, day of week, and methods of enforcement. Based on this authority, the City and

the MTA initiated implementation of a camera-based enforcement system beginning in November, 2010. 1st and 2nd Avenue was the first route to receive the cameras, with 34th St and Fordham Road and Hylan Boulevard following. The city is currently authorized to install them along Nostrand Ave and another unnamed route in Queens. People driving in bus lanes receive tickets of \$115.

The bus cameras have worked to keep buses moving. In bus lane segments where cameras were installed, bus lanes were obstructed 15% less than segments without cameras.

Bus Lane Enforcement

5 Things You Should Know About New York City Bus Lanes

www.nyc.gov/brt

NYC 311

MTA

New York City Transit





SELECT BUS SERVICE PHASE II

- IMPLEMENTED
- PLANNED BRT PHASE II



NYC DOT

NYCDOT identified dozens of potential bus rapid transit corridors, and with NYC Transit, selected 16 routes for implementation

Planning for Bus Rapid Transit

In 2009, once planning was underway for the initial five Select Bus Service projects, NYCDOT and MTA launched a citywide planning process to map out the next round of bus rapid transit routes. MTA and NYC Transit identified over 30 potential corridors for bus service improvements based on proximity to existing transit, potential population growth areas, subway and bus crowding, and difficult trips. The agencies then held seven workshops with over 300 people to solicit additional feedback. In the workshops, 74% of survey respondents said that they supported implementation of BRT in New York City. The agencies then narrowed the list down to 16 priority corridors.

30 BUS RAPID TRANSIT CORRIDORS

The Bronx

- Fordham Road
- Webster Ave/Third Ave
- South Bronx/East West Corridor (Hunts Point/Soundview)
- Bruckner Expressway
- Major Deegan Expressway

Brooklyn

- 14th St
- Utica Ave
- Southern Brooklyn East West Corridor
- Bushwick to Downtown Brooklyn
- Flatbush Ave
- Central Brooklyn East West Corridor
- Williamsburg East River Waterfront
- Gowanus Expressway

Manhattan

- 14th St
- 1st/2nd Ave
- 125th Street Crosstown Corridor
- Upper West Side/Upper East Side Crosstown Corridor
- 14th Street Crosstown Corridor
- West Side Corridor

Queens

- DeGraw/25th Ave to East Elmhurst
- Manhattan to Northern Blvd
- Hillside Avenue Corridor
- Jamaica to Flushing
- Woodhaven Blvd

Southeast Queens

- Middle Village
- Utopia/Fresh Meadows
- Long Island Expressway
- Long Island City East River waterfront

Staten Island

- Hylan Boulevard
- North Shore
- West Shore
- Staten Island Expressway

- █ IMPLEMENTED
- █ PLANNED BRT PHASE II
- █ OTHER POTENTIAL ROUTES

10081-174

Community Advisory Committees are crucial to designing and planning Select Bus Service

Community Advisory Groups

Community boards, civic groups, and the public are heavily involved in the planning process for Select Bus Service routes. Each SBS route has involved dozens of meetings with stakeholders, along with walk-throughs and focused workshops to develop community based solutions to particular challenges along a route. Part of the public engagement process includes the creation of a Community Advisory Committee (or CACs) to allow a more detailed discussion of the proposal and address traffic, street design, commercial delivery and other issues along a corridor. CACs generally include representatives from community boards, elected officials offices, business associations, and civic groups.

The public process for the Webster Ave Select Bus Service in the Bronx led to a more aggressive

and better project. Members of the Community Advisory Committee brought up pedestrian safety concerns during meetings with the NYCDOT and NYCTransit, especially at the intersection of Webster and Tremont Avenues. These concerns reinforced DOT's data that showed this intersection as a high crash corridor in the Bronx. In response to community suggestions, DOT's transit and pedestrian safety groups worked together to redesign the Webster Tremont intersection to add additional pedestrian amenities including the addition of two pedestrian refuge islands, the closure of a slip lane, extension of the sidewalk to shorten crossing distances. Thanks to community involvement through the Community Advisory Committees, DOT was able to design a project that addressed transportation challenges in a more holistic way.



Community Advisory Committee

10/26/2014

REGULATING INTERCITY BUSES

The intercity bus industry has grown significantly over the last fifteen years, becoming an increasingly popular option for people traveling into and out of New York City. While such buses provide good, efficient, intercity transportation, they can cause serious disruption to the local traffic network through increased congestion and abuse of the city's curbside spaces. NYCDOT had

attempted to limit the negative impacts of intercity buses by working closely with operators to designate locations where buses can pick up and drop off passengers. Unfortunately, this system was voluntary and NYCDOT had no authority to prevent intercity buses from pulling up to almost any curb space. Communities and elected officials, especially in Midtown, were increasingly

frustrated with sidewalk and traffic congestion that resulted from certain bus stops.

In 2012 and 2013, the city worked with state elected officials to pass legislation that would give the NYCDOT new powers to regulate the intercity bus industry. The law sponsored by New York Senator Martin Golden and Speaker Sheldon Silver granted the City of New York authority to

set up a permitting system for intercity bus operators. Through a formal online application process, NYCDOT now designates bus stops for all intercity buses, limiting disruptions to the local transportation network.



Megabus Northeast, LLC pick up stop at seventh avenue and 28th St



Eastern Coach Inc. Pick up stop at Seventh Avenue and 33rd St



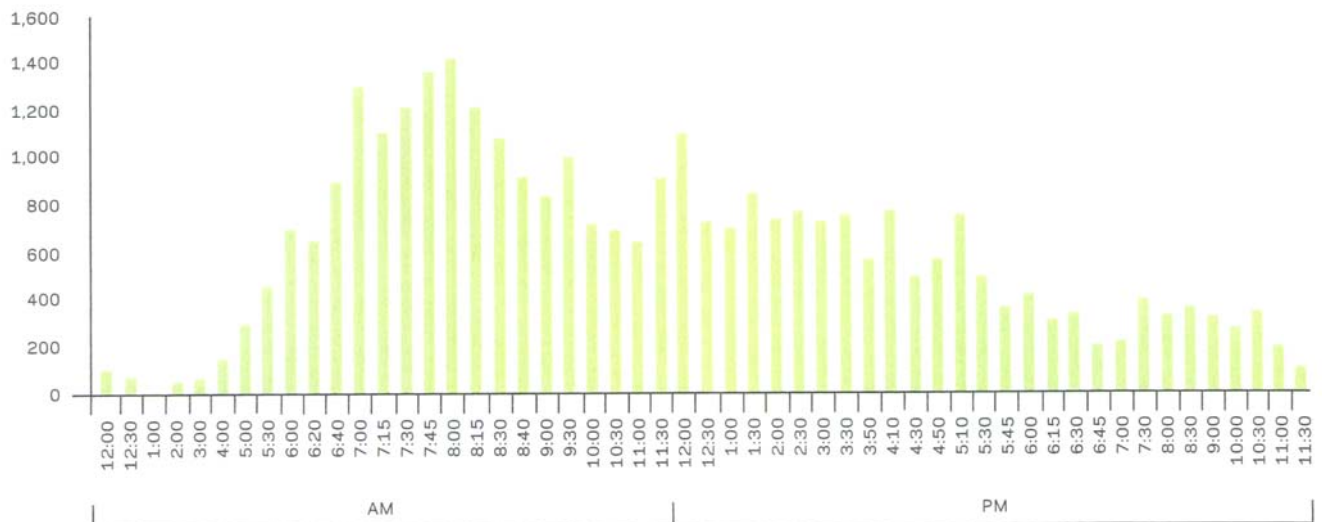
Chapter 6 A City of Rivers and Islands

New York is a waterfront city and a city of islands. As a result, ferries have always played a critical role in moving people and goods around the five boroughs. Today, the Staten Island Ferry, which carries 22 million people annually between Manhattan and Staten Island, is the largest commuter ferry route in the country, and ridership continues to grow.

In the last several decades, a robust network of privately-operated ferry services has also been established in New York City. The services carry Yankee fans to the Bronx, commuters to New Jersey, tourists to the Statue of Liberty and Ellis Island, and beachgoers to the Rockaways. Over the past five

years, the city has worked to encourage and expand the use of our waterways for commuter and recreational transportation. In 2011, Mayor Bloomberg and the City Council released Vision 2020, the New York City Comprehensive Waterfront Plan which called for improving waterfront transportation and access to the waterfront. In addition to this long-term vision, the Mayor and Council also released the Waterfront Action Agenda, a series of 125 near term initiatives to make the most of our waterways. Expansion of ferries was a key element of both plans.

STATEN ISLAND FERRY 24-HOUR WEEKDAY RIDERSHIP, STATEN ISLAND TO MANHATTAN



FRIDAY JUNE 24, 2011



MOBILITY

STATEN ISLAND FERRY

STATEN ISLAND FERRY ON TIME PERFORMANCE

% ON TIME	FY 2011	FY 2012	FY 2013
	91%	89%	89%

NYCDOT operates and maintains the nine Staten Island vessel fleet as well as the St. George Ferry Terminal on Staten Island, Whitehall Ferry Terminal in Manhattan, the City Island and Hart Island Facilities, and The Battery Maritime Building.

Service on the Staten Island Ferry is free and runs 24 hours a day, in 15 minute intervals during rush hours. It is the only non-vehicular transportation between Manhattan and Staten Island. The ride is a vital commuter service for millions of New Yorkers, but the 5-mile, 25 minute ride also provides a majestic view of New York Harbor for tourists from all over the world. Staten Island Ferry ridership

reached an all-time high in 2012, serving 22 million people, and ridership continues to grow. The agency has been successful at keeping service reliable despite declining city resources. Finding innovative ways to use state and federal resources, the agency has been able to plug holes in the city budget and keep boats running frequently and on-time. At the same time, it has kept on time performance steady and found ways to green the ferry fleet. Chapter 16 of the Infrastructure section below details agency's efforts to make the Staten Island Ferry fleet one of the greenest in the nation.

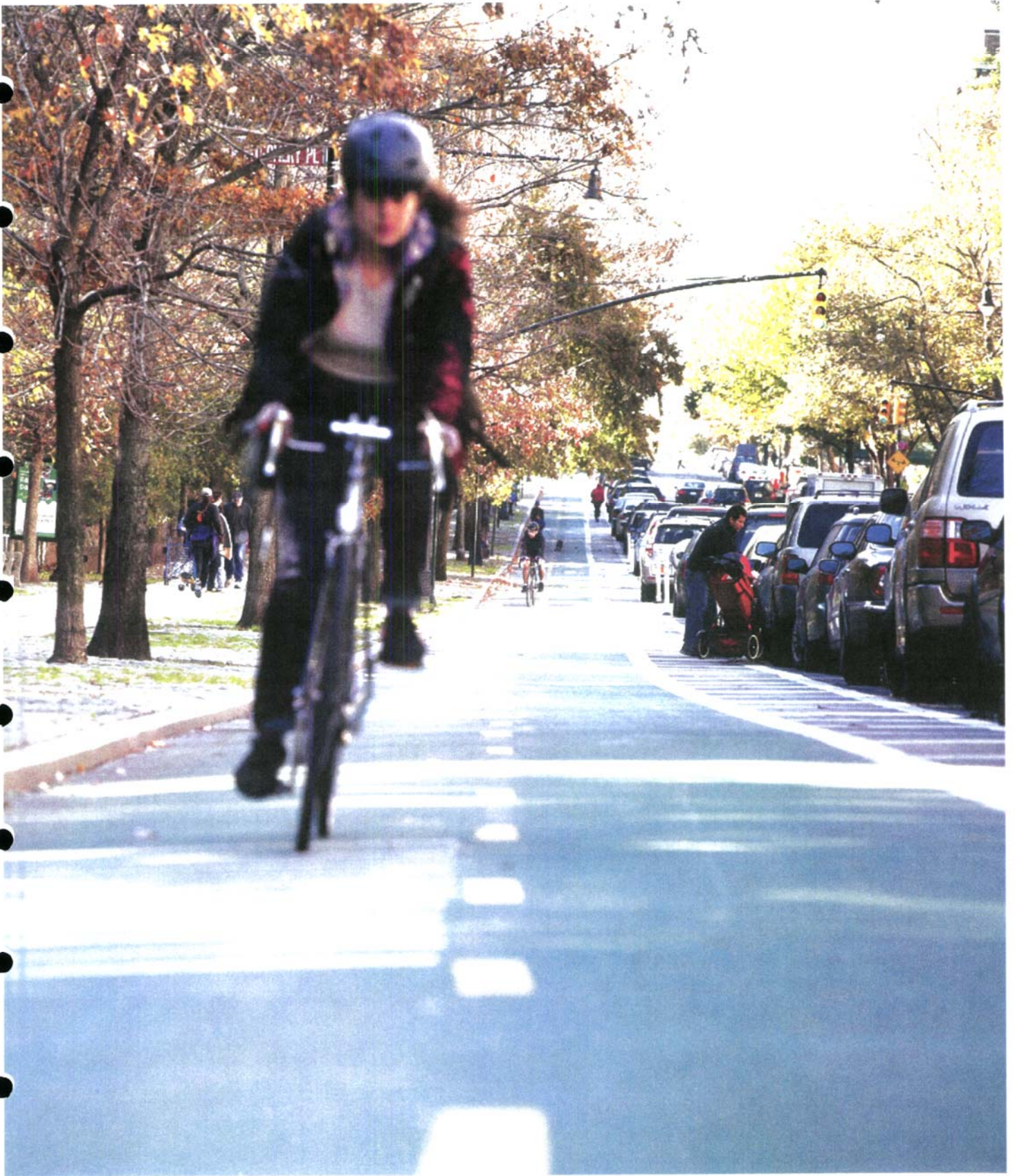
EAST RIVER FERRY

Started in 2011, the East River Ferry commuter service has been wildly successful and offered a new transportation option for waterfront neighborhoods. The service, which connects Long Island City, Greenpoint, North and South Williamsburg and DUMBO with Downtown and Midtown Manhattan, has significantly outperformed the City's original expectations. In May 2013, the service recorded its 2 millionth rider, more than twice the ridership that was projected for the full three-year pilot period that ends in the summer of 2014. Summer ridership increased 43% from the summer of 2011 to the summer of 2012. The East River Ferry has proven so popular that in May 2012, the City announced that larger boats—carrying as many as 399 passengers per trip—would be added to the East River Ferry fleet.

The city is working to find a long term operator for the ferry service to make it a permanent option for New Yorkers.

The East River Ferry is managed by the city's Economic Development Corporation, but DOT plays an important role in siting ferry docks and improving access to the service. Safety improvements at the India Street pier in Greenpoint and traffic calming and pedestrian improvements on Old Fulton St in DUMBO and Brooklyn Heights ensured safe passage to ferry landings. The initial roll out of DOT's CitiBike system included stations at four of the seven East River Ferry landings and the remaining three ferry landings will receive CitiBike stations in bike share's next phase. Additionally, CityRacks have been placed at all ferry stops.

Left:
The launch of the Senator John J. Marchi vessel



Chapter 7

Streets for All: Improving Choices for Short Trips

365
miles of new bike
lanes since 2007

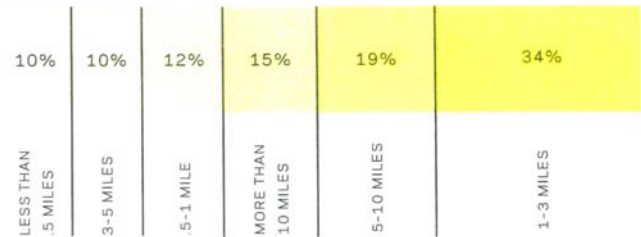
New York City is ideally suited to walking and cycling. The city's dense design means many trips are short. Of auto trips in New York, 10% are under one-half mile, 22% are under one mile and 56% are under three miles—distances that can easily be covered on foot or on a bike. Shifting even a small number of these trips to bicycles or walking results in significant benefits.

Cycling and walking have clear health and environmental benefits, and also create broad mobility gains. Making cycling viable and walking more attractive adds choice to the transportation menu, and can dramatically increase the utility and flexibility of public transportation for city dwellers. PlaNYC and *Sustainable Streets* laid out clear goals for bringing cycling into the transportation mainstream. A very strong emphasis on public health, traffic safety and an improved public realm by the Bloomberg Administration also put the pedestrian at the center of transportation and streetscape planning, constituting a comprehensive pro-walking strategy for the entire city.

New York City has made dramatic strides in creating modern, safe streets that are attractive for cycling and walking. At the core of this progress are programs to overhaul the design of streets so they are more balanced and inviting for all users. This work re-made dangerous intersections, opened new walking routes, helped pedestrians and cyclists orient themselves and created a cycling network that connects the city. Since 2007, NYCDOT has created over 350 miles of bike lanes and launched the largest and most heavily-used bike share system in the Western Hemisphere. To address a further barrier to bicycle transportation, DOT has added 16,000 bicycle parking racks to City streets, and begun to transform 12,000 old parking meter poles into additional bike parking.

With the City Council, DOT defined and enacted a groundbreaking office building bike parking program that DOT administers.

CAR JOURNEY LENGTHS, NYC



The results have been staggering. Cycling has become much safer and attractive for people of all ages. The city reached its *Sustainable Streets* goal of doubling DOT bike counts on commuter routes from 2007 to 2012 in 2011, a year early. Until recently few children and older adults were seen riding bikes in New York. Now bike paths and protected bike lanes are enjoyed by families and cyclists of all ages and abilities. As described in depth in the Safety Section, there was a 73% decrease in the average risk of a serious injury while bicycling in New York between 2001 and 2011.

New plazas, pedestrian wayfinding maps, public seating and the broad range of safety and traffic calming improvements described in the chapters above on public safety have provided a broad improvement in the space and safety afforded to pedestrians. Innovative projects like Broadway Boulevard/Greenlight for Midtown, 6.5 Avenue and the remake of streets around Brooklyn's Grand Army Plaza have made walking routes more direct, generated new foot trips and improved safety.

63%

increase in bike
volumes on 9th
Avenue since 2007

CYCLING

Where it was a fairly intimidating place to bicycle just a few years ago, New York City has become the most bike-friendly big city in America. New Yorkers voted with their pedals for the increasingly interconnected bike lane network and the design innovation that created protected bike lanes on major avenues. CitiBike removed additional barriers for those who face problems storing or parking their own bikes, and has fully unlocked New York's potential as a cycling city.

New York City's density, interconnected street networks and flat terrain have always given it the potential to be an ideal bicycling city. PlaNYC and Sustainable Streets were both crystal clear in their intentions to finally leverage this latent advantage. The policies said clearly that city streets would become increasingly welcoming to bicycles—PlaNYC set the goal of adding 200 miles of new bike lanes within three fiscal years, while Sustainable Streets looked ahead to a doubling of documented bicycle volumes on key routes.

To help spur cycling, NYCDOT's strategy has been to develop bike lanes as a network that is useful for the trips New Yorkers need to make, rather than tucking disconnected bike lanes away in disparate areas. Much of the post-2006 network improvements were initially focused in the lower half of Manhattan and the northern half of Brooklyn where cycling rates were relatively high, where it was plausible that additional people would respond to improved cycling conditions. Tremendous increases in cycling volumes in these areas in 2007–2009 supported the strategy. DOT was subsequently able to expand the network on this basis of very strong usage and response. In more recent years, very strong additions have been made to the network across the City, including the South Bronx, Midtown Manhattan and Western Queens.

Design innovation has been a critical factor in making the cycling network attractive to more people. In 2007, NYCDOT pioneered the practice of protecting bike lanes by setting them off from



moving vehicle traffic with "floating" parking lanes that were no longer located along the physical curb. Manhattan's 9th Avenue saw the first of these projects, which also features a bicycle signal phase where cross-streets turned across the bike lane. The 9th Avenue approach quickly won acclaim—including the Institute for

 MOBILITY

In corridors like Kent Avenue and Prospect Park West, weekday bicycle use has tripled

 INDIVIDUAL 2011 PROJECT GENERATED CYCLING GROWTH IN 2012

STREET	BEFORE	AFTER	CHANGE
W.29TH STREET	258	371	44%
W.30TH STREET	260	339	30%
FIRST AVENUE	583	1072	84%
SECOND AVENUE	842	1286	53%

Transportation Engineers' Transportation Planning Council's Best Program award in 2008—and was expanded to other streets and avenues.

The protected lanes helped fuel substantial growth in cycling. Bike volumes on 9th Avenue are 63% higher than before the new bike lane was implemented in 2007. Wide avenues, like 1st, 2nd, 8th and 9th Avenues in Manhattan that were previously inhospitable to bikes now have a steady flow of cyclists of all ages using the protected lanes. As of summer 2013, there were 30 miles of protected bicycle lanes in New York, with additional miles such as Vernon Boulevard along the East River in Queens still undergoing implementation.

Additional bike-friendly design innovations are extensive. The protected design was adapted to two-way bikeways or interim greenways in "edge" environments such as waterfronts and park boundaries where the volumes of crossing traffic are low. In such corridors, like Kent Avenue and Prospect Park West in Brooklyn weekday bicycle use has grown by nearly 300%. DOT has also made extensive use of the buffered lane design (extra width for safety) that it pioneered as long ago as the 1990s, and has introduced short contra-flow bike lane and shared bike-pedestrian space segments to make key network connections. Extensive use of "bike boxes" gives cyclists more room at intersections.

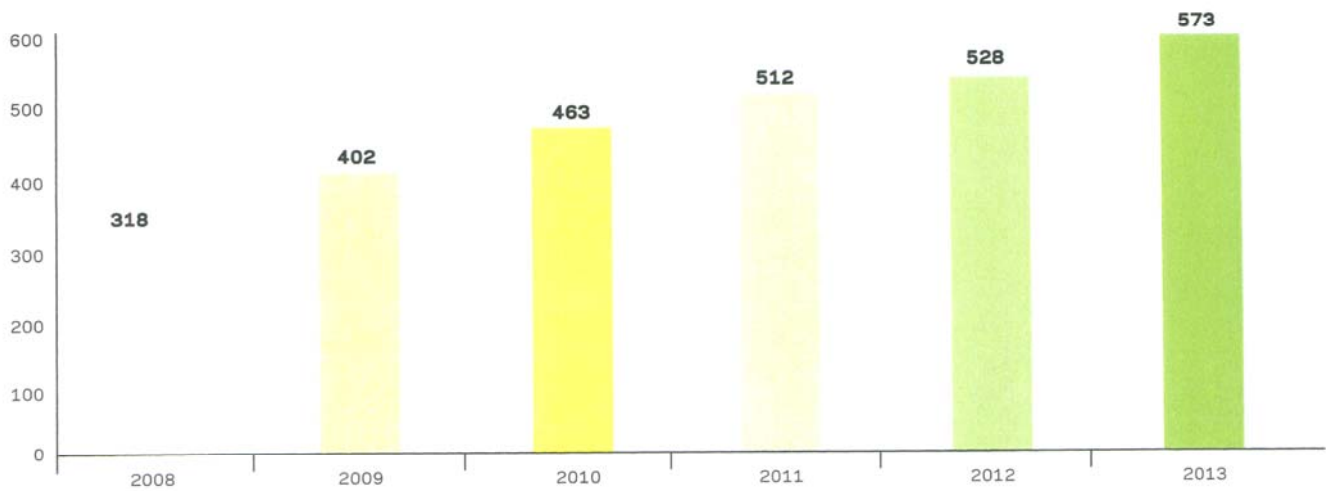
In total, NYCDOT has added over 350 miles of new and enhanced bicycle routes from 2007 to 2013, and our steady pace of expansion continues. DOT reached its strategic goal of doubling bike commuting in five years, a year early. In 2013, the tremendous response of New Yorkers to Citi Bike calls for revisiting the City's cycling targets, revising them substantially upward and harnessing them to bike-sharing expansion strategy.

The rapid expansion of bicycle lanes generated much discussion and media coverage, but public opinion polls have consistently shown very strong support for bicycle lanes and for the Citi Bike program. The latest poll, by the New York Times in August 2013, found 64% of New Yorkers backing expansion of bike lanes, with strong support from many backgrounds, boroughs and political leanings. Support for Citi Bike has registered in the mid-seventies.

DOT has also improved and simplified the realm of bicycle parking. Working with Cooper Hewitt Design Center and cycling groups, DOT launched a design competition for a new type of City-provided bike rack, and received over 200 submissions from around the world. The winning design is now seen throughout the city. Approximately 19,000 total City-provided racks have been installed to date. NYCDOT is now dramatically accelerating the provision of on-street bike parking facilities by converting old parking meter poles into

MOBILITY

GROWTH OF NYC'S ON STREET CYCLING NETWORK



bicycle racks, targeting installation of 12,000 “meter racks” by 2015.

To add further to bike parking capacity, which is outstripped by demand in many places, DOT in 2012 launched an application-based program for bike “corrals” for businesses interested in accommodating cycling customers. The corrals are multi-bike-rack installations situated in parking lanes rather than sidewalks. Over 30 have been installed, with more to come. The program is designed to give community boards input in the installation location. In other areas, DOT, in coordination with our street furniture franchisee, Cemusa, has installed bicycle parking shelters. Each shelter contains stainless steel bike racks for

eight bikes. The design closely resembles the city’s bus shelter, using the same high-quality materials. Panels on the shelters display the annual NYC Cycling Map and other cycling materials. Under the current contract, 36 will be installed.

The city also worked with the City Council in 2009 on legislation that increases bike parking in private garages and office buildings. Under the new laws, garages that accommodate 100 or more motor vehicles are required to provide bicycle parking and office buildings must allow access or parking for bicycles upon request by a tenant. As a result, an ever-expanding set of large office buildings in the densest sections of the City now accommodate bicycle parking access.



MOBILITY

23

capital projects planned for the 14 mile Brooklyn Waterfront Greenway

ON-STREET PROTECTED BICYCLE PATHS IMPLEMENTED SINCE 2007:

1st Avenue most of East 1st St to 124th St

2nd Avenue 2nd St to 34th St, and 104th to 125th

Bruckner Blvd Bryant Ave to Concrete Plant Park Greenway

Columbus Avenue West 68th St to W110th

Grand Concourse Cortland Ave to E Moshula Parkway

8th Avenue Bank St to 56th St

9th Avenue W 16th St to 59th St

Columbia Street & Atlantic Avenue Pier 6 to Congress St

Fort Hamilton Parkway Park Circle to East 5th Street

St Nicholas Avenue Amsterdam Ave to West 163rd St

Prospect Park West Grand Army Plaza to Bartell-Pritchard Sq

Broadway Most of Columbus Circle to East 18th St

Flushing Ave Williamsburg St West to Washington Ave

East 17th Street Broadway to Park Ave South

Allen Street Division Street to East Houston Street

Pike Street South Street to Division Street

Kent Avenue Clymer St to North 14th Street

Sands Street Navy St to Jay St

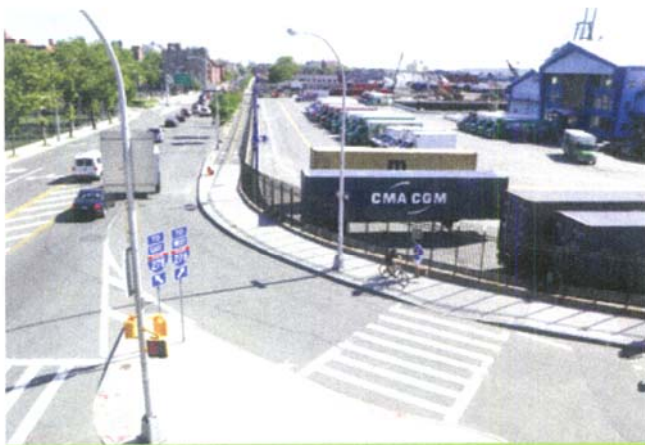
Williamsburg Street West Flushing Ave to Kent Ave

Delancey Street Median Bike Path Suffolk St to Clinton St

Park Circle Prospect Park Southwest to Ocean Parkway

Grand Street Varick St to Chrystie St

Canal Street Forsyth St to Chrystie St



BEFORE: Columbia Street



AFTER: Columbia Street

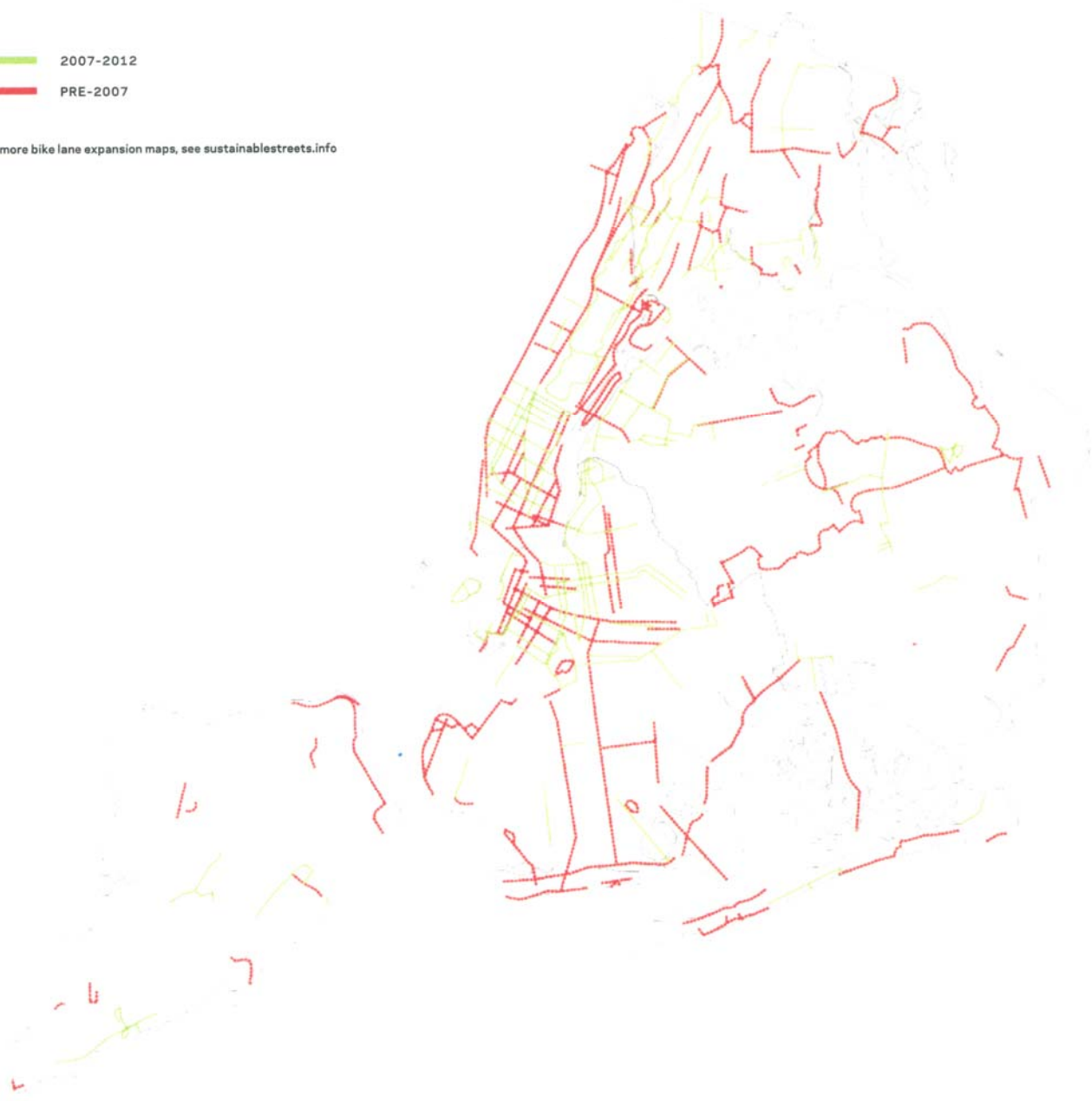




BIKE LANE EXPANSION

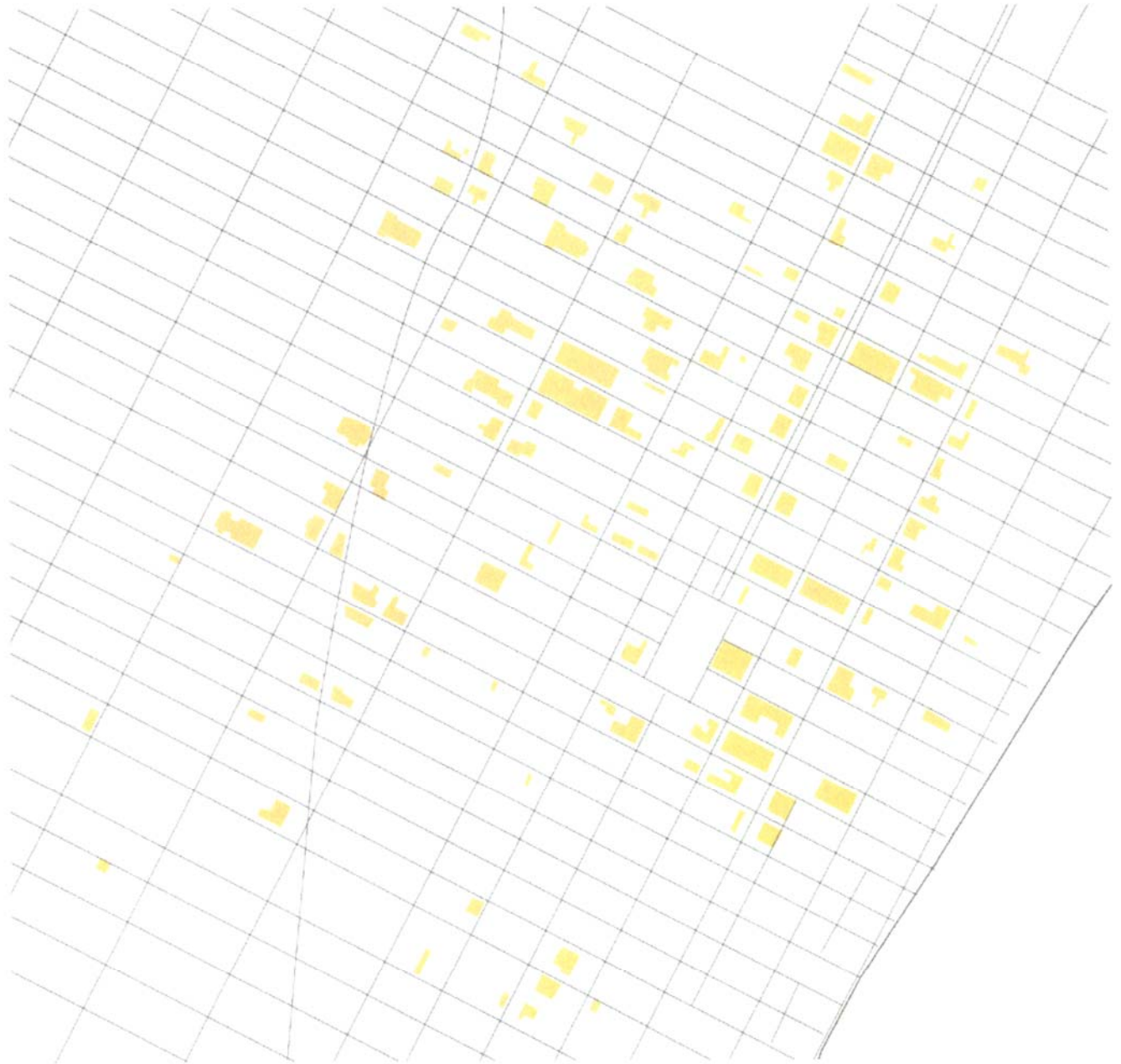
- 2007-2012
- PRE-2007

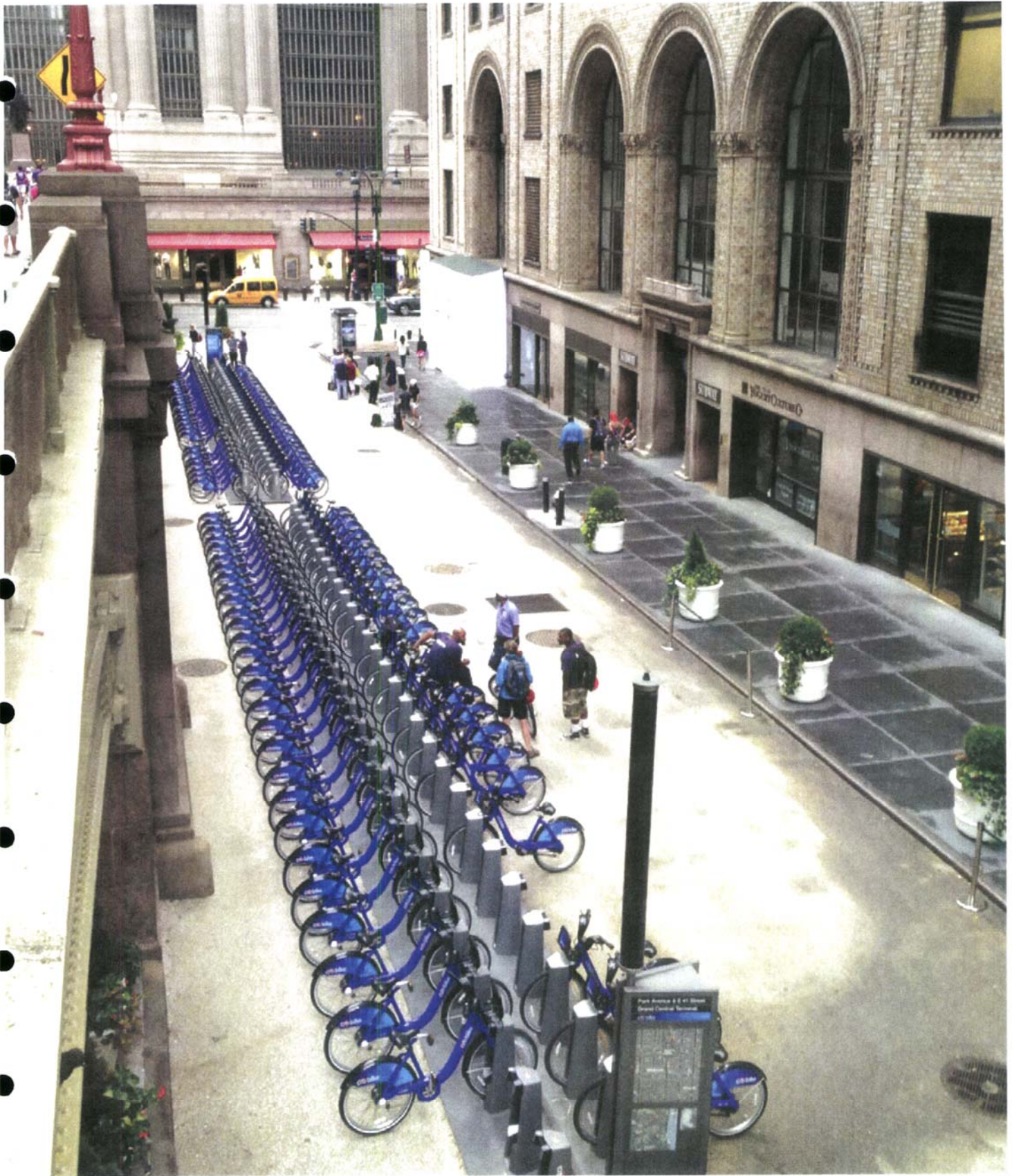
For more bike lane expansion maps, see sustainablestreets.info





BUILDINGS THAT ALLOW ACCESS FOR BICYCLISTS, MIDTOWN MANHATTAN





5

million trips in first
150 days since
Citi Bike launch

Annual members receive a “key to the City,”
allowing them to quickly unlock a Citi Bike



CITIBIKE

The launch of CitiBike on May 27, 2013 in the Manhattan Central Business District and adjacent parts of Brooklyn dramatically expanded the use of bicycles for basic transportation in the heart of the City. CitiBike has seen the most rapid uptake of subscriptions and usage of any bike share system in the world. As of mid-October 2013, just 150 days since the system's launch, the 6,000 CitiBikes had generated nearly 5 million additional cycling trips—about 31,000 trips per day on average, within a relatively compact section of the city, with this average rising over 35,000 in August, September and October. Over 92,000 people have

subscribed as annual members of the system.

Within just a few months, New Yorkers have fully integrated CitiBike into the city's transportation system. The initial network of 330 bike share stations was planned to create maximum utility within the service area, with stations scaled to match the surrounding areas and generally only 1,000 feet from other nearby stations. Some cities have spread bike share stations out and thus made bike share use less convenient than it could be. The tremendous user response to CitiBike indicates that DOT's station network planning is on the right track. Without CitiBike, users

CITIBIKE RIDERSHIP OFF THE CHARTS

AUGUST 2013	RIDES/BIKE/DAY
NYC	5.96
PARIS	5.0
WASHINGTON	4.14
LONDON	3.64

would have taken the subway or walked, with some bike share trips replacing bus and car trips. Without the bike share system, Citi Bike riders would have:

Although bike share systems across the world often have unique characteristics in terms of scale, design, pricing and equipment, one way to compare systems is by usage, examining daily rides per installed bike. By this measure,

New York's CitiBike is clearly one of the most successful and readily adopted bike share system in the world. New York's built-out bike network, with 152 bike lane-miles within the initial bike share operating area, is certainly a big part of New Yorkers' tremendous reception of CitiBike.

Modularity

45% of CitiBike users said the system allowed them to travel to new places

Daily average CitiBike ridership by month

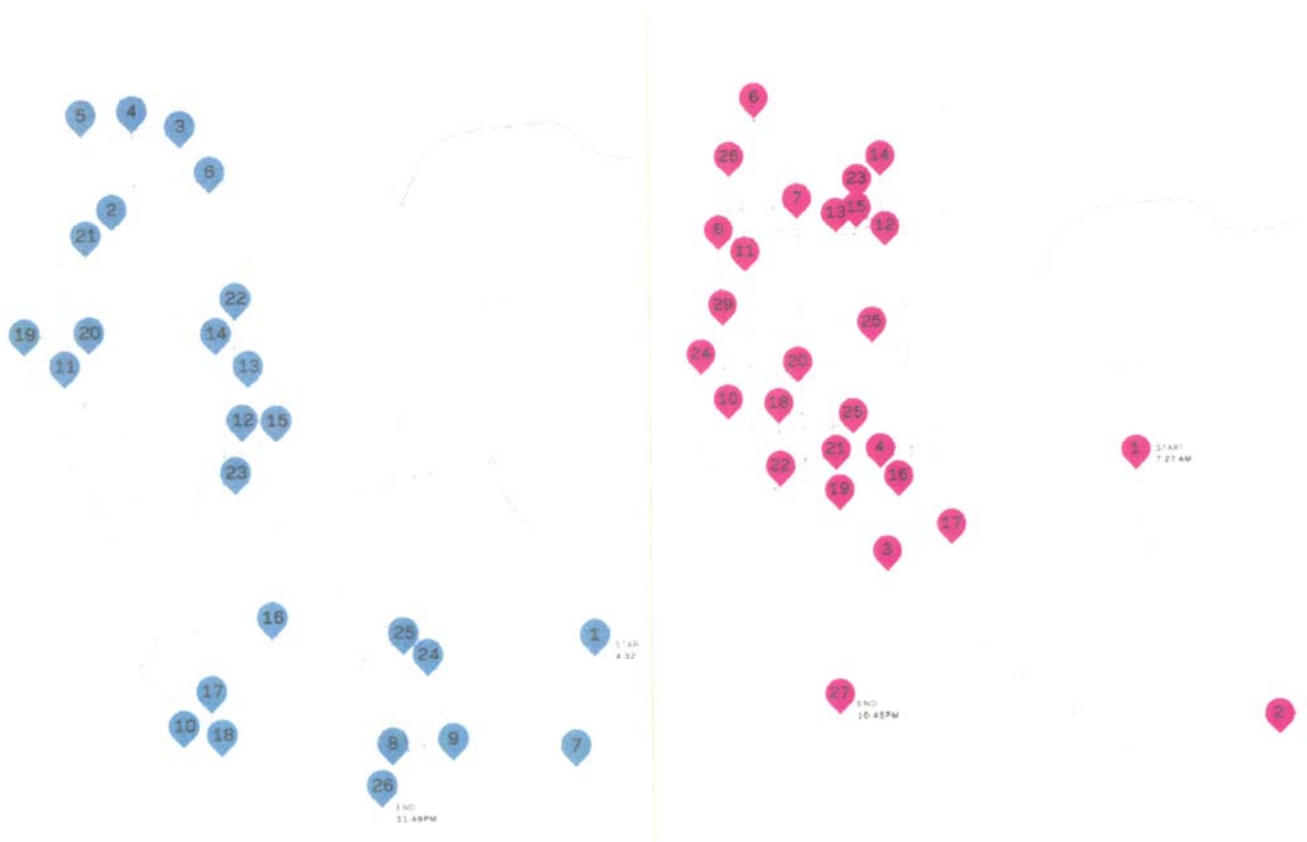
A DOT survey of over 1,000 CitiBike users from August, 2013 confirms that New Yorkers have largely adopted the system for practical transportation. It found that 46% of CitiBike trips are for work purposes, including commuting, while 28% are for errands, personal business and shopping.

53% said that they combine CitiBike travel with other forms of transportation, with nearly one-third of all respondents saying they did this "most of the time." The survey also indicated that virtually all CitiBike trips are new bike trips.

A DAY IN THE LIFE OF 4 CITIBIKES



MOBILE



Some CitiBikes are used dozens of times a day and travel the entire system territory

194

NYC Bike Share: Designed By New Yorkers



Community planning workshop to select station sites

Another key to Citi Bike's popularity is the deliberate, extensive 18-month planning process undertaken by NYCDOT and other stakeholders. Bike share lends itself to a collaborative local planning because it relies primarily on a dense network of stations rather than on the specific placement of any particular station. The planning process for Citi Bike sought and received heavy input from citizens from its inception. Beginning in September of 2011, immediately following the program's announcement, nearly 400 meetings and events were held with community boards, elected officials, civic groups and property owners to describe the program, discuss station siting and demonstrate how the system would work. NYCDOT staff conducted twenty-one field demonstrations of

bike share equipment to introduce the public to program and begin the planning process. Community planning workshops were held in each community board within the program area with the specific goal of educating about the program and eliciting feedback on where bike share stations should be placed, both generally in the New York City streetscape, and specifically on particular blocks and streets. Community members and participating community groups had the opportunity to ask questions and voice support for, or opposition to specific potential Citi Bike station locations. DOT launched a virtual planning tool to open another avenue into Citi Bike station planning. The nyc.gov/bikeshare web portal with its interactive "suggest-a-station"



DOT received 10,000 suggested station sites on its interactive map

feature garnered over 10,000 station suggestions and over 55,000 "supports" for those suggestions.

The process was inclusive and meant to draw in New Yorkers from a range of backgrounds and incomes. Bilingual meetings were held as a result of community board request. DOT worked with the NYC Housing Authority and resident advisors to help site stations near housing campuses. It also developed two discounted annual membership programs for low income New Yorkers. NYC Housing Authority and members of participating Community Development Credit Unions can receive 40% discounts on annual memberships.

After the meetings, workshops and demonstrations were completed, NYCDOT undertook the task of

synthesizing all of the feedback, suggestions and data. DOT used Geographic Information Systems (GIS) to create a predictive model outlining the size of stations for each neighborhood based on surrounding uses and transit. Using technical siting criteria, the information garnered from the public and the GIS demand model, DOT narrowed almost 3,000 potential station locations in the initial program area to just 331, which were presented back to the community boards and stakeholders as draft plans for additional rounds of feedback. DOT has worked closely with all stakeholders through Citi Bike launch as well as post-launch. In total 43% of the stations initially proposed in DOT's draft plan were moved due to additional community feedback and requests.

MOBILITY

86%

increase in winter
cycling since 2008

BETTER DATA ON CYCLING

NYCDOT has greatly improved data collection and analysis to more accurately track the growth in cycling.

DOT conducts regular bicycle counts on all roadways crossing 50th Street in Manhattan, plus the Hudson River Greenways, the Staten Island Ferry at Whitehall, and the Queensboro, Williamsburg, Manhattan and Brooklyn Bridges. The counts began in 1980 and have been conducted annually since 1984.

In 2007, DOT added two cycling counts to track cycling ridership three times a year, in May, August and September. It also started tracking cycling over an 18-hour period (6 am–midnight) during these counts. Traditionally, counts were only done for the 12-hour period from 7am to 7pm.

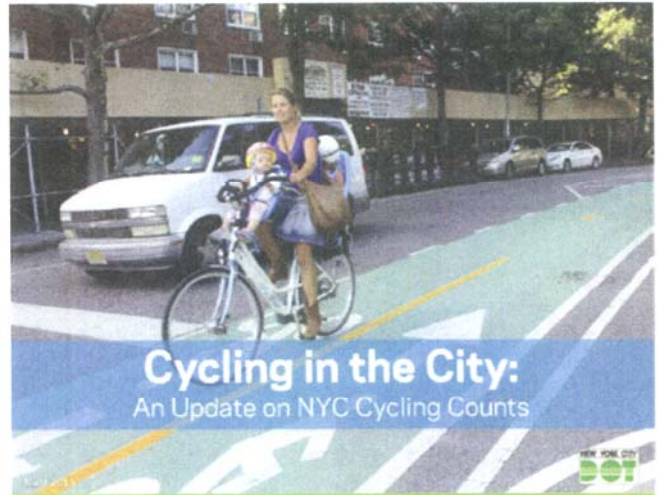
DOT also began counting cyclists in winter months in 2008. Off-season cycling has seen

significant growth—indicating that more and more New Yorkers are cycling year round as part of their transportation routine.

Individual counts have also started to track results of specific projects. These numbers show that new bike paths result in more cycling.

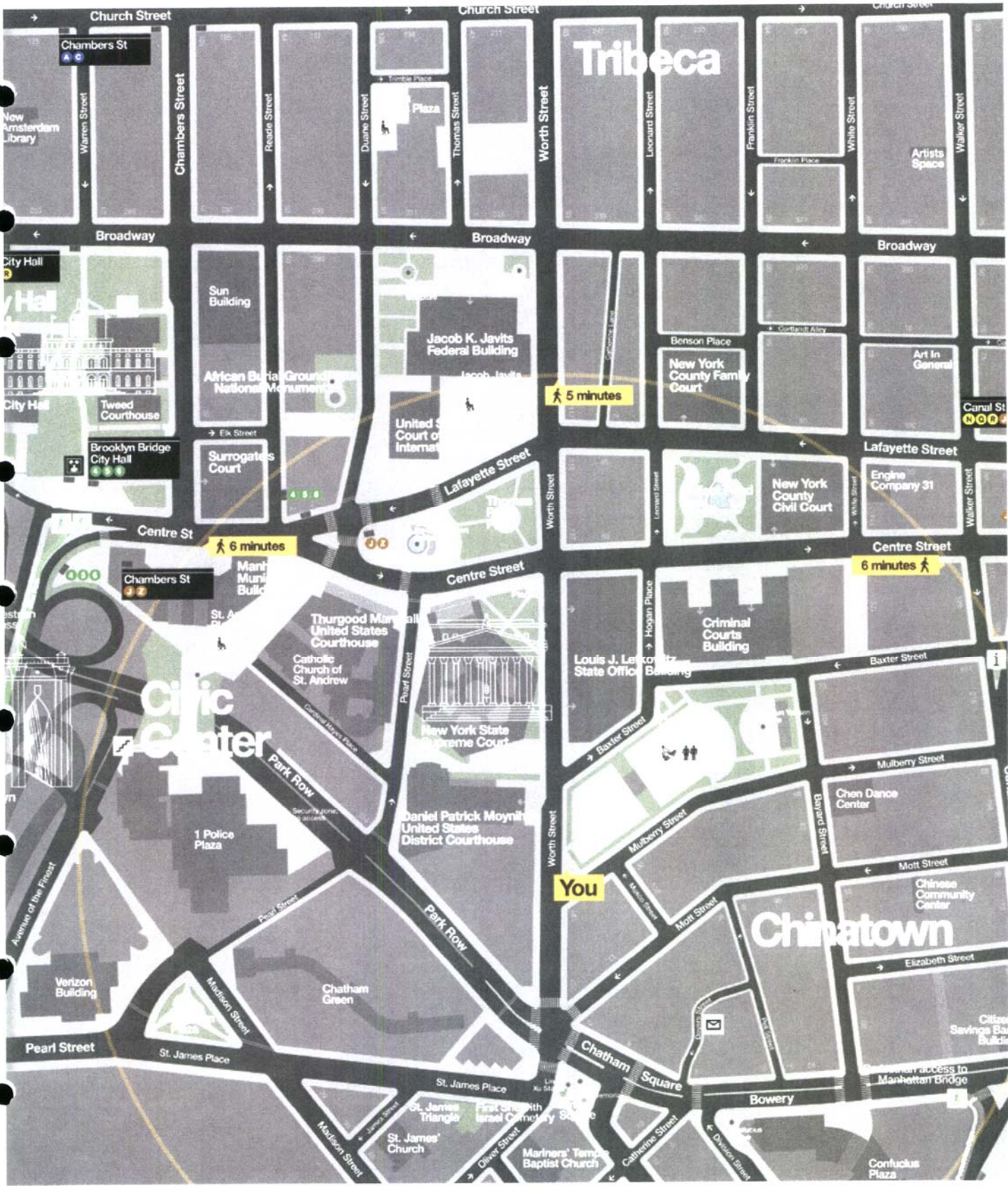
The new tracking methods allow DOT to produce the agency's In-Season Cycling Indicator and the Cycling in the City report which explains the growth in cycling with simple charts and visuals. The updated numbers also provide more accurate data for regional transportation planning documents.

As of late 2013, DOT's bike counting methods are again under revision to account for the launch of CitiBike and the millions of new cycling trips the system has added to NYC bike lanes, pathways and streets.



Cycling in the City:
An Update on NYC Cycling Counts

NEW YORK CITY
DOT



MOBILITY

NYCDOT has found walking rates in New York City are on the rise—10% of New York City residents walk to work



WALKING

Streets that welcome people and encourage walking are a crucial element of a sustainable city. Streets made for people are inviting, safe, and easy to navigate. NYCDOT has used treatments outlined in the Safety and World Class Streets sections of this book, including traffic calming, intersection engineering, signal timing, public plazas and street seating as part of a comprehensive effort to make streets inviting and attractive for walking. Additionally, NYC has developed a number of key projects designed to foster easier walking connections, and to provide information to New Yorkers and visitors alike that many trips within the City can be easily and perhaps most conveniently and quickly accomplished on foot.

NYCDOT has found walking rates in New York City are on the rise. 10% of New York City residents walk to work (2005–2007), some of the highest rates in the country (The Green Dividend, NYCDOT, April 2010). The city's pedestrian volume index (see box, next page) tracks walking rates at locations throughout the city and tracks a 12.9% increase in walking since 2007. The growth in public transit usage highlighted earlier in this chapter also points to more walking in the city—nearly all subway or bus riders start or end their trips by walking.

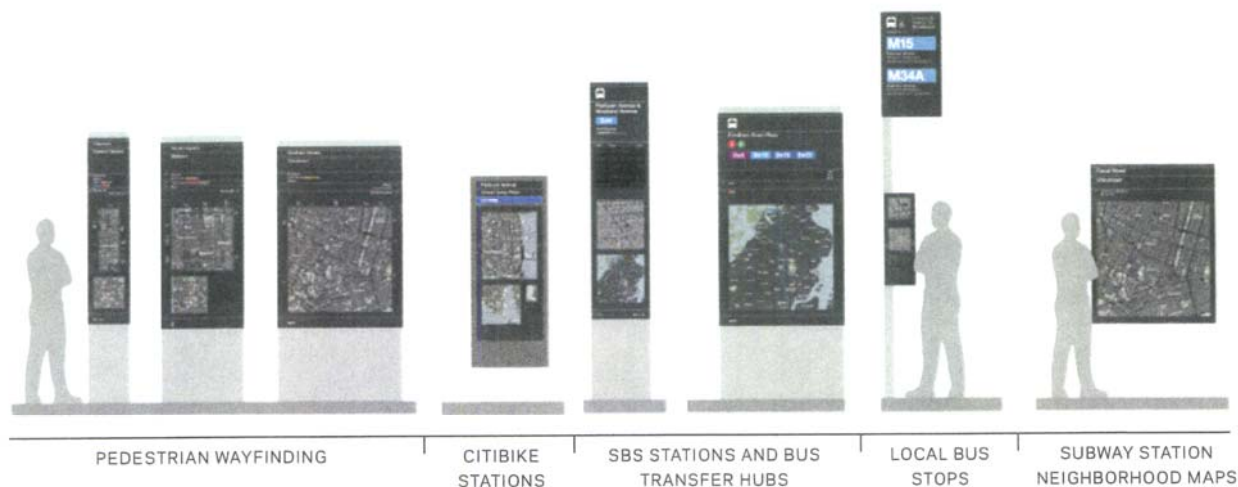
More walking is good for health, mobility and the economic bottom line. Research in the United Kingdom has found a direct relationship between the way in which people travel around city centers and the amount of money they spend. The weekly expenditure of consumers who walk was 42% higher than those who drive. (Economic Value of Livability, Todd Littman, Victoria Transport Policy Institute, 2010). Real estate in areas with above average levels of walkability command a premium between \$4,000 and \$34,000 over houses in areas with average levels of walkability. (Walking the Walk: How Walkability Raises Home Values in US Cities, CEOs for Cities, 2009).

NYCDOT research also confirms that improvements in the walking and public space environment are good for business. The expanded public and pedestrian space near Union Square resulted in 49% fewer commercial vacancies (compared to 5% more borough-wide). Pedestrian plazas and walkability improvements in Pearl Street in Brooklyn resulted in a 172% increase in retail sales at locally-based businesses, compared to 18% borough-wide.

With these numbers in mind, NYCDOT has created innovative projects to encourage walking and build a safer, easier to navigate walking network.

MOBILITY

WALKNYC WAYFINDING SYSTEM FAMILY OF ELEMENTS



Pedestrian Volume Index

NYCDOT's developed a Pedestrian Volume Index to track walking rates throughout the city and to help the city accommodate and encourage growth in walking. It also provides necessary data for DOT projects and programs, regional planning documents, and grant applications. Data collection began in 2007 and has been included in the Mayor's Management Report since 2008. The counts are conducted twice a year, in May and September, and taken at

114 locations, including 100 on street locations (primarily retail corridors), 13 East River and Harlem River bridge locations, and the Hudson River Greenway. After the data is collected, DOT indexes 50 of the locations to 2007 numbers to show growth or declines in pedestrian volumes over time.

Pedestrian and public life surveys

In addition to the citywide counts, NYCDOT has done a series of intercept studies to get a better understanding of how and why people are traveling to commercial corridors. DOT staff conducted intercept surveys at nine locations for various projects between December 2008 and November 2010. While each survey was completed for different types of DOT projects, all the surveys were designed to better understand people's behavior. The surveys were

conducted in areas with a high concentration of shopping and during peak shopping times on weekdays and weekends. For all nine surveys, respondents were asked how they got to their destination (mode) and their reason for making the trip (purpose). The study results show the importance of walking in the city, and underscore how improvements to the walking network and pedestrian environment can benefit local businesses.

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WalkNYC provides user-friendly maps including walking times to nearby destinations

WAYFINDING: WHY NOT WALK?

New York has provided ubiquitous directional signage for drivers for decades. However, few signs are oriented toward pedestrians, despite walking being the universal mode of urban travel. Pedestrian wayfinding is a navigational tool to guide residents and visitors in planning walking routes and connections to transit and other modes of travel.

Wayfinding is not simply a system that helps tourists find major landmarks. Instead, it offers a host of interconnected benefits to the life and economy of the city. Research has shown that even residents of New York do not know places as well as they think. By increasing people's real knowledge of New York City, and providing information at key locations so that it is available to people on the go, a wayfinding system can encourage people to explore their city, revealing hidden shopping streets, local attractions parks and walking routes.

DOT has developed "WalkNYC", a standard wayfinding system, to encourage residents and visitors to walk more and to explore

Many People are lost in NYC, a DOT survey found:

13% of locals are not familiar with area in which they were surveyed

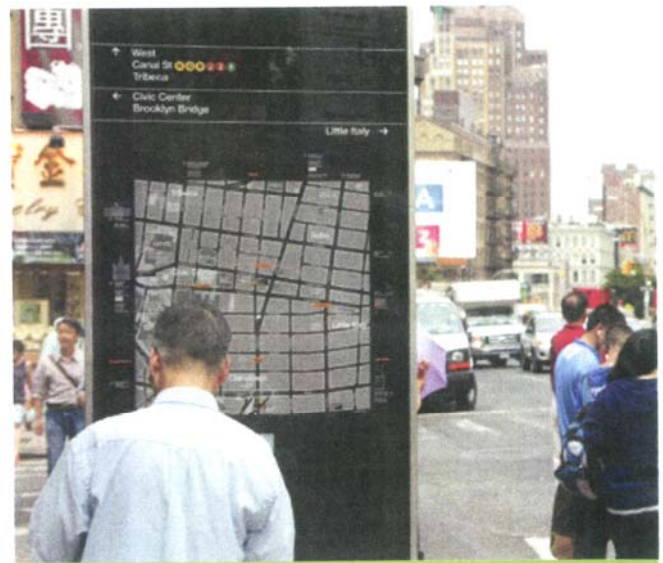
48% of visitors could not give directions to a local landmark

27% of visitors can't name the borough they are in

24% of visitors did not know how to get to their next destination

33% of visitors did not know which way north was

areas of the City that may be new to them. The attractive signs provide user-friendly maps and information, including walking times, the location of other forms of transportation, building addresses, area attractions and public facilities. The design of the signs and maps has been



Pedestrian wayfinding, Canal Street

widely acclaimed. A recent review proclaimed the system a "Feat of Design, Data and Diligence" [Mashable, Oct. 24 2013]. The design draws text and color from ubiquitous NYC Subway signage, adopting a look already familiar to users of transportation in City, and extends it. The initial roll out of wayfinding signs and maps in 2013 included Chinatown, the 34th Street/Herald Square area and Garment District in Midtown,

Prospect and Crown Heights and Long Island City, with the goal to expand to neighborhoods across the city.

The WalkNYC maps have also been incorporated into the Citi Bike station design, and will be found in additional parts of the City as the bike share program expands. DOT is also working with the Metropolitan Transportation Authority (MTA) to develop a Select Bus Service (SBS) wayfinding signage in transit stops.



RESULTS

6 1/2 AVENUE

DOT created a new pedestrian avenue in the heart of Midtown called 6 1/2 Avenue to encourage more New Yorkers to walk and to decongest busy avenues. The route takes advantage of existing plazas at the bases of buildings between 51st and 57th Streets and 6th and 7th Avenues, known as Privately Owned Public Spaces (or POPS), and includes the addition of new crosswalks, signage, and traffic interventions.

The POPS that comprise 6 1/2 Avenue were created between 1984 and 1990 and include commercial, hotel and residential buildings, with public spaces ranging from open plazas and atria to wide lobbies and enclosed corridors.

In 2011, Manhattan's Community Board 5 requested that DOT study the possibility of pedestrian crosswalks to link these disconnected spaces. A

DOT analysis found up to 1,200 pedestrians an hour already crossing 51st Street alone at midblock without the benefit of crosswalks, passing from between parked trucks and other vehicles.

The new crossings shorten trips eliminating the need for pedestrians to travel back and forth to the main avenues to reach midblock locations, without affecting traffic. At each crossing the sidewalks were extended using

crushed gravel and furnished with benches in some locations, further establishing them as pedestrian areas. Adjacent property owners will clean the newly enlarged pedestrian areas, with the businesses maintaining planters and benches.





 MOBILITY

Chapter 8 Vehicles and Parking



All of the bicycle and pedestrian improvements mentioned above haven't come at the expense of drivers. Traffic volumes are down and traffic speeds are up in the Manhattan central business district, a reflection of a growing trend toward other forms of transportation.

In fact, the economic and population growth in New York City over the past decade has largely been accommodated on the city's transit system, not via private automobile. While use of our transit system into the central business district grew by 11% since 2003, traffic growth has declined. There has been a 6.5% decline in traffic entering the central business district since 2003. This trend has even accelerated in recent years—in 2011, there was a 1.8% decrease in citywide weekday traffic volumes and a growth of transit use by 2.5% in 2011 and 1.8% in 2012.

But that doesn't mean roads and highways in New York aren't congested. Many key arteries, including cross town routes, the East River and Hudson River crossings, and highways throughout the five boroughs, remain over capacity. This traffic is bad for our economy, our environment, our health, and our quality of life.

Midtown

MIDTOWN IN MOTION

In 2011, DOT implemented an innovative congestion management program called Midtown in Motion to reduce congestion by adjusting traffic signals in real time. The system uses 100 microwave sensors, 32 traffic video cameras and E-ZPass readers at 23 intersections to measure traffic volumes, congestion and record vehicle travel times in the approximately 110-square block area bound by Second to Sixth Avenues and 42nd to 57th streets. The combined data is transmitted wirelessly to the City's Traffic Management Center in Long Island City, allowing engineers to quickly

identify congestion choke points as they occur and remotely adjust Midtown traffic signal patterns to clear traffic jams. The real-time traffic flow information is available to motorists and to app developers for use on PDAs and smart phones.

Earlier generations of traffic signals could only be reliably set to preset signal patterns based on the time of day, leaving limited ability to respond to crashes, construction, and special events that cause backups. Midtown in Motion allows Department of Transportation engineers to conduct real-time analysis and change signal patterns at the touch of a button, helping

to alleviate congestion before it worsens.

Depending on the traffic situation, traffic lights are adjusted to provide a more even distribution of traffic entering Midtown so that already congested areas do not become oversaturated, or priority can be given to clearing isolated backups resulting from breakdowns, fender-benders or double-parked vehicles. On the avenues, engineers can switch more easily between a simultaneous signal pattern, where all the signals on the avenue turn green or red at the same time, and a traffic signal progression, which lets

vehicles traveling at the speed limit encounter green lights as they drive along a corridor. The system lets engineers use the more effective pattern based on measured traffic conditions.

Preliminary results of the first phase of Midtown in Motion showed a 10% improvement in travel times along the avenues of the 110-block service area, which marks a considerable improvement to traffic in the heart of Manhattan's Central Business District. In September 2013, DOT doubled the Midtown in Motion service area to cover 1st to 9th Avenues from 42nd to 57th Streets.

BROOKLYN BRIDGE RAMPS

DOT widened access ramps to and from the Brooklyn Bridge to accommodate two traffic lanes and simplify traffic patterns. The project eased notorious traffic bottlenecks for many of the 120,000 vehicles that cross the bridge daily. By 2014, three ramps, connecting the exit from the bridge's Manhattan-bound

lanes with the FDR Drive, will be expanded from one to two lanes, easing backups that often extend across the bridge. These changes expand capacity and enhance safety and are part of a \$508 million project to repaint the Brooklyn Bridge and rehabilitate its approach ramps.

HOYT AVE RFK BRIDGE

The RFK Bridge touches down into the bustling heart of Astoria with connections to the Grand Central Parkway and local streets. This crossroads serves subway and La Guardia Airport bus passengers, as well as locals moving to and from various neighborhood destinations. DOT shortened crosswalks, tweaked traffic patterns, modified

signal timing and phasing, added green elements, and created new public space in an area that sees hundreds of pedestrians a day. This resulted in a 51% improvement in travel times northbound and 26% southbound. The project reduced queuing, simplified traffic patterns and made the area safer for all users.

MOBILITY

NYCDOT converted 13,000 meters to muni meters resulting in \$9.1 million savings annually

PARKING

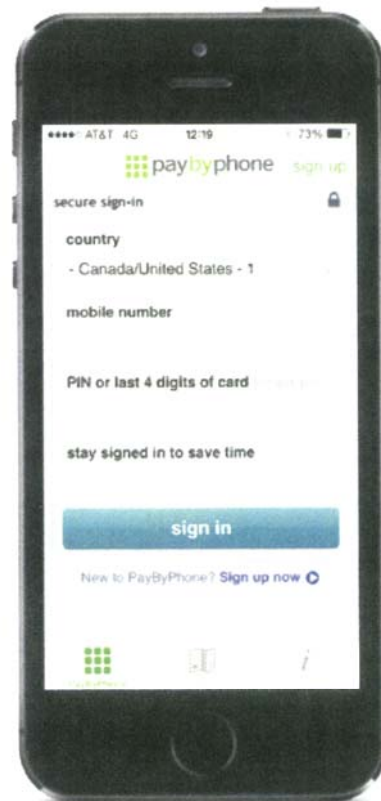
Curbside space is a valuable commodity in New York City and NYCDOT has implemented innovative solutions to simplify and modernize parking and increase turnover at parking spaces, making it more likely that drivers can find spots when they want them.

SIMPLIFYING PAYMENT AND THE SEARCH FOR PARKING

Online real time parking information and pay-by-phone technology are two ways DOT has used technology to make it easier for New Yorkers to park. A pilot program in the Bronx allows motorists to pay for metered parking via a smartphone app, the internet or by telephone for 264 spaces along 18 block faces, as well as at the Department's Belmont Municipal Parking Field. This system eases parking in New York City and comes with no additional fees for drivers or changes to parking rates. The technology also warns motorists when their time is about to expire via e-mail or text messages, and

allow them to pay for additional time easily and quickly, up to the posted time limit.

The parking availability pilot uses innovative sensors embedded in the roadway to produce a real-time parking availability map viewable on the internet, smartphones and tablet devices. After reviewing the map before starting their trips or working with a passenger, motorists can head directly toward blocks with available spaces, reducing the time needed to hunt for spaces and the associated congestion as drivers circle for parking.



Pay-by-phone allows drivers to pay for parking with smartphones

PARK SMART

NYCDOT's PARK Smart program makes parking easier while reducing congestion. The first Park SMART program in Greenwich Village included portions of Sixth and Seventh Avenues and all meters on streets between these avenues. It was made permanent in 2009. The meter rate was increased from noon to 4 pm when demand for parking was greatest, and not changed at all other times that meters are in effect.

The PARK smart program has increased turnover at parking spots, accommodating 20% more parkers during peak periods.

Parking space occupancy declined from 77% to 71% on Tuesdays and from 75% to 69% on Fridays from 12pm to 4pm

Motorists were parking for a shorter amount of time; the frequency of those who parked for less than hour increased by 12%. This improves turnover and benefits local businesses.

Based on this success, additional programs were started in Park Slope, Boerum Hill, Upper East Side and Jackson Heights. Overall, the ParkSMART program has increased turnover at parking spots, accommodating 20% more parkers during peak periods.



New technology lets you pay for parking with a smartphone

MOBILITY

JACKSON HEIGHTS NEIGHBORHOOD TRANSPORTATION IMPROVEMENTS

Jackson Heights, Queens is a diverse and vibrant neighborhood in Northern Queens, containing historic areas, residential streets and a destination shopping and dining district with a considerable amount of vehicular and pedestrian activity. Local residents and merchants asked DOT to explore changes to help create safer, less congested streets and better transit access for this vibrant community.

In 2009, DOT started a community driven planning process, funded in part by Congressman Joseph Crowley. The study was a model of DOT's

inclusive approach to neighborhood transportation studies as guided by PlaNYC. Local residents, business owners and civic leaders worked with DOT to identify their most pressing concerns and guide the development of solutions. DOT created a range of opportunities for public participation, including community workshops, neighborhood walk-throughs, an innovative web portal that allowed DOT staff to receive and respond to comments at any time, and a Community Advisory Committee to facilitate ongoing involvement of key stakeholders.

The project addressed traffic

safety, sidewalk crowding, vehicle congestion, parking availability, slow bus service and a lack of public open spaces. Focused on the area where 73rd Street, 37th Road, Broadway and Roosevelt Avenue converge, the core improvements were carried out in the second half of 2011. Updated curb regulations were introduced in spring 2012, offering a better use of space for deliveries and customer parking. Further parking improvements were implemented in 2013 with the introduction of the variable-rate PARK Smart program.

The project also resulted in a popular plaza. 37th Road between

73rd Street and 74th Street was closed to traffic to provide additional open space in this dense, international neighborhood. The plaza brings pedestrian-scale lighting, new surfaces, and amenities to support the plazas daily activities and cultural and seasonal events.

As a result of the changes, there are fewer injury-causing crashes; problematic traffic bottlenecks have been eliminated; buses are faster and more efficient; and the 37th Road plaza is a popular gathering spot year-round, home to frequent public events and a boon to adjacent businesses.



Jackson Heights Diversity Plaza



Jackson Heights Diversity Plaza



20%

decrease in peak-hour
truck traffic on
residential Grand
Avenue

OFF-HOUR TRUCK DELIVERY—MIDTOWN

Truck deliveries made during busy times of day can exacerbate already congested streets and increase costs for businesses and the consumers that buy their produces. DOT worked with Rensselaer Polytechnic Institute (RPI) to implement an Off-Hour Truck Delivery Pilot program, which ran from late 2009 through 2010. Twenty participants agreed to shift their delivery windows to between 7 pm and 6 am. Receivers found that fewer deliveries during normal business hours allowed them to

focus more on their customers and that their staff was more productive because they waited around less for deliveries that were tied up in traffic. Carriers found that their trucks could make more deliveries in the same amount of time; they saved money on fuel costs and could use a smaller fleet by balancing daytime and nighttime deliveries, and that legal parking was more readily available. Their drivers reported feeling safer and less stressed.

MASPETH BYPASS

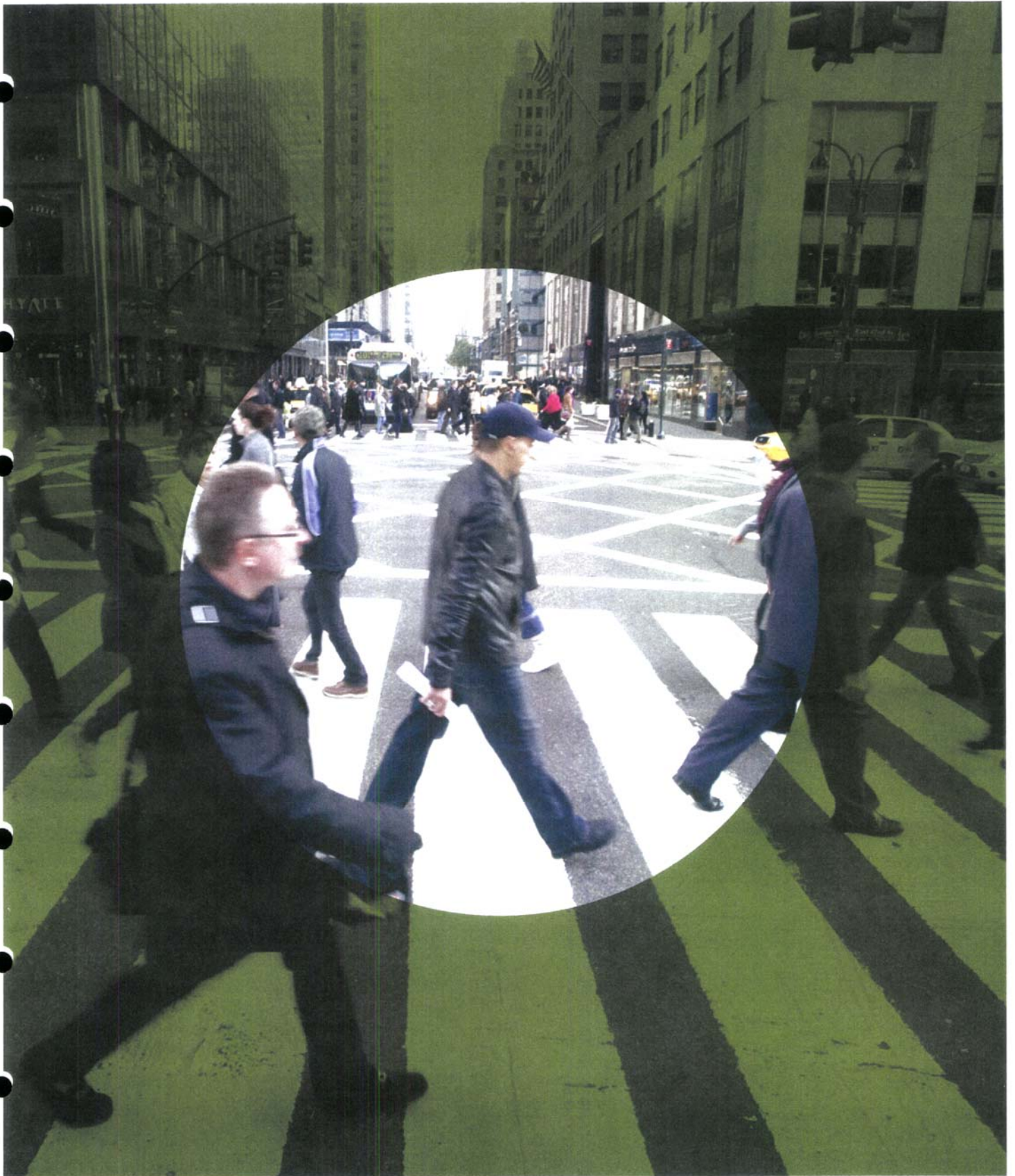
Trucks are critical to the economic life of the city, especially in industrial areas like the Maspeth Industrial Business Zone (IBZ) in Queens. However, the IBZ is adjacent to residential neighborhoods where heavy truck traffic impairs quality of life. In Maspeth, DOT redesigned streets and legal truck routes in Maspeth to direct trucks away from residential streets while maintaining truck access to important industries

Prior to 2011, Grand and Flushing Avenues were designated as through truck routes between the Queens-Midtown Expressway/ Long Island Expressway (I-495) and the Brooklyn line. While this routing provided a connection from I-495 to the IBZs along Newtown Creek, it channeled regional truck traffic through the heart of residential Maspeth. In response to requests from the community and

elected officials, DOT assessed alternative routes that could be less disruptive to residents while serving the needs of truckers and local businesses, and led an in-depth outreach program with all stakeholder groups.

The resulting plan shifts truck traffic from Grand and Flushing Avenues to a preferred bypass route that connects to the LIE without passing through residential Maspeth. DOT also made changes to the street network to ensure that the Maspeth Bypass was as direct and convenient as possible so that truckers would make the switch. DOT reconfigured the multi-legged intersection of Maspeth Avenue and Maurice Avenue to safely accommodate truck through movements and turns, and converted several streets to one-way operation.





Looking Ahead

Demand is growing for the changes outlined in this chapter. Communities all over the city are clamoring for bike share, bus improvement projects, and safer and more expansive walking routes. A changing climate and continued population and economic growth will create an even greater sense of urgency for these projects going forward. Future leaders will have to respond.

This will challenge government to accelerate the pace of implementation and expand the breadth and scope of mobility projects. Bike share systems will need to be deployed in new neighborhoods and the blossoming bike lane network will need to extend to all reaches of the city, including eastern sections of Queens and southern Brooklyn. The second phase of Select Bus Service projects, such as those along Woodhaven Boulevard in Queens, through central Brooklyn and across Manhattan, will need to be completed. Eventually, transportation officials will have to experiment with new street designs that are part of bus rapid transit in other cities, such as physically separated bus lanes and transit-only ways. A variety of treatments should also come to large state-managed highways to provide additional express bus routes.

A faster pace of project implementation will require bold ideas and new approaches. Expansion of programs at a time of dwindling city, state, and federal resources means that new revenue will be needed, and discussions about congestion pricing or East River tolls are certain to be part of the conversation. In 2008, a congestion pricing plan to charge vehicles entering the central business district won popular and City Council support in the New York City but died at the hands of the State Legislature. The proposal would have raised hundreds of millions annually for the transit system and bridge and road repair, resources desperately needed to expand mobility options in the city. A year later, a similar proposal to toll the East River Bridges again died

at the hands of the State. The MTA's next multi-billion dollar construction program provides the legislature with an opportunity to change its stance on the proposal. City leaders may also decide to pursue other new financing ideas, such as taxing large development projects or creating broad districts where zoning bonuses result in transit and public realm enhancements.

Additional attention to resiliency post Hurricane Sandy may bring a new perspective to revenue discussions. The storm was wake-up call that the region needs to protect its transportation assets, and build a stronger, more resilient network. Such fortification will require a significant investment both at the city and state levels.

Specific zones for the city are also ripe for courageous ideas. The pedestrian environment near Penn Station is abysmal, and is only likely to get worse as the Hudson Yards development increases the number of people who frequent the area. Closure of certain streets for pedestrians or creating designated transit ways (along 33rd or 31st street, for example) could help accommodate an influx of residents and visitors.

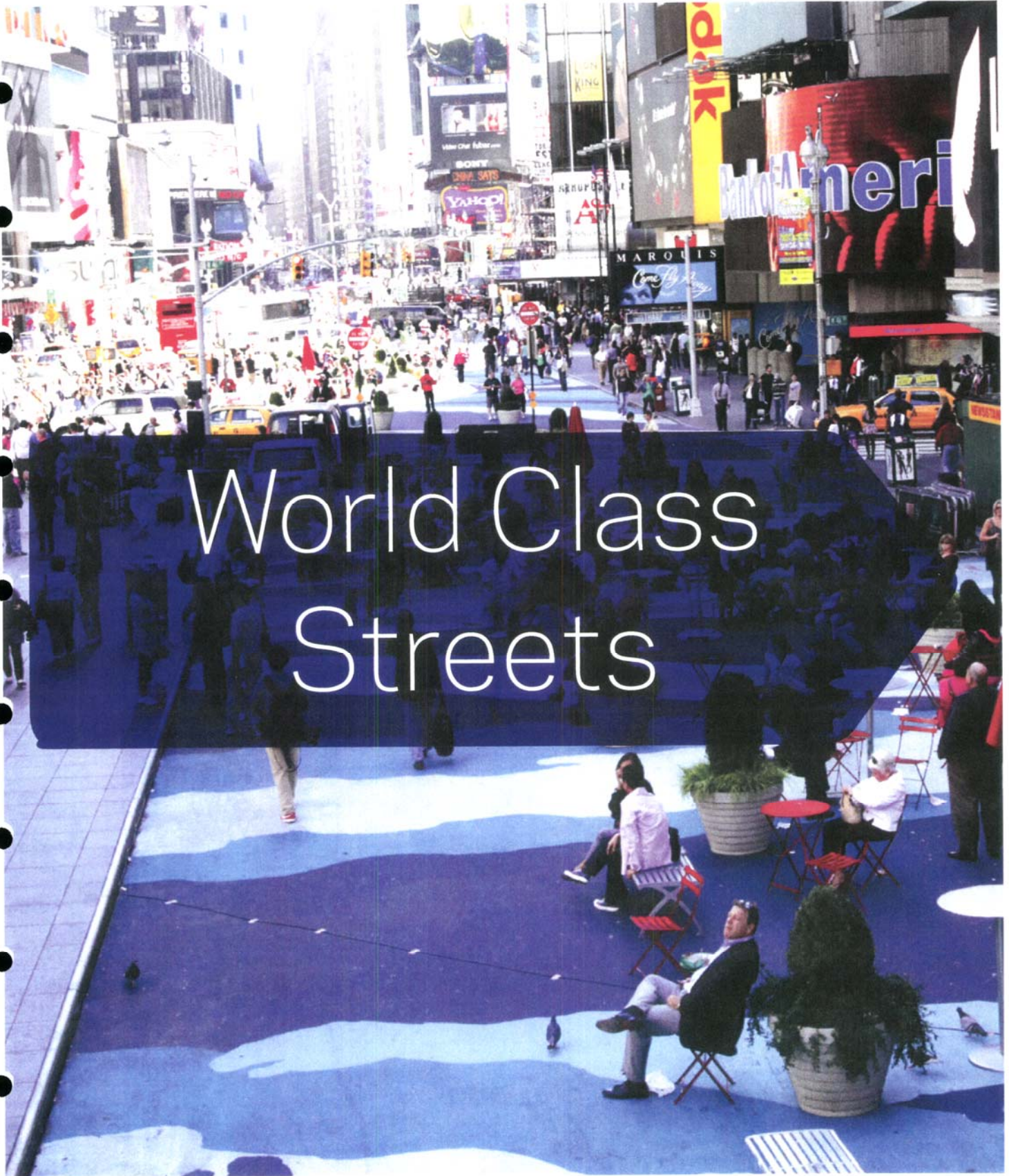
The city's waterfront will also have to be transformed and given additional resources. The Brooklyn Waterfront Greenway and Manhattan's East Side greenway will need to be completed, and planning for better use of Queens waterfront for bike mobility will have to begin.

Technology will also provide new opportunities to enhance mobility. Paying for parking meters and tracking parking space availability on smart phones, changing signals in real time in response to fluctuating traffic patterns, and automating signals on bus routes to speed buses are other opportunities that will bring substantial benefits. Using technology and sensors to better enforce against overweight trucks and help keep trucks on designated routes could also produce mobility gains.

- Expand bike share and bike lane network to new communities
- Build on Manhattan bike network with additional Midtown bike lanes
- Implement congestion pricing or East River Bridge tolls and consider other financing mechanisms to fill transportation funding shortfalls
- Complete next round of Select Bus Service projects and experiment with more ambitious street designs like physically separated bus lanes and bus only streets
- Complete Brooklyn waterfront greenway and expand through Queens
- Improve streetscapes and prioritize the pedestrian experiences near Penn Station and Grand Central
- Use real time information to manage congestion and improve bus speeds
- Allow drivers to remotely track parking availability and pay for parking using smart phones
- Leverage technology and curb regulations to make off-hour deliveries a standard practice for freight receivers

POSSIBLE BUS RAPID TRANSIT SYSTEM IN 2026





World Class Streets

Introduction



72%

of New Yorkers support
DOT's public plazas



39

acres of road
repurposed for
plazas, public seating,
and traffic calming

World Class Streets are hallmarks of diverse, vibrant and thriving cities. The best cities in the world have both famous boulevards or squares, and also hundreds of local streets, sidewalks and plazas that are treated not primarily as thoroughfares for travel, but as places that reflect and celebrate a city's energy, art, and culture.

In a 2008 report, urban design experts engaged by NYCDOT called New York a "city without seats," noting that without public seating in attractive, accessible public spaces, it is impossible to define city streets as places.

The 2007 PlaNYC report had acknowledged that New York City had largely discounted its streets as public space during the 20th Century, allowing traditional traffic engineering to crowd out all other considerations. PlaNYC's vision for a thriving, attractive 21st Century called on New York to "re-imagine the public realm" and stated the ambitious goal of opening new public plazas in every community and of ensuring that all New Yorkers live within a 10 minute walk of open space.

NYC DOT developed specific action plans to reinvent the public realm in both its *Sustainable Streets* strategic plan and the more detailed *World Class Streets: Remaking New York City's Public Realm*, published in 2008 in collaboration with Denmark's Gehl Architects. These strategy documents and action plans elaborated on the problems of treating streets exclusively as corridors for motor vehicles, and on the huge potential for high quality of public life inherent in New York's dense historic form.

WORLD CLASS STREETS

World class streets programs were the cradle of NYCDOT's signature innovation during the Bloomberg Administration—changing City streets in real time. Instead of wading through years of planning studies and trial balloons, NYCDOT uses paint, stone blocks and planters to transform the function and use of city streets virtually overnight. In addition to capital construction plazas that can take 5-6 years to implement, with its real-time approach, DOT delivered acres of new, instantly usable public space to New Yorkers, delivering on the promise of PlaNYC in tangible, practical ways. The proof of concept for the new projects was not a computer model, but real world performance. If some feature of a space or new traffic and parking patterns did not work, it was not difficult to change.

Attractive public space and better designed streets are not simply aesthetic improvements. The business case for better streets has been clearly established and documented in cities around the world, and indeed had been embraced by NYC business improvement districts earlier than by City government. Streets that help create and strengthen communities and businesses increase foot traffic, raise

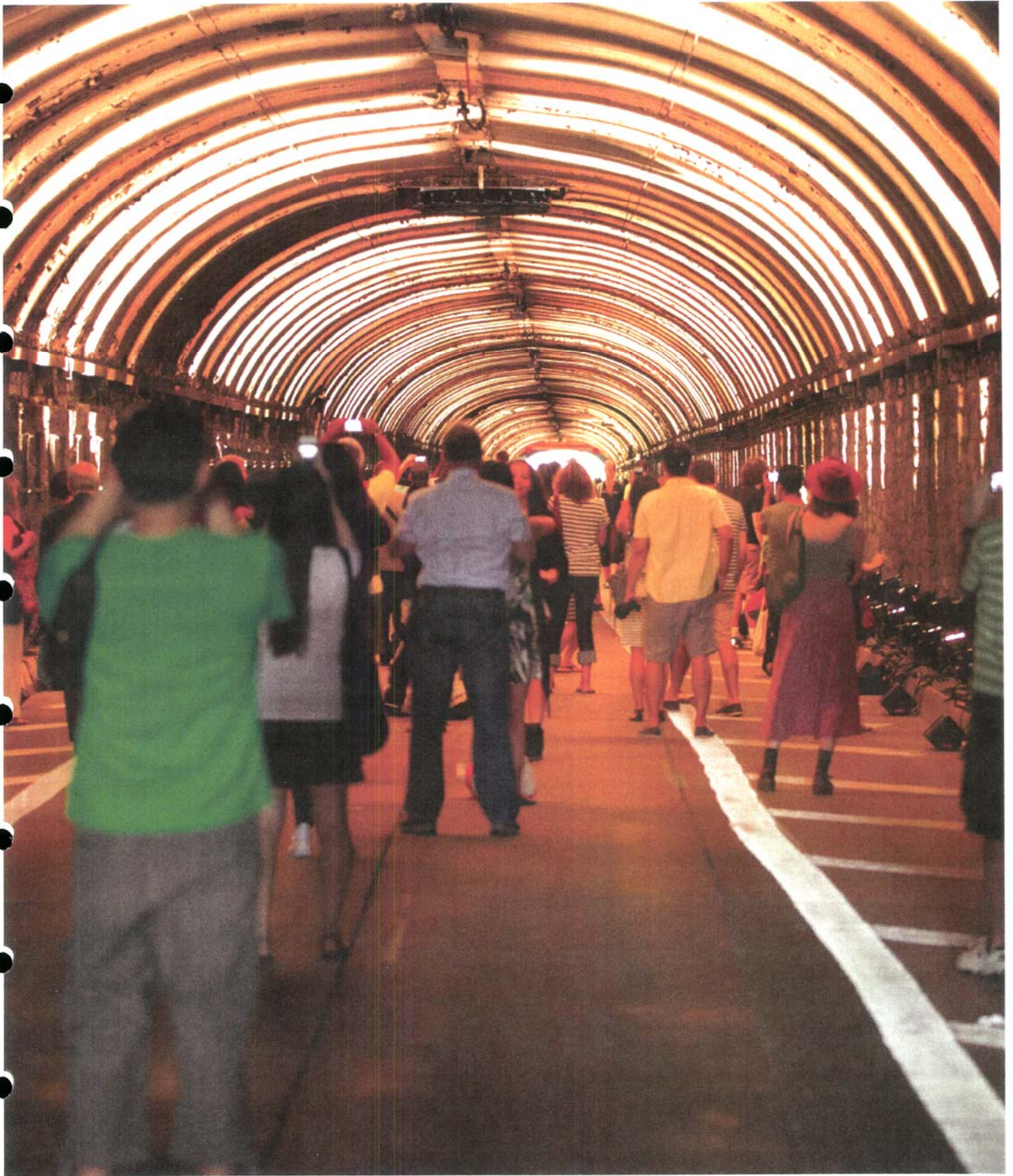
the value of many locations and enable the city to grow economically. These same effects were evident in New York City as well over the past six years. New Yorkers have taken naturally to the public spaces and people-oriented streets that NYCDOT has created, and DOT has clearly documented the economic benefits of this attraction. Better streets mean better business.

The PlaNYC update in 2012 found that 76% of New Yorkers lived within ten minutes of open space, up from 70% in 2007. DOT's efforts to repurpose street space has been crucial to this progress, but there is no shortage of work and opportunity looking into the future. New Yorkers in every community across the five boroughs want world class streets. Far more applications come into the plaza construction program each year than can be accommodated. Enthusiasm and participation in the Weekend Walks and Urban Art programs continues to rise. Opinion surveys asking about existing plazas, like the high-profile examples along Broadway in Midtown Manhattan, return super-majorities in favor. New Yorkers instinctively understand city streets as places.



Above: Dumpster pools at Summer Streets, 2010

Right: Park Avenue Tunnel, Voice Tunnel, Rafael Lozano-Hemmer





Chapter 9

Plazas, Public Space and Public Seating

In the 20th century, city streets were designed primarily to move motor vehicle traffic—a policy which attracted increasing numbers of vehicles, with negative effects on the overall quality of the City’s streetscape and quality of life. But New York’s streets can accommodate many users, not only cars. The City’s dense, active neighborhoods already encourage walking, making the addition of more pedestrian space a benefit to everyone.

NYCDOT initiatives since 2006 have ranged from the temporary use of street space for public events to permanent reclamation of underutilized asphalt for public plazas. Beginning in 2008, DOT’s Summer Streets program has transformed Park Avenue into a boulevard dedicated to strolling, cycling, skating and more for three Saturday mornings in August. At the other end of the spectrum, Willoughby Plaza in Downtown Brooklyn became the first of the DOT Plaza Program’s spaces originally created with temporary materials to be redesigned and set in stone through permanent capital construction. Elements included extended concrete sidewalks, underground utility work and new tree plantings.

In addition to open space, NYCDOT also responded to PlaNYC’s call to “re-imagine the public realm” with new public seating options. By adding seating, both in and out of plazas, DOT has encouraged New Yorkers to use sidewalks as civic space to be enjoyed. Seating has the added benefit of increasing foot traffic, providing a needed resource for the elderly and very young, and engendering feelings of ownership and community.

NYC DOT’s plazas and new seating create vibrant, social pedestrian spaces for communities across the city.

The effort is a key part of the City’s effort to ensure that all New Yorkers live within a 10-minute walk of quality open space. Streets make up approximately 26.6% of the City’s land area and yet, outside of New York’s excellent parks, there had been few places to sit, rest, socialize and enjoy public life. DOT’s public space programs work to change that through innovative design and partnerships.

DOT and its partners create public plazas that are active local destinations and can serve as a gathering place for community events and celebrations. New public spaces and plazas are in demand all across the city, and where DOT has created them, they are extremely well-used. A recent poll conducted by the *New York Times* revealed that 72% of New Yorkers approve of the creation of pedestrian plazas throughout the city. In fact, plazas enjoy high, constant levels support across incomes, ages, races and genders in New York (NYT poll 8/16/13). Two methods of creating plazas have been developed and established in NYC; a quick-moving temporary materials program and a longer-term capital construction program. Both are over-subscribed with proposals from groups around the city.

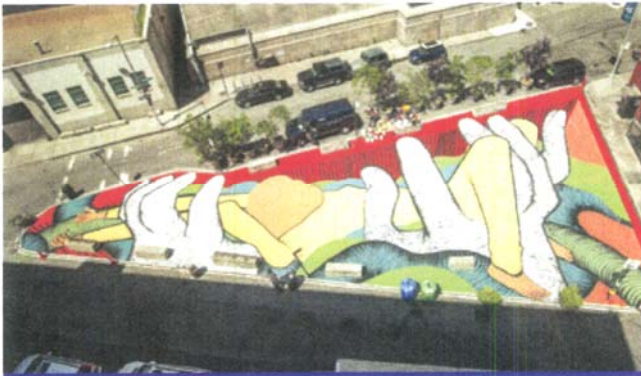
Since 2007, DOT has created over 59 new public places from what had been active vehicular lanes on streets, adding over 26 acres of pedestrian-space amid some of the busiest and most valuable real estate on Earth. With other street treatments like pedestrian refuge islands, a total of 39 acres street space has been reclaimed. 750 benches of seats have been added to the NYC streetscape. Additionally, more space in the City’s flagship parks has been dedicated to pedestrians and cyclists, and Weekend Walks temporary pedestrian streets have occurred in dozens of neighborhoods.

PLAZA TYPES

NYCDOT pursues two major methods for implementing new public spaces in New York City. “Overnight” plazas created with operational materials such as paint and planters are one of NYCDOT’s major, signature innovations. They transform New York’s street by improving pedestrian safety and increasing accessibility.



Fowler Square, Fort Greene



Pearl Street Triangle, PST, David Ellis

TEMPORARY MATERIALS PLAZAS

While capital projects can take years to plan and implement, NYC DOT’s temporary plaza program can bring open space to neighborhoods in nearly real-time. By simply adding crushed gravel or paint, new markings and signage, planters, tables and chairs and artwork, DOT has succeeded in transforming asphalt into space for people, enlivening neighborhoods

all over the city. This method is a quick and cost effective way to test the capacity of maintenance partners, build local support and study real benefits and impacts, not just models, of modifications to traffic and public use. Over time, successful temporary plazas can enter the capital project pipeline to be built out with permanent materials.

CAPITAL PLAZAS

Capital program plazas are longer term and permanent. NYCDOT’s Public Plaza Program solicits applications for new plazas to directly enter the capital project pipeline, for completion several years after a successful application. Frequently, while a capital project is in development, a temporary materials version of the plaza is implemented. Capital plazas often involve major

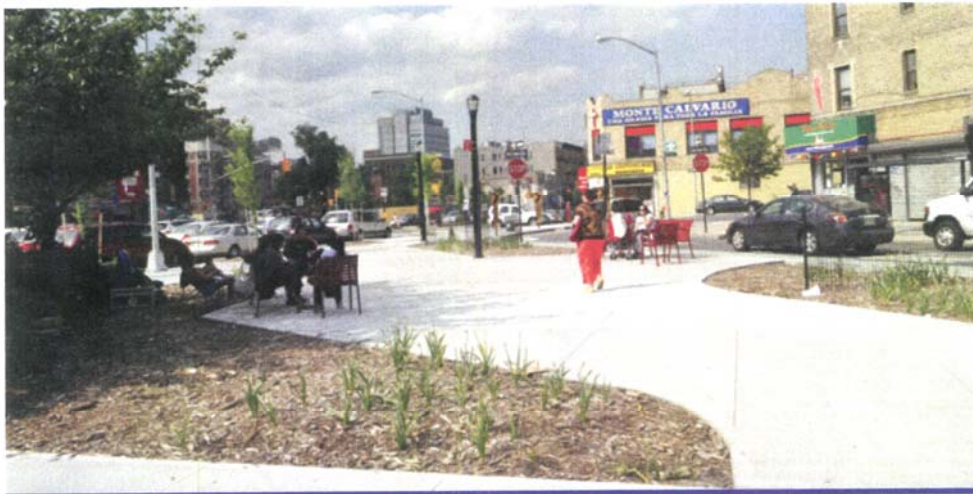
construction, including subsurface infrastructure upgrades or relocation as well as aesthetic elements. Capital plazas often level out the roadbed at sidewalk grade, better connecting public and pedestrian spaces. Uniform pavers or concrete may be used across the entire space, and permanent fixtures such as seating and trees are generally integral to designs.

WORLD CLASS STREETS

DOT has created 59 new public plazas since 2007

81%

of people surveyed had a positive opinion of Times Square Plaza



St Nicholas and Amsterdam Avenues

A third, ancillary type of public or open space is often created by DOT as a result of safety improvements to roadways. When undertaking reconfigurations of streets, DOT often adds or increases the size of pedestrian islands or adds painted sidewalk extensions. Where there is room, public seating and other street furniture can also be added to these spaces.

DOT partnered with the Columbus Ave Business Improvement District to design and improve the streetscape along Columbus Ave. The project includes a new landscaped area, six CityBenches, 26 in-ground solar powered LED lights, a new solar-powered trash compactor, DOT's repurposed parking meter bicycle racks, enlarged and newly planted tree beds along the curb, and Manhattan's first next-generation bioswale. Overall, the design helps enliven a once uninviting block and provides some great new amenities for Columbus Avenue.



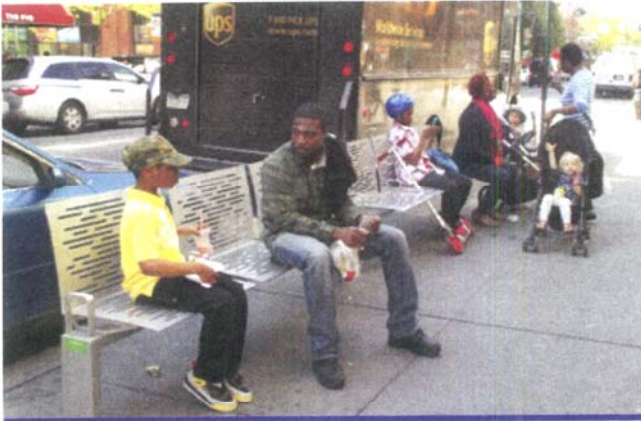
Columbus Ave between 75th and 76th Street



750

benches installed
since 2012

SEATING AND THE STREET SEATS PROGRAM



City Bench

A key part of bringing social and economic vibrancy to city streets is having places for visitors and residents to sit. New public space in New York City is popular in part because New York has long represented the contradiction of being a walking city with no place to sit down. When pedestrians are unable to find public seating, they will often resort to finding alternative seating which may be dangerous or obstruct the flow of other pedestrians. Having places to sit creates a vibrant streetscape for retailers, increases walking and transit use, and is a welcome relief for seniors and parents with younger kids. Through the City Bench and Street Seats programs, NYC DOT is working to remedy this problem throughout the streetscape, not only in places where there are opportunities to develop public plazas.

The Street Seats program offers chic seasonal, outdoor public space and seating where sidewalk seating is not available. During warm-weather months, when demand to spend time outdoors is highest, Street Seats can temporarily replace a few parking spots

in a neighborhood providing an area for eating, reading, working, socializing, or taking a rest. Street Seats also help to beautify the streetscape with attractive wooden platforms and topiary. Like plazas, Street Seats are requested and maintained by local businesses adjacent to the seating.

The CityBench program is another initiative to increase the amount of public seating on New York City's streets. DOT is installing attractive and durable benches around the city, particularly at bus stops, retail corridors, and in areas with high concentrations of senior citizens. As with many other innovative DOT programs, CityBench is largely request based. Local business or community groups can request a CityBench from the DOT. If technical criteria are met and adjacent business do not have objections, a bench will be installed in short order.

As of 2013, we have installed over 700 benches and are on track to install 1,500 newly-designed City Benches across the city by 2015.



Pearl Street pop-up cafe



172%

increase in retail at
DUMBO sales stores
adjacent to plaza

ECONOMIC VALUE OF PUBLIC SPACE



Broadway at Union Square

The idea that more welcoming streets can lead to better business is not just an aesthetic or marketing concept. Detailed studies around the world show that investments in a lively and attractive realm pay off in real terms.

A Transport for London study of that city's West End found that consumers who walk spend more than those who drive or take transit. That same area has had a tremendous experience with record sales during holiday weekends over the past few years when Oxford and Regent Streets were closed to vehicles and opened to pedestrians. These kinds of findings have been mirrored from Glasgow to Shanghai.

In New York, one real estate company [J. Liff Co.] has found that real estate demand and value is higher in areas where DOT has significantly improved the public realm by adding public space, like the Flatiron District at Broadway and 5th Avenue and the Meatpacking district on Manhattan's West Side. Studies of the value of proximity of park space in New York, including recent work by the CBRE group also confirms these types of economic benefits. In Brooklyn's DUMBO district, tax receipts show that retail sales in stores adjacent to a new plaza increased 172% in the three years after the plaza was implemented, over twice the growth seen in other parts of the same area [Measuring the Street, NYCDOT]. Similar findings regarding the signature public spaces that NYCDOT created along Broadway in 2008, 2009 and 2010 are detailed in the next chapter.

COMMUNITY PARTICIPATION AND PARTNERSHIPS



Marcy Plaza, Bedford Stuyvesant: Permanent plaza ribbon cutting. Artist: Ellen Harvy



25th St Plaza

Every public plaza created in a former roadbed has a partner in a business improvement district, merchants association or local development corporation that has done its own calculus of the benefits of generating more foot traffic and attracting people with public seating and attractive surroundings. Even for temporary plazas, DOT must have maintenance partners.

Recent DOT plazas have been created through the application-based NYC Public Plaza Program for capital construction plazas, which has become a national model for community based planning. This focuses new initiatives into places where people want them, dramatically reducing project negotiation and development times, which in turn keeps implementation in reasonable time scales. Here again, the private sector shows that it values attractive urban space and public seating. Demand for the plazas through this program has been very strong, with applications outstripping awards by 2 to 1.

Through the Public Plaza Program, business improvement districts or non-profits across the city suggest sites for plazas. Winning applicants partner with DOT to design the plaza. Through public workshops, DOT and its partners draft a vision for each plaza that complements the architecture, culture, and history of the surrounding neighborhood. DOT tailors community outreach to suit the scope, size, complexity and magnitude of potential impacts of each project. The process is iterative, as DOT often adjusts and modifies the project based on community feedback. A plaza is then built with city funds, either as a temporary plaza with DOT paint, gravel and plantings, or as a more extensive, longer term capital street construction project by the Department of Design and Construction. After the plaza is built, the non-profit partner is responsible for maintenance, cleaning, and the management of plaza concessions, events and programs.

“Corona Plaza ...has immediately become a magnet for people looking for a safe place to relax, eat, read, play and even enjoy a game of dominoes”
—Queens Economic Development Corporation



Corona Plaza

CORONA PLAZA

Corona is located in central Queens, adjacent to Flushing Meadows Corona Park. As one of the most ethnically diverse communities in the U.S. according to Census data, Corona Plaza area is a bustling commercial hub that includes the 103rd Street station on the 7 line and Q33 bus, a public library, and a newly constructed elementary school. A large number of ethnic foods available in and around the plaza make the space a recognized destination. To support these activities, DOT closed the service road to through traffic to provide 13,000

square feet of public open space. The space, now known locally as “La Placita” uses NYC DOT’s signature mix of crushed gravel, new seating and tables, umbrellas, bike racks and greenery. Queens Economic Development Corporation partnered with other organizations, including the Flushing Willets Point Corona Local Development Corporation, Corona Community Action Network and the Queens Museum to schedule seasonal activities and events that benefit the local community.



Willoughby Plaza

WILLOUGHBY PLAZA

Willoughby Plaza in Brooklyn is an excellent example of a temporary to capital plaza construction. The site is located in the heart of Downtown Brooklyn, a bustling mixed use neighborhood in New York’s third largest business district. In 2004 the Economic Development Corporation and the Department of City Planning drafted the Downtown Revitalization Plan which recommended a series of zoning map text changes, new public open spaces and other actions. This set the stage for more intense development in the area, which in turn lead to higher

pedestrian volumes on Willoughby Street. DOT created a temporary plaza in the spring of 2006 to help address the increases in pedestrian traffic and provide a place for visitors and shoppers to rest. The temporary plaza allowed DOT, local businesses and community groups to experience and observe the impacts of the plaza in real time. Once it was clear that the change had benefitted the area, DOT initiated the site’s reconstruction to create a permanent, capital plaza working with Downtown Brooklyn Partnership.

Improvements to Grand Army Plaza defined major new pedestrian areas, reduced crossing distances and added crosswalks and bike lanes

GRAND ARMY PLAZA



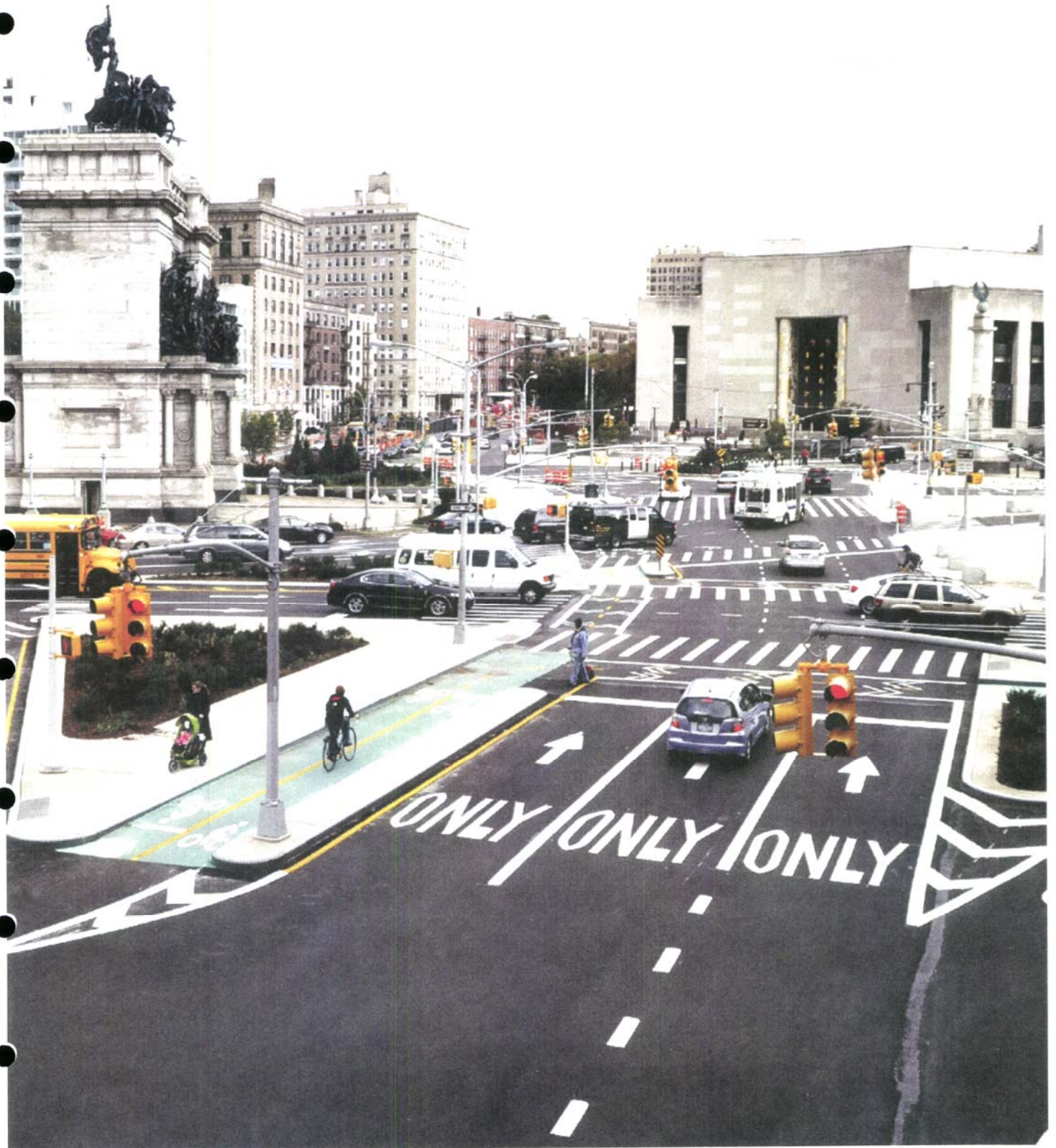
Grand Army Plaza before

DOT has worked for years with the community groups and civic organizations to develop a better design for Brooklyn's most iconic and busy traffic circle, Grand Army Plaza. The design of the circle and large traffic and pedestrian volumes made the area extremely dangerous for pedestrians traveling to Prospect Park and the Brooklyn Public Library and discouraged visitors to the fountain, making the area more prone to crime.

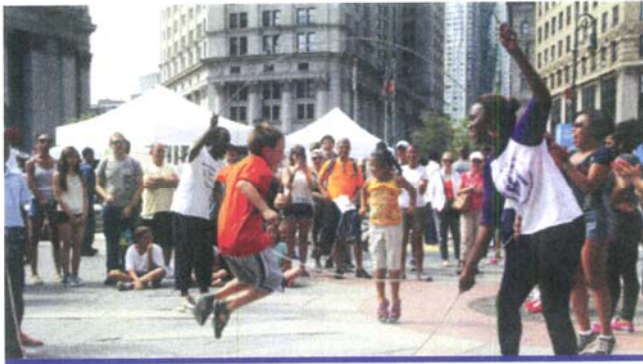
From 1999 to 2006, DOT made modest improvements to the traffic circle, including a larger pedestrian island and reducing auto access to Prospect Park. But residents still felt more needed to be done. Over the next five years, a civic coalition—working collaboratively with government agencies—created a plan for the

area. DOT used the community plan as a guidepost for real projects on the street. In 2007, this included concrete islands to reduce crossing distances, new crosswalks, new bike paths, beautification elements and longer crossing time for pedestrians. In 2011, DOT made additional improvements including a two way bike path on Plaza Street, gravel treatments on the southern side of the plaza and additional beautification. A pedestrian wayfinding program was added in 2013.

The result of the multi-year community based planning effort is a safer, more welcoming intersection and a model for civic and government partnership for livable streets. Safety has improved and the area is more accessible and vibrant.



SUMMER STREETS



Summer Streets is an annual celebration of New York City's most valuable public space and resource—our streets. Streets can be long-term temporarily transformed into pedestrian space, as discussed earlier in this chapter, and others can be modified for short-term activities and events. This short-term modification is a valuable way to get the general public to think about streets as part of the public realm, not just for cars.

On three consecutive Saturdays mornings in the summer, nearly seven miles of NYC's streets are opened for people to play, walk, bike, and breathe. Summer Streets provides space for healthy recreation and encourages New Yorkers to use more sustainable forms of transportation. In 2013, more than 300,000 people took advantage of the open streets.

The event is part bike tour, part walking tour, part art exhibition, part block party—a great time for exercise, people watching, or just enjoying summer mornings. Summer Streets extends from the Brooklyn Bridge to Central Park, along Park Avenue and connecting streets, allowing participants to plan a trip as long or short as they wish. All activities at Summer Streets are free of charge, and designed for people of all ages and ability levels.

WEEKEND WALKS



City streets do not have to be used for the same purposes at every time of day or week. Each year, NYCDOT partners with community groups to present Weekend Walks—neighborhood events on multi-block stretch of commercial streets temporarily closed to vehicles and open to walking and other activities. These multi-day events take place in all five boroughs from May through October. As with many other DOT initiatives, Weekend Walks are application based and completely community driven.

Weekend Walks highlight local culture and cultural institutions and often feature music, arts and crafts, classes and youth programming. They promote healthy, safe recreation and bring in potential customers for local businesses. In 2013, the fifth season of Weekend Walks, NYCDOT co-hosted 272 days of weekend walks across the five boroughs.





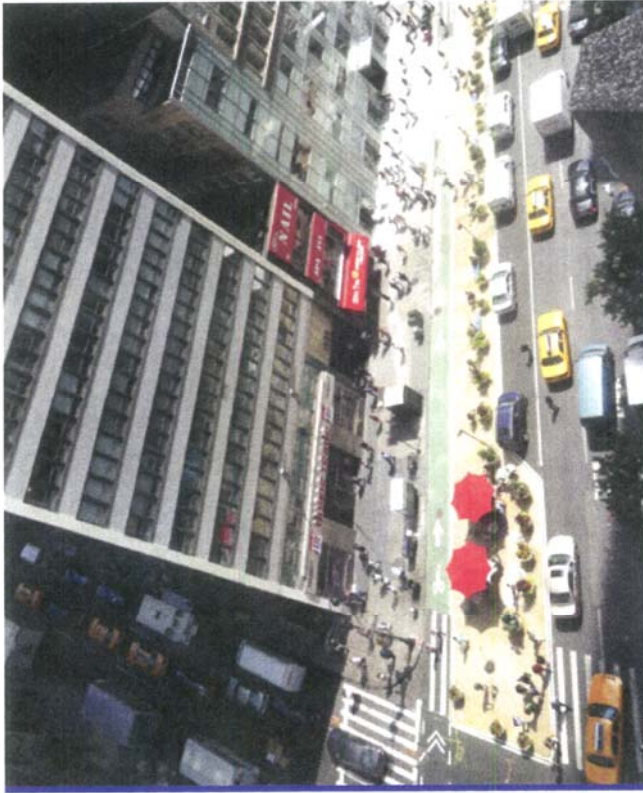
Chapter 10 Broadway

Between 2008 and 2010, NYCDOT undertook the most extensive revision of traffic patterns in Manhattan since the mid-20th Century, when the City changed most major avenues from two-way traffic to one-way. In 2009, major public plazas were added in Times and Herald Squares, and Broadway was closed to through-traffic at those locations. Vehicular traffic is able to serve destinations along Broadway, but the route is no longer a thoroughfare. As a result, DOT and the business improvement districts that manage streetscapes and public space in Midtown Manhattan have been able to devote more room along the route to pedestrians, public seating, cycling and special events.

In many respects, the changes along Broadway constitute an exceptionally visible microcosm of NYCDOT's overall street improvement program, encompassing new public

space, safety improvements, better traffic flow, a better balance among street users and a strengthening of the local economy. The transformation of Broadway, beginning in 2008 with the Broadway Boulevard and Madison Square projects, followed by 2009's major initiative encompassing both Times and Herald Squares, and extending to Union Square in 2010, has exhibited striking improvements in all of these dimensions. But the result of the changes that is perhaps best known and appreciated is the creation of signature public spaces in the heart of New York City—the major expansion of pedestrian plazas in Times, Herald and Madison Squares. In 2013, NYC DOT broke ground for the permanent establishment and construction of the Times Square plazas. The blocks between 42nd and 44th Street in the former roadbed of Broadway are scheduled to be completed during the first quarter of 2014.

2008 TEST CASES



BROADWAY BOULEVARD

Broadway's unique diagonal course through the Midtown street grid creates the particular intersections and shapes that make up well-known spaces such as Madison and Times Squares. The traffic tie-ups that these three-way junctions engendered also meant that portions of Broadway saw relatively less traffic than other Midtown avenues. That was the case in the mid-2000s in between Times and Herald Squares. In July and August 2008, NYCDOT applied its "overnight plaza" approach to the then-unique setting of linear traffic lanes not needed for vehicular movement along the seven-block stretch of Broadway between 35th to 42nd Streets. The project featured a protected bicycle lane along the western curb, defined by "floating" vehicle parking and public

seating in plazas that were defined with rapidly-deployed planters and epoxy gravel surfaces. Vehicular lanes were reduced from four to two.

The project spanned three business improvement districts, the 34th Street Partnership, the Fashion Center BID and the Times Square Alliance. Each organization has taken a hand in maintaining its parts of Broadway Boulevard.

Like other plaza projects, the new public seating quickly drew a heavy base of users, which persisted into the winter months. The project initially created over 22,000 feet of new public space. A 2013 redesign of the bicycle lane through this area, which sees even less traffic since the closures to traffic of Times and Herald Squares in 2009, added even more space to the public and pedestrian areas.



42,000

square feet of new
public space in
Madison Square

MADISON SQUARE



Madison Square from the Flatiron building

In August and September, 2008, NYC DOT reconfigured the intersection of Broadway, Fifth Avenue and 23rd Street, creating major new public spaces and dramatically simplifying one

of Manhattan's most difficult-to-navigate intersections for pedestrians and motorists alike.

At the project's center, a significant new plaza in the shape of the Flatiron Building offers over

The Flatiron BID marks the inauguration of the Madison Square Plazas as an important milestone in the district's development

16,000 square feet of space from which to view one of the world's most photographed landmarks. On Broadway between 22nd and 23rd streets, two lanes of Broadway adjacent to the Flatiron Building were made into a plaza furnished with seating and tables. Several other pedestrian spaces were created, enhanced or enlarged using former roadbed. Pedestrian areas are protected by 170 planters weighing 600 or 1,000 pounds and also 43 granite blocks. Altogether, the project created over 42,000 square feet of new public space.

Southbound traffic from Broadway and Fifth Avenue formerly made several splits, crossing 23rd Street in four different streams. The plan eliminates two of those streams, reducing seven combined lanes crossing 23rd Street to just five lanes, improving safety and convenience for those traveling. Traffic volumes were low enough to reduce Broadway to one lane where it crosses Fifth Avenue. New north-south crosswalks were installed on 23rd Street, and

existing crosswalks made shorter and more direct. For bicyclists, the new, high-visibility bicycle lanes on both Broadway and Fifth Avenue filled gaps in the area's network.

The new traffic pattern also simplified the M2, M3 and M5 bus routes, which no longer turn off of Fifth Avenue to pick up and discharge passengers.

As in other sites around New York, the new public spaces filled with people even before construction had finished, and remain highly popular. In late 2008, the Flatiron Business Improvement District surveyed the public about the plazas and intersection changes. The basic approval rating of respondents broke down like this: Like - 84%; Dislike - 7%; No opinion - 9%. The overwhelming support found in surveys by the BID increased over time. Approval in 2010 was 89.4%, and in 2012 stood at 90.4%. The BID marks the inauguration of the Madison Square plazas in 2008 as an important milestone in the Flatiron District's development.

70% said the Times Square plazas had a positive impact on the theatre-going experience

GREEN LIGHT FOR MIDTOWN

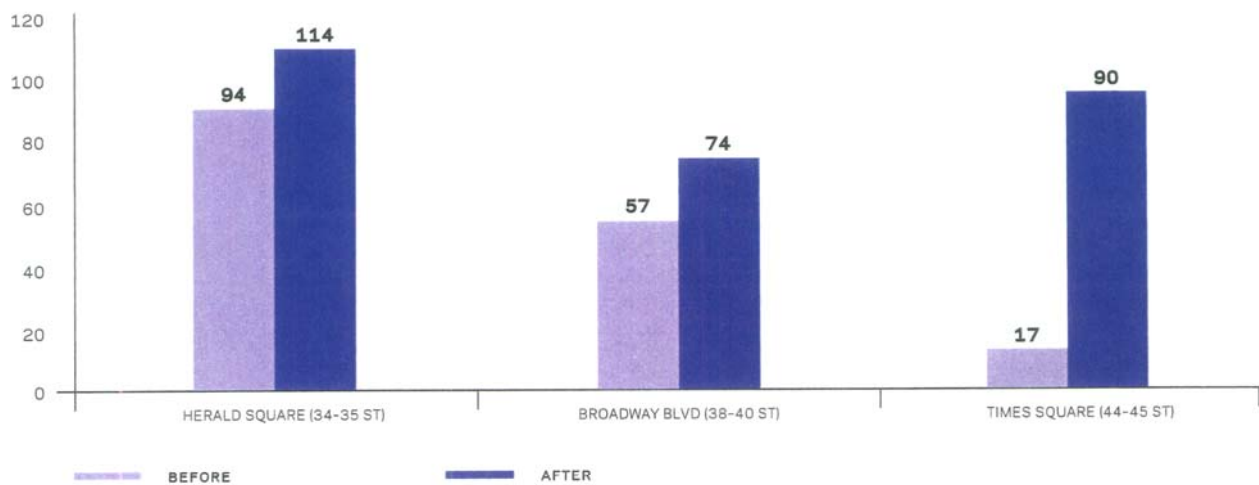
Businesses and BIDS had urged for years that pedestrian space be expanded in Times and Herald Squares, and small incremental steps had been taken in this direction.

In contrast, the 2009 transformation of Times and Herald Squares and connecting segments of Broadway, known as the Green Light for Midtown project, addressed the core of the Broadway corridor, and implemented the most dramatic streetscape changes of the Bloomberg Administration. It took advantage of Broadway's disruptive and diagonal path across the rectangular midtown street grid to simultaneously improve mobility and safety and provide much more public and pedestrian space in the Midtown core along the corridors from Columbus Circle to 42nd Street and from 35th Street to 26th Street. Most notably, it closed Broadway to vehicle traffic through both Times and Herald Squares, creating new signature public places in the heart of New York City.

The traffic complexity caused by Broadway's diagonal path at junctions with major avenues and cross streets caused congestion and contributed to higher crash rates compared to other Manhattan avenue intersections. By removing the Broadway leg from these intersections, the project addressed mobility and safety issues with the added benefit of creating world-class destinations equal to Broadway's reputation. Removing Broadway from the traffic system allowed for an 8% and 66% increase in green signal for 7th and 6th Avenues respectively at Times and Herald Squares.

Dozens of coordinated traffic changes were implemented from Columbus Circle to Madison Square in tandem with the Times and Herald Square closures to improve safety and enhance traffic conditions. Changes ranged from roadway geometry alterations to traffic signal timing adjustments, crosswalk shortenings and parking regulation changes.

AVERAGE STATIONARY POPULATION (PERSONS OBSERVED)





WORLD CLASS STREETS

PUBLIC PERCEPTION

Even before the new public plazas had been laid out in Times and Herald Squares, the new spaces filled with people. The Times Square Alliance set out inexpensive lawn furniture for a short period before the plaza seating could be deployed, and it became the talk of the town.

Whether with temporary or present-day furniture, the Times

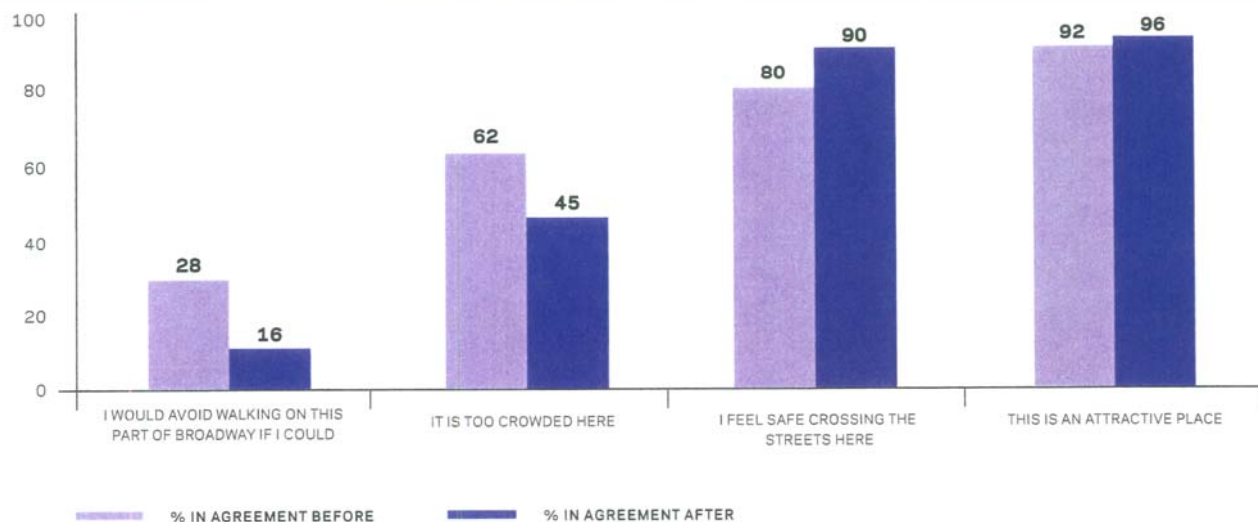
and Herald Square plazas became instant hits. A Quinnipiac University poll conducted in July 2009, close on the heels of the profound changes created by Green Light for Midtown, found that 48% of New Yorkers thought it was a good idea to close the major squares to vehicles and give more space to pedestrians, compared to 35 percent who didn't. A Times Square

Alliance survey in November 2009 found opinion among respondents was 81% favoring the Times Square pedestrian plaza, with 37% indicating a "very positive" opinion. The survey also found that 74% of New York City residents agreed that "Times Square had improved dramatically over the last year."

DOT surveys of people along Broadway before and after the

implementation of Green Light for Midtown found a marked improvement in perceptions of the area: In NY Times poll from August, 2013, 77% of Manhattan residents said they supported the Bloomberg Administration's pedestrian plaza initiatives.

CHANGING PERCEPTIONS OF BROADWAY: SURVEY RESULTS



Surveys indicated clear support among New Yorkers and local businesses for changes in Times Square



Herald Square

EVALUATION

The Green Light for Midtown changes were made with an explicit public declaration that they were pilots, with a definite six-month evaluation window and subsequent decision-making about their permanence. In December 2009, NYCDOT reported results of the evaluation to Mayor Bloomberg. Mayor Bloomberg announced in

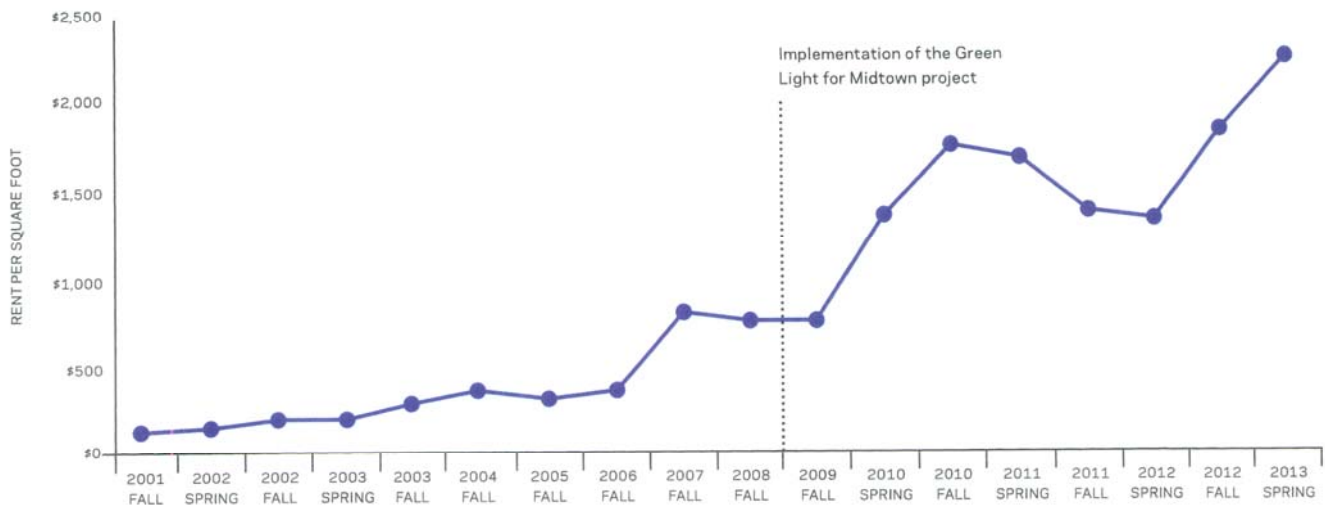
February 2010 that these results warranted making the Green Light for Midtown changes permanent. The Mayor noted the project's dramatic safety improvements and said that "Surveys indicate clear support among New Yorkers and local businesses for the project, and the increased foot traffic has been good for business."

Key findings of the six-month evaluation were:

- The number of pedestrians in Times Square increased by 11% and in Herald Square by 6% following implementation.
- 80% fewer pedestrians were walking in the street in Times Square following implementation. Injuries to motorists and vehicle passengers in the project area declined by 63%
- Pedestrian injuries were down 35%
- Travel times improved by 15% on 6th Avenue and by 4% on 7th Avenue the project was implemented.
- Injuries to motorists and vehicle passengers in the project area declined by 63%
- Pedestrian injuries were down 35%
- Taxi GPS data showed a greater improvement in northbound travel speeds in West Midtown than in East Midtown—17% vs 8%—from Fall 2008 to Fall 2009. Southbound speeds declined by 2% in West Midtown vs. a 3% improvement in East Midtown.

WORLD CLASS STREETS

AVERAGE ASKING RENT: TIMES SQUARE



BROADWAY & 7 AVE: 42-47 St
SEMI-ANNUAL REBNY REPORTS

ECONOMIC BENEFITS

The economic benefits of the plazas and more convenient and safer walking conditions were only just beginning to be realized. 2009 surveys had shown an 84% increase in people spending time (as opposed to hurrying through) in Herald and Times Squares, eating, taking photos or reading.

42% of people surveyed said they shopped in the area more frequently since Green Light for Midtown had been implemented. 26% of people working near Times Square said they go out for lunch more frequently, and 70% of theater-goers said the pedestrian plazas had enhanced their experience of the district.

Real Estate Board of New York research shows that retail rents have nearly tripled in Times Square since the Fall of 2008, the greatest change for any retail area that the Board tracks.

Additionally, a robust set of new flagship stores has opened right alongside the Times Square plaza

area since 2009, including Nike, Disney, Forever 21, Aeropostale, American Eagle and others. In 2011, Cushman & Wakefield for the first time listed Times Square as one of the top ten retail locations on the planet.



72%

surveyed in 2011
said they preferred
the new configuration

2010: EXTENSION TO UNION SQUARE



East 17th Street and Broadway

DOT completed the transformation of Broadway's diagonal route through Midtown in 2010 by extending reduction of traffic lanes from Madison Square to 17th Street and building out additional public and pedestrian space on the north side of Union Square. The Broadway/17th Street intersection was simplified, and crossing distances for pedestrians shortened and made more visible. Broadway's protected bikeway was extended south around the Square to 14th Street. The Union Square Partnership took on public space maintenance and worked extensively with DOT on the plan.

The project saw results similar to other Broadway segments—overall traffic speeds improved, but illegal speeding fell by 14%. Crashes causing injury fell by 24%. 74% of people surveyed in the area in 2011 said they preferred the new configuration. In the two years following the project, the area saw 49% fewer commercial vacancies, compared to a 5% increase across the entire borough of Manhattan.

THE RECONSTRUCTION OF TIMES SQUARE

As in other areas, capital reconstruction is following DOT's "overnight" changes along Broadway. Working closely with the Times Square Alliance and others, the city in 2010 hired the world-renowned Snohetta Architects to create the permanent design for the expanded Times Square.



Pavers being installed as part of Times Square reconstruction project

The reconstruction got underway in late 2012 and is currently laying the new plaza surfaces on the southern-most blocks of Times Square. The entire reconstruction of is expected to be complete in 2016, providing a world class public space in the Crossroads of the World.



Chapter 11

Design in the Public Realm

Well designed and complete streets reflect an urban growth and improvement strategy not only by making streets accessible and safer, but also attractive places to be that are economically vibrant. PlaNYC called for re-conceptualizing the city's streets and sidewalks as public spaces that can foster the connections that create vibrant communities. Since 2007, NYC DOT has embraced this concept of livable, modern, and attractive streets. The agency's temporary art installations inspire visual interest and our award winning bus shelters, newsstands, and bicycle racks make public space more attractive and vibrant. New benches along sidewalks and temporary street seating programs have made the city not only more appealing but also more comfortable, especially for the very young and old.



NYC DOT may be the only city or state DOT in the country with an assistant commissioner and program staff for public art

URBAN ART

NYCDOT may be the only city or state DOT in the country with an assistant commissioner and program staff for public art. The unit runs a variety of programs that allow NYC artists to propose use of public space—street surfaces, facades, jersey barriers—as a broad canvass for all kinds of public art.

Art is integral to DOT's goal of world class streets and the agency's strategy for changing how people use and experience the public right of way in the City. DOT's Urban Art program enlivens the urban landscape with unexpected temporary art installations on DOT properties. Artists help to transform the landscape from ordinary to extraordinary with temporary, unexpected interventions, colorful murals, dynamic light projections, and thought-provoking sculptures. Public plazas, fences, jersey barriers, footbridges, and sidewalks serve as canvases for temporary art in all five boroughs.

DOT's Urban Art initiatives rely on partnerships with community organizations and the creativity of artists to present site-responsive artwork. DOT has presented over 100 inspiring projects since the Urban Art program was created in October 2008. The goals of the unit are to create attractive corridors and activate public space.

In street intercept surveys at DOT Urban Art installations, 83% of respondents had positive feedback, in addition, 60% expressed interest in revisiting the artwork.

Street intercept surveys at DOT Urban Art installations found that sculptures, murals, and lighting design and projections were the most popular, and plazas and sidewalks were preferred sites.

Left: Flatiron Plaza, *Bird*, Will Ryman

Following spread:

Plan Ahead, Magda Sayeg, Brooklyn

Container Series, Victoria Munro, Staten Island



West Farms Square Plaza, *For Closure*, Gabriela Salazar



4th Avenue Median, *Unparallel Way*, Emily Weiskopf





STREET FURNITURE



Bus shelter, Manhattan

In order to improve the aesthetic quality of the city's streetscape, DOT has worked to unify the look and feel of the city's street furniture. This includes bus shelters, seating, bicycle parking and pedestrian navigation signs that are attractive and have a consistent scale, context and material. This coordination brings modern design to city streets.

In July 2005, after an extensive competitive bid process, DOT awarded a franchise to Cemusa, a Spanish street furniture company, to design, manufacture, install and maintain bus shelters, newsstands, and protected bicycle parking at no cost to the City. In exchange, the City will allow Cemusa to sell advertising space on the structures within clearly defined limits. Cemusa partnered with Grimshaw Architects to create sleek, elegant structures made from high-quality materials to withstand the rigors of New York City's sidewalks.

This award-winning family of designs guided future projects, including the design for street benches and totems and maps used in a new pedestrian wayfinding program.

BUS SHELTERS

Over three million riders use New York City local and commuter buses every weekday. Giving these people safe, comfortable places to wait encourages transit use and is an essential element of a sustainable city.

The look and feel of the city's 3,300 bus shelters is not only important for the comfort of transit riders, but also the overall design and aesthetic quality of streets. DOT controls the placement of the shelters, and manages the franchise agreement with a private company, Cemusa, who maintains and installs the units. The DOT worked with Cemusa, the MTA to replace every bus shelter and

install an additional 200 (3,500 bus shelters total).

DOT worked closely with community leaders to identify the best locations for additional shelters to ensure that new locations best serve each community and the riding public. For the first time ever, all of the bus shelters offer seating, especially important for the elderly and disabled. The City is also exploring exciting new technologies like Bluetooth, LCD screens and real-time bus arrival information. Shelters come in four sizes—regular, narrow, short and double—so there is an appropriate shelter for every neighborhood and bus route.

NEWSSTANDS

NYC has a long history of sidewalk newsstands dating back more than 100 years. They are a fixture on New York City streets and provide simple and efficient ways for people to buy newspapers, drinks, and snacks. Since 2007, in an effort to bring a more modern feel to the newsstands, DOT has

replaced every existing newsstand at no cost to newsstand operators. Cemusa maintains the exterior of all newsstands including regular cleaning and graffiti removal. The new design is sleek and modern, and in scale with other street furniture.

The design of NYC DOT's wayfinding maps and signs has been widely acclaimed

BICYCLE PARKING AND CITIBIKE



NYC's standard bike parking structure

DOT has also worked with Cemusa to install bicycle parking structures that resemble the bus shelter and use the same high-quality materials. 20 have been installed with a goal of 36 citywide. Each shelter contains stainless steel bike racks for eight bikes. The ad panels are used to display the annual NYC Cycling Map and the "Look" Public Service Campaign. These structures will do more than just provide parking—they send a message that the City encourages cycling.

These structures also complement DOT's existing City Racks sidewalk bicycle rack

program, City Rack. Working with Cooper Hewitt Design Center and cycling groups, DOT launched a design competition for a new type of City-provided bike rack, and received over 200 submissions from around the world. The winning design is now seen throughout the city. Approximately 19,000 total City-provided racks have been installed to date (see Mobility, Chapter 6—Streets for All: Improving Choices for Short Trips).

CitiBike stations were also designed to reflect the bicycle parking, bus shelters, and newsstands, bringing a consistent design narration to city streets.

WAYFINDING



Pedestrian wayfinding, Brooklyn

The DOT's "WalkNYC" wayfinding system also reflects a coordinated design approach. The system encourages residents and visitors to walk more and to explore areas of the City that may be new to them. The attractive signs provide user-friendly maps and information, including walking distances, the location of other forms of transportation, building addresses, area attractions and public facilities.

The design of the signs and maps has been widely acclaimed

using stainless steel and glass and keeping in scale with other street furniture. A recent review proclaimed the system a "Feat of Design, Data and Diligence" [Mashable, Oct. 24 2013]. The initial roll out of wayfinding signs and maps in 2013 included Chinatown, the 34th Street/ Herald Square area and Garment District in Midtown, Prospect and Crown Heights and Long Island City, with the goal to expand to neighborhoods across the city.



Looking Ahead

NYCDOT's programs to foster a world-class public realm have a strong future ahead of them. The application basis for public plazas, Weekend Walks, CityBench and Street Seats, as well as the maintenance partner requirement for plazas, ensure that these features or programs are only implemented where there is local interest and strong support. This is also the reason for requiring community board approval for Street Seats installations. As this section has detailed, the application process for plazas is heavily oversubscribed, pointing to the popularity and demand for additional public space in the City. Applications are also very strong for the Weekend Walks and CityBench programs. Additionally, the creation of the Neighborhood Plaza Partnership non-profit organization will ensure that successful plaza applications can be made from any corner of the city, providing assistance for communities and local organizations that may need it.

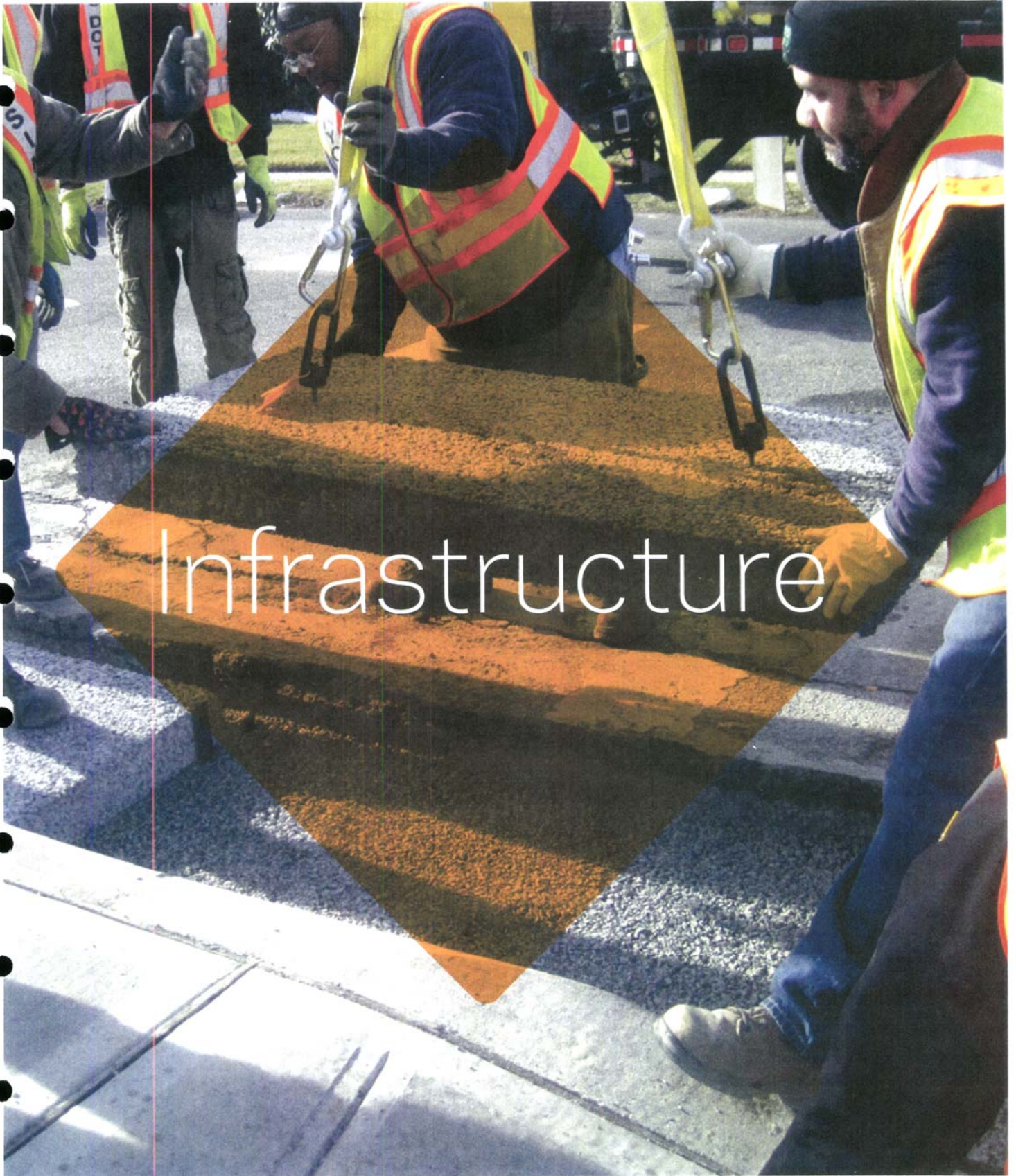
The ongoing development of both "overnight" and capital pipeline plazas has created an essentially new category within the City's capital budget, that agency and elected officials should be mindful of. The current reconstruction of Times Square, for example, points toward additional capital projects along the length of Broadway in Midtown, particularly at Herald, Madison and Union Squares. Assembling funding and moving major undertakings such as these ahead requires concerted effort and attention. It is possible that work in these areas could come from district benefit funds established in connection with major development projects, as is currently contemplated for the East Midtown rezoning. That initiative is also spurring a wealth of ideas for improving the public realm around Grand Central Terminal and Park Avenue, including pedestrianizing part of Vanderbilt Avenue.

A logical next step for August's highly popular Summer Streets program is to extend it to more hours and more days.

DOT's success car-free Central Park summer pilot during 2013 also points the way to permanent car-free park loop roadways.

Any major pedestrianization projects on the scale of Broadway will likely be led by local business and community initiatives. One strong candidate is Lower Manhattan. Before 2001, parts of Nassau and Fulton Street were pedestrian-only for parts of the day. These could be restored, and with increased security concerns in the Financial District and World Trade Center area, the City could consider creating a wider pedestrian precinct on additional smaller streets, with freight delivery access during specific off-peak windows. Shared streets—pedestrian streets with very slow vehicle access, could complement or be central to such an initiative.

- **Expand application based programs—public plazas, Weekend Walks, CityBench and Street Seats**
- **Continue to transform more temporary plazas into more permanent reconstruction projects**
- **Expand Summer Streets to more hours and more days**
- **Pilot closure of Central and Prospect Parks to cars year round**
- **Expand Urban Art program**



Introduction



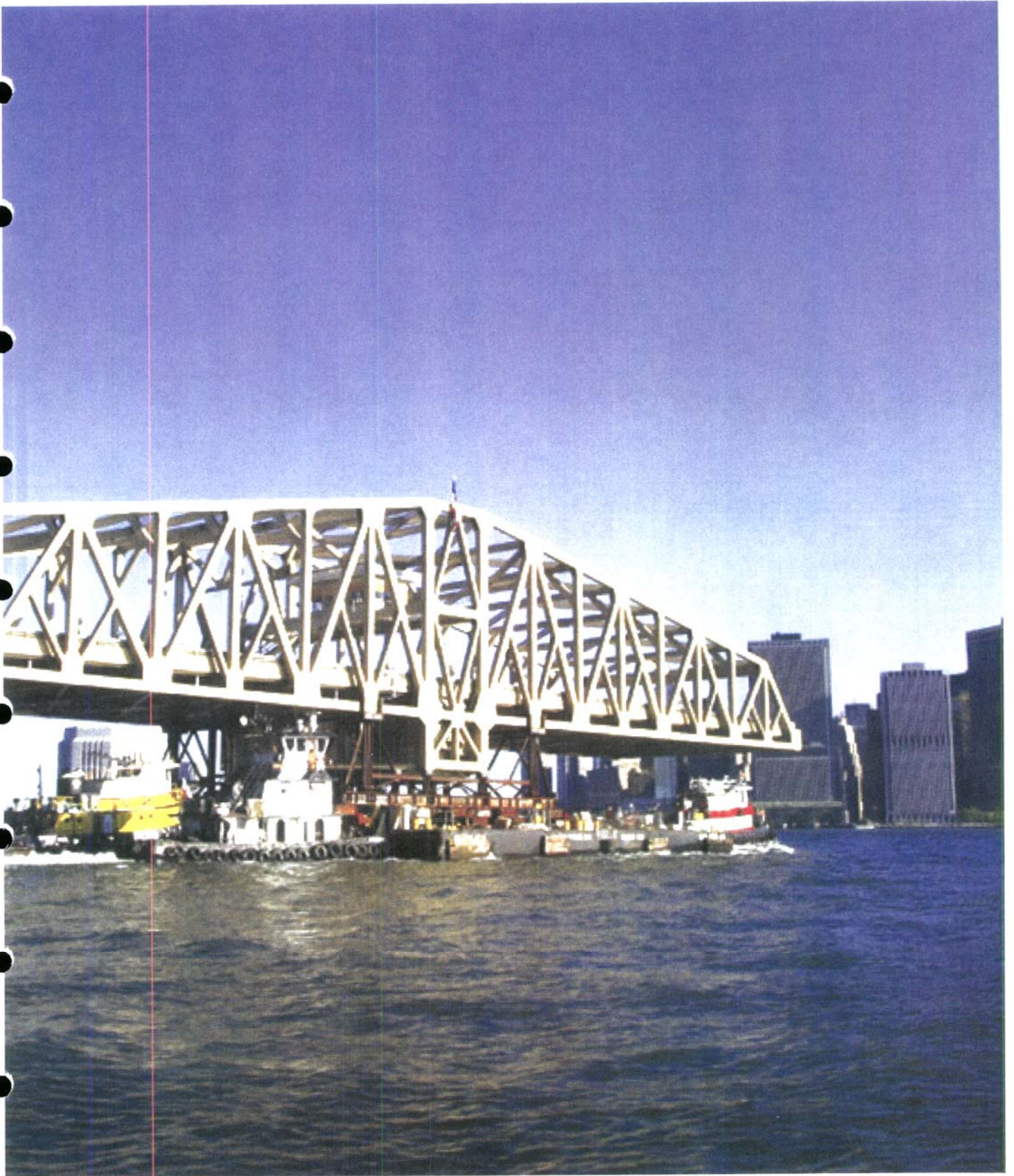
\$6.0
billion invested
since 2007 in DOT
capital projects

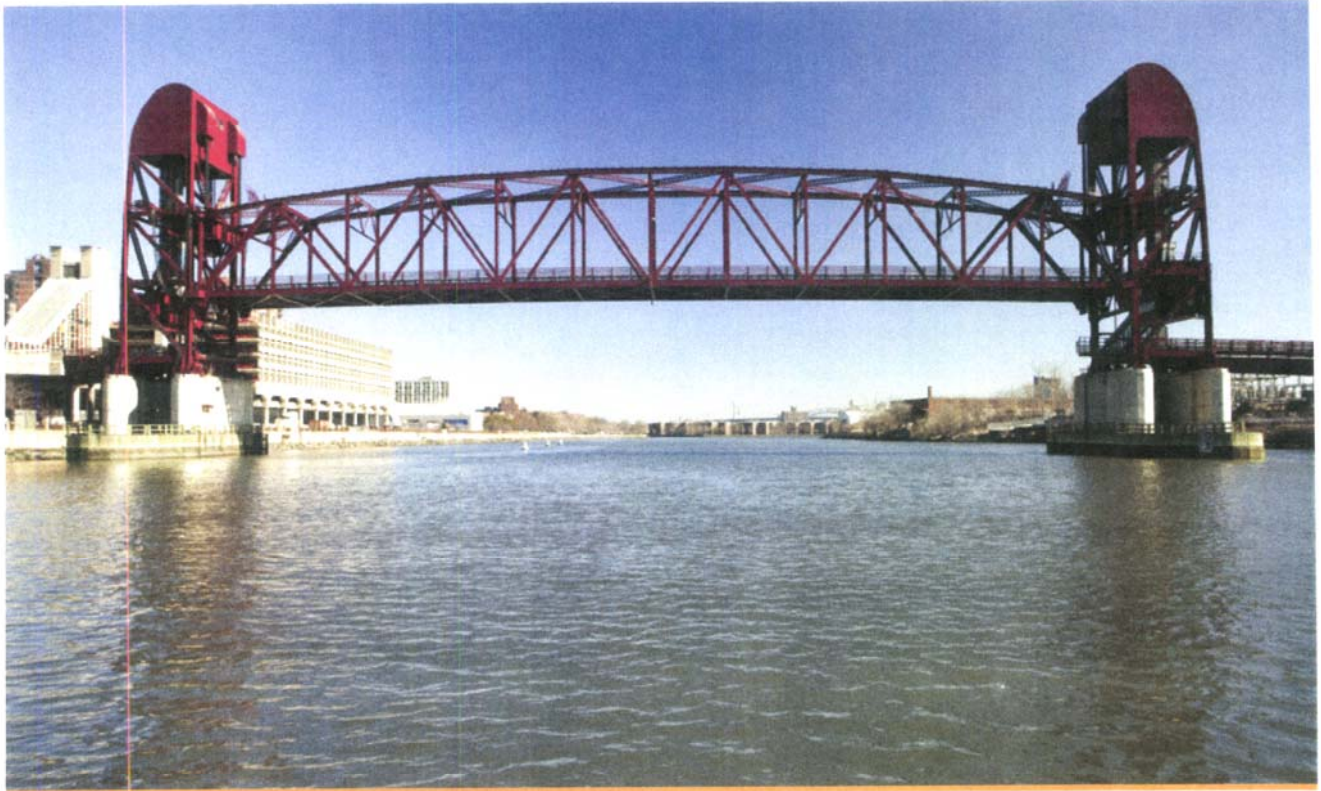
The success of New York depends on its infrastructure. Safe and well maintained roads, bridges and rails allow New York City's economy and industry to thrive and its residents to have a high quality of life. Greening the city's infrastructure is also crucial to meet the city's goal of reducing greenhouse gas emissions from operations 30% by 2017.

Since 2007, NYCDOT has invested a record resources into the maintenance and upkeep of transportation infrastructure. Despite the high visibility of public plazas and bike lanes, the majority of DOT's resources are used for road and bridge repair and reconstruction projects. NYC DOT is responsible for over 6,000 miles of roadway and nearly 800 bridges along with the 24/7 operation of the Staten Island Ferry. We have more than 12,000 signalized intersections and over 300,000 streetlights.

NYC DOT has invested \$6.0 billion over the past six years in capital projects, including \$3.1 billion for bridges, over \$2.1 billion in street reconstruction and repaving, \$430 million for lighting and traffic signals, and over \$110 million for the Staten Island Ferry.

DOT's 2008 Strategic Plan called for maintaining and modernizing the city's infrastructure and ensuring it is ready for the demands of this century and next. These goals include making roads smooth, saving money with timely bridge upkeep, using more sustainable materials in streets and cleaner fuels in our cars, trucks and ferries, and reducing the size of DOT's vehicle fleet.





Roosevelt Island Bridge

Since 2007, DOT has made progress on all of these fronts while making environmental stewardship a hallmark of its operations. Over 73% of city streets are in a state of good repair versus 66% in 2008, and DOT has increased the use of recycled asphalt. The number of bridges in poor condition has declined to record lows. DOT is implementing energy efficient street lights throughout the city with plans to upgrade all street and highway lights to LEDs by 2017. The Staten Island Ferry is one of the greenest in the nation and future upgrades will bring even more environmental benefits.

Chapter 12 21st Century Streets

Keeping city streets in good condition is vital to safe and efficient travel and is an essential function of DOT. The agency's street infrastructure projects range from pothole repair to milling and repaving to full reconstruction of the street. Every year DOT lays millions of cubic yards of asphalt and repairs hundreds of thousands of potholes.

PlaNYC set ambitious goals for resurfacing at least 1,000 lane-miles of city streets per year. Through increased investment, the city has made progress towards improving street conditions. The city committed additional resources to resurfacing over the past six years, totaling over \$997 million since 2007. The improvement in street conditions reflects this investment. This funding has been used to resurface over 6,500 lane miles of streets. The percentage of our streets in a state of good repair increased from 66% in fiscal year 2008 to over 73% in fiscal year 2012.

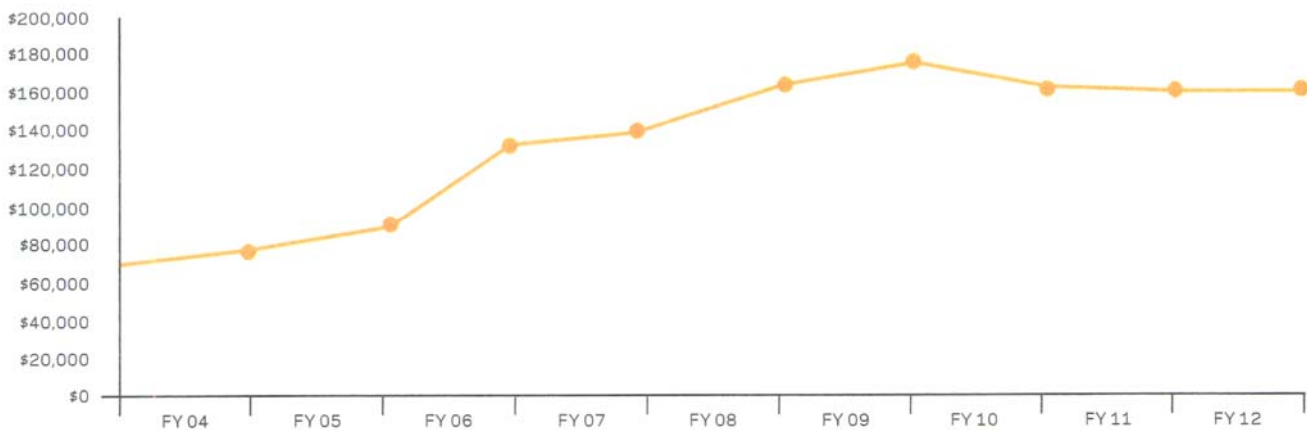
NYC LANE MILES RESURFACED, BY FISCAL YEAR

FISCAL YEAR	FY07	FY08	FY09	FY10	FY11	FY12
TOTAL	924.91	964.15	1,006.75	828.85	1,003.98	1,007.64

Even devastating events haven't stopped DOT from continuing to make progress in street conditions. Hurricane Sandy hit the city in October 2012, and the percentage of streets in good condition dropped only slightly the following fiscal year, to 70%, despite extensive damage to the street system.

The harsh winter of 2010 also battered city streets, and the number of pothole complaints increased. Mayor Bloomberg responded with an additional \$2 million allocation to DOT for pothole repair. During the first quarter of 2011, DOT crews filled 50% more potholes than the prior year—an additional 40,000 potholes were repaired.

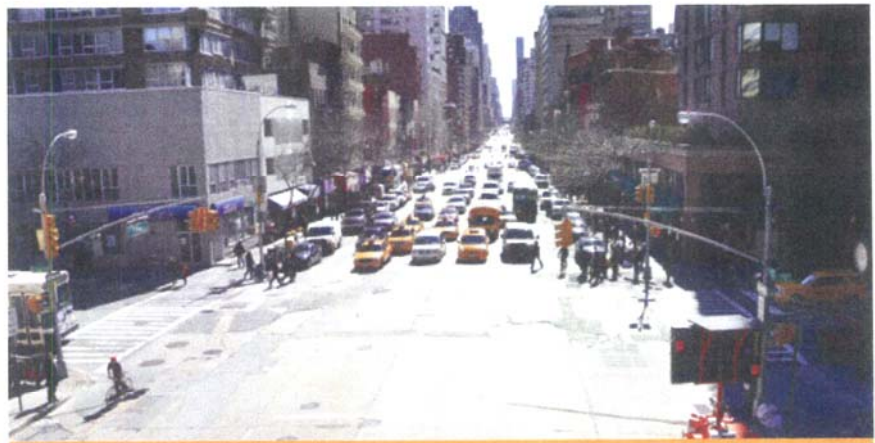
SPENDING ON ROAD RESURFACING





FIRST AVENUE

DOT used an innovative, thin-asphalt overlay atop the notoriously uneven concrete road at a fraction of the cost of a complete rebuilding to repair First Avenue. The \$7 million project to repair the avenue from 72nd to 125th provides a smooth surface for pedestrians—including 48,000 runners at the NYC marathon—and makes it safer and more accessible for 60,000 daily bus, vehicle and bike riders. Select Bus Service was launched in 2010 and the street has been redesigned curb-to-curb in phases from Houston Street, adding high-visibility bus lanes for the M15 SBS, pedestrian refuge islands and parking-protected bike paths.



BEFORE: First Avenue



AFTER: First Avenue

Each year, New York City DOT's recycled asphalt program saves 174,000 tons of milled asphalt from going to landfills, reduces the amount of oil used in asphalt production by 840,000 barrels and eliminates 321,000 trucks trips

GREEN ASPHALT

NYC DOT requires approximately one million tons of asphalt annually to keep its 6,000 miles of streets smooth. The agency is the national leader in producing recycled asphalt in a cost effective and environmentally sound manner.

Asphalt is a combination of hard rock and petroleum-based asphalt cement. During resurfacing, some of pavement is removed and can be recycled to make new street surfaces. The recycling process reduces the amount of new pavement manufactured, which in turn, reduces greenhouse gas emissions and truck trips.

DOT's 2008 Strategic Plan set goals to increase the use of reclaimed asphalt pavement (called RAP), to 50% for in-house production and 25% for contractors. In-house asphalt production averaged 40% RAP in 2012. For vendor content, DOT averages 31% recycled asphalt.

The only other large American city using more than 20% recycled content in its paving material is Los Angeles. DOT's recycled asphalt

pavement saves us 174,000 tons of milled asphalt from landfilling a year, avoids 840,000 barrels of oil annually used to produce new asphalt cement, and eliminates 321,000 truck trips.

Recycled asphalt is good for the environment and saves the city money. In fact, DOT-produced asphalt proved so efficient at the Hamilton Avenue plant in Brooklyn—delivering savings of \$10 million a year—that DOT moved to acquire a second asphalt plant at the Harper Street asphalt plant in Queens.

The acquisition of the Harper Street facility also allowed the agency to close the Hamilton Avenue plant for modernization. After a renovation of the Hamilton Avenue asphalt plant is complete in late 2013, the upgraded facility will allow NYC DOT's use of RAP to increase to 50%.

DOT is piloting the use of 100% recycled asphalt in Staten Island along Richmond Avenue and Jewel Ave in Queens. Initial tests showed additional cost savings and environmental benefits.



Saves enough oil to power the Empire State Building



Keeps over 400 subway cars full of asphalt out of landfills



Eliminates 321,000 truck trips

22,000

gallons of annual fuel savings from new paving equipment

GREEN PAVING EQUIPMENT

DOT has dramatically reduced the environmental impact of the equipment it uses to pave the streets. New “electric screeds” offer the City’s greatest fleet-based savings in greenhouse gas emissions and help it meet air quality goals outlined in PlaNYC.

Paving machines operate with two basic parts—the tractor that stores and prepares asphalt and a “screed” that trails behind to lay asphalt at the correct thickness and angle. The screeds must stay heated for proper application of asphalt. Traditionally, DOT had used diesel fired screeds. With a \$1.14 million grant from the American Recovery and Reinvestment Act, DOT was able to retire these units

early to replace them with more modern, electric screeds. The new electric screeds allow better quality and temperature control, require less maintenance and cleaning, and also lay out a better “mat” of asphalt during the paving process. They are also healthier for DOT staff since they remove fumes and pollutants.

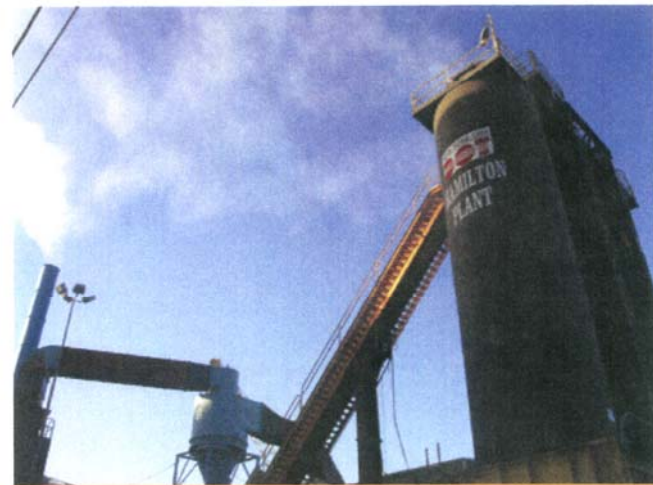
The change eliminates over 460,000 lbs. of CO₂ and 125,000 lbs. of particulates per year, roughly equivalent to the emissions produced by 40 cars driven 10,000 miles. It provides an annual fuel savings of about 22,000 gallons worth about \$90,000. Over the 10-year expected life of the equipment, 3,235 metric tons of greenhouse gases will be reduced.

PHOTO: DOT/PLA

New paving equipment eliminates 460,000 pounds of carbon dioxide and 125,000 pounds of particulates a year



Paving machine with electric screed



Hamilton Plant

The City has installed 5,700 bioswales since 2011

PERMEABLE PAVEMENT AND BIOSWALES

Incorporating sustainable elements into streets is another way to improve the city's environmental performance. The New York City sewer system is old, and during heavy rainstorms wastewater and stormwater combine and flow directly into the city's water bodies, polluting them. The city set a goal to reduce these "combined sewer overflow" (or CSO) events and increase the use of green infrastructure to 10% of impervious surface in combined sewer watershed areas. Streets managed by DOT encompass about 28% of the land in New York City—the agency plays an important role in siting green infrastructure.

Bioswales, stormwater greenstreets, and permeable pavement absorb stormwater during rain storms and help prevent combined sewer overflow events and street flooding. Bioswales and greenstreets use landscaped elements that help to beautify and calm streets. In the past few years, DOT has collaborated with DEP and other city agencies to approve over 5,700 bioswales and over 200 stormwater greenstreets.

DOT has also experimented with the use of permeable pavement as a more flexible alternative to bioswales, which generally require large areas. Our initial screenings show that although permeable pavement has limits—streets above subways and with underground utilities are not good conduits, for example—it performs well in low-density areas where ponding is an issue.

In the winter of 2012, DOT maintenance crews installed precast permeable concrete slabs on the corners of Hollis Avenue & 209th Street and Linden Boulevard & 204th Street in Queens to respond to persistent flooding conditions. After installation, stormwater now infiltrates into the ground. Standing water is absorbed within



Bioswales use planted areas to reduce drainage

a matter of hours. The agency is also using permeable pavement in College Point, Queens after the award of an EPA Green Infrastructure Grant through the New York State Environmental Facilities Corporation.

In 2013, local law codified DOT's interest in exploring permeable pavement. The city is now required to study and issue a report in spring 2016 detailing its experience with permeable materials in streets and sidewalks.

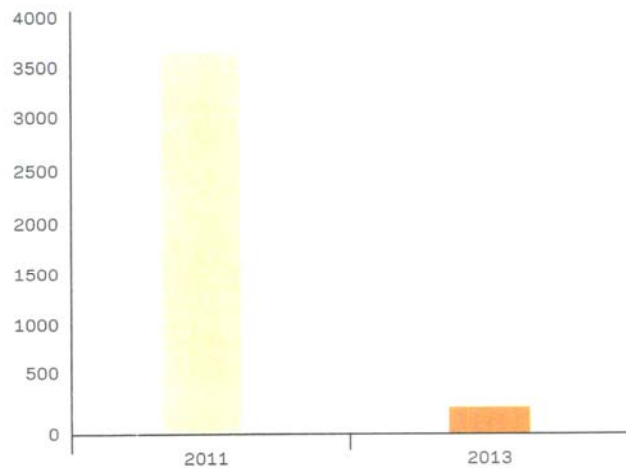


DOT has repaired
2,196,483 potholes
since 2007

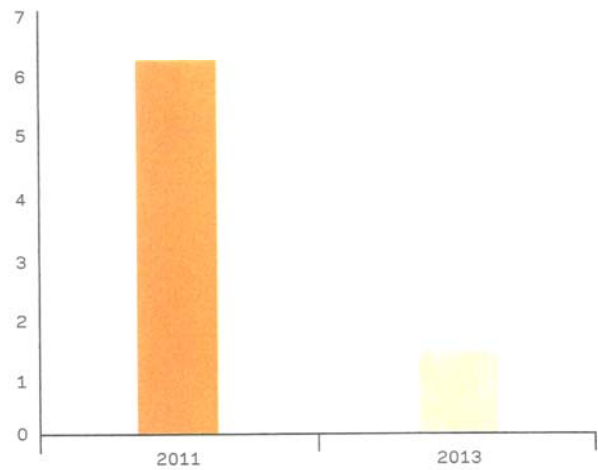
PROGRESS ON POTHOLES

Fixing potholes on New York City's 6,000 miles of streets is a never-ending job. DOT repairs hundreds of thousands of potholes every year, and during the summer, fixes up to 4,000 potholes a day. Through a streamlined process and increased investment, the agency has made strides in reducing the time it takes to respond to pothole complaints, helping keep streets safe and smooth for New Yorkers.

OPEN POTHOLE COMPLAINTS



RESPONSE TIME TO POTHOLE COMPLAINTS (DAYS)



INFRASTRUCTURE

The Daily Pothole makes street repair work accessible to the public at thedailypothole.tumblr.com

THE DAILY POTHOLE

The Daily Pothole tumblr page allows New Yorkers to follow DOT's hardworking men and women as they mill, pave, and smooth city streets. Immediately after its launch in 2011, The Daily Pothole was heralded as a funny, inventive way to show nuts and bolts infrastructure work that keeps New York's transportation system working. Planetizen ranked The Daily Pothole one of the Top Ten Websites of 2011 and Complex.com named it one of the best 100 Tumblrs of all time. As of July 2013, the Tumblr had 16,447 followers.



Warmy the asphalt plug is the Daily Pothole's mascot

The Daily POTHOLE MILL & PAVE

 A publication of New York City DOT    

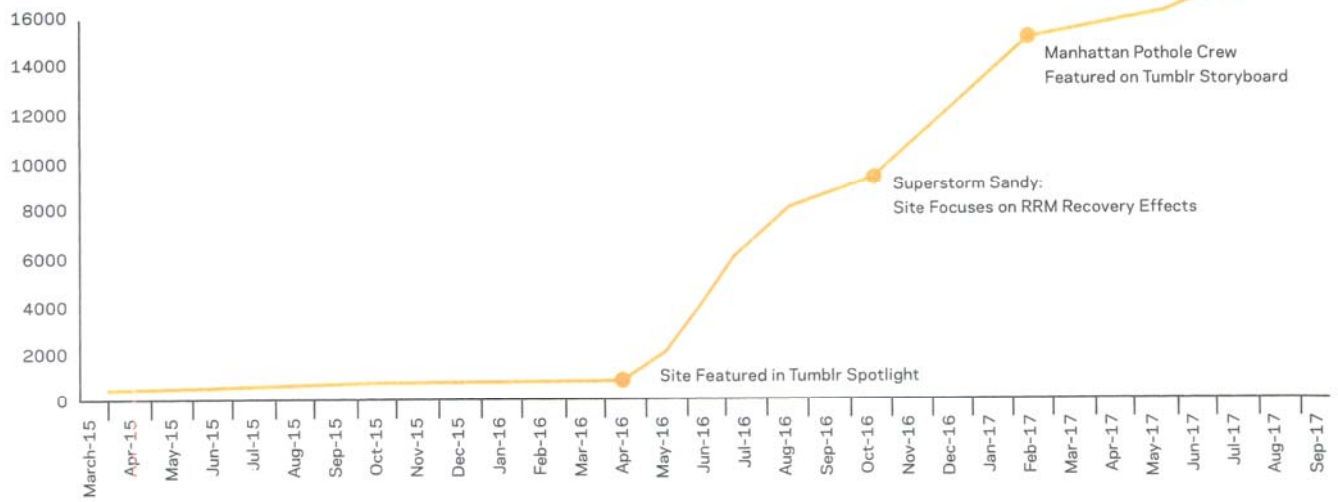
Follow us as we work to make New York City's streets smooth.
1,845,114 square yards resurfaced since July 1, 2013 (9/13/2013)

 [Report a Pothole](#)

 [Check Your Street's Condition](#)

The Daily Pothole Tumblr

THE DAILY POTHOLE SUBSCRIBERS



STREET DESIGN MANUAL

The New York City Street Design Manual is the city's comprehensive resource for street design standards, guidelines, and policies. It draws from a wide range of resources and experience to present a coherent set of choices for street design. These comprise everything from ubiquitous features, such as standard sidewalk concrete and street lights, to newer design elements like pedestrian safety islands, bus bulbs, and protected bicycle lanes.

The Manual's first edition, published in 2009, has been a tremendous success, with rapid integration into the city's DNA. City agencies and private developers now work from a common, comprehensive playbook. A standard reference text for DOT staff, the Manual has been incorporated into the agency's internal design-review processes and is required reading for all design and engineering consultants. The Manual is also cited in the Mayor Bloomberg's Executive Order encouraging active design strategies for streets and buildings.

The Manual is a living document. DOT updated the first edition a year after its publication, and the second edition, released in fall 2013, reflects further evolving practices and aspirations. Future editions will continue to document the changes that come as the city keeps turning its goals into best practices. They will also promote still more innovations to make our streets safer, smarter, and stronger as local economic and social assets.

The following agencies participated in the developing the Manual: Departments of Design and Construction, City Planning, Parks and Recreation, and Environmental Protection, and Buildings, as well as the Economic Development Corporation, the Landmarks Preservation Commission, the Public Design Commission, and the Mayor's Office.

STREET DESIGN MANUAL

Street Design Manual



New York City
Department of Transportation

2013
Second Edition

STREET WORKS MANUAL

City streets are New York's basic circulatory system, serving huge numbers of daily foot, bus and auto trips, as well as facilitating the millions of large and small goods deliveries that keep our economy running. Our streets are also the conduits for the increasingly complex set of public utilities needed for daily life in the 21st Century—water, electricity, gas, steam and telecommunications of every kind.

At times these multiple functions conflict—nearly every New Yorker seems to have a story about a work crew digging up a freshly surfaced city street.

Though better coordination of paving and sub-surface work seems elementary, it has been elusive owing to sheer scales of both our street system and the utility networks buried beneath them.

The New York City Street Works Manual represents a major step in solving this problem. NYC DOT and the city's major utility companies produced new policies set forth in the Manual and a series of agreements about data-sharing and consultation on work on both roadways and below the street surfaces. These have gone a long way to protect the public's investment in better street surfaces. New information applications are facilitating the coordination of vast and complex work schedules across the city.

In the same vein, the release of the Manual in 2012 also marked the adoption of new, business-friendly technology improvements in NYC DOT's issuance of permits to contractors who need to undertake work in or under city streets. All-electronic permitting saves time and money for the utility and construction industries, while reducing costs and saving taxpayer dollars.

INFRASTRUCTURE





The Sheridan/Hunts Point Land Use and Transportation Study recommends turning the Sheridan Expressway into a boulevard lined with new housing, retail, and offices



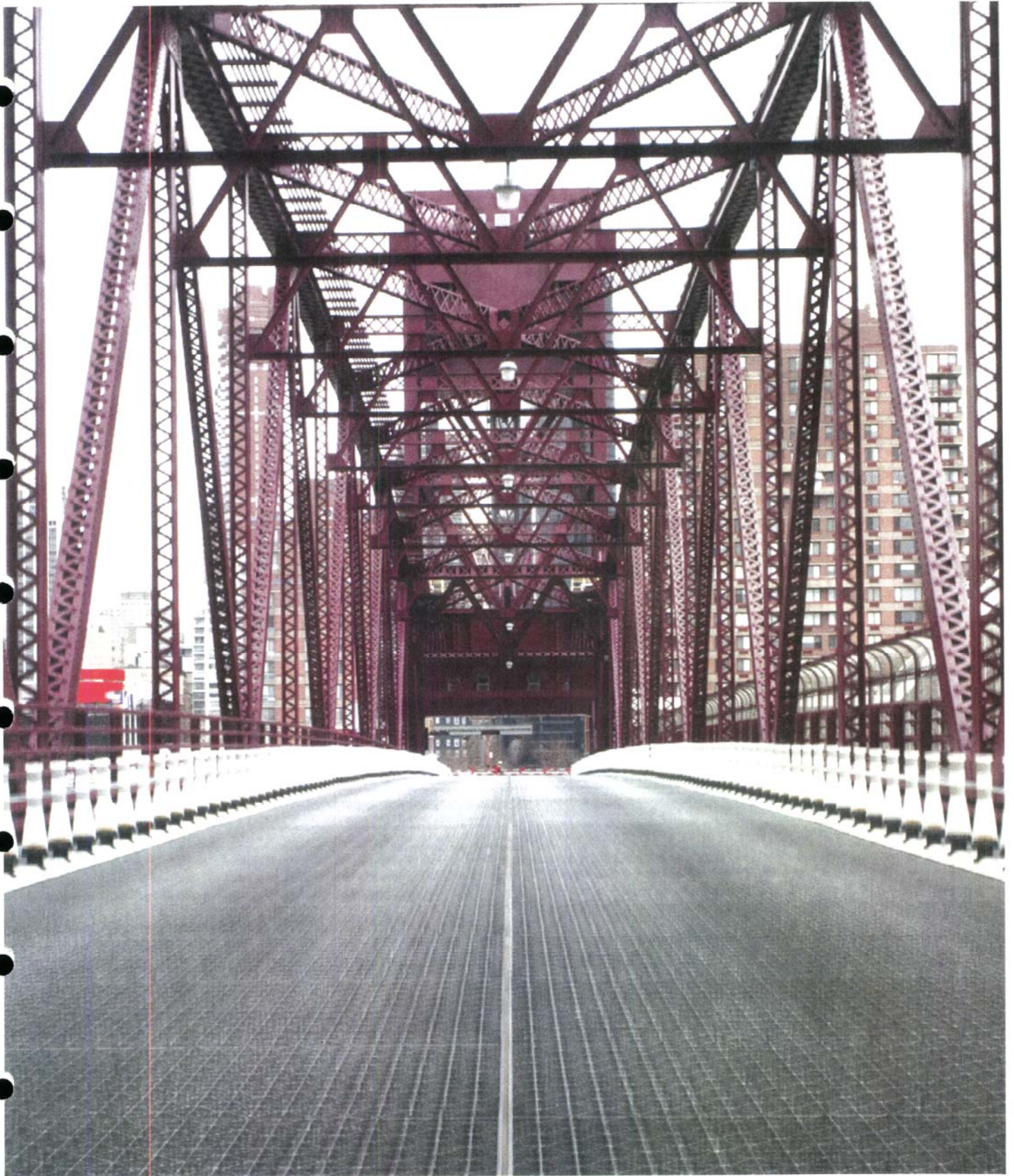
Proposed redesign for Sheridan Expressway at West Farms Rd, Bronx

SHERIDAN EXPRESSWAY

DOT worked with City Planning, the Economic Development Corporation, and local stakeholders to undertake the 'Sheridan-Hunts Point Land Use and Transportation Study' starting in 2010. After a \$1.5 million federal TIGER II award from US Department of Transportation, the agencies evaluated ways to address community concerns over land use, waterfront access, transportation and economic development, and take advantage of emerging opportunities for new housing and retail. The study sought ways to mitigate an over saturation of infrastructure in the Hunts Point neighborhood of the South Bronx.

The recommendations built off prior state and community based studies that addressed local transportation problems and proposed improved access to new parks along the Bronx River. The final recommendations were to turn the 1.25 mile highway into a boulevard, improve pedestrian crossings and safety, and encourage additional housing, offices and retail.

The completion of the study sets the stage for the transportation project development process, which will require environmental review and preliminary design. The City will pursue a cooperative agreement to advance the project with the State, which owns the expressway.



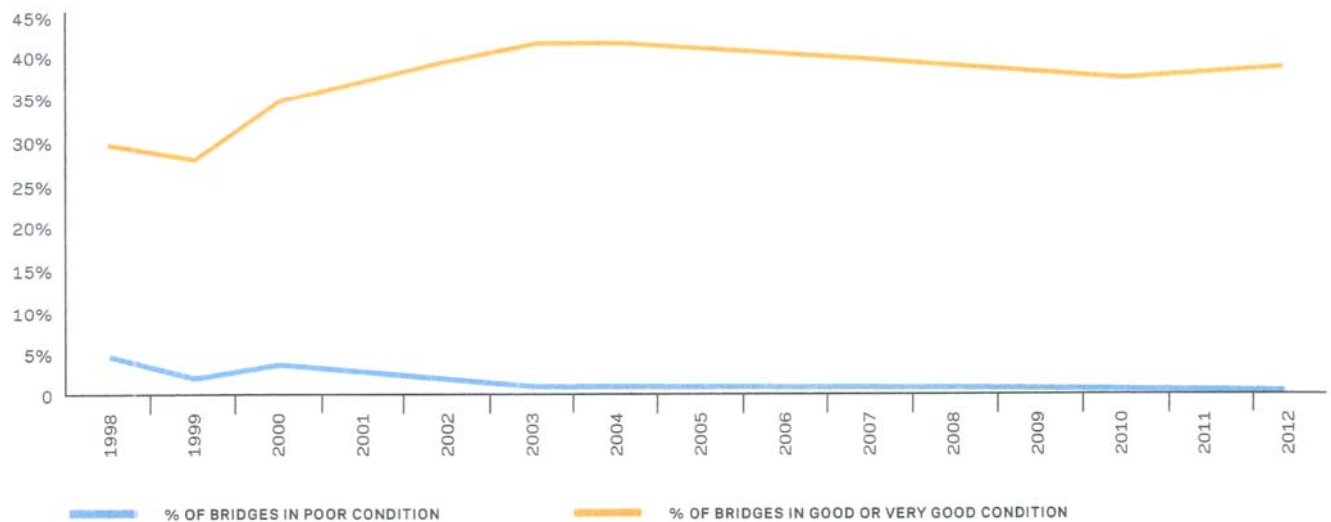
Chapter 13 A City of Bridges

DOT has committed \$3.1 billion to repair the city's bridges since 2007

DOT has committed \$3.1 billion for the city's bridge program since 2007 and instituted internal controls to use dollars more efficiently. The investment has paid off. 66 bridges, including the Brooklyn Bridge, Willis Avenue Bridge, and the ramps at St. George Ferry Terminal, have been rehabilitated or replaced creating a smoother and safer ride for motorists. Once the Brooklyn Bridge rehabilitation is complete, all the city's bridges will be restored to a state of good repair—a new record.

DOT is responsible for 788 bridges and tunnels throughout New York City. Keeping these bridges safe and in a state of good repair is vital to safe and efficient movement of goods. Over the next ten years, the city has committed \$4.3 billion to this goal. Over 70 bridges that would otherwise fall into "poor" condition are funded for reconstruction. However, funding challenges over the long-term remain (see Looking Ahead section).

NYC BRIDGE CONDITIONS



To ensure the best communication with local residents about the Brooklyn Bridge reconstruction project, DOT hired a full time community liason, set up a working group with key stakeholders, and developed a mailing list of over 1,000 people

EAST RIVER BRIDGES

The East River Bridges are iconic, landmark symbols for New Yorkers and tourists who walk, bike and drive over them every day. Over the past few decades, over \$1 billion has been invested to keep the East River Bridges safe for the millions of people that use the bridges annually. This investment was strengthened under the leadership of Mayor Bloomberg.



Brooklyn Bridge



DOT worker fixing Brooklyn Bridge

BROOKLYN BRIDGE

More than 120,000 vehicles, 4,000 pedestrians and 3,100 bicyclists cross the Brooklyn Bridge every day. The agency is undertaking a \$500 million overhaul of the bridge to keep it safe, attractive and well maintained for all users. This project includes upgrading existing roadway pavement, rehabilitating historic arch blocks, railings, and masonry structures, restriping and expanding capacity at on and off ramps, and increasing the overhead clearance at the York Street arch over the BQE, which is currently lower than industry standards. In addition, the DOT project includes seismic retrofitting at the Franklin Square arch over Pearl Street. On all the bridge approach structures on both the Manhattan and Brooklyn sides, the existing deck will be removed by lifting out sections and replacing them panel by panel with precast concrete-filled steel grid deck panels. The bridge is also being painted to prevent steel corrosion and improve aesthetics.

Brooklyn Bridge Working Group:

The rehabilitation of the Brooklyn Bridge is a large infrastructure project in a dense urban area. To lessen the impacts of the project on its Manhattan and Brooklyn neighbors, NYC DOT employed construction equipment innovations such as smaller jackhammers, sound proofing blankets, and to the extent possible, doing work during the day. To ensure the best communication with local residents, the agency hired a full time community liaison, set up a working group with key stakeholders, and developed a mailing list of over 1,000 people.



Manhattan Bridge

MANHATTAN BRIDGE

Nearly a billion dollars has been invested in the Manhattan Bridge over the past few decades for reconstruction and repair. The latest \$149 million contract began in January 2010 and builds on the investment in the historic bridge.

It includes the total replacement of all 628 bridge suspenders, main cable re-wrapping, replacement and upgrade of the necklace lighting, and installation of maintenance platforms at the bridge towers. Previous

phases of the rehabilitation have strengthened the bridge, reconstructed the roadways, the subway tracks, and the walkway, and developed a new bikeway on the north side.

224%

increase in cycling
daily over the
Williamsburg Bridge
since 2007

WILLIAMSBURG BRIDGE

Ongoing maintenance of the Williamsburg Bridge builds on previous reconstruction and repair projects and ensures the crossing will remain in good condition for future generations. The bridge is one of the busiest in the city, carrying over 150,000 motorists, nearly 100,000 transit riders, and

over 5,000 cyclists on weekdays.

The most recent \$173 million project includes rehabilitating the tower bearings, the truss system, and the steel structure of all the bridge's eight towers. Architectural work includes the restoration of decorative lights and the Brooklyn granite stone monument. Work

inside the anchorage houses on both the Manhattan and Brooklyn sides includes the construction of new stairs, ventilation and lighting. The project also includes the installation of an Intelligent Transportation System (ITS).

Previously, over \$500 million was spent to fix deterioration due

to deferred maintenance and the effects of age and weather, and increased traffic. The investment rehabilitated the main cables, reconstructed the roadways and completely rebuilt the walkway, bikeway and subway tracks.

ED KOCH QUEENSBORO BRIDGE

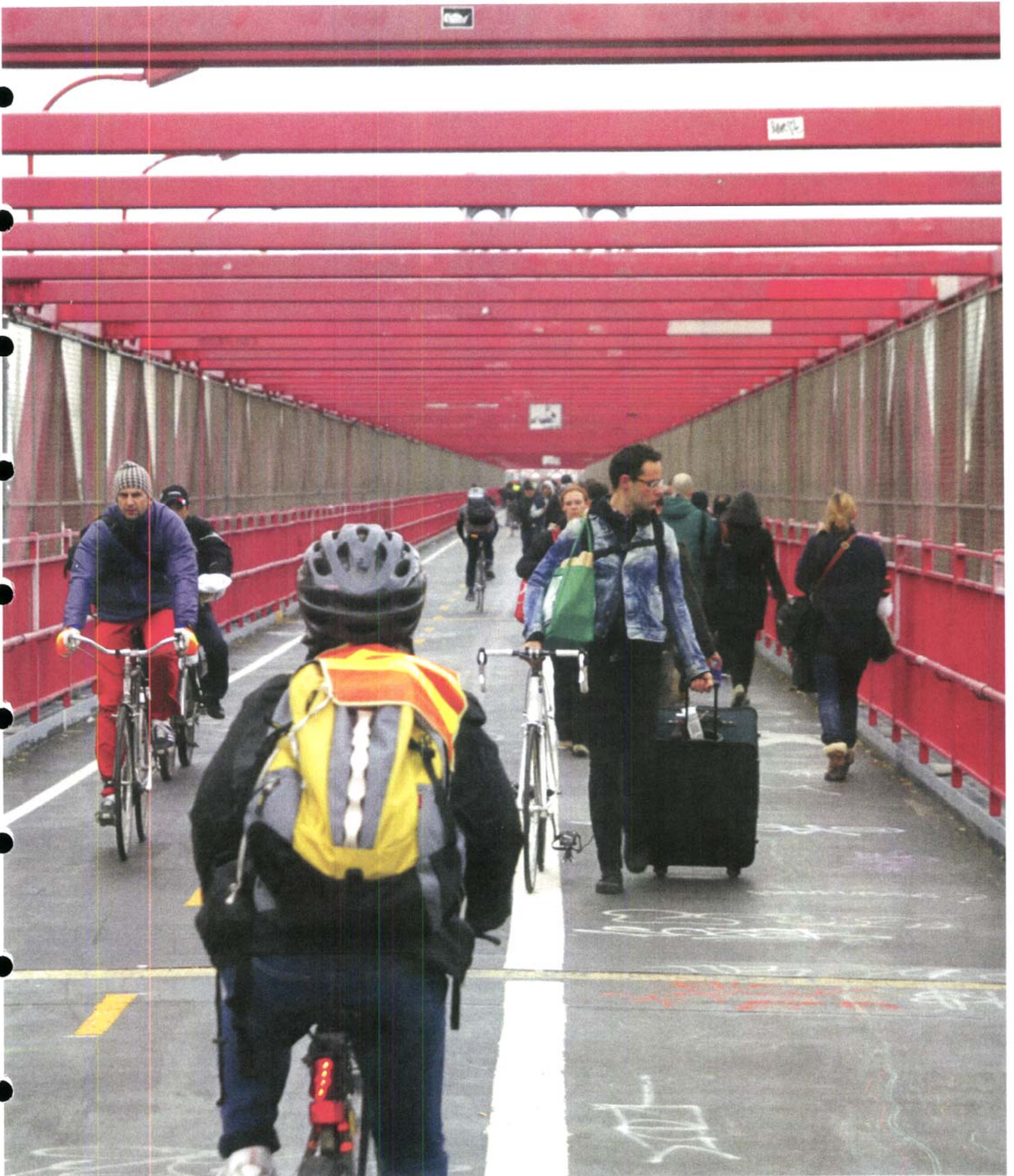
The Ed Koch Queensboro Bridge is the busiest crossing of the East River bridges, carrying 221,920 motorists, 11,980 bus passengers and 4,342 cyclists and 1,591 pedestrians every day. Ongoing work to keep the bridge in good condition includes drainage improvements on the main

bridge and Queens approach, new overhead signs and lighting, and cleaning and repairing the bridge structure.

The current projects build on the \$300 million invested in recent decades to reconstruct ramps and roadways and rehabilitate the bridge bearings.



Ed Koch Queensboro Bridge

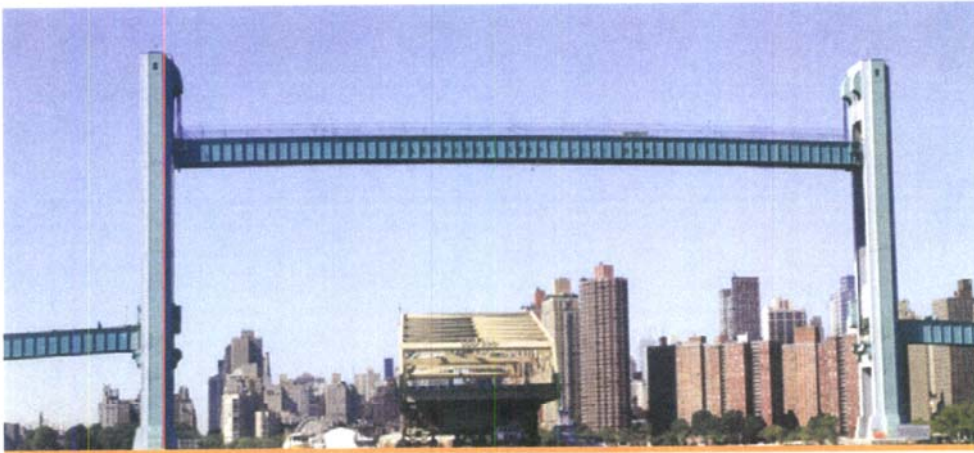


\$14.3

million in federal stimulus funding for the Wards Island pedestrian bridge

HARLEM RIVER BRIDGES

WARDS ISLAND BRIDGE



Willis Avenue Bridge Under Wards Island Bridge

In early 2012, NYCDOT completed a \$1.5 million rehabilitation of the Wards Island pedestrian bridge including bridge deck renovations, a new electrical system, and better lighting and security. The project was funded by the American Investment and Reinvestment and Recovery Act and allowed a better experience for pedestrians using the bridge to travel between East 103rd Street in Manhattan and Wards Island.



3rd Avenue Bridge

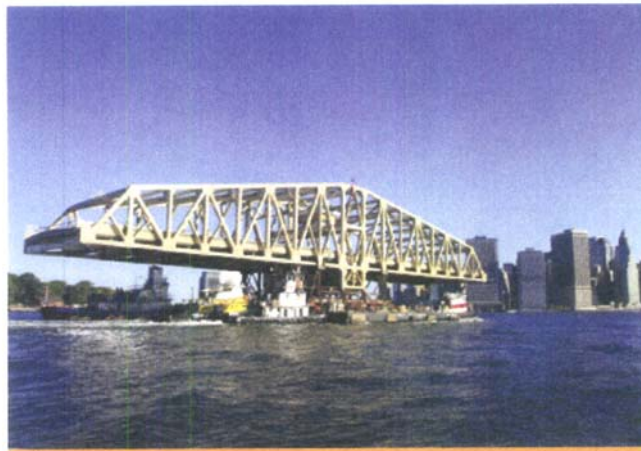
THIRD AVENUE BRIDGE

DOT completely replaced the Third Avenue Bridge in 2004, part of a \$118 million project to improve mobility for traffic between Manhattan and the Bronx. The new bridge span was the first one to be floated into New York Harbor after being constructed in Alabama.

WILLIS AVENUE BRIDGE

In 2011, NYCDOT completely replaced the Willis Ave Bridge, which connects East 124th Street in Manhattan to Willis Avenue in the Bronx, as part of a \$612 million project. The 350-foot swing span of the new bridge, which opens on a pivot to let marine traffic pass, was constructed in Coeymans, New York, and travelled by barge to its Harlem River home. The span's 135-nautical-mile journey down the Hudson River, through New York Bay, and up the East River included passage underneath 14 bridges.

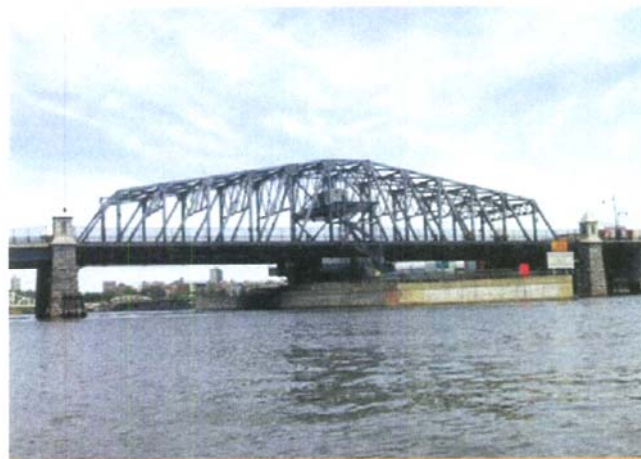
The new bridge features a direct connection from the FDR to the northbound Major Deegan Expressway in the Bronx. It has wider lanes than the old bridge, and a combined pedestrian/bicycle pathway along its north side. The project is ongoing, as DOT completes reconstruction work on surrounding ramps and approaches.



Willis Avenue Bridge

145TH STREET BRIDGE

As part of a \$70 million project, the bridge was entirely closed to traffic in November 2006 and the center swing span was removed. In February 2007, when the preparatory work was complete, the new 145th Street Bridge was floated up the Harlem River to its final destination. The reconstructed bridge includes a new swing span, new machinery and electrical system, a new approach roadway and spans, railing, fencing, lighting, and signals. A new Operator's House has been centered and installed.



145th Street Bridge

www.nyc.gov/dot

DOT's reconstruction project on seven Belt Parkway Bridges will improve safety and reliability for 150,000 drivers a day

BELT PARKWAY BRIDGES

The New York City Department of Transportation began the reconstruction of seven bridges and over the Belt Parkway in 2009. In total, the projects will cost nearly a billion dollars and improve safety and reliability for 150,000 drivers who use the Belt every day. The Fresh Creek Basin, Rockaway Parkway, Paerdegat Basin, Gerritsen Inlet, Mill Basin, Nostrand Avenue and the Bay Ridge Avenue Bridges are all original structures built starting in 1939. In 2009, a construction contract began for three—the Belt Parkway over Fresh Creek Basin, Rockaway Parkway, and Paerdegat Basin. Additionally, in order to mitigate wetland impacts, an offsite project at Floyd Bennett Field within the Gateway National Recreational Area (GNRA) was started in March 2011.

Reconstruction of these bridges will improve safety and visibility. Lanes and the bike path will be wider, safety shoulders and median barriers will be constructed, and the roadways will be realigned to improve sight distances. NYCDOT anticipates that these improvements will reduce the current accident rate on this section of the Belt Parkway and improve highway drainage.



New Paerdegat Basin Bridge in Canarsie.

One of seven bridge projects along the Belt Parkway.

 WIRING BRIDGES TO IMPROVE UPKEEP

Widespread use of sophisticated sensors helps enforce against overweight trucks and protects bridges facilities

WIRING BRIDGES TO IMPROVE UPKEEP



Monitoring the dynamic behavior of the Brooklyn Bridge



Strain gauge monitoring of beam on the Brooklyn Bridge

DOT has used technology to more efficiently detect problems on our bridges. GPS, laser scanning, ultrasonic testing, and fiber optics have all been used on the East River Bridges in order to track tiny movements of the bridge structures resulting from vehicles, weather, river activity and seismic movements. The data has allowed DOT to more effectively monitor and maintain our bridges. For example, measurements from these scans confirmed that the torsion in the middle of the Manhattan Bridge declined.

DOT is also using weigh in motion sensors on the Alexander Hamilton Bridge to collect data about the impact of overweight trucks on bridge conditions. As truck weight increases, damage to bridge structures accelerates exponentially, stressing bridge roadways and structures, so better data about and enforcement against overweight trucks is a vital component of any bridge maintenance program.

The sensors, installed in the roadbed of the bridge in 2013, weigh each truck that travels over it. Data is then transferred electronically to DOT staff for analysis and used to develop assessments of the number of overweight trucks, and the impacts of those trucks on the bridge structure. Widespread use of the sensors has the potential to help improve enforcement against overweight trucks and protect city facilities from the disproportionate damage they cause.



25

NYC transportation projects saved from cuts by stimulus funding

FEDERAL STIMULUS FUNDING

New York City received \$1.1 billion for transportation projects from the American Recovery and Reinvestment Act in 2009, including \$261 million for NYC DOT. The allocation was the largest to any city in the country and allowed the city to create or preserve approximately 32,000 jobs. New York was able to take maximum advantage of the opportunity because of its sophisticated project development process and expertise in federal transportation law. Existing funding for stimulus projects allowed 25 other projects to proceed, projects that would have languished due to the economic downturn. Examples include the reconstruction of Eastern Parkway in Brooklyn and East Houston Street in Manhattan and construction of the Hunts Point Greenway in the Bronx. Six NYC DOT projects received direct stimulus funding.

Rehabilitation of Saint George Ferry Terminal Ramps

At \$175 million, the project at the St George Ferry Terminal was the largest stimulus project in New York State. The Terminal is Staten Island's transit hub linking 70,000 daily commuters with the Staten Island Railroad, 20 New York City Transit bus lines, 3 parking facilities and the Bay Street and Richmond Terrace bikeway.

The project consists of the rehabilitation of 8 ramps and was completed using the Design Build approach, a modern method of project delivery in which the city enters into a single contract with one entity for both design and construction services. This permits construction to begin while design continues in close coordination, enabling the construction to be completed in less than 3 years under strict cost control. Replacement of the ramps will reduce long term expenditures for the city.

Total Project Cost: \$175 million
Direct Stimulus Funding: \$175 million

Rehabilitation of the Brooklyn Bridge

This project includes rehabilitating ramps and repainting the bridge to improve traffic conditions for 100,000 vehicles and 4,000 pedestrians and 2,600 bicyclists who cross the Brooklyn Bridge every day.

Total Project Cost: \$500 million
Direct Stimulus Funding: \$30 million

Upgrades to the Ward's Island Pedestrian Bridge

The project improved pedestrian access to Ward's Island from East Harlem through a complete mechanical and electrical rehabilitation, including replacing the complete tower drive machinery, providing a new reinforced concrete deck, and a new drainage system. The project was done in tandem with a \$100 million upgrade to Ward's Island recreational facilities, including construction of Icahn Stadium and dozens of new ball fields. The project improved pedestrian safety and durability and extended the useful life of the existing bridge.

Total Project Cost: \$14.3 million
Direct Stimulus Funding: \$14.3 million

Rehabilitation of 17 Runway Bridges

Rehabilitation of deteriorated components of 12 bridges throughout the City extended their useful life by 10 years. Rehabilitation work addressed concrete abutments, piers and columns, bearing replacements, resurfacing steel repairs and waterproofing.

Total Project Cost: \$9.7 million
Direct Stimulus Funding: \$9.7 million

\$261

million stimulus allocation to NYC DOT for transportation projects

INFRASTRUCTURE

The stimulus allocation was the largest to any city in the country and allowed New York City to create or preserve 32,000 jobs

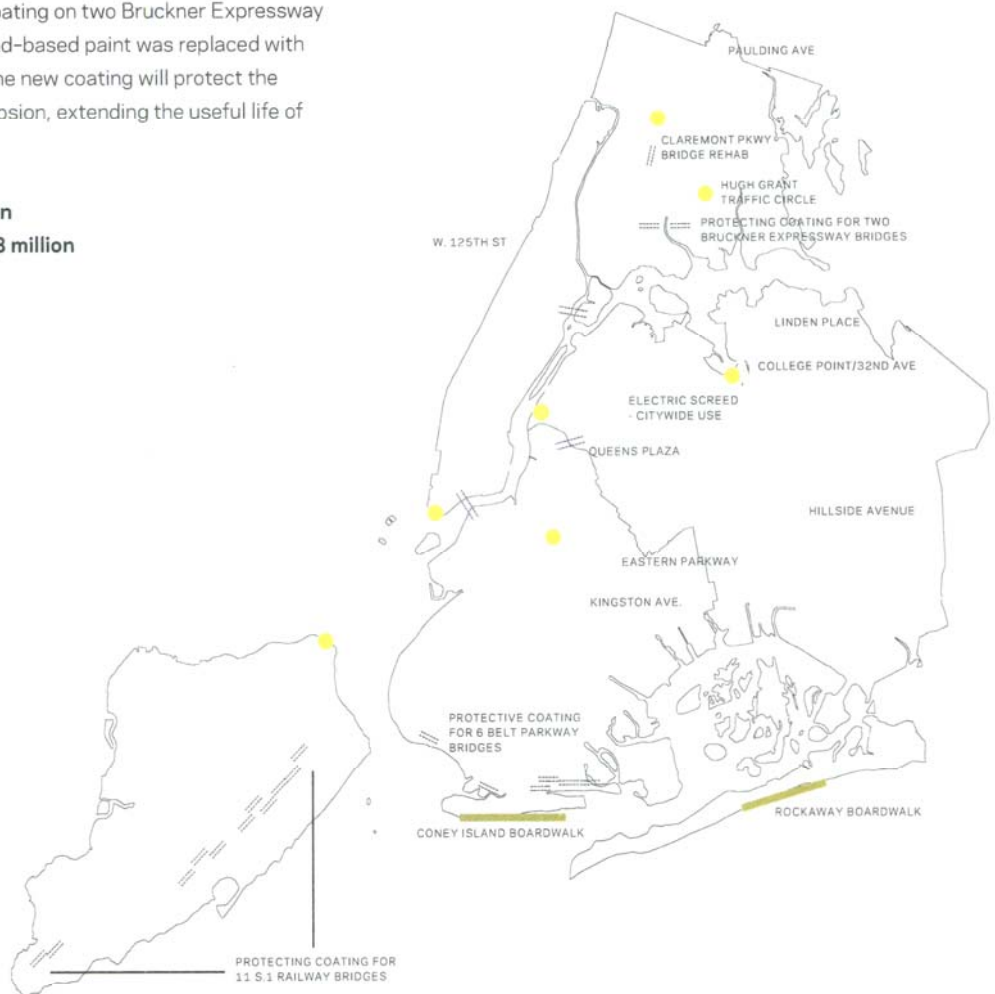
Replacement of Protective Coating on Two Bruckner Expressway Bridges

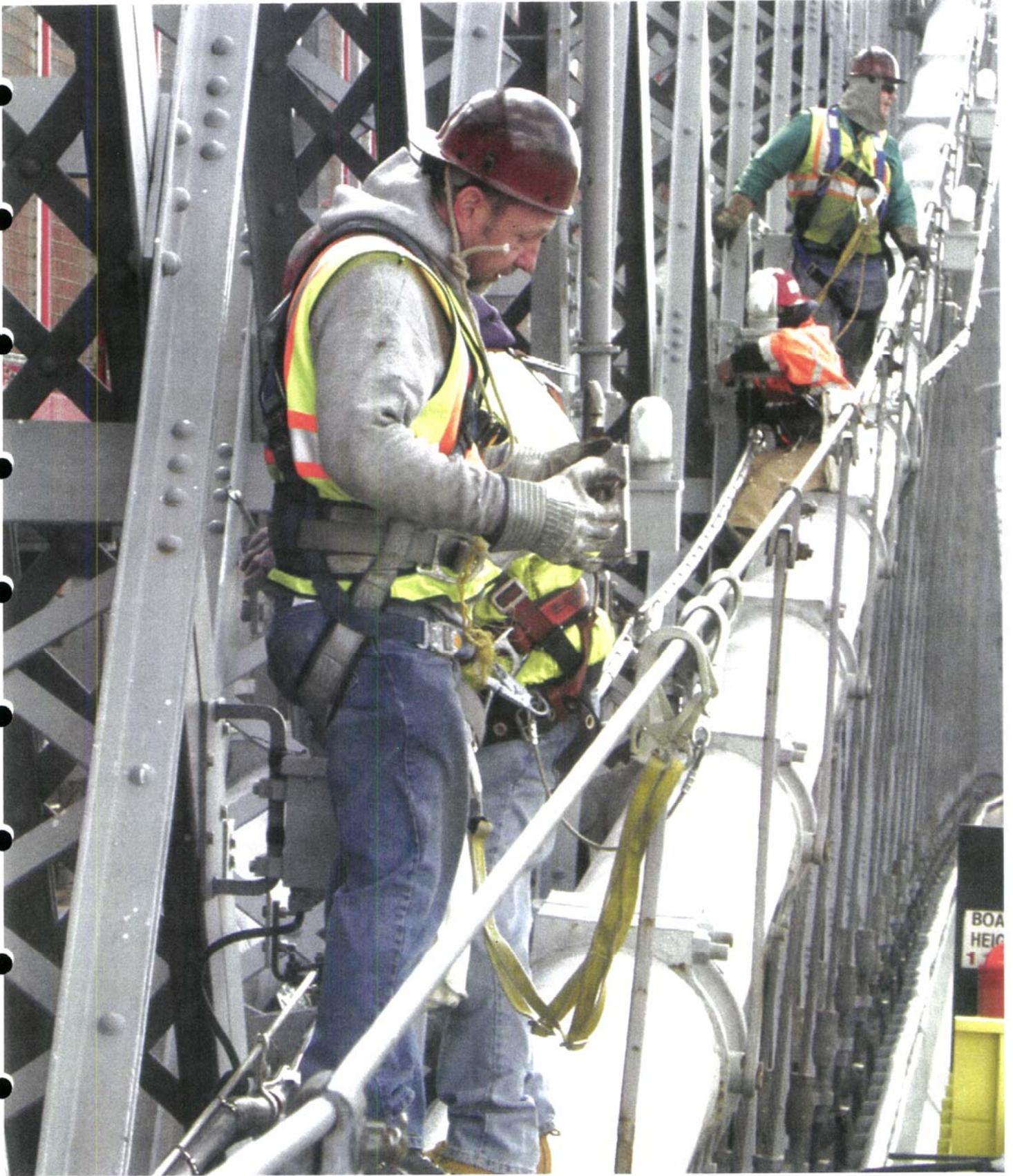
Replacement of the protective coating on two Bruckner Expressway Bridges over the Bronx River. Lead-based paint was replaced with a lead-free protective coating. The new coating will protect the structural steel from further corrosion, extending the useful life of the structures by 20 years.

Total Project Cost: \$8.8 million

Direct Stimulus Funding: \$8.8 million

FEDERAL STIMULUS FUNDING FOR DOT PROJECTS





Chapter 14

Built-in-Efficiency:

Lighting, Signage, Ferries and Vehicles

Sustainable Streets promised that NYCDOT would lead by example, and strive to become a national model for efficient, environmentally sound infrastructure management. As detailed in the chapters above, DOT has risen to this challenge in its street maintenance and bridge maintenance programs.

The agency has also brought a new approach to lights, signs, fuels and its fleet. It has become a leader in the use of energy efficient street and traffic signal lighting, saving millions of dollars in electricity costs and reducing greenhouse gas emissions. Clean fuels for our ferries and agency fleet, along with our car sharing program, have brought significant environmental benefits and are poised to generate additional gains going forward.

\$14

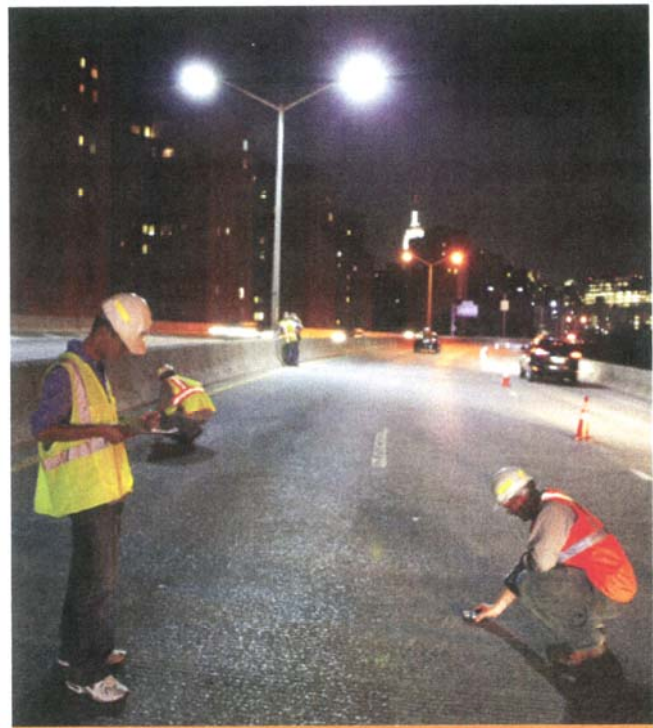
million in annual savings
from conversion to
LED's

LIGHTING

The city has over 300,000 street lights and 12,000 signalized intersections. Keeping streets bright and safe for travel and city life require a substantial amount of electricity. Since 2007, the city has been converting to energy efficient models to reduce energy costs and lessen the city's greenhouse gas emissions. Upgrading traffic and street lights to light-emitting diodes (LEDs) will help the city reach its 30% energy reduction goal in city buildings and operations by 2017, a goal outlined in PlaNYC.

LED upgrades came to traffic lights at DOT's signalized intersections in 2009, producing an annual energy savings of 81%. By the end of 2014, all of DOT's highways and some of our streets will have LED lights. This will save approximately \$2.2 million annually in energy and maintenance costs. Additionally, Far Rockaway and the Staten Island boardwalk will get LED lights as part of the Sandy recovery program.

By 2017, 250,000 streetlights will be converted, completing the largest LED retrofit in the United States. In total, this will save approximately \$6 million in energy and \$8 million in maintenance a year for a total of \$14 million. Compared to the current standard high-pressure sodium lights currently on streets, which last six years, LEDs can last up to 20 years before needing replacement, potentially producing up to an 80 percent savings on maintenance.



DOT employees checking light levels on the FDR Drive as part of the agency's LED pilot program.

DOT has removed 50,000 unnecessary and redundant signs from New York City streets

CLEARER AND MORE ATTRACTIVE SIGNAGE



New commercial vehicles parking signs (right) replaced older signs (left).

Clearly explaining the many laws, rules, and regulations to drivers on the streets of New York is no easy task. The quantity and content of NYC street signage has provided material for many late night comedians, and been the source of confusion for residents and tourists alike.

DOT has worked diligently to reduce sign clutter and make parking and street signs easier to understand. In 2013, Commissioner Sadik-Khan and City Council members announced newly designed and simplified parking regulation signs in Midtown's

commercial parking areas. The initial rollout replaces 6,300 parking regulation signs of varying colors, typefaces, font sizes and sometimes confusing phrasing with streamlined and standardized two-color signs that are phrased and formatted for easier readability. The simplified signs are located throughout Manhattan's paid commercial parking areas, running generally from 60th Street downtown to 14th Street and from Second to Ninth Avenues, with additional areas in the Upper East Side, Lower Manhattan and the Financial District.

The 6,300 signs that DOT will replace in Midtown and Lower Manhattan include 3,300 commercial parking signs and 3,000 other signs for nighttime and weekend parking for the general public, hotel and taxi stands, street cleaning and no standing areas. The new signs reduce the number of characters needed to explain the rules from 250 to about 140, making the sign appear less visually cluttered while reducing five-foot-high signs by about a foot. The new design also places the day of the regulation before the hours of the regulation, eliminating abbreviations and retaining all necessary parking information while making it easier to read. The signs were designed working with Pentagram Design, which has also worked with DOT on its safety campaigns.

DOT has also reduced the number of signs on city streets. Excessive signage distracts drivers from essential control signs, such as stops signs and one-way signs, and clutters streets. Signs also lose effectiveness over time as they blend into the built environment.

DOT has removed over 50,000 signs that are redundant or unnecessary on NYC's streets. These include snow route and bump ahead signs, along with signs to recycle and curb your dog. When the initiative is complete, 60,000 signs will be removed, making streets safer, directions clearer and reducing maintenance costs for DOT.





22
million riders use the
Staten Island Ferry
annually

FERRIES

DOT owns and operates the Staten Island Ferry and works with other public agencies and private operators to promote use of the city's waterways for transportation. The Staten Island Ferry carries over 22 million passengers annually on a 5.2-mile run between the St. George Terminal in Staten Island and the Whitehall Terminal in Lower Manhattan. The Ferry runs 24 hours a day, 365 days a year. The Staten Island Ferry is the most reliable form of mass transit, with an on-time performance of over 96 percent. On a typical weekday, five boats make 109 trips, carrying approximately 70,000 passengers.

GREENING THE STATEN ISLAND FERRY

In 2010, the Staten Island Ferry converted to ultra-low sulfur fuel, delivering significant environmental benefits. We have experimented with biodiesel, installed diesel oxidation catalysts on all of our large ferries, and embarked on a partnership with the Port Authority to reduce emissions as an offset for its dredging projects. These upgrades include installation of after-treatment systems on the two small ferries and mechanical upgrades on the balance of the fleet.

DOT commenced a design process for the conversion of our boats to liquefied natural gas which would essentially eliminate the emission of sulfur dioxide, nitrogen dioxide and particulate, while reducing CO₂ discharge by 25-30% and costs by 35-40%. By summer 2014, we will have retrofitted at least one boat to run on the liquefied natural gas, further making the harbor cleaner and Staten Island Ferry the greenest fleet in the country.

INFRASTRUCTURE

On a typical weekday the
Staten Island Ferry carries
70,000 passengers

THE NEXT GENERATION OF STATEN ISLAND FERRY BOATS

DOT has begun a design process for construction of a new class of ferry boats to serve the next generation of Staten Island ferry riders. The boats will replace three Barberi boats that are at the end of their useful lives. A design firm was selected in March 2013 to design the boats. After design is complete, NYCDOT will seek resources to

procure them at an estimated cost of \$300 million for three boats. Delivery of the first boat is scheduled for 2018. The new boats will have cycloidal propulsion systems to allow it to quickly change thrust and direction, improving maneuverability in choppy water and high winds.

GREENING PRIVATE FERRIES

DOT partnered with the New York State Energy and Research Development Agency and city agencies to repower and retrofit private ferries in the NY Waterway and BillieBey fleets. As part of the program, 9 boats were repowered

and 34 received diesel oxidation catalysts. One Sea Streak boat was also repowered using a grant from the United States Environmental Protection Agency. The change resulted in fuel and emissions savings.

IMPACT BULLETIN

DOT operates eleven plug-in electric vehicles and 15 all-electric vehicles and equipment

VEHICLE FLEET

DOT has worked to reduce the size of its car fleet, and green the fuels used in its cars, trucks, and operational machinery.

CLEAN FUELS

DOT is working to reduce emissions through the use of cleaner fuels as mandated by PlaNYC and Local Law. In 2013, DOT bought the first ever diesel hybrid bucket truck, nine are now used on New York City streets. DOT operates eleven plug-in electric vehicles (Chevy Volts) and 15 all-electric vehicles and equipment. They include cars, forklifts, mini utility vehicles, an aerial lift, and two shop sweepers. The agency utilizes ultra-low sulfur

diesel fuel for diesel powered vehicles (and ferries—as outlined earlier in this chapter), and has begun using biodiesel fuel in certain vehicles. Biodiesel is a non-toxic, biodegradable fuel that has less greenhouse gas emissions. Between fiscal year 2012 and 2013, the agency increased its use of biodiesel fuel by 50% while lowering its total fuel consumption by 15%.

HUNTS POINT CLEAN TRUCKS PROGRAM

HUNTS POINT CLEAN TRUCK PROGRAM EMISSIONS REDUCTIONS

ANNUAL	NO (TONS/YEAR)	PM ₁₀ (TONS/YEAR)	HC (TONS/YEAR)	CO (TONS/YEAR)	CO ₂ (TONS/YEAR)
PERCENT REDUCED (%)	88.5%	97.5%	86.4%	80.2%	22.9
AMOUNT REDUCED PER YEAR	94.6	5.1	6.5	32	2631

The Hunts Point Clean Trucks Program is an environmental initiative led by NYCDOT to promote sustainable transportation and a cleaner environment in the South Bronx. The agency works with truck owners serving the Hunts Point and Port Morris communities and offers attractive rebate incentives for the purchase of advanced transportation technologies and alternative fuels such as new diesel, hybrid electric, compressed natural gas,

and battery electric vehicles. The rebates are available through a federal grant managed by NYCDOT. Rebate incentives are also available for truck scrappage and the installation of exhaust retrofit technologies. The program started in summer 2011 and has resulted in substantial pollution reduction benefits. As of summer 2013, there were over 200 private delivery vehicles in the program, bought with over 3.5 million in federal funds.

CAR SHARING



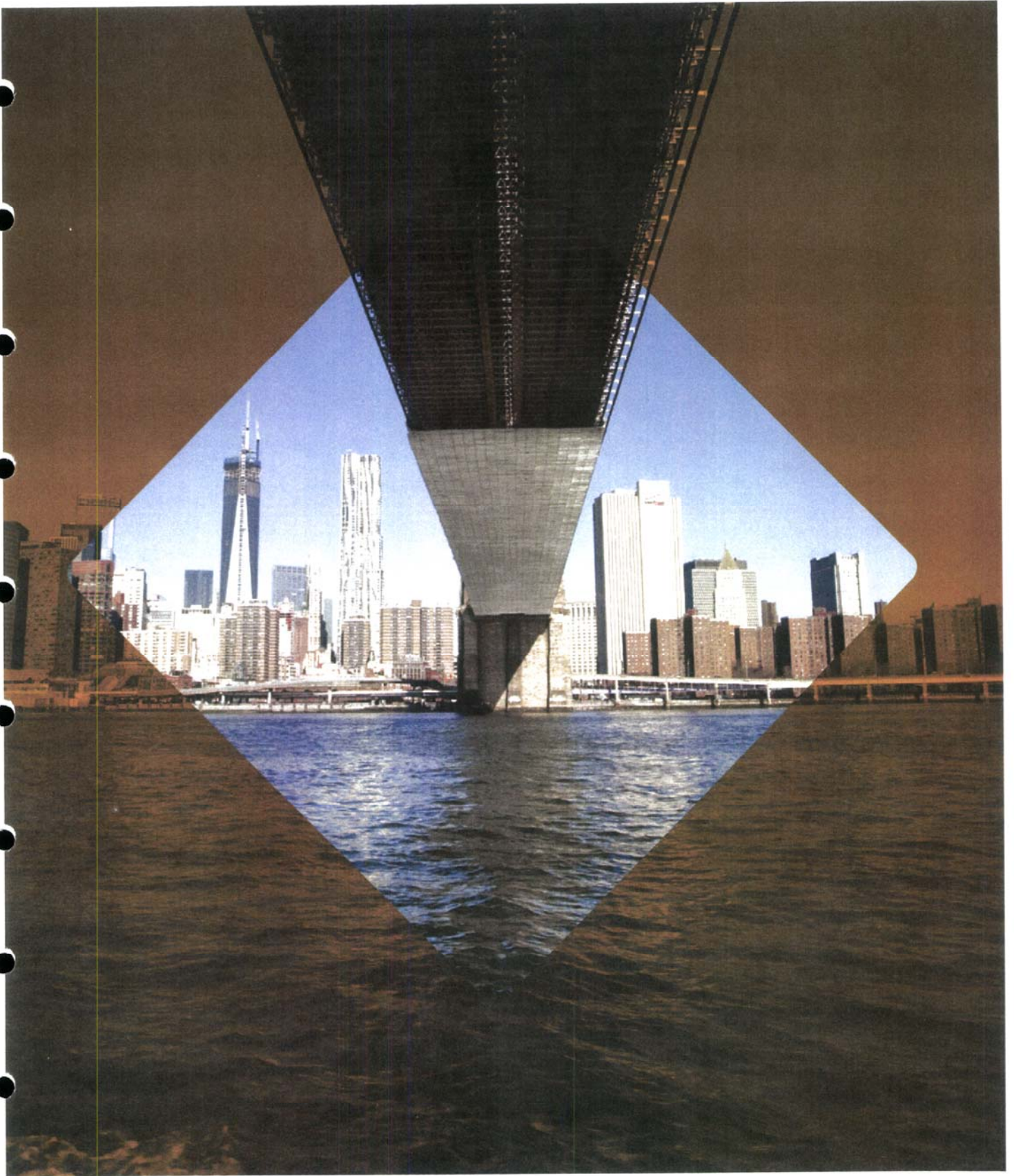
Working with Zipcar, DOT launched a car share pilot in 2010 to reduce the agency's fleet size, help combat global warming, and lessen the agency's parking footprint in Lower Manhattan. During the pilot, DOT removed 50 vehicles from its fleet and provided car sharing access to 350 employees. Given the successful

pilot, DOT renewed its contract and now is working to expand use of car sharing.

Based on this success, the program expanded, to 420 DOT staff with access to Zipcar in 2013. The employees used car shares for hundreds of trips a month and allowed DOT to reduce its standing car fleet.

DOT's car sharing pilot program:

- Removed 25% of DOT vehicles from Lower Manhattan
- Reduced DOT parking impact in Lower Manhattan by 14% weekdays and 68% weekends
- Reduced DOT's miles traveled by 11%



Looking Ahead

Continued progress on the infrastructure maintenance outlined above will require a substantial investment.

The agency's bridge reconstruction program for the next ten years totals \$4.3 billion. Over 70 bridges that would otherwise fall into "poor" condition are slated to be reconstructed over this time, including the Unionport Bridge in the Bronx and Roosevelt Avenue over the Van Wyck Expressway in Queens. Analysis of bridge conditions shows growing needs going forward, as more of our bridges age. Maintenance costs increase as bridges get older, so repairing bridges on time will save public funds in the long run.

The design process for three new Staten Island Ferry boats is underway to service the next generation of Staten Island Ferry riders. Procurement of those boats will cost \$300 million and require government resources—so far federal funding has not been secured.

An additional \$2.4 billion in city funds is programmed for street reconstruction and repaving, allocations that are necessary for the safe movement of buses, trucks, cars, and bicycles. PlaNYC's analysis showed that the City needs to resurface at least 900 lane miles per year in order to return the city's streets to a state of good repair, so anything less than this will have consequences in terms of safety, mobility and vehicle maintenance.

Sustaining these investment levels will be challenging. The needs above are in addition to those of the MTA, which runs subways, commuter trains and buses, and has a multi-billion-dollar hole in its next capital construction program, and come at a time of eroding federal transportation aid. As a percentage of U.S. GDP, investment in infrastructure today is half what it was in 1960, according to the National Association of City Transportation Officials. The United States is investing approximately two percent of GDP on infrastructure; Europe and China are investing approximately five percent and nine percent. Growth in India, China, Brazil and other surging

economies is being fueled by investment in urban transportation systems while the U.S. lags behind.

But the region will have no option but to find revenue necessary. Ignoring vital bridge, road, and transit maintenance would have disastrous consequences on the region's mobility and economic vitality, as evidenced by the deterioration of the NYC subway system in the 70s and 80s. Deferring maintenance will also lead to higher costs in the long run.

New sources of revenue will be necessary, such as East River Bridge tolls or a congestion charging program that levies fees on drivers coming in Manhattan's central business district. (see Mobility Looking Ahead section).

The agency will also have to find ways to preserve its current investments, and reduce maintenance costs. Despite progress to protect recently repaved streets from construction work, streets are frequently torn up in New York or not repaired to adequate standards after construction. The Street Works Manual attempts to address this. Greater knowledge of and use of this document could help protect the city's street and bridge investments. The agency will also have to find new and innovative ways to communicate with New Yorkers about the core maintenance work it undertakes. The model set by The Daily Pothole could be expanded to other areas, and help make a case for the new revenue programs.

Realigning transportation infrastructure to better reflect the needs of the surrounding community could produce cost savings and offset previously inflicted impacts of large infrastructure projects. Turning the Sheridan Expressway in the South Bronx into a boulevard, as proposed by the city's Sheridan/Hunts Point Land Use and Transportation Study, would improve access to new parks along the Bronx River, greatly enhance safety, and provide new development opportunities. As vacant city land becomes scarcer, proposals to deck over other highways, like the Brooklyn Queens Expressway in Williamsburg or through Cobble Hill, could provide new opportunities for parks and housing.

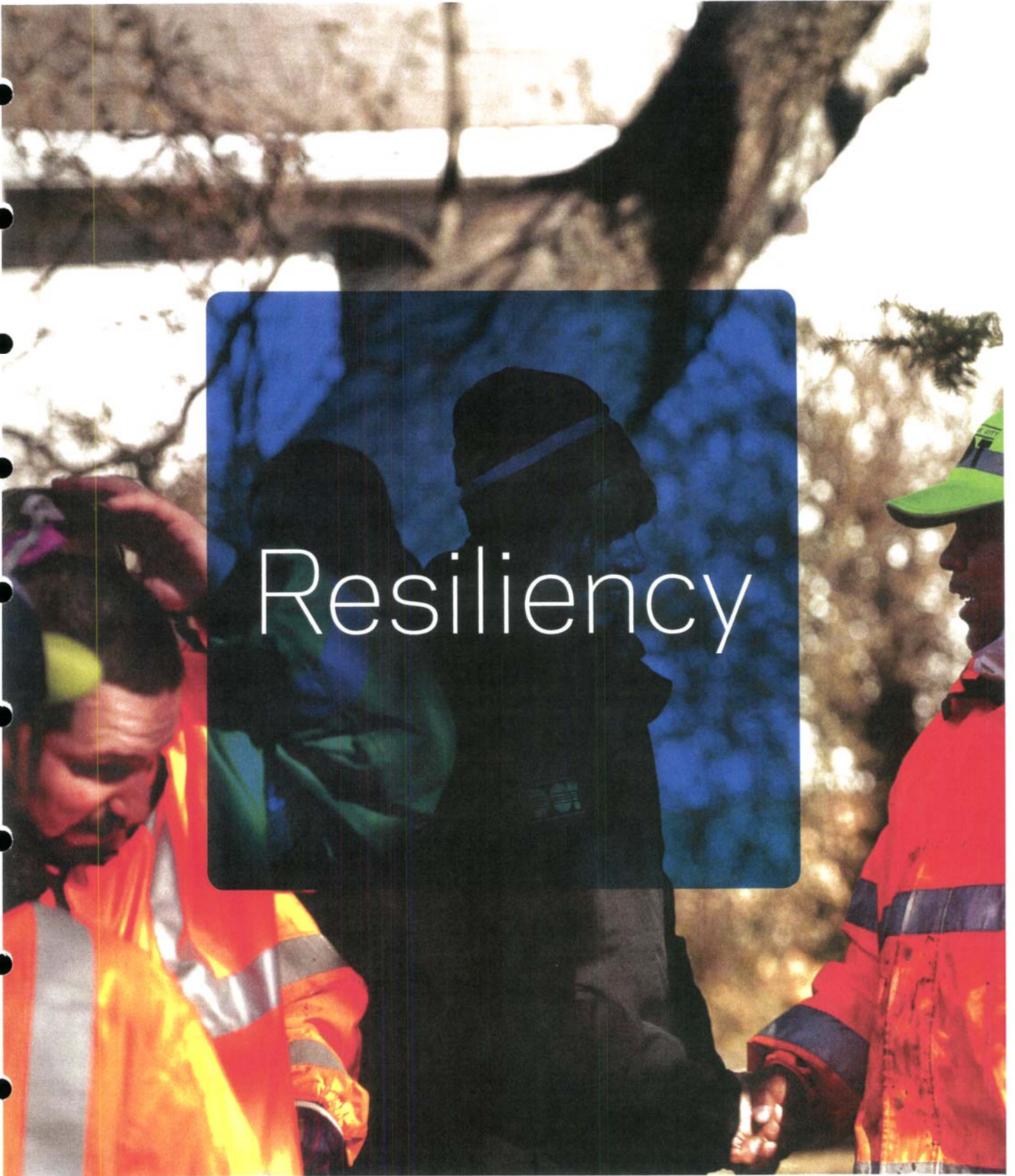
INFRASTRUCTURE

NYC's commitment to the use of sustainable materials will produce environmental and economical benefits for the city, both in the short and long term. The agency is working towards using even higher percentage of recycled content in asphalt, warm mix asphalt technology and testing 100% recycled asphalt. The use of permeable pavement and bioswales has grown significantly, and may grow more once the durability of materials is further tested over the long term in a variety of street and sidewalk locations. The city's conversion to energy and cost efficient LED lights, which will be fully completed by 2017, means it is on track to become the first big city to have all of its street and park lights converted, producing savings over a longer period of time.

In addition to the bus, ferry, and bike projects outlined in the Mobility section, the Bloomberg Administration has also endorsed a number of larger scale transit expansion projects that are necessary for the region to grow and prosper. These include the a new Amtrak Gateway project which seeks to add intercity rail capacity to New York City and bringing MTA's Metro-North to Penn Station. The projects have higher price tags than new bus rapid transit or bike routes, but will be vital to the future of the city.

- Continue to improve bridge and street conditions
- Better protect street and bridge repair investments and more widely publicize the Street Works Manual
- Consider new revenue streams like congestion pricing to pay for infrastructure needs
- Secure funding for the new generation of Staten Island Ferry boats
- Realign infrastructure to better reflect the needs of the surrounding communities, including transforming the Sheridan Expressway into a boulevard with housing, retail, and offices
- Expand use of recycled asphalt, permeable pavement, bioswales, and clean fuels
- Complete conversion of street lights to LEDs by 2017
- Expand car sharing





Resiliency



226,000

commuters crossed
the East River using
temporary transit
services after the storm

Introduction

When Hurricane Sandy roared into New York on October 29, 2012, it drove the waters around our city right up to, and then over, our doorsteps. Forty-three people died in the deluge and untold numbers were injured. Along the shoreline the storm surge engulfed buildings and destroyed communities. It flooded roads, subway stations, and electrical facilities, paralyzing transportation networks.

After the storm receded, New York was a changed city. Homes and businesses were wiped out. The transportation system was in disrepair. And New Yorkers felt more vulnerable to the effects of global climate change.

As the city recovered, it became clear that addressing immediate damage from the storm was not sufficient. It was critical that the city develop longer term strategies for future storms, building on lessons learned during Sandy, and redouble the effort to address climate change that began with PlaNYC.

Starting in December 2012, Mayor Bloomberg brought together city agencies to develop A Stronger, More Resilient New York, a \$30 billion program to protect and strengthen the city. The program includes almost twenty transportation initiatives to fortify New York's transportation network, and outlines a strategy for rapid response to future emergencies.

This chapter illustrates NYCDOT's response to Sandy, and lists the transportation initiatives that will help protect and strengthen the city going forward.



Chapter 15

Impact of Sandy and the City's Response

During Sandy, many highways, roads, railroads, and airports flooded. At the same time, all six East River subway tunnels connecting Brooklyn and Manhattan were knocked out of service by flooding. The Steinway Tunnel that carries the 7 train between Queens and Manhattan, the G train tunnel under Newtown Creek, the Long Island Railroad and Amtrak tunnels under the East River and the PATH and Amtrak tunnels under the Hudson River were all effected. Major damage occurred to the South Ferry subway station in Lower Manhattan, as well as to the subway viaduct connecting Howard Beach, Broad Channel, and the Rockaways. Service also was disrupted on the Staten Island Ferry, the East River Ferry, and private ferries. Exacerbating flooding was the loss of electrical power, which made it difficult to pump out tunnels, clean up damaged subway stations, and begin restoring service. The difficulty in “dewatering” the tunnels further increased the damage from Sandy, as sensitive mechanical, electrical, and electronic equipment soaked in corrosive salt water. In addition to subway tunnels, flooding closed three vehicular tunnels into and out of Manhattan, interrupting the commutes of 217,000 vehicles, and over 500 miles of roads suffered significant damage.

Under Mayor Bloomberg’s leadership, relief and recovery efforts kicked in immediately. NYCDOT worked to open bridges and tunnels, repair streets and streetlights, and reopen the Staten Island Ferry. NYCDOT bridge engineers inspected, cleared and reopened the four East River bridges by 10 a.m. the day after the storm. DOT reopened long sections of the FDR within 24 hours, restoring this vital north-south link. Staten Island Ferry service resumed within 72 hours of the storm thanks to over 100 DOT staff who worked throughout the storm to protect boats and facilities.

Over the course of the recovery, DOT replaced over 3,800

traffic signals and over 400 street lights and removed 156,949 cubic yards of debris. With assistance from Army Corps of Engineers and DEP, DOT reopened all City-managed tunnels, with some 15 million gallons of water pumped from the Battery Park Underpass alone.

Although major bridges reopened as soon as winds dissipated and portions of the transportation network not directly flooded experienced little damage, the subway and over 500 miles of roads suffered significant damage. The subway system remained out of service in the days after the storm, even as crews worked around the clock to restore service. This led to substantial gridlock on roads and bridges into Manhattan as people tried to return to work by car. The commuting challenges led officials to implement temporary measures to manage travel and congestion.

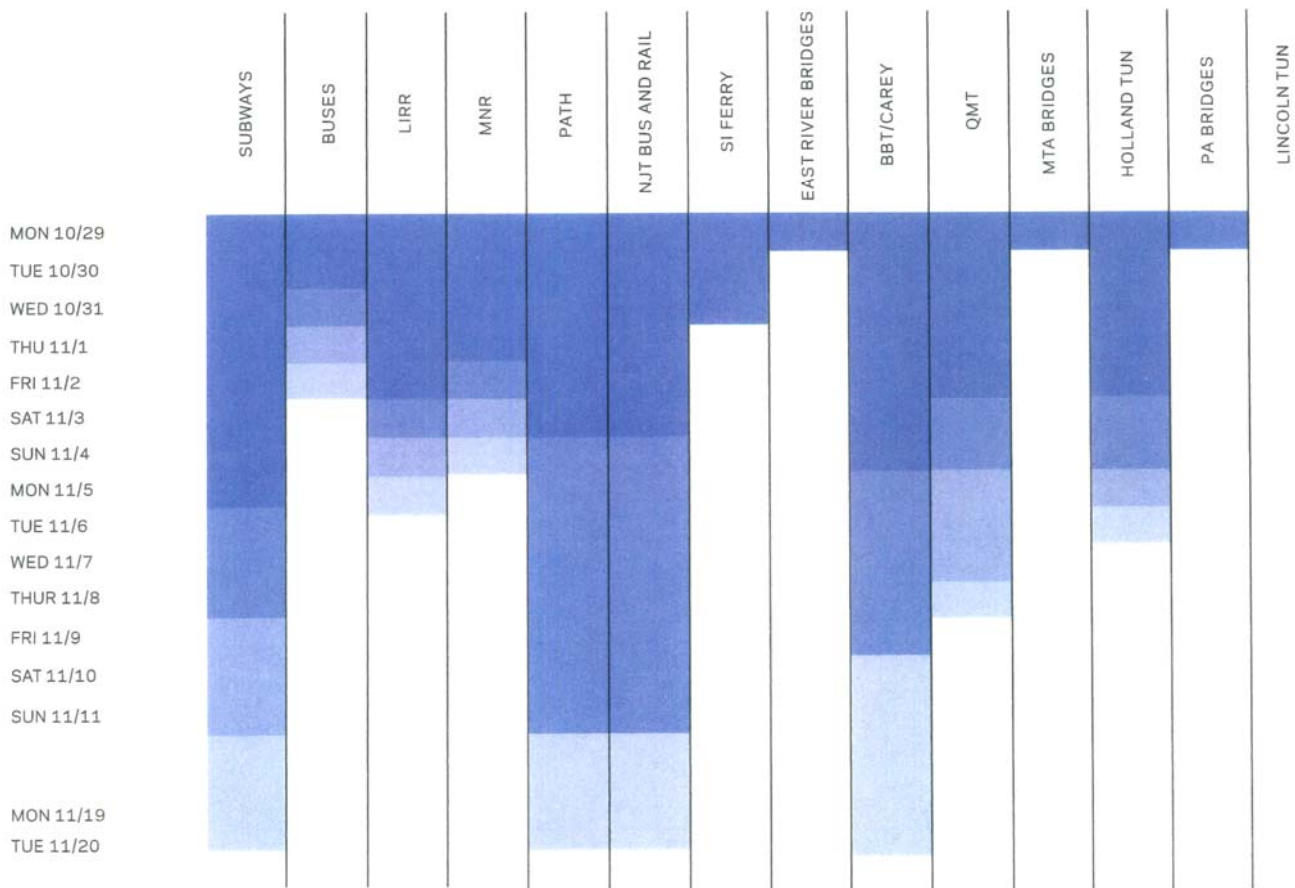
These measures included restrictions on single-occupant vehicles using bridges and tunnels across the Hudson and East Rivers, increased East River ferry service, and the successful “bus bridges” —an above-ground replacement for the subways that sent hundreds of buses back and forth on the bridges between Brooklyn and Manhattan. These measures enabled over 226,000 commuters to cross the East River—almost triple the number able to cross before they were in place.

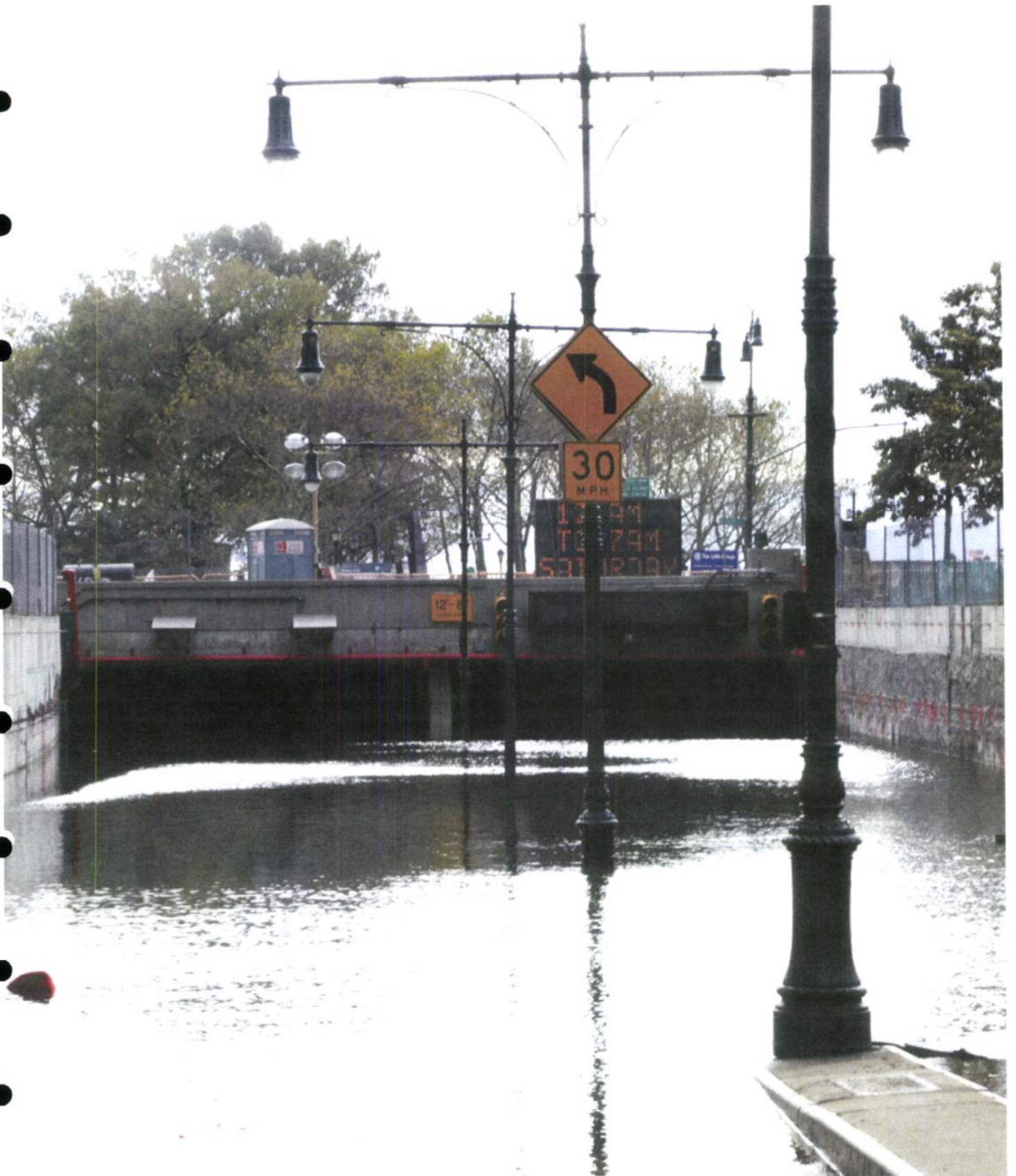
One week after Sandy struck, many subway lines had been fully or partially restored, but some elements of the system remained closed much longer, with repairs projected to take months and even years.

Overall, Sandy caused over \$19 billion in damage in New York City, including \$800 million to infrastructure managed by DOT. Over \$700 million in damages to streets, signals, bridges, and facilities, including the DOT’s headquarters in Lower Manhattan, and over \$30 million in damage to the Staten Island Ferry and its facilities.

NYCDOT bridge engineers inspected, cleared and reopened the four East River bridges by 10 a.m. the day after Hurricane Sandy.

TRANSPORTATION OUTAGES AFTER THE STORM: BRIDGES PROVED THE REGIONS MOST RESILIENT





DOT'S ROLE IN MAYOR BLOOMBERG'S PLAN FOR A STRONGER AND MORE RESILIENT NEW YORK



DOT trucks removing debris in the Rockaways

1. Integrate climate resiliency features into future capital projects.

Using storm water management to increase resiliency, where appropriate tools implemented will include bioswales, raising street grades, and bulkheads.

2. Elevate traffic signals and provide backup electrical power.

Over the next three years, controllers will be raised at approximately 500 vulnerable intersections. In addition, power inverters will be installed in 500 NYPD vehicles to provide backup power should grid power be lost.

3. Protect NYCDOT tunnels in Lower Manhattan from flooding.

Flood protection measure such as installing floodgates and raising tunnel entrances and ventilation structures for the Battery Park and the West Street Underpasses will be considered for implementation.

4. Install watertight barriers to protect movable bridge machinery.

NYCDOT will install watertight barriers to protect the bridges' mechanical equipment from flood damage and to ensure that the 25 of the City's bridges function properly.

5. Protect Staten Island Ferry and private ferry terminals from climate change-related threats.

Using Federal Transit Administration Emergency Relief funds NYCDOT and NYCEDC will construct improvements to floating infrastructure, loading gangways, pilings and piers at Whitehall and Saint George Ferry terminals and other ferry landings. In addition, waterproofing and relocating certain equipment will be initiated.

6. Plan for temporary transit services in the event of subway system suspensions.

NYCDOT working with transportation partners will develop and enforce temporary transportation services such as bus bridges, bus lanes and ferry service based on identifying potential threats. Increased access to LIRR and Metro-North will be investigated.

7. Identify critical transportation network elements and improve transportation responses to major events through regular resiliency planning exercises.

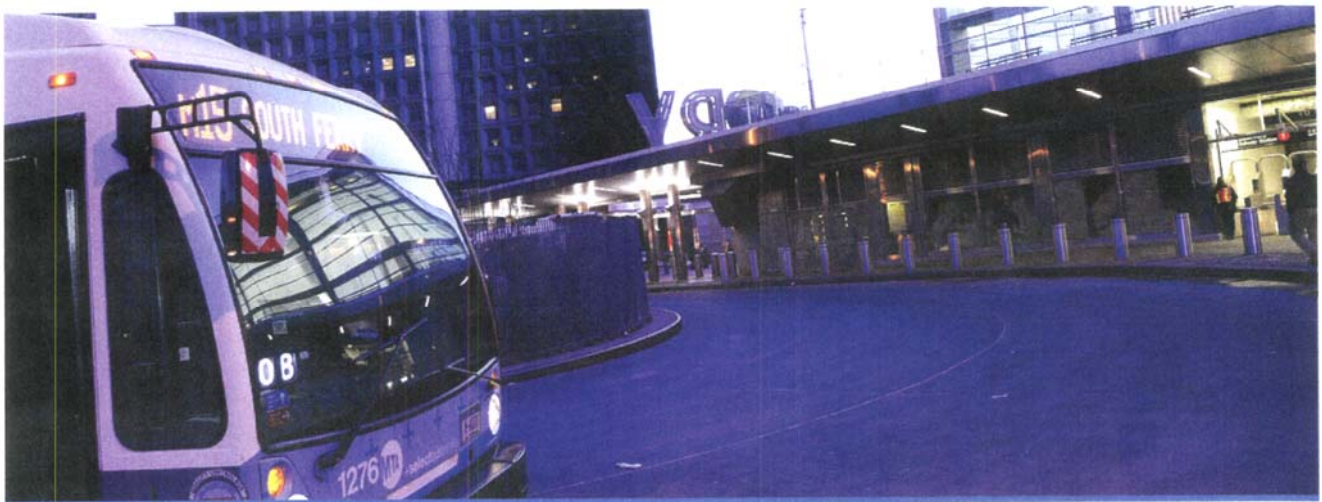
NYCDOT working with transportation agencies will identify the services and elements that need to be available during different events. Identifying crucial elements allows agencies to prioritize investment and improve operational responses.

8. Develop standard plans for implementing High-Occupancy Vehicle (HOV) requirements.

In order to address potential gridlock following both manmade and natural events when the subway system is down, NYCDOT, NYPD, NYC OEM are working together to formalize any exemptions to HOV requirements, including under which conditions the requirements would be implemented.

9. Plan for and install new pedestrian and bicycle facilities to improve connectivity to key transportation hubs.

After Hurricane Sandy, NYC DOT removed 156,949 cubic yards of debris.



Bus transporting passengers to the Staten Island Ferry after the storm

NYCDOT and NYPD will deploy temporary pedestrian and bike capacity during an emergency situation and will procure and store the materials needed. NYCDOT will work with CitiBike to explore expansion into areas that are vulnerable to weather related transportation interruptions.

10. Construct new ferry landings to support private ferry service

NYCEDC will work to expand the network of interim ferry landings and will work with NYCDOT to deploy four new permanent ferry landings which will be designed to be mobile so in an extreme situation they can be relocated to provide transit service where needed.

11. Deploy the Staten Island Ferry's Austen Class vessels on the East River and during transportation disruptions

NYCDOT will develop operational plans for different scenarios in order to supplement East River Ferry service, the Austen class vessels will be used due to their large capacity.

SIGNALS AND STREET LIGHTS REPAIRED POST-SANDY

	TRAFFIC SIGNALS FIXED	STREET LIGHTS FIXED
STATEN ISLAND	38	90
BROOKLYN	1,645	205
QUEENS	1,339	123
BRONX	77	—
MANHATTAN	727	—
CITYWIDE	3826	418

12. Expand the city's Select Bus Service network and bus priority on arterial highways

Over the next five years, NYCDOT will work with the MTA to implement four additional bus routes. An additional 12 routes will be launched and include 15 miles of bus priority projects on limited access highways.

Chapter 16

Restoring Mobility after the Storm

On a normal day, the subway carries about 80 percent of the people crossing the East River into Manhattan. Following Sandy, however, with subway service across the river entirely shut down for a number of days, many people tried to commute by car. As a result, gridlock took over many parts of the city including the East River crossings and major

highways and through routes. During, this period, average highway speeds dropped by as much as 71 percent relative to speeds on normal weekdays. It quickly became clear that the transportation network simply was not designed to handle the spike in drivers attempting to enter the central business district south of 60th Street.



Bus Bridge replaces "R" train between Brooklyn and Manhattan

In the days following Hurricane Sandy, transportation and power outages affected 8.5 million public transit riders, 4.2 million drivers, and 1 million air passengers.

BUS BRIDGES

In the days following Hurricane Sandy, transportation and power outages affected 8.5 million public transit riders, 4.2 million drivers, and 1 million air passengers.

In response, the NYCDOT worked with the Metropolitan Transportation Authority (MTA) and NYPD to institute a series of measures to limit the number of cars coming into Manhattan. First, cars entering Manhattan's central business district were required to have three or more occupants, including those crossing the East River Bridges. Second, the NYPD, NYCDOT, implemented three new temporary, high-capacity, point-to-point bus routes (which quickly became known as "bus bridges"). Bus bridges connected Downtown Brooklyn and Williamsburg with Midtown Manhattan, using 300 buses that the MTA diverted from other routes. As part of this, the lower level of the Manhattan Bridge was turned into a bus only route. Third, the East River Ferry service pattern was modified to increase capacity and provide faster service along routes with the highest demand, taking advantage of the

infrastructure already in place and the vessels on hand.

While no bus service can match the capacity of multiple subway trunk lines, the post-Sandy bus bridges served much of the demand. The morning of Friday November 2nd, 74,000 people crossed the Manhattan Bridge by bus, foot, bike and private vehicle—over three times the 22,000 figure on Wednesday October 31st, when neither the bus bridge nor HOV3+ rules were in effect. On a typical weekday morning, the Manhattan Bridge serves 87,000 Manhattan-bound commuters, 87% of whom are subway passengers. The combination of the bus bridge and HOV3+ rules, in conjunction with increased pedestrian and bike traffic, boosted the Manhattan Bridge's non-subway capacity by over 670%.

These measures accomplished their desired goal, moving over 226,000 commuters across the East River—almost triple the number able to cross before these measures were in place. The bus bridge is a template in case of subway outages in the future.

TEMPORARY BUS BRIDGES AFTER THE STORM





72%

hours after the storm,
Staten Island Ferry
service resumed



Flooding at South Ferry subway station after the storm

NEW AND EXPANDED FERRY SERVICE

Ferries have played crucial roles in emergencies, climate events and times of crisis in New York City. In a waterfront city, ferries can be quickly deployed to evacuate people and can provide redundant transportation service when subways aren't functioning and bridges and tunnels are closed. The importance of ferries was reinforced after Sandy.

NYCDOT operates the Staten Island Ferry, a crucial link between Staten Island and Manhattan. Thanks to the hard work of NYCDOT staff during the storm service resumed just 72 hours after the

storm despite damage to the Whitehall and St George ferry terminals. After the return of service on 11/1, ridership on the East River Ferry surged to 2.5 times the level of a typical weekday morning.

Other ferry services are managed by the city's Economic Development Corporation, but DOT plays an important role in siting ferry docks and improving access to the service. EDC and DOT implemented temporary ferries to provide transportation services for areas hardest hit by the storm, including services to Great Kills and the Rockaways.

Great Kills Ferry

One of the services was a temporary ferry from Great Kills, Staten Island to Manhattan. It launched on November 25th 2013 using Federal Emergency Management Agency funds and ran for eight weeks.

While the temporary service offered a new transportation option for the weeks immediately following the storm, ridership never reached anticipated levels, and waned significantly in its final weeks. On average, only 114 riders used the service in each direction each day, or roughly 19 passengers per boat.

Rockaway Ferry

Helping to assist thousands impacted by Hurricane Sandy in the Rockaways, Mayor Bloomberg, New York City Economic Development Corporation and Seastreak provided a temporary ferry service between the Rockaways and Manhattan starting on November 12, 2013. Originally slated to run through July, the service was extended through Labor Day and then again until January 2014. The service provided alternative transportation due to the closure of the A train to the Rockaways and R train tunnel between Manhattan and Brooklyn. Both lines experience damage after the storm.

On Friday November 2, the number of people riding over the East River Bridges by bike more than doubled from 3,500 to 7,800.

Protecting the fleet

The heroic service of DOT's Ferry Division during Hurricane Sandy prevented damage to six ferryboats during the storm. As winds reached over 80mph and a record breaking tidal surge took over New York harbor, 90 ship-board crew and 60 additional staff on the ferry docks stopped the boats from striking the ferry slips and each other. The ferryboat crews adjusted mooring lines as the tide rose. Captains worked boat engines the entire night making sure the ferries stayed in position between the piers and did not come in contact with the piers or the associated pilings. At one point, an Austen class boat's stern line came lose, and the boat made contact with the Senator John J. Marchi, which was moored nearby. DOT Ferry staff placed make-shift fenders in between the two vessels

to minimize the potential for damage as the vessels came together. As the storm progressed and the storm surge escalated, water engulfed both the Whitehall and St George Ferry Terminals. DOT staff had to move to the upper floors to stay safe.

The professionalism and dedication and long hours put in by DOT's captains, crews and shore staff ensured that almost \$200 million worth of custom-built ferryboats were kept safe and secure during the hurricane. After the storm, ferry staff worked around the clock to repair electrical systems and remove debris to the St. George and Whitehall terminals*. Despite \$30 million in damage to ferry terminals, the Staten Island Ferry was up and running 72 hours after the storm.



Commissioner Sadik-Khan on first Staten Island Ferry to run 72 hours post-Sandy

Bicycles

The city's substantial improvement to the bike network provided much needed transportation capacity in the days after the storm. On a typical weekday, 3,500 people enter Manhattan by bike using one of the

four East River Bridges. On Friday November 2nd, the total swelled to 7,800. Unfortunately, the storm did damage CitiBike equipment that was in storage in the Brooklyn Navy Yard prior to the program's start.



Bicycling rates swelled after the storm

NYCDOT used Twitter, The Daily Pothole, and Facebook to communicate with New Yorkers after the storm.


USING SOCIAL MEDIA IN EMERGENCY SITUATIONS

In the days after Superstorm Sandy, NYCDOT used social media to communicate with the public about the recovery.

The Daily Pothole tumblr, which documents NYCDOT street maintenance crews, was temporarily transformed into a Sandy recovery page, documenting clean-up efforts in affected areas. DOT's roadway repair, street lighting, and emergency response crews focused on clearing the streets of debris and fixing traffic signals and stop signs to help communities get moving again.

The number of Daily Pothole subscribers increased by 50% after the storm, to nearly 15,000, as New Yorkers found the frequent updates to contain useful information about the status of recovery efforts. NYCDOT's twitter and Facebook following also increased after the storm.

The post Sandy experience with the Daily Pothole shows how government and its citizenry can benefit from flexible communication strategies like tumblr during emergencies.

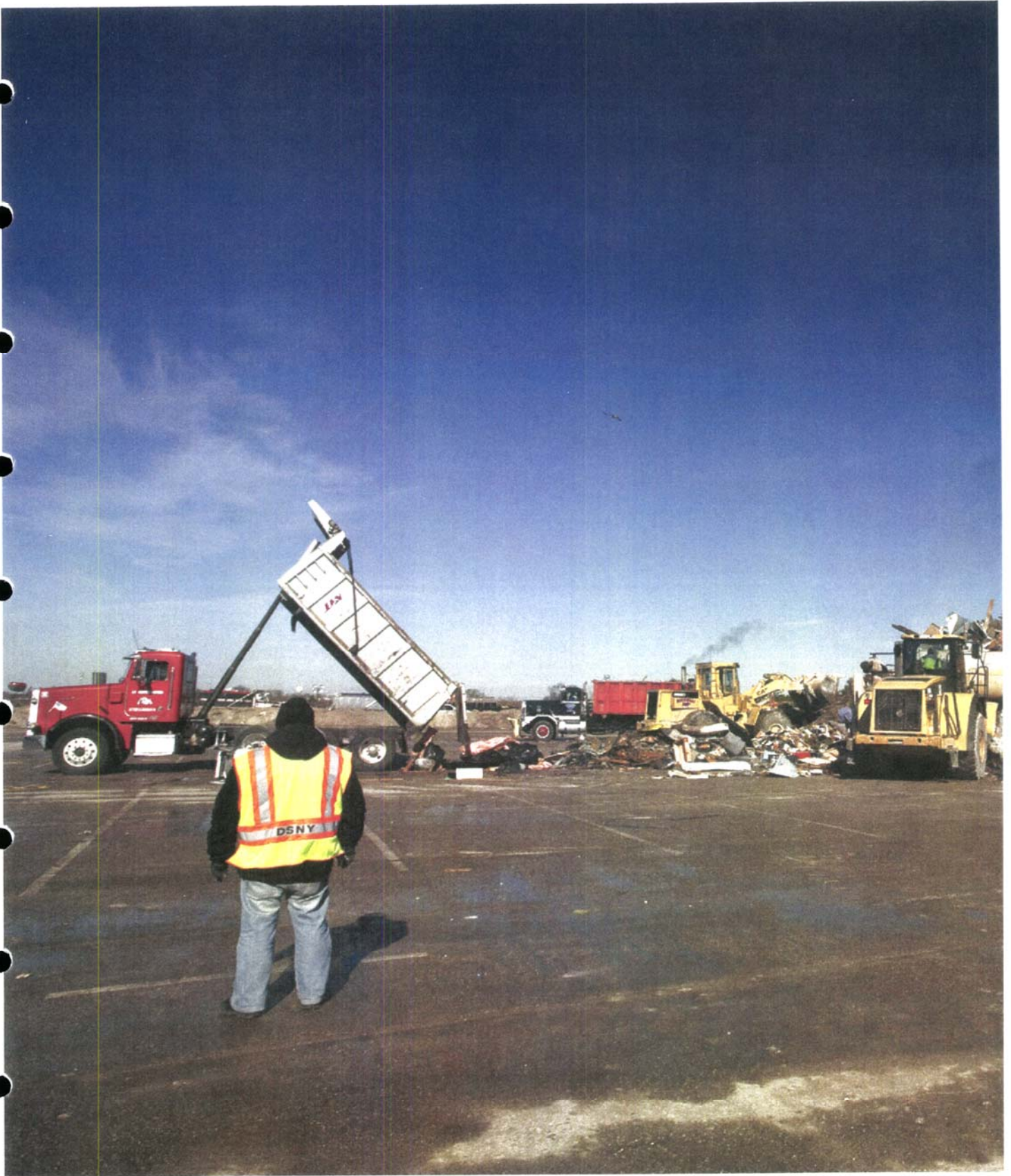


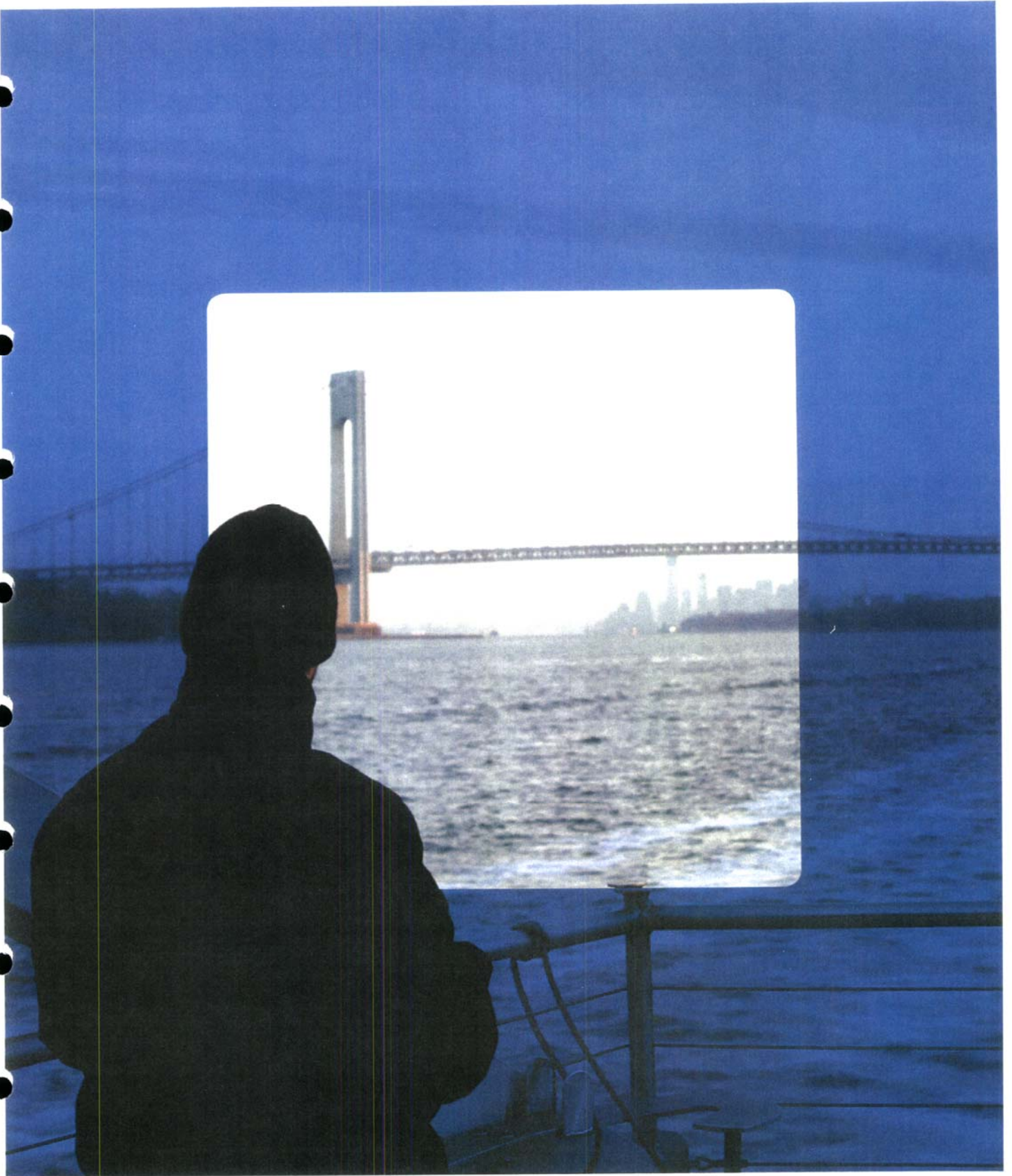
The screenshot shows a Facebook post from Staten Island Ferry. The post text reads: "Temporary commuter ferry service from Great kills begins Monday, November 26! Learn more and check the schedule: <http://www.nyc.gov/html/dot/html/ferrybus-greatkills.shtml>". Below the text is a map of Great Kills Park showing the ferry landing and surrounding roads like MERRILL BL and HERRING BL. The map also shows other ferry routes to Manhattan and the Bronx.

NYC DOT - Ferries - Great Kills Ferry, Staten Island

NYCDOT Posted information about the Great Kills Ferry on Facebook

The Daily POTHOLE
SANDY RECOVERY





Looking Ahead

For years environmental experts have been projecting the possible catastrophic effects of increasingly volatile and extreme weather conditions on New York, but it wasn't until Hurricane Sandy hit that the region experienced the magnitude of these impacts first hand.

The storm generated a sense of urgency around long-term resiliency and sustainability. The city pledged to redouble environmental efforts outlined in PlaNYC to reduce greenhouse gases that contribute to climate change. It also set in motion plans, procedures, and projects to adapt infrastructure and improve government response to future events.

In the immediate aftermath of the storm, NYCDOT worked closely with other agencies to restore basic operations and assess the extent of the damage to the City's transportation assets. The city's use of bus bridges, for example, proved that transit and roadway networks can be adapted quickly to emergency situations. The experience gave transportation officials a template for future events and helped them refine a list of objectives to keep people moving in emergency situations. These included immediately restricting single-occupant traffic as soon as long-term subway outages are confirmed, creating temporary bus routes to replace inoperative links of the transit network and adding capacity on existing bus routes with disaster-induced demand spikes, and exploiting redundant capacity in modes like ferries to scale up temporary service in disconnected areas. The spike in bicycle riding after the storm also prompted NYCDOT to evaluate additional bike facilities over the East River Bridges.

As vehicular tunnels and subway lines returned to service

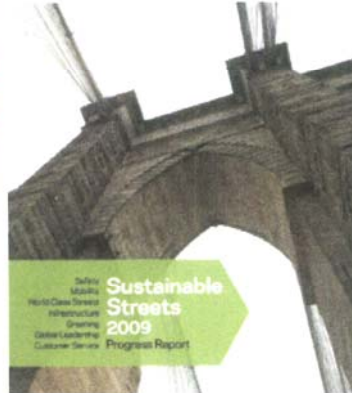
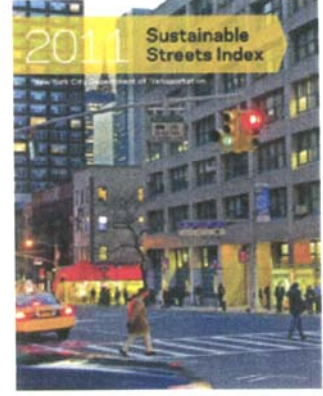
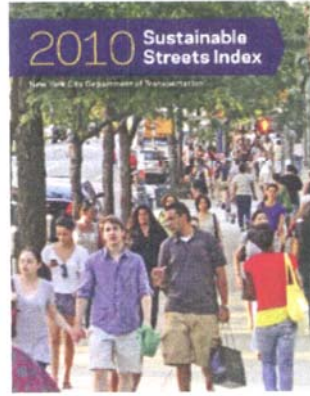
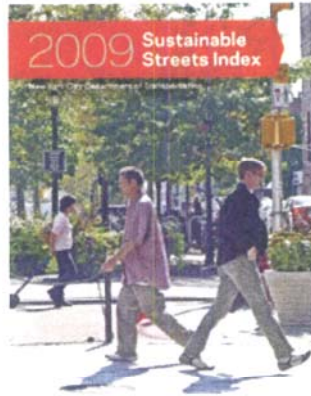
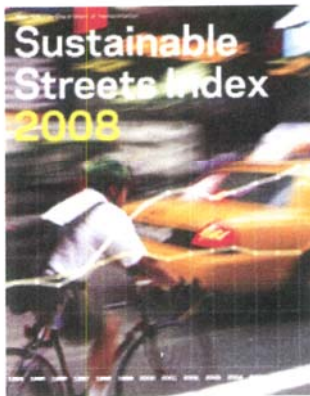
in the weeks following the storm, New York City's transportation network started to return to normal operations. However, many streets in the most vulnerable coastal areas remained severely damaged by the force of the storm. Creeping corrosion necessitated repairs long after the actual floodwaters had subsided. In many locations, merely restoring agency assets (roadways, bridges, ferries, traffic controls) to its pre-Sandy condition is not enough. The transportation system needs to be made more resilient in the face of storm surge, more intense precipitation, warmer temperatures, and stronger winds.

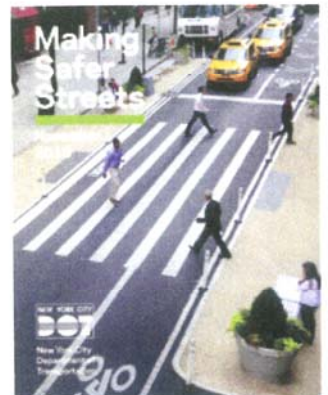
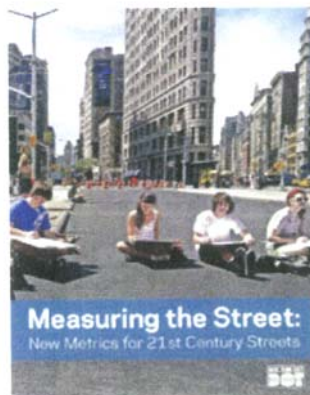
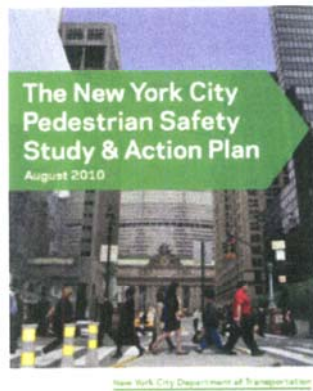
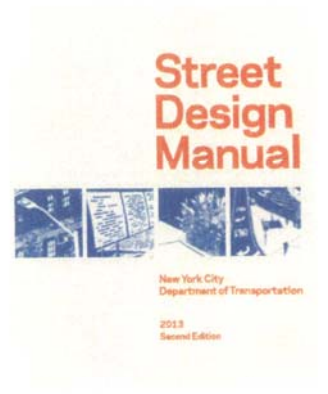
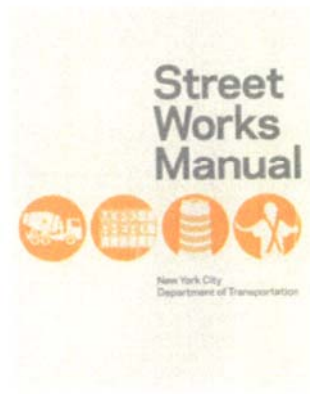
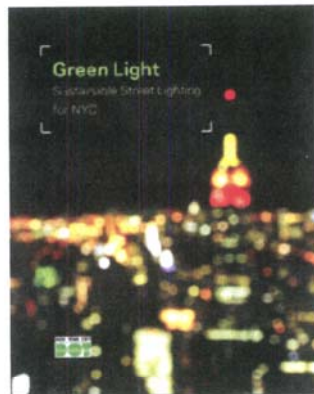
Through the Mayor's Special Initiative for Rebuilding and Resilience (SIRR), NYCDOT and its partner agencies identified innovative ways to rebuild smarter and stronger. *A Stronger, More Resilient New York* outlined 18 transportation initiatives central to the City's resiliency goals. In many areas, the challenge is not merely the protection of a physical asset, but ensuring that transportation network has the redundancy and flexibility to handle unforeseen outages. Continued expansion of bus rapid transit, for instance, not only benefits regular commuters, it also broadens the transit network in ways that can better serve demands when a subway line is out of service. The report also called for larger transit expansion projects for added redundancy, including Amtrak's Gateway project into Penn Station.

All of these initiatives, most especially coastal protection, will require ongoing collaboration among city and state agencies. And they will require sustained, long-term investment during a time of uncertain and shrinking funding for transportation infrastructure.

NYCDOT Publications

Since 2007, NYCDOT has published more material stating agency goals, describing programs and documenting transportation trends and project outcomes than ever before. These are some of DOT's major publications. They and others are available at nyc.gov/dot.







Acknowledgments

The remarkable accomplishments of the New York City Department of Transportation from 2007 to 2013 were top-to-bottom efforts, involving every division of the Department and thousands of individuals. Thank you to all the men and women of the NYC DOT.

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DOT's *2013 and Beyond* report team was Carly Clarke, Robin Lester-Kenton, Stephanie Levinsky, Jon Orcutt, Kate Slevin and Rebecca Zack

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EXHIBIT E TO MCCAMPHILL AFFIRMATION -
ONLINE NEWS ARTICLE — “BILL DE BLASIO SAYS NEW CONGESTION
PRICING PLAN ‘HAS TO BE TAKEN SERIOUSLY,’ ”
BY ROSS BARKAN, NEW YORK OBSERVER [314 - 315]

5/8/2015

De Blasio Says Gridlock Sam Schwartz Plan Should Be Taken Seriously | Observer

Bill de Blasio Says New Congestion Pricing Plan ‘Has to Be Taken Seriously’

By Ross Barkan | 02/19/15 4:44pm



The Brooklyn Bridge would be hit with a toll under “Gridlock” Sam Schwartz’s congestion pricing plan. (Photo: JEWEL SAMAD/AFP/Getty Images)

Mayor Bill de Blasio said today that a new congestion pricing proposal needs to be taken “seriously,” perhaps a sign that the mayor, opposed to a Bloomberg era pricing scheme, is evolving on the issue.

The proposal, advanced by former City Traffic Commissioner “Gridlock” Sam Schwartz, would introduce tolls to

5/8/2015

De Blasio Says Gridlock Sam Schwartz Plan Should Be Taken Seriously | Observer

cross four East River bridges and to travel south of 60th Street in Manhattan. The new revenue would be used to lower tolls on outer borough crossings like the Bronx-Whitestone Bridge, Robert F. Kennedy Bridge and Verrazano-Narrows Bridge.

"I have not seen the details of the new proposal but ... I think it has to be taken seriously," Mr. de Blasio told reporters at an unrelated event in Brooklyn. "What I think we have to do is, the city and state together, figure out a long-term vision for the MTA. And, you know, we should look at a range of options."

Mr. de Blasio still did not voice outright support for the plan, which would need to win over city and state lawmakers and Gov. Andrew Cuomo. As a city councilman, Mr. de Blasio opposed ex-Mayor Michael Bloomberg's plan to introduce another form of congestion pricing. The plan, backed by then-Gov. Eliot Spitzer, was never brought up for a vote in the Assembly.

Mr. Schwartz has worked extensively behind-the-scenes to line up support for his plan, known as Move NY, from labor unions and business organizations, some of whom resisted Mr. Bloomberg's congestion pricing scheme. Mr. de Blasio praised Mr. Schwartz, but said his focus this year would be on "preserving the funding streams we have for the MTA."

"Clearly one of the things that has to be addressed is the level of state support for the MTA from the surplus dollars that are now available," Mr. de Blasio said. "So those are the immediate things that have to be addressed, but I think the various proposals that have come out over the last couple of years need to be assessed and compared with other options, and we've got to figure out a long-term solution for the MTA finances."

FILED UNDER: BILL DE BLASIO, CONGESTION PRICING, MOVENY, SAM SCHWARTZ

EXHIBIT F TO MCCAMPBELL AFFIRMATION -
"TRANSPORTATION" CHAPTER OF THE REPORT ONE NEW YORK:
THE PLAN FOR A STRONG AND JUST CITY [316 - 330]

One New York

The Plan for a Strong and Just City



The City of New York
Mayor Bill de Blasio

Anthony Shorris
First Deputy Mayor

NYC



Transportation

Goal: New York City's transportation network will be reliable, safe, sustainable, and accessible, meeting the needs of all New Yorkers and supporting the city's growing economy

INDICATORS + TARGETS

- ✓ Increase overall transit capacity into the Manhattan core by 20 percent by 2030
- ✓ Double the number of customers tracked by the NYC Commuter Cycling Index by 2020
- ✓ Increase the share of jobs moved within the regional rail and water

Overview

Our transportation network is the lifeblood of the city's neighborhoods and our economy. Every day the city's public-transit system enables millions of New Yorkers to get to work and school, access services and shopping, and enjoy the life of the city.

Throughout its history, New York City's economic growth has been supported by investment in its transit system. Despite the importance of the transit network, the first phase of the Second Avenue Subway—scheduled to open in late 2016—will be the first major capacity expansion of the system since the late 1930s. Today, a growing number of subway lines, such as the 4/5/6, are at capacity during peak periods. Transit hubs serving the region, such as Penn Station (Amtrak/NJT/LIRR) and the Port Authority Bus Terminal (PABT), are also strained. These capacity issues are not limited to Manhattan and traditional central business districts. Growth throughout the five boroughs, both to dispersed centers of employment and communities experiencing commercial and residential growth, like DUMBO, Williamsburg, and Long Island City, is creating new challenges, a telling sign of the need for better service and connections to emerging job clusters throughout the city.

Reliable and convenient transit access to employment and other activities remains stubbornly out of reach for too many New Yorkers. This problem is particularly acute for low- and moderate-income residents in areas poorly served by the subway or buses. For seniors and those with disabilities, this can affect their ability to simply get groceries, or see family and friends.

For New Yorkers who are active, biking offers a convenient travel option for work and other trips. As biking creates no carbon emissions, it also supports the City's sustainability goals. New York City's Commuter Cycling Indicator, an indicator developed by DOT that makes use of the most robust data available to estimate levels of cycling within the central areas of the city over time, has almost quadrupled since 2000. This growth has been facilitated by a dramatic expansion in the City's bike network to 980 lane miles. However, many neighborhoods outside Manhattan and inner Brooklyn and Queens still lack significant bike infrastructure.

New York's three main airports—JFK, LaGuardia, and Newark Liberty—consistently rank as the most delay-prone in the nation. During peak hours, the Federal Aviation Administration caps take-offs and landings in an effort to control delays. Adding to



this challenge, forecasts show demand at these airports increasing from about 117 million passengers today to 150 million by 2030.

New York City's freight system also faces significant challenges. Although New York City's port and rail connections fueled the city's rise in the 19th and 20th centuries, almost all of the nearly 400 million tons of cargo that enters, leaves, or passes through the city every year are now transported by truck. This creates a host of challenges, from air quality to costs for businesses, to security and resiliency, to quality of life concerns for residents.

And those trucks put a tremendous amount of wear and tear on the City's roads, which are used by millions of vehicles each day. Our streets, bridges, and highways are among the oldest in the country and are in need of near constant repair and rehabilitation. A sustained commitment to maintaining our road network is essential to supporting the movement of people and good across the five boroughs.

Initiative 1

Support full funding of the MTA capital plan

A modern and reliable regional transit system is essential to New York's future growth and realizing the goals of OneNYC. Thus, the City strongly supports the full funding of the Metropolitan Transportation Authority's (MTA) 2015–19 Capital Plan. As the city's transit riders, toll payers, and taxpayers already support the much of the MTA's operations, we will continue to look to expand level of government to support the modernization and expansion of New York's transit system, which is a key economic driver of the downstate New York region.



Subway capacity expansion

The City will also work closely with the MTA to identify significant savings and improve operational coordination in areas of common interest, such as bus rapid transit, other bus services, and Access-a-Ride. Any savings we achieve together can be leveraged to create new capital support for the MTA.

To support the goals on OneNYC, the City calls for the inclusion of the following additional capital projects and initiatives in the MTA capital plan:

- The development of a strategy to accelerate the installation of Communications-Based Train Control (CBTC), a technology that allows the MTA to operate more frequent service on existing subway lines. CBTC improves safety, expands capacity, increases reliability, shortens travel times, and enables the installation of count-down clocks. To keep up with growing ridership on our subways, CBTC must be more quickly deployed on congested routes
- A study to explore the expansion of the subway system south along Utica Avenue in



Brooklyn, one of the densest areas of the city without direct access to the subway

- Entrance upgrades at a number of subway stations in high-growth areas to relieve crowding and provide access for the disabled beyond those already included in the MTA plan
- A transfer connection at the Livonia Ave/Junius St stations between the L and the 3 lines, which would improve subway options for residents of Canarsie and East New York

- The development of a strategy to upgrade the Long Island Railroad (LIRR) Atlantic Branch to subway-like service after the completion of East Side Access—including adoption of the subway fare—and a timeline for implementation
- Improvements to the LIRR and Broadway Junction stations and necessary enhancements, including streetscaping and pedestrian improvements, to strengthen connections in a potential high growth area with transit capacity



Select Bus Service

Initiative 2

Improve existing transit services

Supporting Initiatives

A. Relieve congestion on major subway corridors. In addition to accelerating the installation of CBTC on key subway lines, as detailed in Initiative 1, the City will also continue to work with the MTA to move forward on design and construction of Second Avenue Subway Phase II, and move forward on the planning and design of Phase III. When completed, these phases will extend the line north to 125th Street and south to Houston Street, dramatically relieving congestion on the over-crowded 4/5/6 subway lines.

B. Improve and expand bus transit throughout the city

To improve bus service throughout New York City, we will:

- **Expand the Select Bus Service (SBS) network to 20 routes citywide by 2017.** The MTA and New York City Department of Transportation (NYCDOT) will significantly expand the reach of SBS, bringing faster and more-reliable bus service to tens of thousands of daily bus riders. The City and the MTA will initiate service on three new SBS routes in 2015 and five new routes in both 2016 and 2017. The next routes to launch in 2015 are 86th Street in Manhattan, Utica Avenue in Brooklyn, and Flushing to Jamaica via Main Street in Queens. The City has also begun work on a transformative new bus rapid-transit route on Woodhaven Boulevard which will reduce travel times by 25 to 30 percent for more than 30,000 daily bus riders. The SBS program has been successful in reducing travel times and increasing ridership.
- **Improve local bus service.** NYCDOT will work with the MTA to identify key congestion points along busy local bus routes, and to develop and implement solutions.

Over the next four years, the City will address eight of these bus hot spots. The City will also continue to expand transit signal priority (TSP), a system that improves bus reliability by giving buses an early green light or extra green time at intersections. The City will implement two new TSP corridors per year over the next four years (in addition to the nine corridors already being planned, and three already in operation).

- **Increase camera enforcement of bus-lane rules.** Bus lanes are an essential tool for moving buses through congested city streets and getting bus riders where they need to go more quickly. Effective enforcement of bus lanes requires cameras in order to keep the lanes free from traffic. The current State legislation authorizing enforcement of bus-lane rules with cameras expires this year. Working with our elected representatives in Albany, the City will work to expand use of bus-lane cameras to keep buses moving and thus provide faster trips for tens of thousands of New York City bus riders.
- **Provide real time bus information to more riders.** Working with the MTA, the City will install 250 real time bus information signs at key SBS and local bus stops in 2016 and 2017. These displays will provide better information to bus riders, especially those without smartphones.

- **Leverage the commuter rail system to better serve New York City communities.** The City will work with the MTA to better leverage the commuter rail system to provide improved transit connections within the city. The City will continue to support the building of new accessible stations in the Bronx as part of the Metro-North to Penn Station project, which will bring commuter rail service to Co-Op City and other Bronx communities currently without rapid transit access. The City will also work with the MTA on a study of the conversion of the Atlantic Branch to a more frequent and affordable shuttle service between Atlantic Terminal and Jamaica, which would provide a new transit option to residents of Crown Heights, East New York, and Jamaica. Finally, the City will advocate for changing commuter-rail-fare policy for intra-city trips, including the expansion of City Ticket, which would make the Long Island Rail Road and Metro-North an affordable option for travel within the city.

Initiative 3

Plan for major expansions of the transit network

Supporting Initiatives

A. Develop a regional transit strategy to address the growing number of commuters from west of the Hudson River

Over a quarter of a million workers commute every day from counties in northern New Jersey to Manhattan—and this number is expected to increase over the coming decades. The bus and rail infrastructure that handles most of this commuter load is already at capacity. The City will work with Amtrak, the MTA, New Jersey Transit, and the Port Authority of New York and New Jersey



Port Authority Bus Terminal



Improving Transit Access to Jobs

The initiatives described within this goal will improve existing transit service and provide support for major expansions to the transit network. While increasing access to jobs for all New Yorkers, these improvements will particularly impact those whose poor access by public transit affects their economic outcomes.

The neighborhoods highlighted in the above map are those in which median household income for a family of four is below the citywide average of \$52,250 and access by public transit to jobs is comparatively poor. Many workers in these communities do not have access to a car and rely exclusively on mass transit to get to work.

To improve access to employment in these priority areas, the City will implement a program of public transit and bike improvements, including new Select Bus Service (SBS) routes and expanded ferry service. The City will also work with the MTA to improve and expand the transit network. These initiatives are described in more detail in Initiatives 1, 2, 3, and 4 of this goal. Including existing SBS routes, these projects will improve transit service in 25 priority communities, contributing to the target of providing 90 percent of New Yorkers with access to more than 200,000 jobs by transit in 45 minutes.

- Below Average Job Access and Income^{1,2}
- Potential Fair Corridor/Stops
- Existing SBS Corridors
- Planned SBS Corridors
- Existing Ferry Network
- Proposed Ferry Network/Stops
- Potential Subway Expansion
- Priority Subway Signal Enhancements
- NYCT Subway

¹ NYC median income is \$52,250 (2013).
² Weighted average jobs accessible via transit within 45 minutes.
 © 2014 Economic, Economic Opportunity and New York City Neighborhoods NYU Public Center Analysis



Number	Neighborhood Name
1	Harlem
2	Harlem North
3	Marble Hill
4	West Farms
5	East Harlem
6	East Harlem (West)
7	East Harlem (East)
8	East Harlem (South)
9	East Harlem (North)
10	East Harlem (Central)
11	East Harlem (South)
12	East Harlem (North)
13	East Harlem (Central)
14	East Harlem (South)
15	East Harlem (North)
16	East Harlem (South)
17	East Harlem (Central)
18	East Harlem (East)
19	East Harlem (West)
20	East Harlem (South)
21	East Harlem (North)
22	East Harlem (Central)
23	East Harlem (South)
24	East Harlem (North)
25	East Harlem (South)
26	East Harlem (Central)
27	East Harlem (East)
28	East Harlem (West)
29	East Harlem (South)
30	East Harlem (North)
31	East Harlem (Central)
32	East Harlem (South)
33	East Harlem (North)
34	East Harlem (Central)
35	East Harlem (South)



Transit Network Expansion Projects

This map shows two types of projects:

1. Major transit projects already under construction by the MTA and PANYNJ.
2. Major capital projects that are essential to the future growth of the city and are called for in OneNYC.



Major Transit Projects Under Construction

1. **2nd Avenue Subway (Phase 1)**
What: MTA
What: Tunneling and station work for the second phase of the subway line.
When: 2015-2020
2. **East Side Access**
What: MTA
What: Bridge, ramps, tunnels and platform for the new 7th Avenue Subway line.
When: 2015-2020
3. **Advanced Subway Signals**
What: MTA
What: Installation of new signals to increase reliability and frequency on the 7 line.
When: 2015-2020
4. **Midway Station Expansion**
What: MTA
What: Tunnel design and construction to connect the 7th Avenue Subway to the Midway Station as a major component of the East Side Access.
When: 2015-2020
5. **WTC Transportation Hub**
What: PANYNJ
What: Replacing World Trade Center PATH station with new transportation hub that provides access to the subway and PATH services.

Existing Transit Capacity



Overall Available Capacity Used At Rush Hour

- 80% or more utilized
- 75-90%
- 50-75%
- 0-50%

Available Capacity

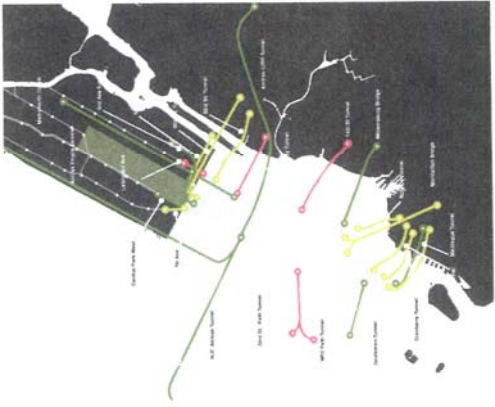
97%

Existing Passengers

New York City subway ridership has reached record highs in 2014, the system recorded over 6.1 million trips in a single day, the highest daily figure since recording began in 1985. Commuter rail tunnels under the Hudson River, which are over 100 years old, are also carrying a record number of passengers. High transit ridership is putting tremendous strain on the subway and commuter rail systems.

The first map shows that subway and commuter rail lines are at 85 percent of passenger capacity overall entering the Manhattan central business districts during rush hour, with many lines (shown in dark red) at over 90 percent capacity. In some cases, lines are operating at over 100 percent, with trains tightly packed and passengers often waiting for several trains to pass before being able to board.

Increased Capacity with Expansion Projects



Overall Available Capacity Used At Rush Hour

- 80% or more utilized
- 75-90%
- 50-75%
- 0-50%

Available Capacity

36%

Existing Passengers

The second map shows estimated capacity with the set of major expansion projects described in Initiative 2, including Annals Gateway Project, current and future phases of Second Avenue Subway, acceleration of advanced subway system improvements to expand the capacity of existing lines, as well as the East Side Access project currently underway. With completion of these projects, lines would be at 65 percent passenger capacity overall entering Manhattan during rush hour, allowing over half a million more passengers to reach places of work in the central business districts during the average work day. Many lines would achieve significantly improved capacity, as shown by the number of dark green lines on the map.



(PANYNJ) to develop an integrated strategy to address this challenge, including:

- The Gateway Project, an initiative to build two new commuter rail tunnels under the Hudson River and dramatically expand rail capacity into Penn Station
- Long- and short-term interventions to improve access, connectivity, amenities, and circulation in Penn Station
- Modernization of the Port Authority Bus Terminal and other bus facilities. The City will also work with the PANYNJ to develop a cost-efficient strategy to modernize the PABT

B. Study new subway routes in underserved communities and other improvements to the subway network

The City will work with the MTA to study a Utica Avenue extension from the Eastern Parkway Line (3/4 train). The Utica Avenue corridor is a prime candidate for the next generation of subway expansion—it is one of the densest areas in the city not directly served by the subway and is served by the second busiest bus route in the City, the B46. The City will also work with the MTA to explore creating new system transfers, such as a transfer between the L and 3 trains at Livonia Avenue. These new connections will reduce travel times and expand travel options for thousands of subway riders. Finally, the City will work with the MTA to identify strategies to improve and expand station entrances at subway stops experiencing growing ridership. As subway ridership continues to climb, we must take action to reduce over-crowding within subway stations, especially at choke points like stairways and fare-gate areas.

C. Expand the ferry network

The City will launch an expanded citywide ferry network to improve transit connections between the city's waterfront communities; this service will be fully accessible to New Yorkers with disabilities. Three new routes—Rockaway, South Brooklyn, and Astoria—are scheduled to launch in 2017, with two

Citywide Ferry System



New York City Ferry Service



others in 2018 (Lower East Side and Soundview). The City has also committed capital funding for the construction of landings.

D. Expand and improve service to and within Staten Island

- Improving connections to Staten Island will support recent revitalization along the North Shore and strengthen the connection of the South Shore to the rest of the city, an essential link in expanding economic opportunity and building resiliency for those communities. The City will work to expand service through:
 - Enhancements to east/west transportation along the North Shore. In the short term, this includes a package of bus service improvements, including additional Transit Signal corridors, real time information signs, and treatments for bus hot spots
 - More frequent service on the Staten Island Railway (SIR). New train cars will improve service for existing ridership, while enhanced off-peak service will benefit residents of Staten Island as well as visitors to Staten Island's neighborhoods and new attractions and amenities

Initiative 4

Expand the City's bike network

Supporting Initiatives

A. Continue to expand the City's bike-lane network, especially to neighborhoods with limited bike infrastructure

Bicycling as a way to get around the five boroughs continues to grow in popularity. Between 2013 and 2014, the City's In-Season Cycling Indicator—a measure of bike volumes on major bike routes into the Manhattan CBD—rose by 4 percent. Overall, cycling has increased a staggering 337 percent since 2000. To support this growth and the City's goal of doubling the Cycling Indicator by 2020, the City will continue to invest in new bike infrastructure. Over the next four years, the City will add another 200 miles of bike lanes, including 20 miles of protected lanes, bringing the total to 1,180 lane miles. The City will work collaboratively with communities to continue expanding the bike network outward from the Manhattan core and inner Brooklyn. The City will also explore ways to better measure bike ridership in areas outside of the Manhattan CBD.



Expanded Bike Lane Network

B. Improve bike access on bridges

Safe and convenient bridge access for bikes is crucial to making New York City more bike-friendly. In 2015 and 2016, the City will improve bike connections between Brooklyn and Queens with the construction of a two-way bike path on the Pulaski Bridge and the installation of protected bike lanes on the John Jay Byrne Bridge on Greenpoint Avenue. The City will also improve bike connections



to the High Bridge in Upper Manhattan to coincide with its reopening this summer. Moving forward, DOT is evaluating potential designs for improved bike routes on the Grand Street Bridge in Brooklyn and the Honeywell Street Bridge in Queens. The City is also initiating a study of bike access to the 15 Harlem River bridges, which will recommend a program of both short- and long-term improvements. Finally, the City is working with the MTA to pilot external bike racks on buses that cross bike-inaccessible bridges and to explore options for adding pedestrian and bike paths on the Verrazano Narrows Bridge.

C. Expand bike share

In 2015, the City and its partner, New York City Bike Share, will expand Citi Bike to Long Island City in Queens, and to additional parts of Williamsburg, Greenpoint, and Bedford Stuyvesant in Brooklyn. This expansion will include 1,000 new bikes and over 90 stations. In 2016 and 2017, Citi Bike will add another 5,000 bicycles and increase its service areas to additional areas of upper Manhattan, central Brooklyn, and western Queens.



NYCHA, Citi Bike and DOT

New York City Housing Authority (NYCHA) is part of a collaboration with the bike and NACTD to place bike share stations at public housing complexes. NYCHA residents receive a discount on the annual fee charged for a Citi Bike. Having bike share stations for NYCHA residents and the low-income tenants there is currently 133 bike stations serving NYCHA developments, with 11 more planned for the summer of 2015.



C. Improve convenience and reliability of modes of transit for New Yorkers with disabilities

Working with the MTA, the City will expand use of the yellow and green taxis—including the growing number of wheelchair-accessible taxis—to provide faster and more convenient paratransit services to New Yorkers with disabilities. The City and the MTA will work to increase the proportion of paratransit trips made by yellow and green taxis over the next four years. And to improve the quality of life for the taxi drivers providing these services, the City will create new relief stands and rest areas in all five boroughs. The City will also explore the feasibility of installing public toilets and benches at some stands.

Initiative 6

The City will make the trucking sector greener and more efficient, and continue to expand freight movement via rail and water where possible

Supporting Initiatives

A. Encourage water and rail freight to the New York region through projects such as the Cross-Harbor Rail Tunnel and Brooklyn Marine Terminals

Red Hook Container Terminal Operations



The City will continue to protect and invest in deep-water marine terminals in Brooklyn and Staten Island. The City has already invested \$100 million in upgrades and a rail link to the South Brooklyn Marine Terminal (SBMT), a long underutilized facility. In the immediate term, SBMT will focus on non-containerized cargos primarily used in the construction industry and roll-on/roll-off cargos such as automobiles. In the longer term, and in conjunction with the Cross-Harbor Rail Tunnel, additional facility upgrades at SBMT and improved distribution facilities East of Hudson, could allow the SBMT to handle container ships, which carry most of the world's ocean freight. By directly serving New York at a point that is already in the market, truck trips will be reduced and air quality improved. The City will also support state and federal efforts to dredge primary and secondary waterways in order to better facilitate waterborne freight movement and water-dependent uses along the waterfront.

To realize the inherent environmental and cost advantages of using rail, the City will continue to work with PANYNJ to advance the Cross-Harbor Rail Tunnel connecting New Jersey and Brooklyn. Specifically, the City supports a two-track, double-stack rail freight tunnel as this configuration offers the largest capacity and greatest redundancy. When completed, this tunnel will result in a meaningful shift in the City's dependence on truck service for freight. PANYNJ estimates that construction of the tunnel would reduce annual greenhouse gas emissions by 80,000 to 110,000



Buses are a critical transportation link for older residents and New Yorkers with disabilities. In 2015, the City will roll out a second phase of its Safe Routes to Transit initiative to address accessibility problems at 25 bus stops located under elevated train lines. At these bus stops, buses cannot pull to the curb, leading passengers to wait and then board from the street. This initiative will build sidewalk extensions on boarding islands at these stops so that passengers are safe and the bus ramps can be properly deployed.

B. Improve accessibility to bus services for transit users with disabilities

The City will identify a range of measures to increase the accessibility of our streets to New Yorkers with disabilities. These measures include the expansion of Accessible Pedestrian Signals (APS) and sidewalk-repair programs, development of accessible design guidelines for all New York City street projects, and a pilot program to explore ways technology can improve accessibility. New technology, such as smartphones, opens up opportunities to assist pedestrians with disabilities, particularly the vision-impaired, in navigating the city's streets—in addition to other efforts like DOT's upgrading of pedestrian ramps.

Initiative 5
Expand the accessibility of the city's transportation network to seniors and people with disabilities

Supporting Initiatives

A. Increase accessibility of the pedestrian network to people with disabilities

The City will identify a range of measures to increase the accessibility of our streets to New Yorkers with disabilities. These measures include the expansion of Accessible Pedestrian Signals (APS) and sidewalk-repair programs, development of accessible design guidelines for all New York City street projects, and a pilot program to explore ways technology can improve accessibility. New technology, such as smartphones, opens up opportunities to assist pedestrians with disabilities, particularly the vision-impaired, in navigating the city's streets—in addition to other efforts like DOT's upgrading of pedestrian ramps.



Off-hour truck delivery

metric tons by 2035. Such a tunnel would also greatly expand East of Hudson freight-rail capacity, and support domestic rail needs as well as container activity at SBMT. In the meantime, the City will support the PANYNJ's efforts to enhance the capacity of freight movements by rail barge across the Hudson River, increasing opportunities now for shippers in Brooklyn, Queens and beyond.

B. Reduce the impact of the trucks that must bring freight "the last mile" to market

The City will increase off-hour deliveries by food- and retail-sector trucks, with a focus on large buildings, high-pedestrian areas, and bicycle-conflict areas such as Midtown and Lower Manhattan, Downtown Brooklyn, and Downtown Jamaica. By shifting deliveries to over-night and early-morning hours, the City will decrease both congestion and truck emissions. As part of this effort, we will work with the trucking industry to explore and pilot low-noise truck technologies.

Mobile applications are now available to match suppliers who need to move goods with truckers who are already on the road and have room to pick up additional cargo, thus reducing new truck trips on our streets by consolidating loads. The City will launch a pilot project to encourage the use of these platforms.

The City will work with large fleets to create a Smart Fleet rating system, similar to the Leadership in Energy & Environmental Design (LEED) standard for buildings, but based on truck safety, noise reduction, energy efficiency, and emissions-control technology. The City will then publicly recognize fleets that go above and beyond in using safe, quiet, and green trucks for their deliveries.

To facilitate the delivery of construction-related cargo by water, such as building components, turbines, and generators, the City will create designated roll-on/roll-off and lift-on/lift-off staging areas for maritime cargo in each borough, making it easier and cheaper to bring these essential construction supplies into New York City.

C. Expand JFK Airport's air freight activity

The City is working with PANYNJ to improve JFK's air-freight facilities. Over the past decade, cargo volumes at JFK have declined by almost a third. Today, over 15,000 people at JFK work directly in air cargo related jobs. Regionally, the air cargo industry supports over 50,000 jobs, \$8.6 billion in sales, and almost \$3 billion in wages. The City remains committed to supporting the air cargo industry and will work with PANYNJ to increase the capacity of our air freight systems to expand JFK's share of the air-freight market.

In March 2015, the City adopted a new rule allowing industry-standard 53-foot tractor trailers to access JFK. The City is also working with the PANYNJ to build new facilities. Over the past two years, a truck stop has opened on-airport, and a new animal handling facility (for which the City provided financing) is under construction. The next two years will see the construction of a new state-of-the-art cargo handling facility.



Baggage claim at LaGuardia Airport

This work is complemented by the City's efforts to establish an industrial business improvement district in the adjacent Springfield Gardens neighborhood.

Initiative 7

Expand airport capacity

To maintain our competitiveness as a center of tourism and the global economy, the City will work with PANYNJ, New York State, and the Federal Government to expand flight capacity and improve airport facilities and terminals at the region's airports, particularly LaGuardia and JFK. Working with PANYNJ and the airline industry, the City will support the expansion of Terminal One, Terminal Eight, and Terminal Four at JFK and the complete reconstruction of the Central Terminal at LaGuardia Airport, an outdated facility that is long overdue for replacement.

Additionally, the City will encourage the Federal Aviation Administration and PANYNJ to continue to implement NextGen technology, a series of upgrades to the region's air traffic control system that will improve safety and enable more-efficient take-offs and landings.

The City supports expanding flight capacity at JFK, but only in a manner that is sensitive to the environment and the quality-of-life concerns of adjacent communities. The City will work with PANYNJ as it completes a study of capacity-expansion options, including the addition of a fourth runway. This study should take into account the noise, air quality, and greenhouse gas emission impacts of different expansion options and ways to mitigate these impacts.

Initiative 8

Provide reliable, convenient transit access to all three of the region's major airports

Though they are all served by transit, none of New York's major airports offers a one-seat transit connection to the City's central business districts (CBDs). This lack of access impacts air travelers and airport employees, and increases congestion on the regional highway system.

The City will continue to work with the MTA and others to improve existing bus connections to LaGuardia in the short term, while working with PANYNJ, the MTA, and the State of New York to develop a plan for better long-term transit. Similarly, it will continue to support PANYNJ's project to extend Port Authority Trans-Hudson (PATH) to Newark Airport, which will add airport access from Lower Manhattan. Finally, the City will work with PANYNJ and the MTA to explore additional ways to improve existing bus and rail connections to JFK, such as adding more frequent shuttle service on the Atlantic Branch of the Long Island Rail Road after East Side Access is complete.

Initiative 9

Improve the city's roads, bridges, and highways

The City is responsible for the operation and maintenance of a complex network of roads, bridges, and highways that connect the five boroughs. Much of this infrastructure is aging—the four East River Bridges, for example, are all over 100 years old—and requires continual reinvestment to remain in a state of good repair. Over the next ten years, the City will undertake dozens of major capital projects to restore our network of roads and bridges, including significant rehabilitation of major roads essential to the City's economic vitality. For example, sections of the critical FDR Drive will be rehabilitated along with the esplanade that sits above it.

In Brooklyn, the City will rehabilitate and reconstruct the 21 interconnected bridge structures that carry the Brooklyn Queens Expressway from Atlantic Avenue to Sands Street, including the “triple cantilever” stacked section of highway completed in 1948, topped by the iconic Brooklyn Heights Promenade. With no reconstruction work in recent history, the triple cantilever is in need of major repair with many components experiencing significant deterioration. In Queens, the City will repair multiple structures carrying and crossing both the Van Wyck Expressway and the Cross Island Parkway. In addition, the City is initiating a Queens Boulevard, a Vision Zero Priority Corridor, as part of the Administration's Great Streets initiative. In the Bronx, the Great Streets initiative will implement safety and quality of life improvements for users along the Grand Concourse, a major thoroughfare in the borough, while the City will also undertake the rehabilitation and reconstruction of highway structures along the Bruckner Expressway and the Hutchinson River Parkway.

In Staten Island, the City will undertake 17 projects to fully rebuild city streets, including sections of Father Capodanno Boulevard, Victory Boulevard, and Arthur Kill Road. Together, these projects will ensure our road and bridge network can continue to safely support the movement of people and goods across the city.

Department of Transportation Street, Bridge, and Highway Reconstruction Program



The “Triple Cantilever” in 1948 and today

Bridge Rehabilitation/Reconstruction

- # Name
- 1 Queensboro Bridge
- 2 Williamsburg Bridge
- 3 Manhattan Bridge
- 4 Brooklyn Bridge

Highway Structure Rehabilitation/Reconstruction

- # Name
- 1 Bronx Highways and Parkways
- 2 Henry Hudson Parkway
- 3 Van Wyck Expressway
- 4 Cross Island Parkway
- 5 FDR Drive
- 6 BOE Triple Cantilever
- 7 Belt Parkway

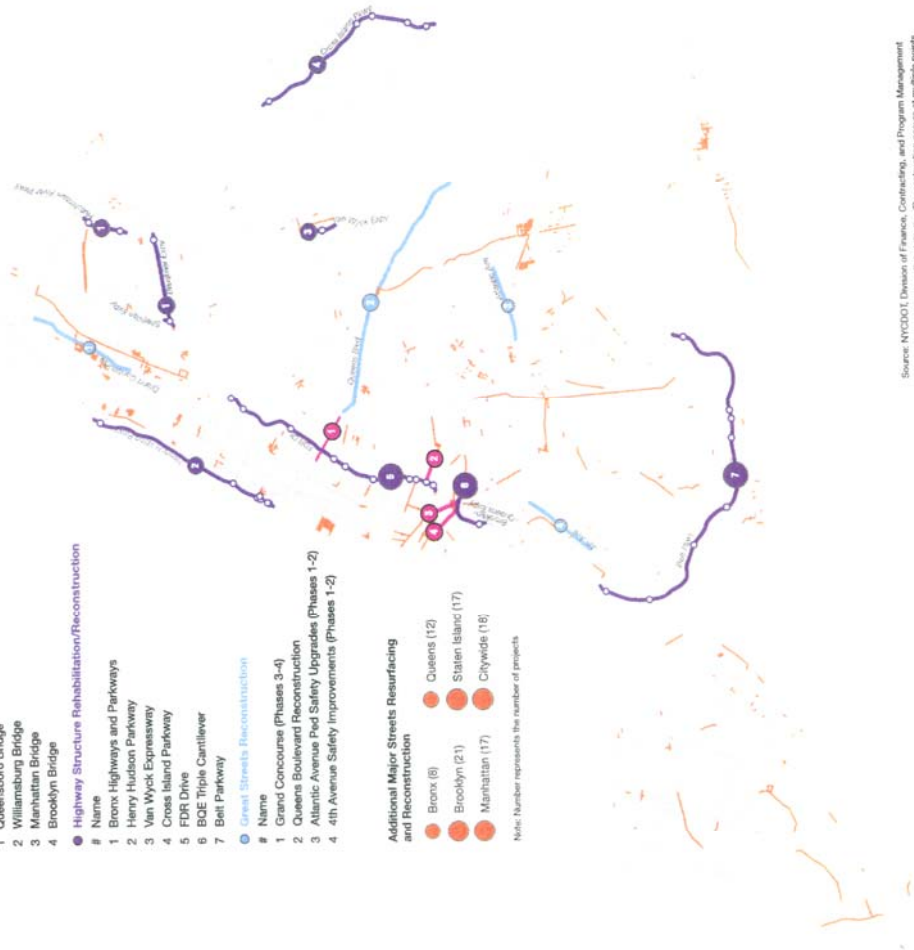
Great Streets Reconstruction

- # Name
- 1 Grand Concourse (Phases 3-4)
- 2 Queens Boulevard Reconstruction
- 3 Atlantic Avenue Ped Safety Upgrades (Phases 1-2)
- 4 4th Avenue Safety Improvements (Phases 1-2)

Additional Major Streets Resurfacing and Reconstruction

- Bronx (8)
- Brooklyn (21)
- Manhattan (17)
- Queens (12)
- Staten Island (17)
- Citywide (18)

Note: Number represents the number of projects



Source: NYCDOT, Division of Finance, Contracting, and Program Management. Note: Street Rehabilitation/Reconstruction occurs at multiple points along each highway.



Infrastructure Planning & Management

Goal: New York City's infrastructure and built environment will exemplify global economic, environmental, and social leadership

Overview

Infrastructure is the foundation of our regional economy and provides for the everyday needs of all New Yorkers, yet much of New York's core infrastructure is aging and outdated. Many systems, including transit, sewers, and schools, were built decades ago and are at capacity, straining to meet the demands of a growing population and a modern, thriving economy. Fixing our infrastructure requires significantly more funding and a renewed national commitment to cities, as well as smarter, more efficient infrastructure planning and project delivery.

The physical legacy of disinvestment during the fiscal crisis of the 1970s stands as a testament to the urgency of achieving a "state of good repair." The City spent the next three decades trying to catch up, investing billions of dollars to rehabilitate infrastructure and buildings. We need a near-term infusion of funding from all levels of government in order to prevent history from repeating itself and to allow us the opportunity to expand infrastructure systems that catalyze economic expansion and neighborhood revitalization.

While more investment is required, we will take significant steps to improve our use of existing funds through integrated capital planning, improved project delivery, and asset management. Current investment plans would benefit from better coordination with our regional partners, including State government, public authorities, utilities, and other private entities. The City is committed to taking a leadership role in coordinating these investments and incorporating them into our own strategic planning process.

As it currently stands, many capital projects come in over budget and behind schedule. This is partially due to reasons outside of our control, such as the complexities of construction in a dense city. However, we can do better in a number of areas, including reforming City and State laws, streamlining rules for public procurement and construction, streamlining permitting processes, improving capital project tracking and accountability, and enhancing the City's technology and data systems.

Our overall goal is to ensure New York City's infrastructure is the product of best practices and is consistent with our City's reputation as a global leader in economic, environmental, and social policy. In this vein, we are fully committed to reforming the processes that support each stage of the infrastructure lifecycle.



Additionally, the City's massive infrastructure program creates a wide range of jobs and economic activity. We will leverage these investments to create employment and career opportunities for New Yorkers, targeted to those who have historically experienced high rates of unemployment. These commitments are carried out through targeted training programs and Project Labor Agreements, discussed earlier in the Workforce Development goal.



School Construction Authority

A growing city needs more room for children to learn in facilities that meet their educational needs. To address increasing demand in high growth areas across New York City, the City will add over 30,000 new classroom seats during this plan, as well as investing in new technology and the improvement of aging facilities.

The School Construction Authority's (SCA) current inventory of facilities includes over 100 buildings that are at least 100 years old. The needs for improvements in these schools identified by the SCA are based on several factors, including the annual Building Condition Assessment Survey of all schools, which provides an evaluation of the condition of building systems. The SCA uses this evaluation of what is required to maintain a state of good repair—in conjunction with recommendations from facility personnel, school administration, and the community—to develop city projects to be included in its Capital Plan.

In its upcoming Capital Plan, the SCA will create thousands of seats in areas of current overcrowding and projected enrollment growth, and will take significant steps to address the pre-kindergarten need.





Initiative 1

Secure funding sources that are equitable, sustainable, and dedicated to our core infrastructure

Over the next decade, the City will continue to advocate for a robust federal commitment to funding urban infrastructure, while exploring new streams of dedicated revenues.

Supporting Initiative

A. Leverage land-use actions to encourage infrastructure investments

City policy, such as rezonings, create economic value for property owners, some of which should be recaptured in order to fund the infrastructure improvements needed to accommodate growth and development. For instance, as part of the zoning changes associated with the planned One Vanderbilt office tower, the development firm SL Green Realty Corporation has committed to spend \$210 million on improvements to the Grand Central Terminal and subway station. Investments in infrastructure can in return enhance real estate values and thus lead to increased tax revenue for the City.

Initiative 2

Maximize the economic, environmental, and social benefits of infrastructure investments

Every City agency strives to achieve economic, environmental, and social benefits with its investments—the triple bottom line. New methodologies have emerged to help inform investment decisions. The City should maintain a focus on achieving a state of good repair for its infrastructure assets while prioritizing projects that are socially, fiscally, and environmentally advantageous, as exemplified by the emissions reductions, energy cost savings, and jobs created through retrofits to public buildings under One City Built to Last.

The City already collects a wealth of data that could be harnessed to inform infrastructure investment decisions based on triple bottom line criteria. Over the next year, we will review current indicators and identify data gaps that would support more sophisticated prioritization methodologies.

We will also facilitate interagency and intergovernmental collaborations in order to realize higher economic, environmental, and social returns (the triple bottom line). These efforts will include improvements to the City's geographic information systems (GIS) and data-sharing platforms that will also increase the transparency of our infrastructure programs and facilitate greater partnerships with our infrastructure partners in state and federal government.



Initiative 3

Enhance capital project delivery

Capital projects often take too long and cost too much. While many of the reasons for this are outside of the City's control, there is much we can change to improve the situation, particularly in rules and processes. Over the next several months, the City will establish a task force to identify strategies for accelerating investment programs and modernizing project delivery, procurement, and payment processes to greatly reduce the time between project approvals and completion.

Supporting Initiatives

A. Reform state laws to enable design-build

City construction is governed by state laws, some of which are outdated and undermine timely capital project delivery. In 2014, we were pleased to see the joint bidding law passed in Albany, which increases the pace and lowers the cost of upgrading our underground infrastructure—what EB White described as the “ganglia” of subterranean power lines, steam pipes, gas mains, and sewer pipes.

The City also supports an amendment to the New York State Construction Law authorizing the use of the design-build method of project delivery. Currently, the City is required to contract separately and sequentially for design and construction services. Design-build saves a great deal of time by requiring the procurement of only one contract for both phases and allowing these phases to overlap. New York State is using a design-build contract for the Tappan Zee Bridge rebuild, which may save taxpayers as much as \$1 billion. New York City agencies should be able to use similar cost-saving measures for their projects.

B. Expand the Accelerated Work Program

Last spring, the City created the Underground Infrastructure Taskforce to improve the response protocol for gas leaks and find ways to advance the replacement of older gas pipes and water mains. In cooperation with private utilities, the City piloted the Accelerated Work Program in 2014, which identified locations where water- and gas-main work could be coordinated. The City will continue to expand the program in 2015. The Department of Environmental Protection will spend \$100 million to replace old water mains on an accelerated schedule. Thanks to the Accelerated Work Program, private utilities will be replacing their gas pipes at many of the same locations using the same contracts. As a result these streets will be dug up only once.

C. Improve project scoping and design to improve green-building and save costs

Spending more time and effort on the early phases of any project pays great dividends during the design and construction phases. However, due to funding structures for capital projects, the scoping of a project is often short changed.

Several years ago the City created a program to fund early and enhanced project scoping. This program has proven to be successful and will be expanded to build on the progress already made.

We will take a more integrated approach to planning and design in general, and bring more of a design focus to capital planning and budgeting. Moreover, we will make a conscious effort to focus on citywide goals and values during each public-project design phase. Led by the Department of Design and Construction, the City will plan, design, and construct the City's infrastructure and public buildings to integrate green building and energy-efficient goals in a cost-effective manner:

D. Modernize project delivery requirements and project management processes

The City is investigating additional ways to reduce construction costs and shorten project schedules. As a whole, the City's project delivery requirements must be modernized to meet national and global project management lifecycle standards. Developing citywide project management knowledge and frameworks to address scoping, design, procurement, construction, payments, change orders, and permitting will reduce project costs, schedules, and risks. We will create a higher level of transparency and accountability for capital projects, and revamp the online Capital Projects Dashboard for internal tracking and public information. The Mayor's Office of Contract Services is also reviewing every step of the City procurement process for opportunities to reduce delivery time and reduce costs.





Major Planned City Projects 2014-2025

The City will soon release its Ten-Year Capital Strategy, providing a blueprint for capital spending over the next decade that will be critical to improving New Yorkers' lives in the years to come. A selection of major planned projects, including transportation, parks, water, sewers, hospitals, and schools, economic development and resiliency projects are highlighted on the map at right. OneNYC and the Ten-Year Capital Strategy are aligned to ensure funding for OneNYC goals.

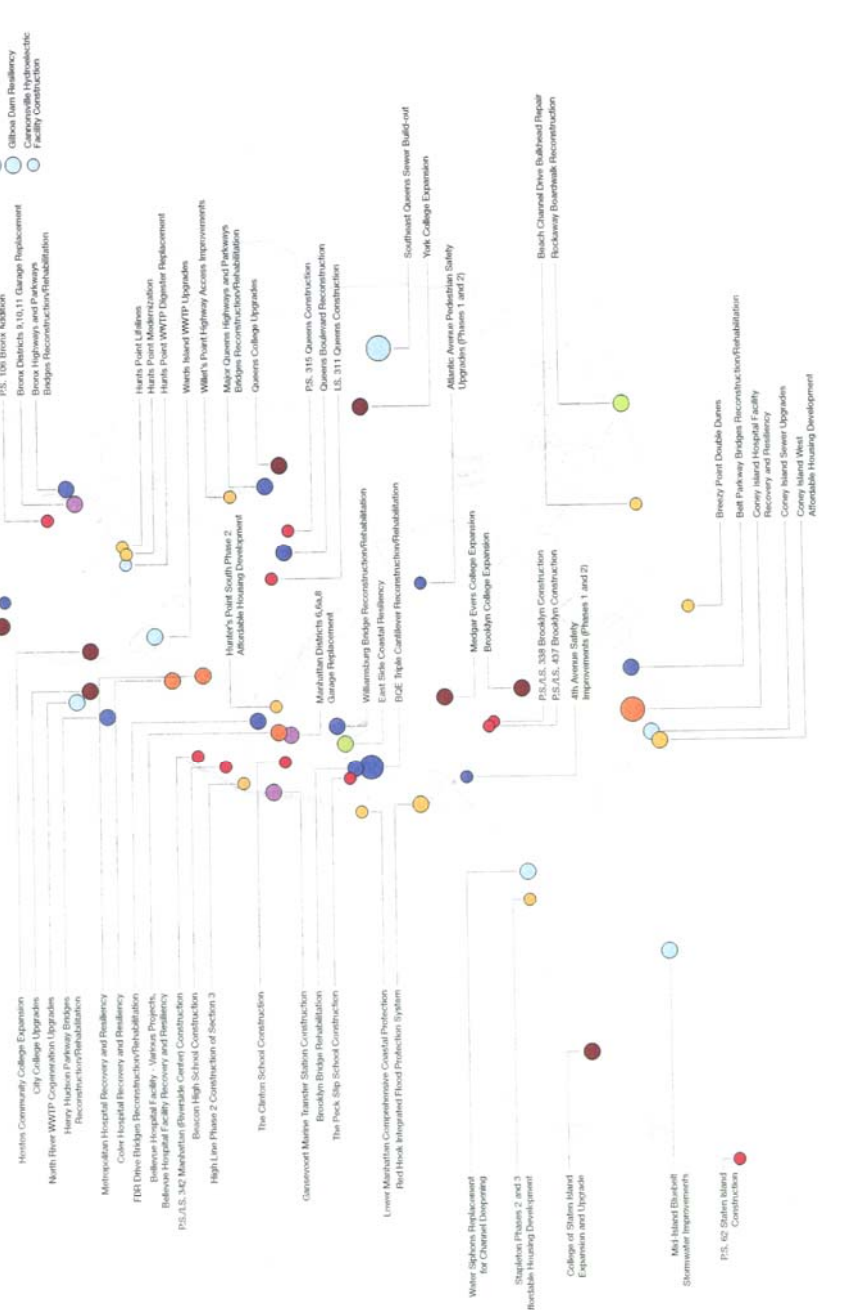
- CUNY
- DOC
- DSNY
- EDC
- HHC
- DEP
- DOT
- DFR
- NYCHA
- SCA

Note: Partial list of City-led projects

Projects Not Shown

- Citywide Green Infrastructure Program
- NYCHA Recovery and Resiliency Investments
- Citywide Parks Initiative
- Parks without Borders

- Projects located in Upper New York
- Delaware Aqueduct Repair
 - Kensico Eschewer Connection Tunnel Resiliency
 - Anokan Dam Upgrades
 - Catskill Aqueduct Rehabilitation
 - Flatiron Aqueduct Detour/Installation
 - Gibson Dam Resiliency
 - Conaway Hydroelectric Facility Construction





Broadband

Goal: Every resident and business will have access to affordable, reliable, high-speed broadband service everywhere by 2025

INDICATORS + TARGETS

- ✔ Increase the percentage of New Yorkers with affordable, reliable, high-speed Internet access at home
- ✔ Increase the percentage of New Yorkers with access to free public Wi-Fi within 1/8 mile from home
- ✔ Substantially increase access to local, affordable, reliable connections in neighborhoods per second on budget

Overview

High-speed Internet access is not a luxury, but an essential service that New Yorkers depend on to communicate, make a living, and access essential goods and services. Without broadband, families and businesses are unable to fully participate in many aspects of contemporary life. Lack of broadband negatively affects the civic, economic, and social engagement of community residents; makes it difficult for startups and small businesses to succeed and scale; and impedes neighborhood development, job creation, and the economic health of the city. Twenty-two percent of New York City households do not have Internet service at home, with major disparities in households above and below the poverty line. 36 percent of households below the poverty line do not have Internet access at home, compared to 18 percent of households living above the poverty line.

Commercial high-speed connections are often priced out of reach of small businesses and startups. The average cost of monthly gigabit speeds for commercial users is \$8,000 in New York City, outpacing those in peer cities like Chicago, and far outstripping costs in cities that have made recent investments in broadband infrastructure.

Sluggish Internet speeds and capacity can also create barriers to local economic development and weaken New York City's global competitiveness. Despite recent investments by Verizon to build a citywide fiber-optic network, many New Yorkers cannot access or afford this high-speed service. And while businesses located in Manhattan's commercial corridors generally enjoy high-speed connections, there are insufficient options in the neighborhoods in other boroughs where growth in key sectors is taking place. Large healthcare and research centers are also finding Internet speed and access to be a barrier to their operations and growth. This poses a risk that critical New York City economic sectors might lose competitive ground to national and international cities.

The City has, to date, taken significant steps toward building its capacity to meet this goal, creating new positions focused on telecommunications infrastructure and policy, and establishing the Broadband Task Force, an advisory body composed of experts in broadband technology, real estate development, venture capital and digital equity.



Initiative 1

Promote competition in the residential and commercial broadband markets

The City will create new or expanded franchises and alternative service models to expand infrastructure, produce more competition, and increase affordability by 2025—in addition to holding incumbent providers accountable for their legal obligations and negotiating for additional upgrades when those franchises come up for renewal in 2020.

According to the Federal Communications Commission, broadband providers appear to invest more heavily in network upgrades and offer faster Internet speeds in areas where they face competition. The City will therefore seek to increase the diversity of residential and commercial broadband service options through new technologies, combined with novel approaches to the exercise of existing franchise authority, establishment of new franchise authority, creative investment of City resources, and/or creative uses of regulatory authority. The City will explore avenues for increasing competition, including maximizing non-exclusive franchises, supporting hyper-local residential and commercial networks, and facilitating the transition of companies that have, to date, solely focused on infrastructure to Internet service providers.

Initiative 2

Provide high-speed, residential internet service for low-income communities currently without service

The City will invest in networks providing high-speed residential access either free or at low-cost for low-income communities. Investments may be targeted at particular locations such as communities identified for economic and housing development, or may be focused on particular types of housing, such as public or subsidized properties. Sites may also serve as nodes in a citywide network consisting of LinkNYC and other wireless corridors and networks.

The City expects to realize cost savings resulting from greater efficiencies, such as the use of smart building technologies and resident utilization of e-services. The City will also develop revenue models—grounded in advertising, branding opportunities, premium paid service, and other strategies that will ensure networks are ultimately self-sustaining.



Initiative 3

Increase investment in broadband corridors to reach high-growth business districts, with a focus on outer-borough neighborhoods

The City will invest in new technologies to support innovation economy business in key commercial corridors. This will address the relative lack of high-speed fiber or wireless options for businesses in the boroughs outside of Manhattan, high prices and their combined impact on economic growth and development across the City. Selection criteria will include demonstrated need for and potential benefit from robust broadband by businesses in considered areas, and/or demonstrated engagement from community-based organizations and other stakeholders to help drive the adoption and implementation process.

WiFi coverage within 1/8th of a mile of New Yorkers' homes



Initiative 4

Promote seamless user experience across public networks to create high speed access across the boroughs

The City will ensure a successful citywide rollout of LinkNYC network, which will consist of up to 10,000 structures across the five boroughs, offering 24/7 free Internet access up to gigabit speeds, as well as a range of other services.

The City will leverage existing public and commercial wireless networks and corridors and the backbone created by LinkNYC, with a goal of covering a critical mass of the City's public spaces with free Wi-Fi by 2025. Today, there are 1,050 documented public hotspots across the five boroughs; the City will enable a dramatic increase in this number.

Through these initiatives, the City will support a seamless user experience across all five boroughs, leveraging LinkNYC and other wireless hotspots. As a result of rising usage levels, the potential advertising-based revenue models—similar to the LinkNYC model—is sure to grow, which will promote the sustainability of these networks over time.

All networks in public spaces can be woven together to ensure a seamless user experience that can be



Initiative 5

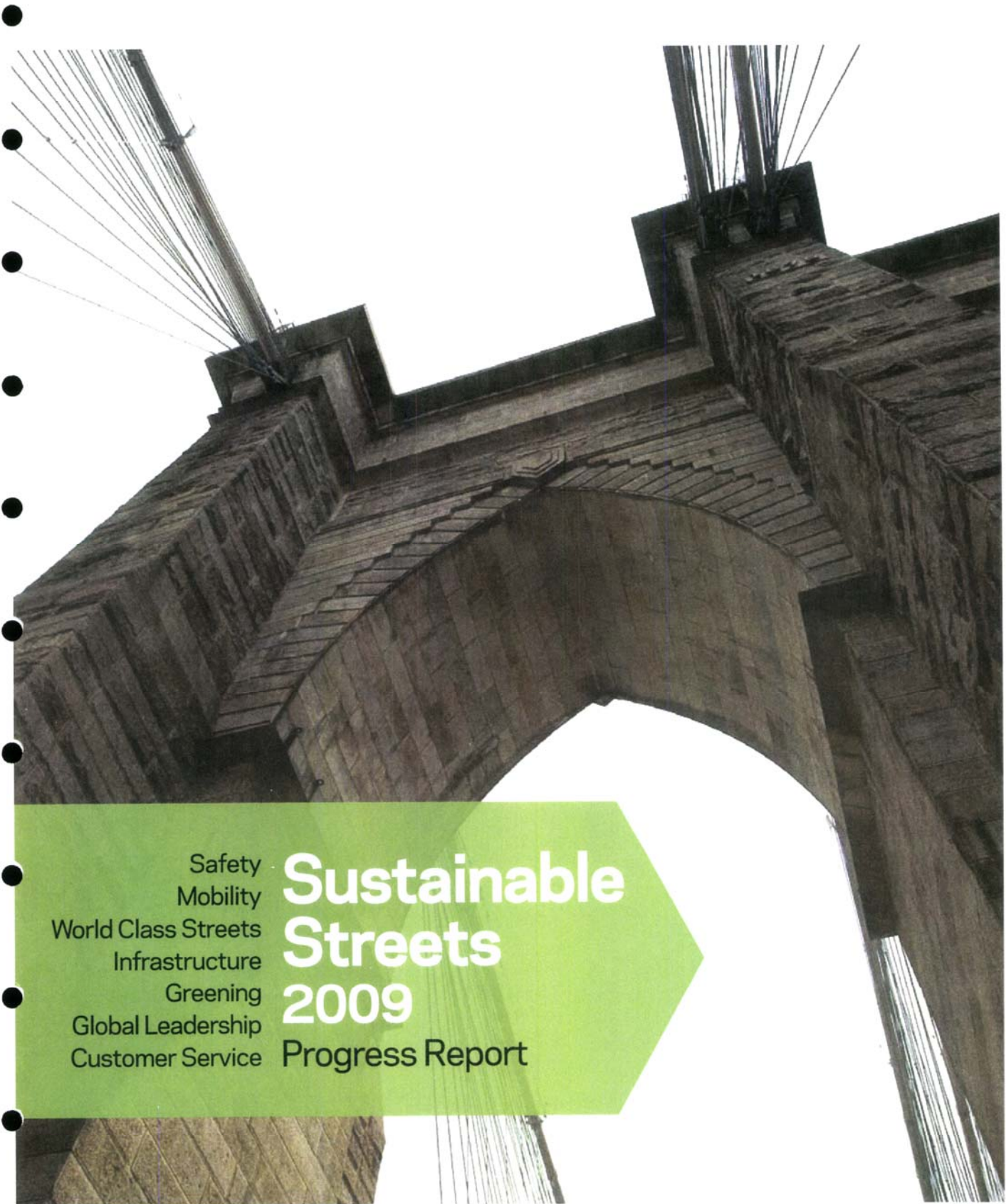
Explore innovative ways to provide high-speed Internet to homes, businesses, and the public

The City has released a Call for Innovations targeting the needs of underserved residential and commercial customers, identifying public and private infrastructure that might be leveraged to meet these needs, and requesting suggestions for innovative models to provide service to low-income households and startups. These policy and project proposals will inform City efforts to increase access, affordability, and adoption.

Finally, the City will conduct research on the latest broadband developments and trends to help inform the City's strategy on connectivity.



Rendering of LinkNYC structure



Safety
Mobility
World Class Streets
Infrastructure
Greening
Global Leadership
Customer Service

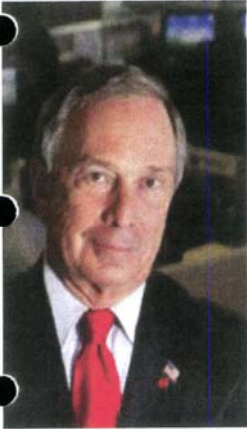
**Sustainable
Streets
2009
Progress Report**



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LETTER FROM THE MAYOR



Dear Friends:

A year ago, the Department of Transportation released *Sustainable Streets*, a new strategic plan that outlines in detail our Administration's goals for a more sustainable transportation system with better infrastructure and increased mobility. The plan emphasizes how an intelligent transportation policy can positively affect the quality of life in New York City and improve our neighborhoods in ways consistent with *PlaNYC*, our long-term plan to combat global warming and climate change.

This 2009 progress report provides a status update for each of the initiatives launched in the past year and presents new steps we're taking to achieve our goals. With Select Bus Service, Green Light for Midtown, and new provisions for bicycling, we've measurably increased mobility — while our popular Plaza and Summer Streets Programs have made the City an even more attractive place to live, work, and visit. In fact, these and other improvements have already made our City a national and global leader in creating a sustainable transportation system.

We're also finding new ways to make our streets safer and smoother. Having reduced traffic fatalities to historic lows, we're working to drive them down further with programs to make areas frequented by youth and seniors even more pedestrian friendly. We've steadily

expanded the resurfacing program in order to restore more streets to good condition, and city-owned bridges are in the best shape they've been in for more than a generation.

Transportation has always been key to unlocking New York City's potential, and as this report shows in detail, our Department of Transportation is a vital partner in helping to create a greener, greater New York.

Sincerely,

A handwritten signature in black ink that reads "Michael R. Bloomberg". The signature is fluid and cursive, with a long, sweeping tail on the letter "g".

Michael R. Bloomberg
Mayor



COMMISSIONER'S INTRODUCTION



Dear fellow New Yorkers:

In the Spring of 2008, NYCDOT released *Sustainable Streets*, its new strategic plan. The plan laid out, for the first time ever, a clear and detailed transportation policy for New York City—one that promised a new direction.

I am very pleased to report that DOT is delivering on the promises of its plan, and is moving forward on every one of the 164 actions that we committed to undertake in *Sustainable Streets*. This annual update of our plan reports on that progress, and serves as a focal point for meeting targets and sustaining momentum across all of our programs. It also sets forth new goals that have emerged during the past year, ranging from development of an internal DOT car-sharing system to further reduce DOT's fleet, parking needs and miles driven, to issuing a request for proposals to establish a large scale public bicycle system in New York, similar to those in Paris and other cities.

Sustainable Streets elaborated on the transportation policy themes established by Mayor Bloomberg in PlaNYC 2030: a more mobile and attractive bus system, a bicycling network that increases ridership, more attention to the quality of the public realm and infrastructure in good condition.

The response to *Sustainable Streets* has been inspiring. First and foremost, the men and women of NYCDOT have embraced its vision with great enthusiasm and spirit. Their hard work, creativity and professionalism is allowing us to transform the City's streetscape before our eyes, implement mobility improvements that will allow New York to grow for years to come and show tangible evidence of progress toward a greater, greener New York. Leaders across many walks of life in New York have taken note of the clarity of direction our strategic plan establishes. Beyond the city, we have experienced

a broad and sustained interest in our plan, with requests for the document and follow-up discussion coming from city halls in a variety of American cities, as well as from both municipal and national governments in Europe, Australia and South America.

New Yorkers themselves are voting with their feet, pedals and transit passes to take advantage of the projects and new networks NYCDOT is creating within the frameworks of PlaNYC and *Sustainable Streets*. Our first Select Bus route, the Bx12, now carries 30% more weekday riders than the service it replaced, and is shaving 11 minutes off of its previous run. Bicycle commuting has more than doubled since 2000, and growth is accelerating. We saw a 35% increase in our counts of commuter bicycle volumes in 2008 alone, which is clearly linked to the rapid expansion and increase in quality of our bike lane network. 86% of residents, workers and business people recently surveyed in the Flatiron district were upbeat about the new public spaces that DOT created in Madison Square last summer.

Unusually for the transportation sector, we are making these positive changes quickly. NYCDOT's planning, paving, signing, marking and concrete teams have developed methods that allow us to create protected bicycle ways, bus lanes and public plazas without extensive digging and construction, so we are implementing functional and visible change on our streets in months rather than years or decades. The Green Light for Midtown program that we implemented along Broadway on Memorial Day Weekend will change the face of Manhattan's central business district, and will be fully implemented by September. These improvements are also flexible enough to change as needed.

COMMISSIONER'S INTRODUCTION

City government is also taking major steps to ensure that it is part of the transportation and sustainability solution. In 2008, Mayor Bloomberg directed DOT and the Police Department to overhaul the system for issuing parking placards for City-owned vehicles, and we have achieved an overall 53% reduction across all City agencies. DOT also recently cut its light duty vehicle fleet itself by 10%.

In addition to the strong accountability and direction that *Sustainable Streets* builds into NYCDOT's work, we are also tracking transportation trends and changes in the city—the outcomes of our actions—more closely than ever. We released the first *Sustainable Streets Index* in December, which showed how public transit has accommodated most of the growth in travel in New York during the past decade. We will be refining and expanding that report with each annual issue.

In 2009 we mark the centennials of the Queensboro and Manhattan Bridges. The creators of these spans were part of a generation of heroic builders that knit together the pieces of New York that we know today. Much of what gives New York its edge in sustainability—the density enabled by our intensive web of transportation links and connections—is the result of the era that saw the East River bridged at multiple points, the subways tunnel into Brooklyn, Queens and the Bronx and the regional railroads connected into the city center. We must honor this legacy and extend its benefits by taking care of fundamental infrastructure needs. This year, we were able to negotiate the most advantageous big-city allocation of federal economic recovery funding for transportation in the country. An infusion of over \$260 million will help keep today's downturn from impacting the City's investment in our collective future. It will sustain good jobs and deliver major projects from the

Bronx to Staten Island, while releasing city funding for additional capital projects across the five boroughs. The project choices and design decisions we make today can sustain and intensify New York's transportation advantages. In today's economic climate, preserving and adding jobs in our large transportation industry provides an immediate shot in the arm for the city's economy. Investing in future mobility, our quality of life and the basic foundations of our transportation system will prime the city for renewed growth.

Sincerely,



Janette Sadik-Khan
Commissioner

ACCOMPLISHMENTS

Major NYCDOT Accomplishments in 2008–2009

The New York City Department of Transportation launched numerous new projects and initiatives over the past year, and saw positive transportation results in many areas. These are some of the highlights.

- Launched and expanded large-scale targeted safety programs— Safe Streets for Seniors and Safe Routes to Schools.
- Implemented complete-street roadway designs in many locations, including an award winning design for 9th Avenue. Safety benefits have been demonstrable within months in many cases.
- Developed and launched the Green Light for Midtown plan to reduce traffic congestion in the heart of Midtown Manhattan and improve safety and public space in Herald and Times Squares.
- Launched the Select Bus Service program with NYC Transit, implementing routes on Fordham Road in the Bronx and 34th Street in Manhattan.
- In 2008, implemented a record 90 miles of new bicycle lanes, contributing to an unprecedented 35% single-year increase in bicycle commuting.
- Created new public spaces in key city locations, including Madison Square, the DUMBO Manhattan Bridge arch, the Bronx Hub, Gansevoort Street and others.
- Launched DOT's Public Plaza program and application process to create new open spaces in every NYC community. Announced the program's first 9 sites.
- Launched the Summer Streets program that opened Park Avenue and connecting routes to pedestrians, cyclists and others on August Saturdays.
- Reduced parking placards for NYCDOT by 20% and DOT's light duty vehicle fleet by 10%.
- Established a clear, cutting-edge direction in sustainable transportation policy with publication of *World Class Streets*, *Sustainable Streets Index* and NYC Street Design Manual.
- Strengthened DOT communications via a refashioned and more substantive website and through directed outreach programs such as DOT Academy.

NEW GOALS

New Goals for 2009

Since publication of *Sustainable Streets* in 2008, NYCDOT has developed a range of new initiatives, and we have added new goals outlined here and throughout this report.

- o NYCDOT will triple the number of 20 mph speed zones around schools from 25 to 75 by 2010.
- o During 2009, NYCDOT and NYC Transit will issue a Phase II bus rapid transit plan recommending 8–10 new routes.
- o NYCDOT and NYC Transit will test a real-time bus arrival information system on 34th Street in Manhattan.
- o NYCDOT has accelerated its targets for increased bicycle commuting following the significant rise in bicycle counts in 2008 and developments such as passage of bicycle parking legislation by the NYC City Council. DOT now anticipates doubling bike commuting from 2007 levels by 2012 and tripling it by 2017.
- o During 2009, NYCDOT will explore opportunities for a large scale public bicycle system in the Manhattan CBD and adjoining areas. Bike sharing would provide a new mobility option for short trips and increase bicycling's share of overall travel within the city.
- o NYCDOT will expand installation of on-street bike parking by beginning to re-fashion single-space parking meter poles into bicycle racks as part of the uni-meter installation process.
- o NYCDOT will expand the PARK Smart curbside management program to additional neighborhoods.
- o With the NYC Economic Development Corp, NYCDOT will launch an expanded East River ferry network with six landings, including new docks in Greenpoint and North Williamsburg, by 2012.
- o NYCDOT will begin to establish new rules and conditions for use of curb and layover space by private buses, whose presence on city streets has dramatically proliferated.
- o NYCDOT will develop pilot projects for some of the new street designs recommended in the NYC Street Design Manual, such as "shared streets."
- o NYCDOT will expand Summer Streets to additional days and areas in 2010.
- o NYCDOT will launch a car share system for its headquarters in Lower Manhattan that will replace 57 DOT cars with a pool of 20 shared vehicles. The program could serve as a model for citywide adoption.
- o DOT will provide new information on traffic speeds via traffic condition maps at www.nyc.gov/dot and will make more of its map-based data available in open source standards on its website.



SAFETY

Building Safe Streets

In the past year, NYCDOT has made significant strides to deliver safer city streets to New Yorkers, and to drive historically low levels of traffic fatalities even lower. Most significantly, the Department added a second large-scale targeted safety effort — DOT’s Safe Streets for Seniors program — to its extensive Safe Routes to School initiative. Both young people and seniors are over-represented among traffic fatalities each year. These two programs will help drive down traffic deaths and injuries as they are implemented and expand into new areas.

Additionally, NYCDOT targets specific sites for safety improvements. Our new designs for city streets are developed under a “complete street” ethos that advances safe accommodation for all street users. Our projects are demonstrably improving safety on recently treated streets. For example, in summer 2008, DOT targeted Park Avenue and 33rd Street, an intersection with one of Manhattan’s most persistent crash histories, for an aggressive redesign. Pedestrian crashes have been cut in half since the redesign was implemented.

Similarly, an early step in DOT’s Safe Streets for Seniors program in Flushing, Queens was installation of a new pedestrian refuge island at the intersection of Northern Boulevard and Bowne Street. Injuries at this location were down 45% in the first eight months since installation.

DOT has completed safety improvements at the first 135 Safe Routes to Schools locations.

Design safe streets

- Slow speed zone tests have been completed at 20 schools on one-way streets. Slow zones may be put in place around schools where speeding is a problem in order to slow traffic and protect students. Tests for slow speed zones on two-way streets are now underway.
- Capital construction is 68% complete at 12 priority Safe Routes to Schools sites. The NYC Department of Design and Construction continues to coordinate this work with other agencies and utility companies. This round of construction should be complete by 2010.
- Operational safety improvements have been made at the first 135 Safe Routes to Schools locations.
- 135 elementary and middle schools have been selected as the next round of schools slated for Safe Routes to School improvements.
- Evaluation of traffic and crash data at every high school in the City is underway for selection of the first 40 high schools for DOT's Safe Routes to School program.
- In May 2009, NYCDOT released New York City's new Street Design Manual, which expands the City's menu of safety-oriented streets design elements (see page 39 for details about the Manual).
- Downtown Brooklyn Traffic Calming Phase A is under construction by the NYC Department of Design and Construction, scheduled for completion in May 2010.
- In the past year, DOT has installed six new leading pedestrian intervals (LPI), 12 new split phase operations and re-engineered existing LPIs at 26 locations to make them more effective.

- DOT modified the signal timing on two one-way corridors in Queens to discourage speeding: Skillman Avenue between 35th Street and Roosevelt Avenue and 43rd Avenue between 35th Street and Roosevelt Avenue.

- DOT improved safety for bus passengers under elevated trains by building seven curb-protected bus stops.

Improve data on pedestrian injuries & fatalities and target safety resources to high crash locations

- NYCDOT's Fatality and Severe Injury Study is underway, with a final report expected by the end of 2009. It is being conducted by the NYU Rudin Center in partnership with Calspan-University of Buffalo Research Center, Rensselaer Polytechnic Institute and Baruch College. It analyzes pedestrian fatalities and severe injuries during 2002–2006 to identify underlying factors that cause crashes or increase the danger of certain crashes. The findings will help inform DOT's engineering, design and education strategies, as well as assist the agency in prioritizing locations for safety interventions.
- NYCDOT's Effectiveness of Traffic Calming Measures study is being conducted by City College of New York and scheduled for completion in October 2009. This study will evaluate traffic calming measures implemented by DOT. It will allow the agency to evaluate the appropriateness of specific traffic calming treatments for future projects.



Laboratory testing new technology to monitor the bridge cable corrosion underwater



DOT partnered with local arts organization, Groundswell and schools in all five boroughs to create Safety Awareness Signs

- NYCDOT is streamlining and improving its access to crash data, which is collected by the Police Department and processed and stored by the NY State Dept. of Motor Vehicles and the State Dept. of Transportation. DMV has agreed to transmit crash data more frequently to NYCDOT. DOT is also improving the storage of the data, and systems for internal access to it.

Cut the number of annual traffic fatalities by at least 50% from 2007 to 2030

- Traffic fatalities increased by 6% in 2008 from New York City's all-time low in 2007 (from 274 to 292). 2008's level was the second-lowest traffic fatality rate in city history, and only the third year ever that traffic deaths were below 300. NYCDOT will work harder than ever in 2009 to reduce fatal incidents on our streets.

Curb dangerous behavior on city streets with strong public education campaigns

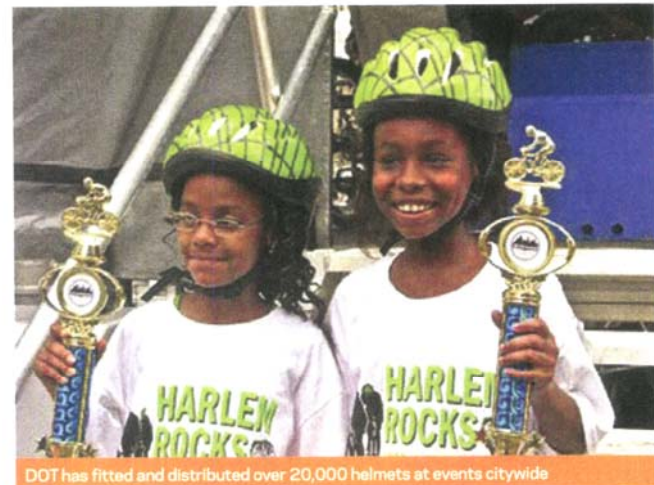
- DOT is contracting with an advertising agency to increase its communication capacity and allow for more extensive public information and educational

campaigns on street safety and dangerous traffic behaviors.

- DOT has launched Phase 2 of the LOOK traffic safety campaign with a new television and internet public service announcement component.
- DOT is developing a marketing campaign to curb drunk driving.

Revise and expand Safety City education programs

- To give its education materials a more unified and updated look, DOT created a new design standard for all of its safety educational material.
- DOT is working with the NYC Department of Education (DOE) to extend the reach of its traffic safety education. Traffic safety training for DOE personnel will begin shortly, with instruction for students beginning in fall of 2009.
- DOT's Safety Education unit is working with Groundswell, a non-profit organization, to create a new in-school program to encourage youth to explore traffic safety conditions around their schools. The project installs student-created signs urging drivers in the school area to act safely and responsibly. DOT fabricates the signs and installs them.



DOT has fitted and distributed over 20,000 helmets at events citywide

Expand safety enforcement programs

- NYCDOT helped convince the State legislature to extend the City's red light camera program beyond its 2009 legislative sunset date, and to allow the City to add cameras at 50 additional locations, bringing the City's total to 150. The City's existing red light cameras have reduced red light running up to 60% at intersections where they have been deployed. The legislation contains a new sunset date of 2014.
- NYCDOT is developing a proposal to obtain federal safety funding for

targeted traffic law enforcement activities.

Establish strong, explicit pedestrian safety measures as a condition of DOT construction permits and enhance monitoring unit for construction sites with high pedestrian volumes

- DOT's Office of Construction Mitigation and Coordination (OCMC) has increased the safety measures for traffic stipulations for all building and roadway construction permits in the city. New measures implemented

during the past year include NYPD intersection agents and use of additional flaggers, signage, fencing and timber curbs to minimize pedestrian, bicycle and vehicular conflicts. Locations include Houston Street, 2nd Avenue Subway sites, and around World Trade Center reconstruction.

- OCMC now requires permit holders on major projects to use closed circuit television to monitor construction sites and areas where traffic flow has been altered to accommodate construction. CCTV observation allows OCMC to determine if additional safety measures are needed.

Enhance bridge inspection capabilities

- DOT is adopting state-of-the-art bridge cable monitoring, starting with a federally funded pilot on the Manhattan Bridge. A mock-up of the cable has been undergoing laboratory testing since December 2008.

- Forty fiber-optic sensors provide real-time monitoring of the arches of the Manhattan approach to the Brooklyn Bridge. Fiber-optic sensors are also in use monitoring components of the Williamsburg, Manhattan and Paerdegat Basin Bridges.

- After the Minneapolis bridge collapse, DOT augmented its bridge inspection program with additional inspection personnel.

- DOT monitors the poorly-rated components of poor bridges every three months and the poorly-rated components of all bridges on a regular basis.

Implement truck-specific safety measures

- To better monitor wear-and-tear on City roadways and bridges, DOT has expanded its over-dimensional truck permitting unit. Single-use, non-divisible load permits allow the City to track the routes these trucks travel and ensure the infrastructure along these routes is maintained properly.

- DOT is seeking state legislation to require all trucks in New York City to install cross-over mirrors. These mirrors allow drivers to see shorter people such as children in front of truck cabs.

- DOT created and distributed truck route maps and summaries of truck access rules to all 76 police precincts to help them improve truck route enforcement.

Enhance construction zone safety

- The Department has adopted clear internal guidelines for demarcating and signing work zones on arterial roadways and surface streets under both night- and day-time work conditions.

- DOT is coordinating with NYPD precincts around the City to foster better communication and increased presence at DOT work sites.

- DOT promoted state legislation that was introduced in April (A7382 in the Assembly and

S3862 in the Senate, by prime sponsors Assemblymember Michael Cusick and Senator Diane Savino) that would add criminal penalties for work zone intrusions and intrusions resulting in injury or death.

- NYCDOT has participated in National Work Zone Safety Awareness Week in April for the past two years. DOT created magnetic signs for all of its fleet vehicles and distributed posters to sites around the City to encourage drivers to slow down in work zones. DOT also ran radio public service announcements during Work Zone Safety Awareness Week.

Increase safety for DOT employees

- DOT is conducting hazard assessments at eleven of its facilities. Based on these assessments, DOT Facilities will work with the agency divisions housed in these facilities to make improvements as necessary.



8th Avenue bike lane

City officials...have created a seven-block experiment of a bike lane on Ninth Avenue. Here, concrete dividers and a row of parked cars shield a bike lane from the street and its traffic. Low mini-traffic lights show when cyclists have the right of way. Bike commuters, messengers and delivery people peel down perfectly smooth paths.

“It would be nice if that were everywhere.”

said Mark Weiss
(local cyclist).

Washington Post



DOT's project at the Bronx Hub improves safety for thousands of people who walk, bike and make transit transfers in the bustling commercial district

- During the past year, DOT conducted general assessments of personal protective equipment (such as safety vests, hearing protection and footwear), completed an exposure assessment for crews working on paving, milling, and pothole repair, and assessed backhoe operations. Based on these assessments DOT's Human Resources has developed new procedures and additional requirements for Personal Protective Equipment (PPE).
- NYCDOT has developed a new "Working Safely Around Mobile Equipment" training. It is being deployed in summer 2009.
- New information has been added to DOT's annual Safety Awareness/ Right To Know training program, especially targeting employees in milling, paving, and pothole repair operations.



This summer, DOT ran television ads on broadcast and cable networks reminding motorists to share the road with cyclists

Television PSAs ran on CBS Fox, WB11 and NY1. They ran during three major league baseball games. The campaign garnered over 60,000,000 impressions through television airtime.

Safe Streets for Seniors

Since 1990, pedestrian fatalities in New York City have decreased by 62%, but senior citizens remain a particularly vulnerable group. A study of pedestrian fatalities from 2002 to 2006 showed that people 65 and over made up about 12% of the City's population but were 39% of pedestrian fatalities.

To remedy this problem, which could worsen as the New York City's senior population increases in coming decades, NYCDOT examined crash histories across the city and launched the Safe Streets for Seniors program in January 2008. It identified 25 city neighborhoods that have both a high density of senior citizens and a high number of senior pedestrian severe injuries or fatalities.

Planners and engineers working on the program are evaluating pedestrian conditions from a senior perspective and making changes such as extending pedestrian crossing times at crosswalks, shortening crossing distances, altering curbs and sidewalks, restricting vehicle turns and narrowing roadways.

Improvements have already been made in Brighton Beach, Brooklyn; Flushing, Queens; the Lower East Side in Manhattan; Fordham/University Heights in the Bronx; New Dorp/Hylan

Boulevard in Staten Island and are coming soon to Pelham Gardens in the Bronx.

Studies for ten "Phase I" areas have begun and will be completed by the end of 2009, and studies for the remaining "Phase II" locations will begin this summer. Neighborhoods to be addressed over the next year are:

Brooklyn: Borough Park, Bensonhurst, Sheepshead Bay, Midwood, Greenpoint, East Flatbush

Bronx: Mott Haven, East Concourse

Manhattan: Chinatown, Washington Heights, Hamilton Heights, Upper West Side, Yorkville, East Village, Chelsea/9th Avenue

Queens: Jackson Heights, Jamaica Hills, Rego Park, Sunnyside

DOT's Safety Education unit is also working with senior centers in the identified districts to explain safe use of the streets and to gather feedback about street conditions faced by local seniors.



Before: Main Street & Kissena Boulevard (Queens)



After: Safe Streets for Seniors Project at Main Street & Kissena Boulevard (Queens)



"The men and women who build and secure our City's infrastructure should be protected the same way they would be in any other workplace," said Commissioner Sadik-Khan as she, State Senator Savino and State Assemblyman Cusick announced the introduction of workzone safety legislation this spring.

Work Zone Safety

Weak Work Zone Law – the Cost



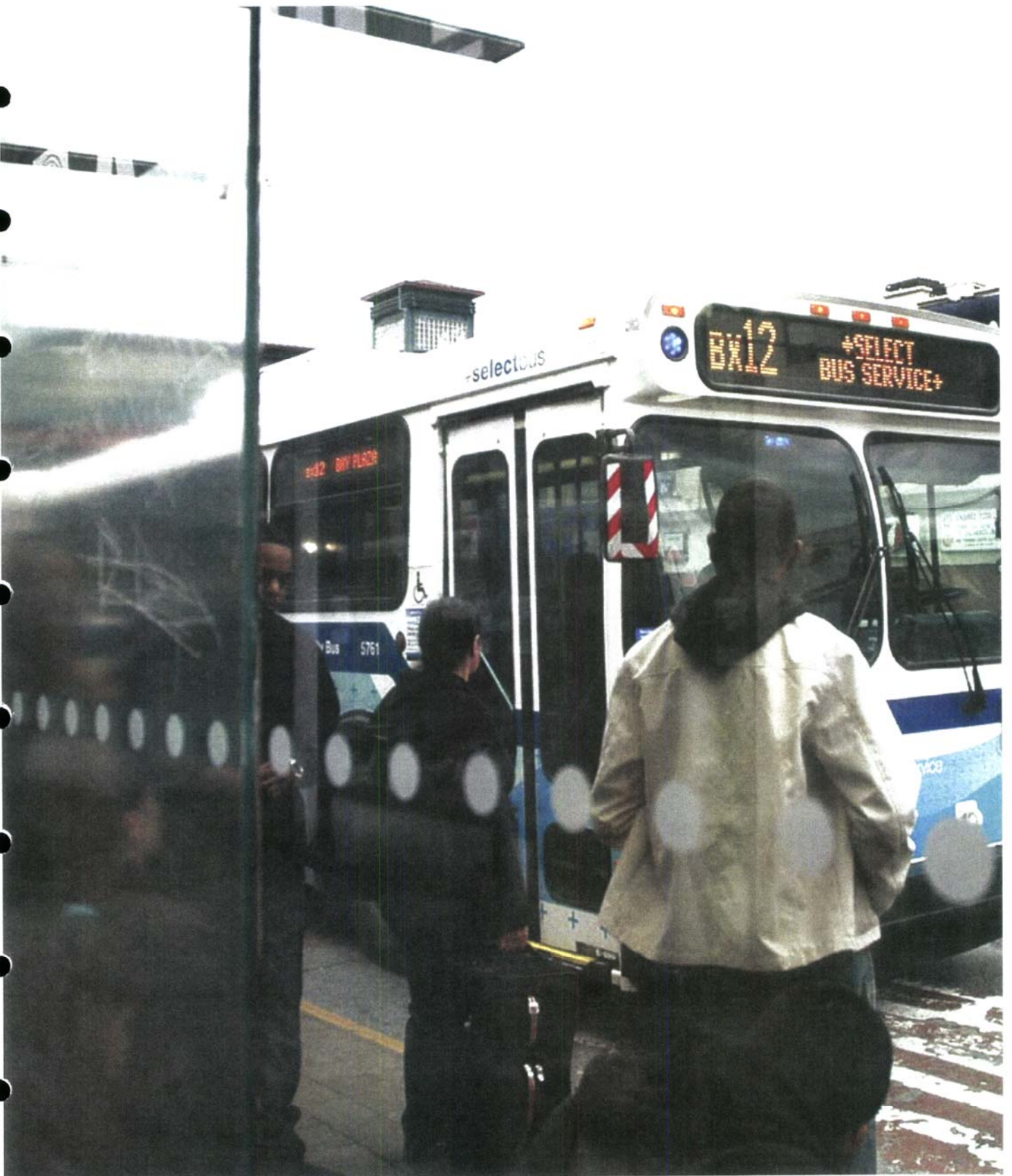
DOT workers on the street continue to be menaced by dangerous drivers, who face little sanction for their behavior. The agency has stepped up efforts to increase public awareness about this important issue.

Nicky Antico was doing routine road repair on the overnight shift in Staten Island in September 2005. His wife Anna and eight-year-old daughter were sound asleep in the "dream home" the Anticos had purchased just a few months before. At 2 am, a speeding SUV driver plowed into Nicky's work zone, injuring two of his colleagues and sending Nicky flying 50 feet in the air. Nicky died after five days in a coma. The driver turned himself in days later.

"My heart aches, my bones hurt and my eyes are still scanning the room looking for him, I just seem to keep repeating the same question 'why?' The hardest part of that question is that I will never get an answer." — Anna Antico

In 2009, work zone safety legislation was again introduced in both the State Senate and Assembly. The new law would establish tough new penalties for injuring or killing a construction worker that will serve as a deterrent to driving carelessly in a work zone. These proposed penalties, as with those established for injuring or killing police officers, would give prosecutors and judges additional flexibility in punishing offenders.

DOT will seek to become a national sponsor of National Work Zone Awareness Week in 2010 to bring greater awareness to work zone issues in New York, including the legislation to criminalize work zone intrusions that the Department seeks in Albany.



MOBILITY

Moving New Yorkers Forward

It has been a good year for NYCDOT's mobility initiatives. The inauguration of Select Bus Service and the rapid extension of the city's cycling network both proved their effectiveness with substantial ridership increases. Developments in both of these areas set the stage for even more impressive results in the years to come. DOT also began a parking program aimed at reducing cruising for spaces, and is now expanding that pilot effort into additional districts. In 2009, the City's Green Light for Midtown project will substantially improve circulation for both motor vehicles and pedestrians in the heart of Manhattan. Over the past year, DOT also continued to implement truck route improvements to both facilitate freight delivery and to minimize the impact of truck traffic in city neighborhoods.



A bike box on Clinton Street in the Lower East Side

Commuter cycling is up over 35% from 2007–2008, thanks in part to innovative designs that improve cyclists' sense of safety.

Implement Bus Rapid Transit

- With NYC Transit, DOT launched the City's first Select Bus Service in July 2008 on the Bx12 route on Fordham Road in the Bronx. The service features pre-boarding fare collection, new bus lanes and traffic signal priority for buses.
- DOT and NYC Transit inaugurated a second Select Bus route on the 34th Street in Manhattan in September 2008. It features new bus lanes, a test of "soft separation" lane markings and bus signal priority at 34th Street and 7th Avenue.
- DOT and NYC Transit began a bus rapid transit planning process in Spring 2009 to identify a second set of BRT routes citywide. DOT and NYCT briefed each Borough Board on current BRT plans and the plans for Phase II, and began preparations to solicit public input for Phase II through a series

of borough-based workshops. The vision for this network is of a third system that complements and enhances existing subway and bus networks, since BRT is a relatively fast and cost-effective way to expand transit capacity. The BRT Phase II plan will guide development of the BRT network over the next 10 years.

- DOT initiated an environmental review for a robust 34th Street bus-way, with expected completion in late 2010.
- DOT began testing cameras to enforce rules against taxi encroachment of bus lanes. The cameras are only applied to taxis because penalties for taxi violations are within City jurisdiction. State legislation is required for camera enforcement against other classes of vehicles, and NYCDOT continues to seek such legislation in Albany. Photos will be used to issue administrative violations to taxi drivers.
- NYC Transit is working with NYCDOT to pilot real-time bus arrival information on 34th Street in Manhattan. The pilot will involve the installation of real-time information displays at eight bus shelters along 34th Street, as well as providing access to this information via wireless devices and online. If this pilot is successful, New York City Transit will consider expansion of the system to other routes around the system.

Improve streets for the existing bus network

- DOT successfully tested signal priority for buses on the NYC Transit bus routes along Staten Island's Victory Boulevard, beginning in late 2007. Travel times declined approximately 17% in the morning peak period and 11% in the evening peak.
- DOT's re-design of the Bronx Hub at 3rd Avenue and 149th Street reduced traffic congestion and eased bus movement in this very busy retail district and bus-subway transfer point. The project's



Mayor Bloomberg and Commissioner Sadik-Khan launch a pilot to provide real-time bus arrival information at eight City bus shelters serving two 34th Street bus lines



The first annual Bicycle Friendly Business Awards recognized Credit Suisse for its commitment to employee cycling and stellar indoor bike parking room

sidewalk extensions and a new public plaza also improve walking conditions for transit users, shoppers, residents and those who work in the area.

- DOT successfully tested red-colored bus lanes on 57th Street in Manhattan, adopting this marking for future NYC bus lanes.
- DOT's redevelopment of Madison Square (see page 26) straightened the traffic path of the M2, M3 and M5 bus routes along Fifth Avenue, removing a time-consuming set of turns that buses previously had to make to navigate the intersection of Fifth Avenue and Broadway.
- In the past year, DOT's Safe Routes to Transit (SRT) initiative and Sidewalks Inspection and Maintenance unit has constructed sidewalks at three bus stops in Queens and Staten Island. The Staten Island location is a pilot rubber sidewalk. It is made from recycled rubber and plastic and avoids tree removal due to its permeability. The SRT Initiative also made permanent a street closure at 40th Street station under the 7 train, improving safety for people entering and leaving the station.

Double bicycle commuting by 2015

- DOT exceeded PlaNYC's goal of installing 200 new miles of bike lanes between 2006 and 2009.
- DOT bicycle counts show that commuter cycling has increased 35% from 2007 to 2008, putting the city one-third of the way to doubling bicycle commuting from 2007 levels.
- DOT installed 1,211 outdoor bicycle racks and 20 bicycle parking shelters whose designs are consistent with the City's Coordinated Street Furniture Franchise. DOT also held an international design competition that produced a new standard design for DOT's CityRacks program.
- DOT worked with the Department of Citywide Administrative Services to improve and expand secure bicycle parking for City employees in several City-owned buildings, and expanded bicycle parking capacity at its former 40 Worth Street headquarters.

- DOT promoted bicycle commuting and responsible commercial cycling with the City's first Bicycle-Friendly Business Award, presented to Credit Suisse and City Bakery in May.
- Commissioner Sadik-Khan testified in support of City Council legislation to require office buildings to provide indoor access for bicycle commuters and a City Planning zoning change that requires new buildings to create bicycle storage capacity. The legislation was approved by the City Council in July 2009.

Reduce congestion along key commercial corridors

- DOT identified ten Congested Corridors for study and action. Early action improvements, such as signal timing modifications and markings, will be implemented in 2009 on Amboy Road in Staten Island. Plans for West 181st, Woodhaven Boulevard, Amboy Road, White Plains Road and Church Avenue will be issued in 2010. East Gun Hill Road in the Bronx, Flatbush Avenue and Broadway in Brooklyn, 14th Street in Manhattan and Liberty Avenue in Queens will be the next set of corridors to be studied.

Support new ferry routes

- EDC and DOT began pilot ferry service from the Rockways to Wall Street in May 2008.
- Slip 5 at the Battery Maritime Building opened for commercial passenger ferry service in May 2009.

Improve the High-Occupancy Vehicle network

- DOT created an HOV2+ lane on the Manhattan Bridge from 6-10am for Manhattan-bound traffic in October 2007. Travel times have improved substantially (17% to 33%) for most motorists, particularly those utilizing the HOV lane. Since the lane's creation, auto occupancy has increased by 46% in the HOV lane (from 1.36 to 1.99 persons per vehicle).
- NYCDOT is working with the State Department of Transportation to prioritize implementation of a south-bound bus/HOV lane on the Gowanus Expressway.

Improve freight mobility

- The Department is coordinating with the Port Authority of NY/NJ, the NY State DOT and MTA Bridges and Tunnels to assess the feasibility of permitting small commercial vehicle access on the Henry Hudson Parkway in Manhattan.

Use technology to fight congestion

- NYCDOT hosted the 15th Annual Intelligent Transportation Systems World Congress in November 2008. During the Congress, DOT installed in-roadway sensors on 11th Avenue and allowed vendors to bring vehicles equipped with special transponders to demonstrate applications such as in-vehicle signing, warnings and traveler information.
- DOT and the Taxi and Limousine Commission are using GPS data from taxicabs to estimate aggregate travel speeds in the Manhattan central business district. The agencies are exploring use of the data to track daily and seasonal changes in traffic speeds.

- With the NY State Department of Transportation and the New York Police Department, NYCDOT opened a new Joint Traffic Management Center (JTMC) in Long Island City in November 2008. The Center brings together in one room all of the agencies responsible for detecting and responding to roadway incidents within the five boroughs. Staff from NYSDOT, NYCDOT and NYPD observe camera feeds around-the-clock and share information on the exact nature of unplanned occurrences and the appropriate response. The JTMC also has several means for notifying the public of highway incidents. Staff can activate any of the nearly 100 electronic variable message signs along the roadways and provide Highway Advisory Radio announcements to notify travelers of area delays.

Develop and implement innovative parking management programs

- In October 2008 DOT launched its PARK Smart parking pricing program in Greenwich Village in partnership with the local community board and business

groups. During peak parking times, meters charged \$2 (double the standard rate) to encourage vehicle turnover and create more parking opportunities for people doing business in the area. The program expanded to Park Slope, Brooklyn in May 2009.

- DOT continues to install multi-space "muni-meters" across the city, thus making for more efficient use of street space. In addition, all muni-meters for passenger vehicle parking now allow drivers to pay by credit card.
- Over the last year, DOT expanded its commercial muni-meter parking program, whose pricing structure encourages quick turn-over of parked trucks. Since mid-2008, the Department installed muni-meters for truck parking from 23rd to 14th Street, between 3rd Avenue to 6th Avenue. In addition, the Department installed commercial muni-meters on Grand Street and West Broadway in Soho, along Canal Street, and approximately 14 will be installed in Chinatown this summer.



PARK Smart is a pilot program being tested in Greenwich Village and Park Slope to make parking easier while reducing congestion

- During the November 2008 ITS World Congress, DOT conducted a live parking information demonstration, providing real-time space availability at the DOT Municipal lot on Broome and Ludlow Streets via DOT's website. Real-time parking information can be used by NYCDOT to provide better information to motorists, optimize parking prices, and reduce congestion.



Safe Routes to Transit makes areas near bus and subway stops more pleasant for pedestrians, including here at 86th Street and 20th Avenue in Brooklyn



NYCDOT, State DOT and the NYPD are united at the new Joint Traffic Management Center to coordinate responses to traffic incidents



Paying before the bus arrives makes boarding faster, improving bus travel times along Bus Rapid Transit corridors

“I love it,” said Javier Tano, 35, who was riding the Bx12 bus on a recent afternoon. “They made it run faster, more efficiently.” He said that his typical trip, from the Grand Concourse to Pelham Bay Park, now took about half the time it once did.”

Washington Post

Select Bus Service

In July 2008, NYCDOT and NYC Transit and the launched the first ever Select Bus Service route on the Bx12 line on Fordham Road in the Bronx. In just a matter of weeks, the combination of off-board fare collection, high-visibility bus lanes and Transit Signal Priority led to improved travel speeds (a cross-Bronx trip on the Bx12 now takes 20% less time) and a 10% increase in ridership over last year. An NYCT survey found 98% of riders were satisfied or very satisfied with the new service.

In September, the agencies launched the first elements of a 34th Street SBS route with high-visibility lanes, soft lane separation to keep motorists and taxi drivers from using the lanes and a turn-signal priority system at 34th Street and 7th Avenue. NYCDOT also began a camera enforcement program to prevent taxis from driving in the lanes.

New SBS lines are planned for 1st and 2nd Avenue in Manhattan and Nostrand Avenue in Brooklyn. Bus improvements are also slated for 5th and Madison Avenues.

NYCDOT and NYC Transit have established a community-based master planning process to map out Phase II of Select Bus Service routes over the next decade, so that New Yorkers can begin to reap the benefits of an inter-connected SBS network, complete with links to subways, ferries and major destinations. The planning effort is described in detail at www.nyc.gov/brt.

New Goals for 2009

- Complete Select Bus Service Phase II plan.
- Explore opportunity for a bike sharing program.
- Use cameras on buses to catch taxicabs in bus lanes and partner with the TLC to summons drivers through Administrative Law system.
- Pilot use of GPS units on buses and electronic displays in bus shelter to provide bus locations on select routes.
- Explore the addition of new HOV lanes on highways or bridges as part of the Select Bus Service master planning process.

If You Build Them, Bikes Will Come...

In the past year, DOT installed an unprecedented 90 miles of new bicycle lanes. NYCDOT is not only implementing more lanes than ever before, it is installing them at a faster pace than any other big city in the nation. The speed does not compromise design. In the past year, the DOT won the Institute for Transportation Engineers Transportation Planning Council Best Program Award for the design of the 9th Avenue bicycle path and created a version of the design for narrower streets such as Grand Street in Manhattan. DOT also installed 619 wayfinding signs to guide cyclists to the entrances to East River bridge paths. DOT is also increasing the availability and quality of bicycle parking.

DOT is working with other City agencies including DCAS, DOH and City Planning to increase bicycle access in City-owned and leased buildings. DOT and DCAS collaborated to identify and expand three existing bike parking locations for City employees and add two new parking facilities, turning 44 bike parking spaces into 132 total spaces.

For the general public, DOT installed 20 sheltered bicycle parking stands, 1,211 new outdoor bicycle racks and held an international design competition that led to the adoption of a new, elegant outdoor rack design that will become the new standard for DOT's CityRack program.

All of these improvements are yielding tremendous results. The bike lanes are filled with lines of cyclists moving down the street. DOT's 2008 bicycle counts (taken at selected entry points into the central business district) show a 35% increase from 2007 to 2008, and that bicycle commuting has more than doubled since 2000 (a 116% increase). At this rate, we will meet and significantly surpass our goal of doubling bicycle commuters by 2015 and tripling their number by 2020.



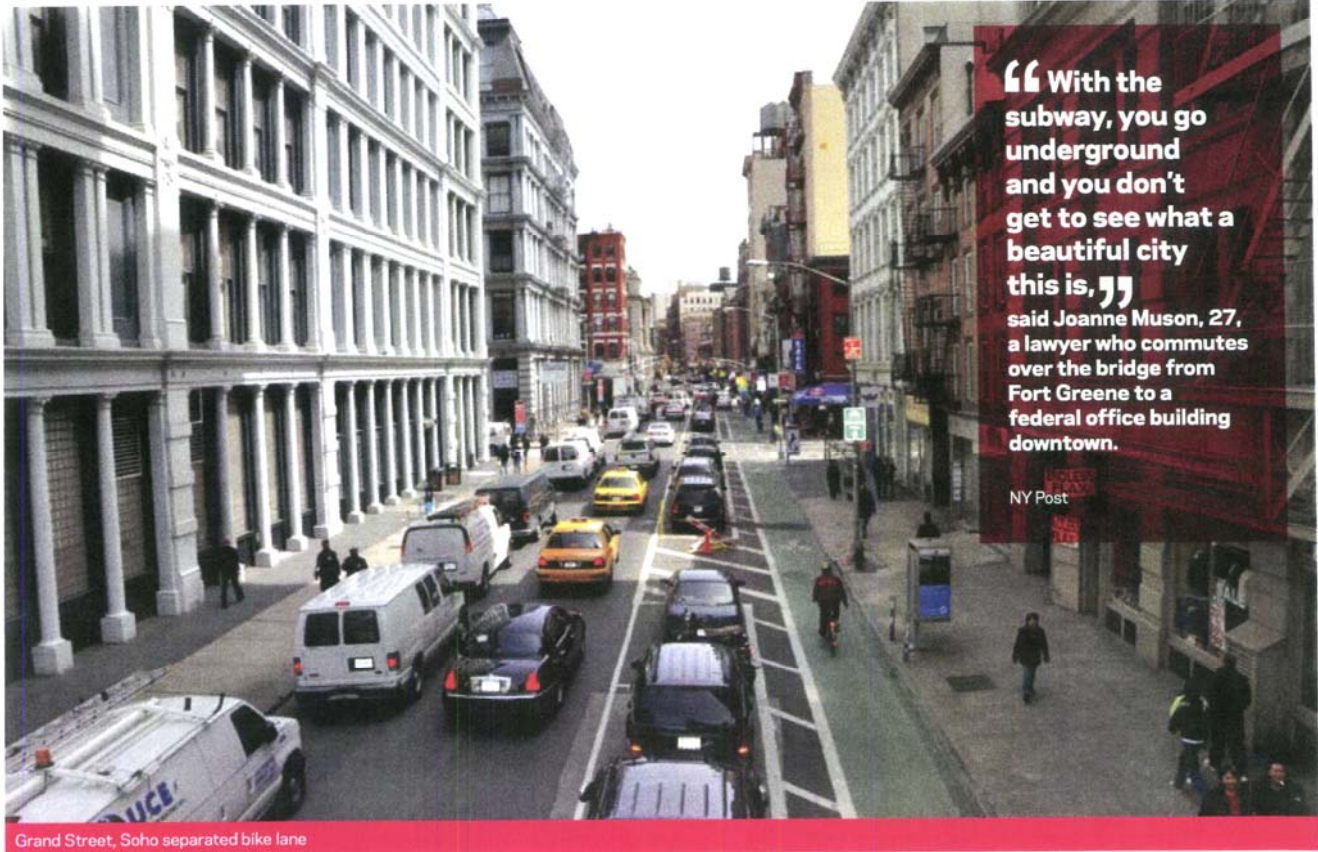
Counts have shown a 57% increase in the number of cyclists using 9th Avenue since installation of the parking protected bike lane



Bike parking at City offices at 125 Worth Street



Mayor Bloomberg and Commissioner Sadik-Khan received the Bronze Bicycle Friendly Community Award from the League of American Bicyclists in 2007

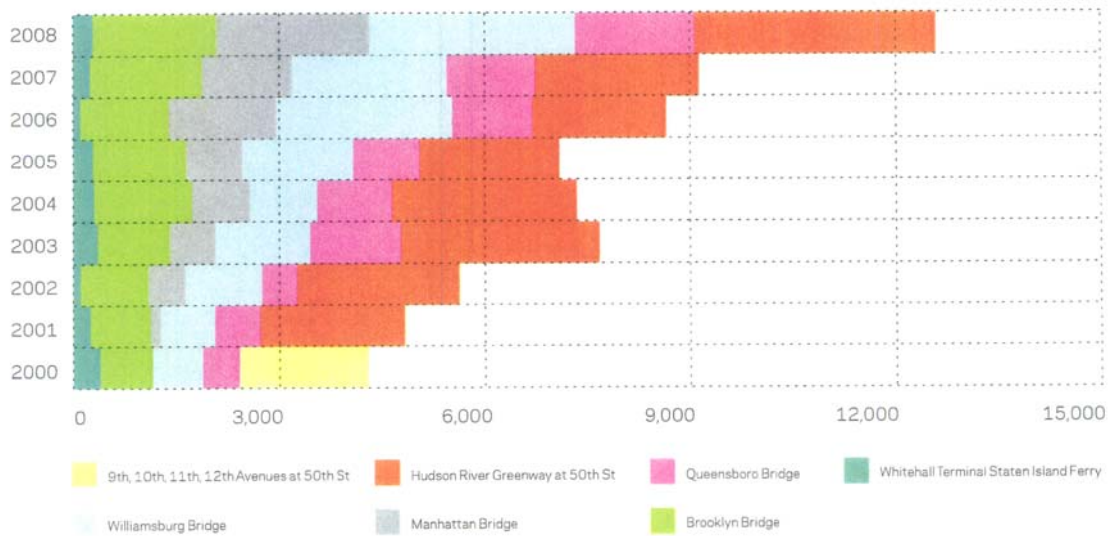


“With the subway, you go underground and you don’t get to see what a beautiful city this is,” said Joanne Muson, 27, a lawyer who commutes over the bridge from Fort Greene to a federal office building downtown.

NY Post

Grand Street, Soho separated bike lane

New York City Bicycle Counts on a Single Weekday (7am–7pm) at Selected Commuter Locations





WORLD CLASS STREETS

New Life for City Streets

Last year, DOT committed to transforming the City's streets and sidewalks from simple utilitarian corridors into varied and lively streetscapes. In the past year, DOT created numerous new public spaces from underutilized space on roadways, in both local and in world-famous settings. We launched a new process for communities to propose, build and maintain new plazas throughout the city. DOT also provided New Yorkers with new ways to enjoy their streets on weekends, through events like Summer Streets and weekend pedestrian streets in all five boroughs. New Yorkers have greeted these developments with enthusiasm. New plaza areas are occupied as soon as streets are closed, and the weekend events have been well attended.

DOT detailed these new policies in its *World Class Streets* report, issued in November 2008. The report also contained an analysis of the ways New Yorkers use a variety of city streetscapes by Gehl Architects, one of the world's leading urban design firms.

In May 2009, DOT further raised the standard for urban design with the release of the New York City Street Design Manual. The Manual is the product of an inter-agency task force that provides clear guidance for City agencies, design professionals, private developers, and community groups as we renew and reinvent streets and sidewalks throughout the City.

Develop "complete streets" that accommodate all users

- NYCDOT developed a Street Design Manual to establish street design policies and guidance for designing more efficient, sustainable, attractive and cost-effective streets. The Manual is a guide to potential street geometries, materials, lighting treatments and street furniture.
- In tandem with the development of the Street Design Manual, NYCDOT has instituted an improved design review process so that the full spectrum of considerations is addressed early in the planning process. This will lead to better, less expensive capital projects. Traditionally there was not a standard process for capital project development in New York City. As a result some agency stakeholders did not see a project until late in the process, necessitating costly delays as plans were revised.
- DOT is committed to achieving full compliance with the Americans with Disabilities Act (ADA). At present 75 percent of the City's nearly 160,000 crossing points have pedestrian ramps. Between April 2008 and April 2009, ramps were installed at over 2,800 crossing points, helping to make New York accessible to all.

Create and enhance public plazas throughout the city

- In 2008, DOT launched the NYC Plaza Program, in which the agency and local community groups identify new plaza locations. In April 2009, the City announced the nine sites selected in the first round of the application process; these projects will add the equivalent of 2.5 football fields worth of open space to the City. The Round Two application process began in April 2009.

- Mayor Bloomberg, Commissioner Sadik-Khan and Midtown Manhattan Business Improvement Districts unveiled over 65,000 square feet of new public space at Madison Square and along Broadway between Herald and Times Square during the summer of 2008. At the Madison Square project's heart, a significant new plaza offers 16,000 square feet of space.
- The new geometry of Broadway from 42nd to 35th Streets creates new plazas, a protected bike path running along the curbside and abundant pedestrian space furnished with tables, chairs and benches, protected by large planters.

- Commissioner Janette Sadik-Khan and former Bronx Borough President Adolfo Carrion unveiled a major intersection redesign and traffic-calming project at the Bronx Hub in October 2008. The project created abundant new pedestrian space and simpler traffic crossings at the five legs of 149th Street and Willis and Third Avenues in the South Bronx—the borough's busiest intersection. DOT is developing public-private partnerships for long term plaza maintenance.
- DOT has worked with established BIDs to maintain the new public spaces it is creating.

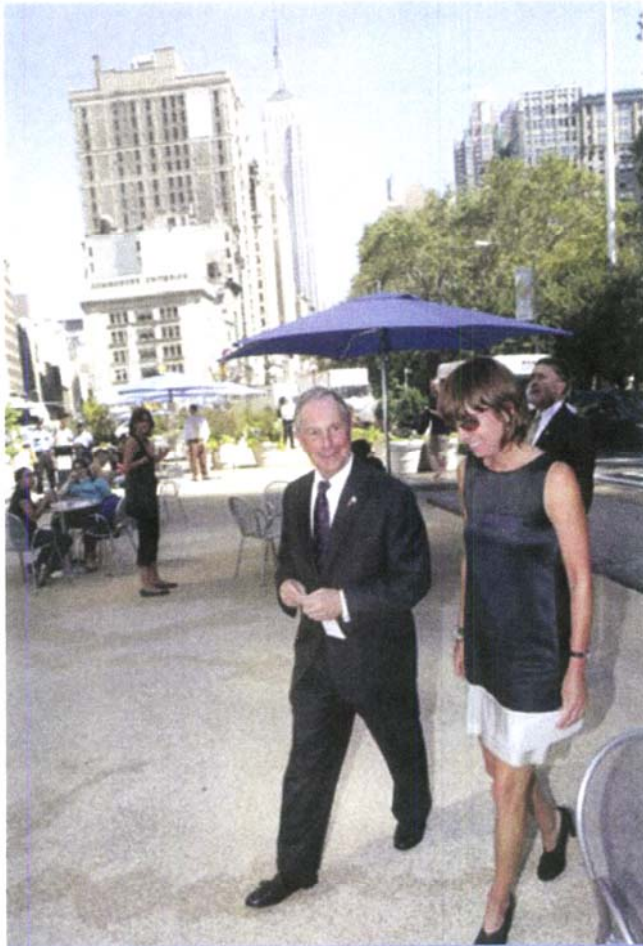
Create a beautiful city with space for people

- In 2008, DOT introduced Summer Streets, a car-free urban recreation corridor that connected the Brooklyn Bridge to Central Park. For three consecutive Saturdays, tens of thousands of New Yorkers cycled, roller bladed and walked the length of Park Avenue. The same summer, DOT partnered with neighborhood business and civic groups to sponsor smaller, neighborhood-oriented recurring weekend pedestrian streets in Brooklyn and Queens. Both programs have returned in the summer of 2009 and the pedestrian street program has expanded to all five boroughs.



Weekend Walks is a partnership between local business and community groups and DOT to create temporary pedestrian spaces in commercial districts citywide

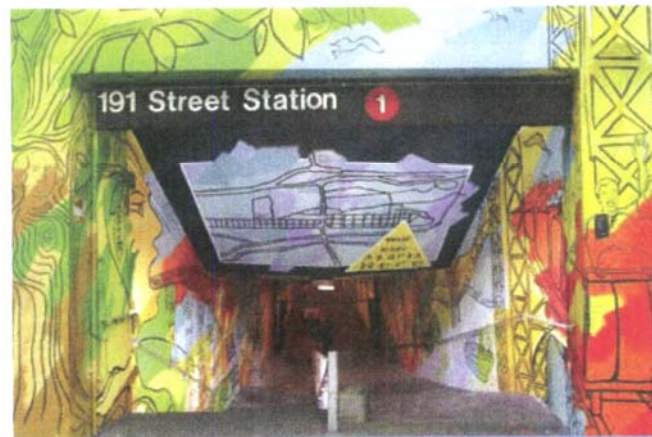
DOT has partnered with local artists and community groups to install 20 temporary art projects citywide.



Mayor Bloomberg and Commissioner Sadik-Khan at the unveiling of Madison Square Plaza



New York Road Runners kick off Summer Streets



DOT's Urban Art program partners with community groups to create a mural at a newly refurbished pedestrian subway tunnel at 190th Street in Washington Heights

- In April 2009, DOT made Prospect Park safer and more inviting for pedestrians and cyclists by reducing the number of places where vehicles can enter or exit the park. The Department use operational materials to close both the Third Street entrance/exit and the Sixteenth Street exit.
- In Fiscal Year 2008, ten new sponsors adopted fifteen miles of highway as part of the Adopt-A-Highway program. As of February 2009, more than 60 percent of the total number of eligible miles was adopted by sponsors.
- In Summer 2008, DOT developed an urban beautification pilot project with the city departments of Sanitation, Environmental Protection and Human Services in Bedford-Stuyvesant, Brooklyn. DOT crews filled potholes, replaced missing or damaged traffic signs, refurbished pavement markings, fixed street lights and repaired parking meters.
- DOT was a proud participant in the "Love Your (NYC) Block Contest" which took place this spring. A joint effort between City agencies and the Citizens Committee for New York City. The program allows neighborhood groups to compete for grants to beautify their blocks.
- In 2008, DOT unveiled the Urban Art Program which has placed context-sensitive public art in Harlem, DUMBO, Chelsea, and Washington Heights. The Urban Art Program supports local artists and community groups.
- Cemusa has installed 1,630 new-design bus shelters under the auspices of NYCDOT's Coordinated Street Furniture Franchise program, along with 130 newsstands and two automatic public toilets. Three toilets will be installed in 2009.
- To encourage bicycling to transit stops, DOT has installed twenty sheltered bicycle parking stands using the basic Cemusa/Grimshaw bus shelter template structures at busy subway stations, and will install another 16 shelters in 2009. One Grimshaw shelter will be tested as a taxi stand in a busy nightspot.
- DOT partnered with the Smithsonian's Cooper-Hewitt

Set a standard for design excellence



DOT, the Fashion Institute of Technology and the 34th Street Partnership transformed this Jersey barrier on 31st Street, Manhattan



DOT assisted with the temporary installation of artist Robert Indiana's HOPE sculpture in Times Square



David Byrne designed bike rack



Winning entry from the bike rack design competition

National Design Museum to hold a design competition for a new bicycle rack for New York City. The competition drew over 200 entrants from 24 states and 26 nations. The winning design, by Ian Mahaffy and Maarten De Greeve, based in Copenhagen, Denmark, will become the new standard for DOT's CityRacks program.

- In 2008, artist, musician and cyclist David Byrne designed and fabricated nine new bike racks. DOT installed these clever and innovative racks that add attractive, temporary art to the City's streets in appropriate

neighborhoods of Manhattan and Brooklyn.

Combine security and placemaking in Lower Manhattan

- DOT continues to work with DDC, EDC, NYPD, Parks and MTA to enhance Lower Manhattan's public realm while improving public safety. For example, the City is installing new custom security devices and distinctive streetscape elements around the NY Stock Exchange. The project will be completed by the end of 2009. Similarly, Peter Minuit Plaza, which began

construction in spring 2009, will incorporate the Whitehall Ferry Terminal's security needs. The Manhattan Greenway connection will be completed along the perimeter of the plaza.

- The City continues to improve pedestrian connections across Lower Manhattan between the World Trade Center site and the South Street Seaport. The City is reconstructing the Fulton Street corridor and will create and/or enhance three pocket parks along the street by 2012. In addition, DOT is working with EDC and Parks to develop new pocket

parks, improve pedestrian access to the East River Waterfront and develop an improved Manhattan Greenway connection (which began construction in Spring 2009).

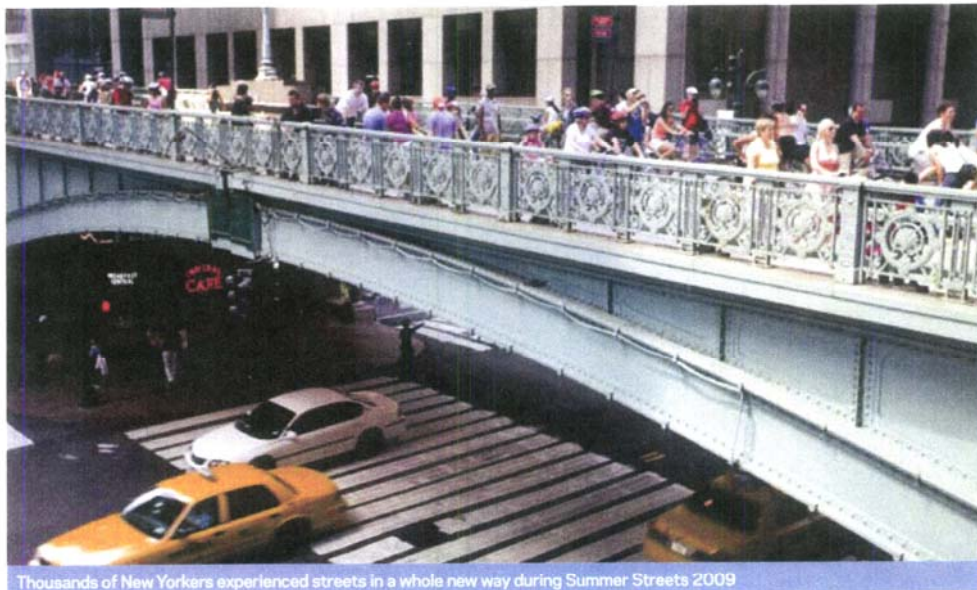


David Byrne, left, and Lance Armstrong join Mayor Bloomberg and Commissioner Sadik-Khan to announce the first ever Summer Streets

Summer Streets

In the summer of 2008, New Yorkers discovered a new way to use their streets. For three Saturdays in August the City created what Mayor Bloomberg referred to as a “seven mile ribbon of recreation” stretching from Central Park to the Brooklyn Bridge. Park Avenue and connecting streets were free of vehicular traffic and opened to cyclists, rollerbladers, joggers, and strollers. Over 150,000 New Yorkers enjoyed the sunshine and one another’s company as they took advantage of the open space.

Summer Streets encouraged New Yorkers to dust off their bikes, or even to purchase cycles for the first time ever. Local gyms and studios offered free fitness and dance classes on the street, and companies offered free bike rentals. Some side streets were reserved for music performances, while children’s play areas and “teach your child to ride a bike” classes were set up in others. Summer Streets earned rave reviews from the local press, and garnered the City positive international media attention. Summer Streets was modeled on successful events from around the world and has since inspired cities around the country. Chicago, Seattle and San Francisco all held similar events after New York’s debut, and many other cities are contemplating them in 2009. Best of all, it offered New Yorkers of all ages a fun, healthy, and free way to enjoy their day.



Thousands of New Yorkers experienced streets in a whole new way during Summer Streets 2009

“If Saturday was any indication, New Yorkers are voting with their feet – in favor of more chances to displace the cars, trucks and taxis for a day, and go for a stroll.”

NY Times Editorial



Karis Durmer, 29, who works at Conde Nast in Times Square, said the esplanade had transformed a part of the city that she had thought of as unbearable:

“ Just people and the noise, the traffic, it’s all cars and smoke and honking. It’s amazing how a few plants can make you feel removed from all that. ”

NY Times

Broadway Boulevard at 40th Street

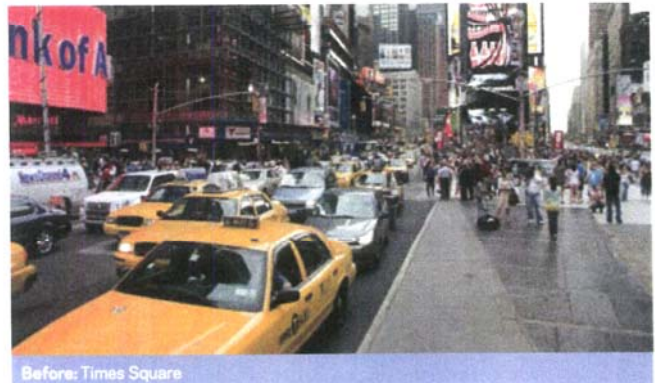
Broadway Boulevard

Broadway, perhaps New York’s most famous street, has been a source of headaches for transportation planners for years. The avenue cuts across the Manhattan street grid, creating famous spaces such as Times and Herald Squares. However, these junctions are overrun by traffic. For example, 89% of the total space at Times Square is allotted to vehicles, and New Yorkers often complain that there is nowhere to catch one’s breath in the midst of Midtown’s frenetic activity. In addition, Broadway has had the worst safety record of any Midtown thoroughfare. As the City pursues the PlaNYC goals of reducing congestion and creating a more livable city, the re-creation of Broadway has emerged as a major initiative.

DOT initiated the changes in the summer of 2008, when it re-designed Broadway from 42nd to 34th Street. It converted two of Broadway’s four lanes into a linear pedestrian plaza with a protected bicycle lane. At the same time, DOT transformed the wide expanse of pavement in Madison Square into a series of attractive public plazas. The new areas were landscaped, including a distinctive gravel surface, chairs, tables, brightly colored sun umbrellas, and large planters filled with flowers that served a dual safety and aesthetic purpose. New Yorkers immediately occupied Broadway’s chairs and benches, and the sites became a favorite of office workers and tourists alike.

The projects proved to be so popular that during 2009, DOT is creating major new public and pedestrian areas in Times and Herald Squares, on a pilot basis, as well as a new linear plaza along the east side of Broadway between 59th and 57th Streets. Broadway is no longer accessible to motor vehicles from 47th Street to 42nd Street and between 35th Street and 33rd Street. Street designs which create more public and pedestrian space similar to the 2008 changes implemented between 42nd and 35th Streets will be extended from 47th to 57th Street and from 33rd to 24th Streets. Extensive traffic modeling has shown that traffic flow on 6th and 7th Avenues will improve significantly with the simplification of the intersection in the major squares.

The improvements on Broadway have created more space for people, a better streetscape and provide an economic shot in the arm by encouraging New Yorkers and tourists to visit and spend more time in an area whose streetscape will begin to equal the world-famous destinations it serves.



Before: Times Square



After: Times Square, Today

DOT is committed to providing public space in all five boroughs. Here, Lou Gehrig Plaza near Yankee Stadium is the result of a public-private partnership designed to improve safety and the public realm along the new bike course.



Before: Lou Gehrig Plaza, 2005



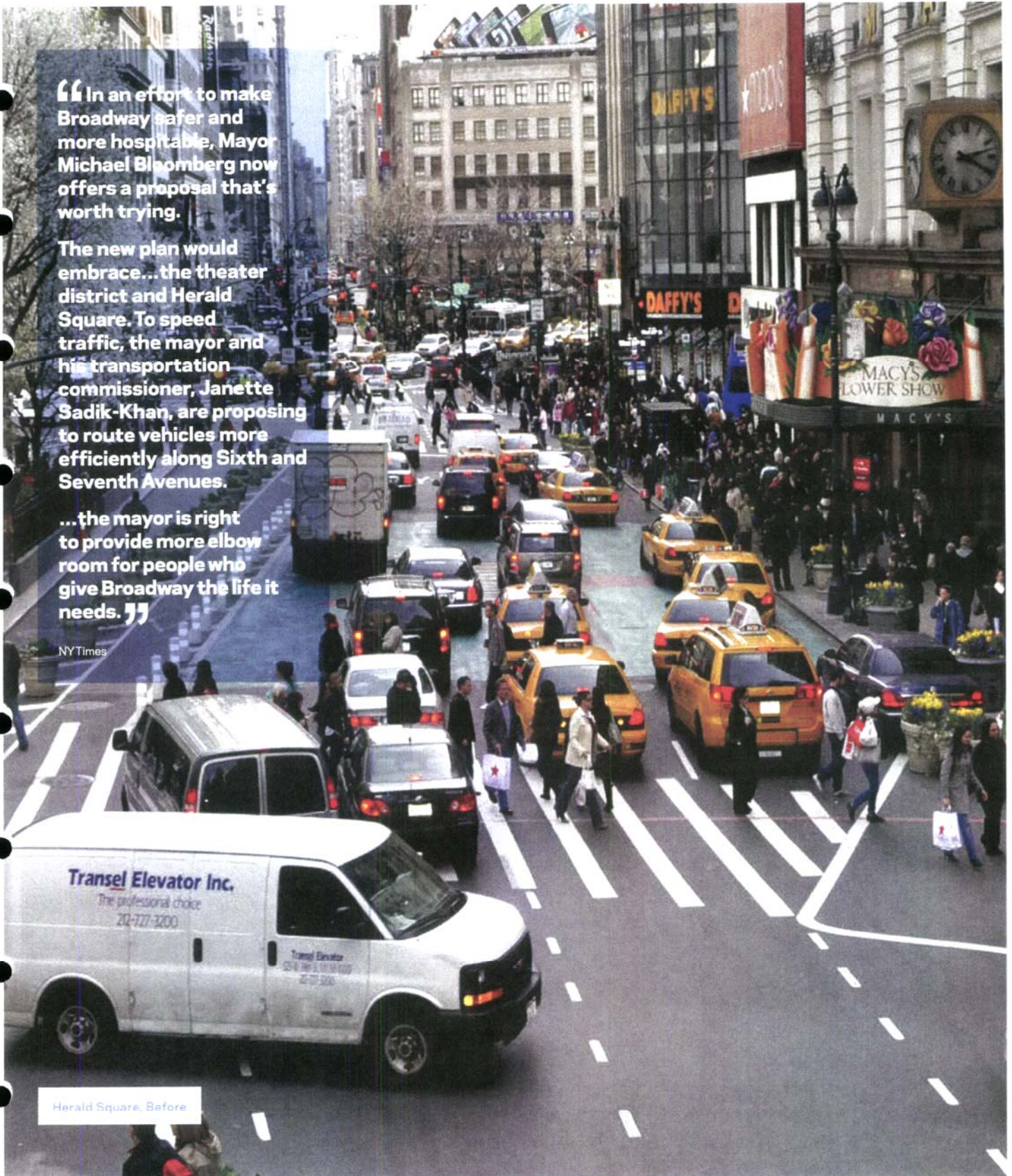
After: Lou Gehrig Plaza, Today

“In an effort to make Broadway safer and more hospitable, Mayor Michael Bloomberg now offers a proposal that’s worth trying.

The new plan would embrace...the theater district and Herald Square. To speed traffic, the mayor and his transportation commissioner, Janette Sadik-Khan, are proposing to route vehicles more efficiently along Sixth and Seventh Avenues.

...the mayor is right to provide more elbow room for people who give Broadway the life it needs.”

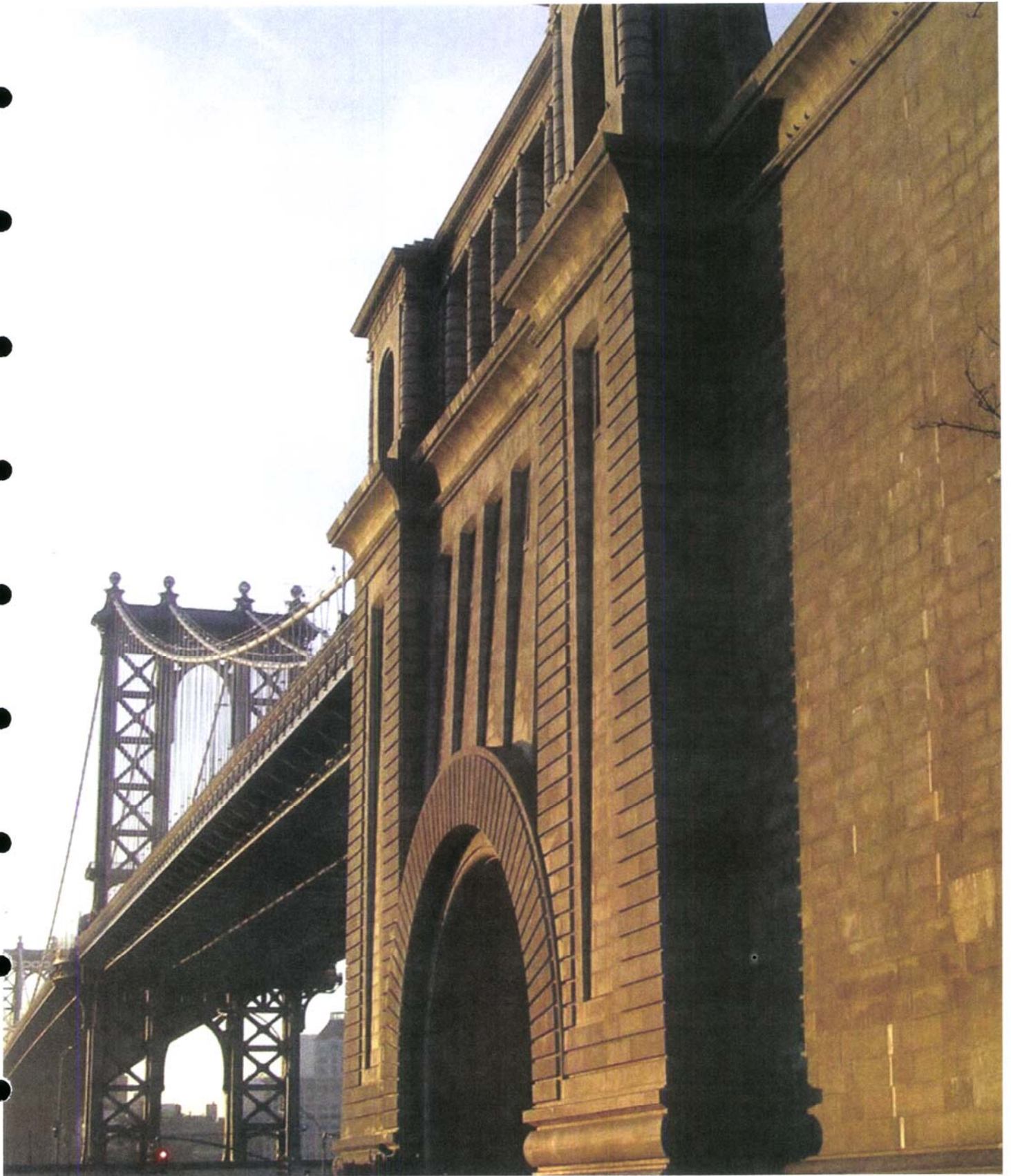
NYTimes



Herald Square, Before



Herald Square Today



INFRASTRUCTURE

Investing in Our Future

New York's fortunes have always been tied to the success of its transportation system. To take the city's pulse, just look to its roads and rails. We thrived as our waterways, railroads and public transit systems emerged and expanded. We faltered when we neglected subways and bridges — and we prospered again when we restored investment in those critical systems.

The city's infrastructure supports New York's industries, entrepreneurs, commuters and its people's daily lives. Maintaining and running that infrastructure is an industry itself, while effective infrastructure investments can contribute to the lives and prosperity of New Yorkers for generations to come.

Infrastructure investment features prominently in Mayor Bloomberg's Five Borough Economic Opportunity Plan, and DOT set high standards for infrastructure in adopting *Sustainable Streets* in 2008. We're committing to bringing all of NYCDOT's bridges into good repair, and will accomplish this in 2010. In addition, DOT committed to an increased roadway resurfacing plan, new street designs and an improved ferry maintenance program.

**In Fiscal 2009,
DOT resurfaced
1,000 lane miles
of City streets —
an increase
from FY08's
900 lane miles.**

Bridge and roadway maintenance

- DOT conducted a comprehensive study of its practice concerning street cuts and reconstruction, and has reviewed best practices from around the world. In December 2009, DOT will issue recommendations that will cover all aspects of the program, from asset management to stakeholder coordination to organizational change.
- At the time of its 2007 bridge inventory, three of the 789 bridges in DOT's inventory were rated "poor." Capital reconstruction projects scheduled for 2009–2011 will improve these bridges to a "fair" or "good" rating. DOT will continue its rigorous inspection schedule to ensure that it is aware of any changes in bridge condition.
- In FY2009, DOT resurfaced 1,000 lane miles of City streets — an increase from FY08's 900 lane miles.
- DOT's Highway Inspection and Quality Assurance unit inspects streets to ensure that utilities, builders, contractors, and government agencies properly repair them after construction or subsurface work. To ease this task, last year DOT outfitted 65 inspectors with hand-held computing devices. The wireless devices allow inspectors to access records of past and planned construction work, and to record and retrieve information in the central database while still in the field. This has significantly increased accuracy and efficiency. DOT plans to purchase hand-held devices for the remaining 110 inspectors by the end of 2010.

Asphalt recycling

- DOT mills more asphalt from City streets than it can reuse in its resurfacing program. DOT is working with the NY State Department of Environmental Conservation to gain approval for additional uses for reclaimed asphalt pavement (RAP). DEC

has approved the use of RAP in utility street cuts, and DOT has requested that base fill and surface applications be considered as well.

- Although it is already a national leader in recycling asphalt, DOT's aging Hamilton Avenue asphalt plant cannot produce asphalt with more than 40% RAP content. DOT is now upgrading the plant to allow for 50% RAP production. DOT has reconfigured space to allow for increased RAP storage, and has submitted a capital project request to DDC to replace the asphalt-making components of the plant. Construction will begin in early 2010 and the plant should be supplying the City with 50% RAP content asphalt by the following year.
- DOT is seeking to purchase an asphalt plant in Queens adjacent to the Department's Harper Street equipment yard. A second municipal asphalt plant will allow the Department to further extend its resurfacing work, increase the amount of recycled content in City paving work and reduce resurfacing costs per lane-mile. DOT has received land use approval for the acquisition from the City Planning Commission and City Council.

Street materials

- DOT's new Street Design Manual lists new construction materials that will be accepted for use on city streets going forward. The new materials were selected based on aesthetic qualities, capital cost, sustainability, durability and maintenance.

Truck damage

- DOT is using paper, GPS and internet mapping applications to provide drivers and trucking companies with information about bridge clearances and truck routes. The NYC truck route map is available from the DOT website. A downloadable version for GPS devices will be available this summer. A map of low bridges over the City's limited access highways



Dry docking during ship construction



Installing strain gauges on a movable bridge – Pulaski Bridge over Newtown Creek



A DOT street inspector uses a handheld computer to report on road conditions

has been added to DOT's website and will be distributed to mapping companies in 2009. In addition, a GIS file of the Low Bridge Vertical Clearance file has been developed for sharing with data providers and mapping companies like Google.

- Over the last year, DOT installed new low clearance warning signage on four bridges with a history of frequent strikes by over-height trucks. The agency is tracking strike incidents to determine the effectiveness of its bridge strike prevention program. In addition, DOT is working with Westchester County, the NYPD and NY State DOT on additional bridge strike mitigation measures such as the use of Intelligent Transportation Systems.

Ferry maintenance and repair

- DOT has traditionally released dry-docking contracts on an individual vessel or ferry class basis. This is a time consuming process, and has required that over 90% of all dry-dockings require a formal extension from the US Coast Guard. In April 2009, DOT signed a comprehensive five year dry-docking contract. The new system will ensure that DOT's ferries are dry-docked in a timely manner, which is safer for all users, and cost-effective for NYC taxpayers.
- DOT is awaiting NYC Comptroller approval to hire a contractor to assist with ferry fleet planning. The contractor will take a system-wide view of the Staten Island Ferry

system, including ridership trends, Staten Island demographics, and other factors which could affect ridership, schedules and vessel size.

- DOT expanded its ferry preventive maintenance system, MAXIMO, to incorporate all vessels, terminals and its fuel pier. MAXIMO will assist DOT in complying with Coast Guard requirements and the Ferry's Safety Management System. Additional benefits include tracking of work orders, labor and specialized trade requirements, hours required for each work order, parts and inventory control and documentation of maintenance.
- In 2005 DOT conducted a study to determine the appropriate ferry fleet maintenance and repair

staffing plan. The next phase of maintenance staff expansion is pending a review of the results of the increased repair and maintenance work undertaken in phase one.

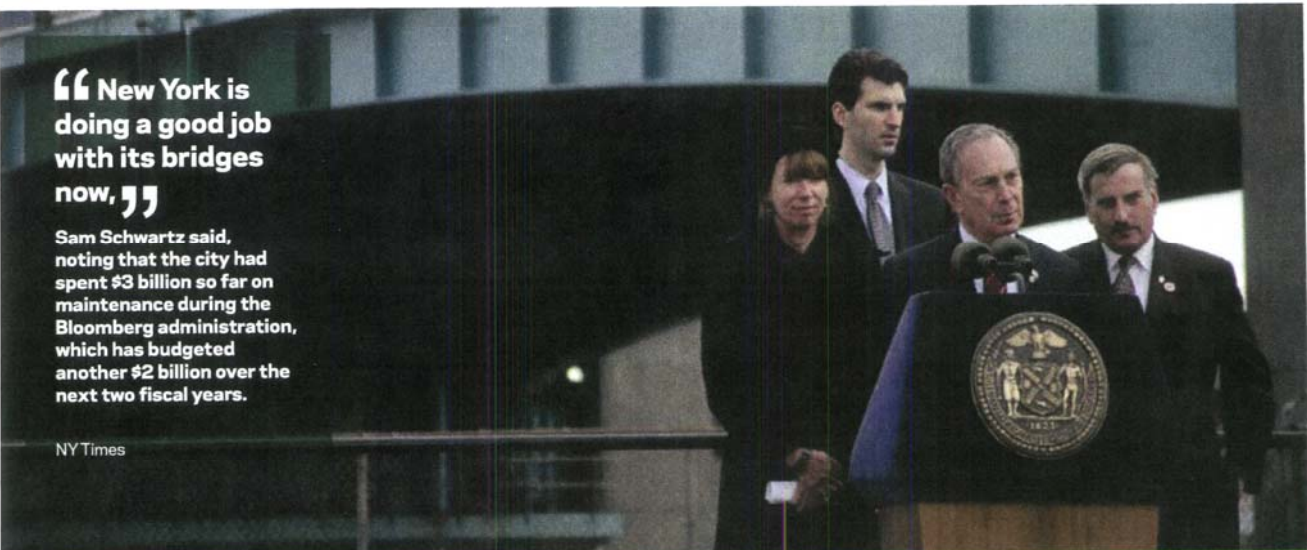
Normalize replacement cycle for the DOT vehicle fleet

- DOT has replaced the interagency procurement process to replace vehicles nearing the end of their useful lives. As a result, the average age of the Department's light duty vehicles has been reduced to 51 months, compared to 64 months two years ago. This has improved productivity and reduced costs and emissions.

“New York is doing a good job with its bridges now.”

Sam Schwartz said, noting that the city had spent \$3 billion so far on maintenance during the Bloomberg administration, which has budgeted another \$2 billion over the next two fiscal years.

NYTimes



Mayor Bloomberg announces \$261 million of federal stimulus funding at the Greenpoint Avenue bridge



DOT's low bridges map



After a bridge strike—Waterbury Avenue Bridge in the Bronx

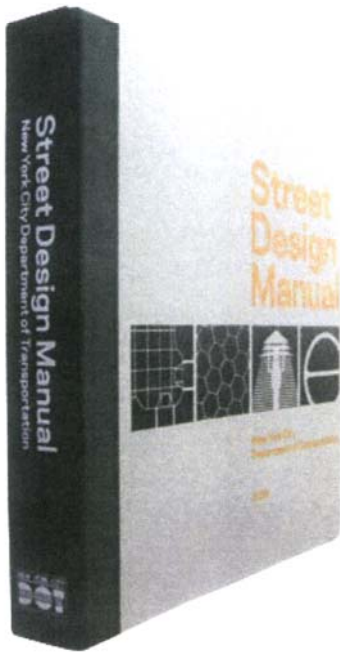


DOT improved bridge fascia over the BQE to reduce bridge strikes

Federal Stimulus Funding

On March 30, 2009, Mayor Bloomberg announced the City's selections for infrastructure projects that will benefit from \$261 million of federal transportation funding from the American Recovery and Reinvestment Act. The infusion of transportation funding negotiated by NYCDOT and City Hall is the largest for any city in the U.S. Projects in all five boroughs will benefit from the funding, supplementing the City's current capital plan. The Bloomberg Administration is using the stimulus funding to support key economic development initiatives across the city. The total value of the transportation projects in the stimulus package is \$1.1 billion and the projects are expected to create or preserve approximately

32,000 jobs throughout New York City. Six projects, including rehabilitation of ramps on the Brooklyn Bridge and an overhaul of the St. George Ferry Terminal bus ramps, will receive direct stimulus funding. The existing funding for those projects will be used to support 25 projects such as the rehabilitation of the Greenpoint Avenue Bridge that would not otherwise have adequate funding to move forward. "The federal stimulus dollars mean that we can move projects that would have been on the chopping block and get shovels in the ground quickly — putting thousands of people to work and rebuilding our infrastructure," said Mayor Bloomberg.

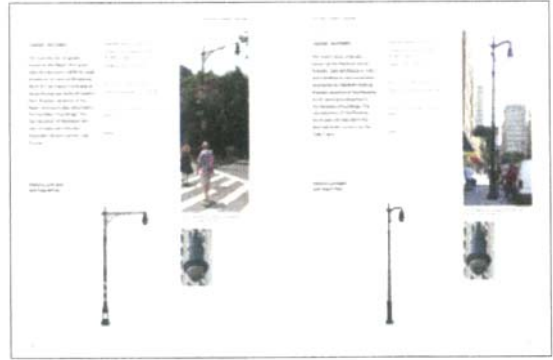
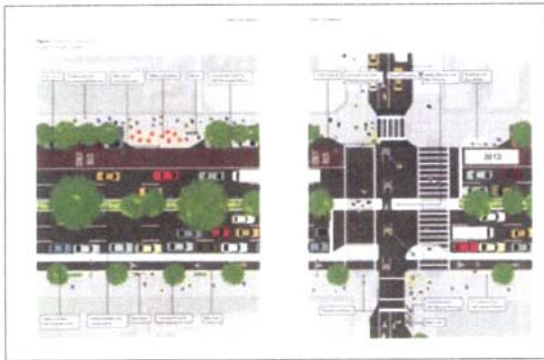


Street Design Manual

In May of 2009, DOT released the Street Design Manual, a landmark document that establishes policies and guidelines for streets and details a broad array of treatment options to create world-class streets in New York City. The 232-page document is New York's first comprehensive resource on street design and consolidates the various standards and specifications for street materials, lighting and furniture across agencies. The manual's goals are to create streets that are safer, last longer, and work better for a broader variety of activities, needs, and communities. It also promotes designs and materials that are better for the environment and improve the quality of life in the city's diverse neighborhoods while stimulating economic investment.

The manual provides detailed guidance on sidewalk, roadbed, lighting and street furniture treatments, ranging from more varied uses for concrete and asphalt to the layout of bus lanes, raised speed reducers, greening, medians and sidewalks. These treatments, most of which can be found on city streets today, support the long term vision for growth outlined in Mayor Michael Bloomberg's PlaNYC initiative. The book is intended for a broad audience, including stakeholders in the public and private sectors — City agencies, design professionals, private developers and community groups.

Inside the Manual





GREENING

Reducing DOT's Footprint

Sustainable Streets not only charted transportation policies that will green our streets and further reduce New York City's environmental footprint, but also pledged that NYCDOT would lead by example. Additionally, PlaNYC calls on city government to reduce energy consumption and cut its greenhouse gas emissions by 30% by 2017.

To meet these goals, DOT over the last year has reduced the amount of energy consumed by street lighting, expanded its asphalt recycling program and conducted energy efficiency audits throughout the agency.

DOT headquarters have been recently consolidated at 55 Water Street. At its new headquarters, DOT has done away with water coolers in favor of filtered water. Recycled carpets and cork flooring were installed to reduce the use of glue and vinyl.

DOT is also strongly committed to reducing its own use of vehicles. The agency has reduced its use of parking placards by 20%, and is investigating the feasibility of eliminating placards altogether in favor of a car share system. The agency recently purchased bicycles for staff to use when conducting agency business.

DOT has banned harsh and toxic cleaning products at its new 55 Water Street headquarters in favor of environmentally friendly products.

Better manage stormwater run-off from city streets

- DOT's ongoing collaboration with the NYC Parks Department Greenstreets program on street projects creates numerous sites for runoff-absorbing green landscaping. DOT's Street Design Manual also includes a variety of stormwater best management practices such as porous pavements and connected tree pits.

Reduce vehicle emissions

- NYCDOT's Alternative Fuels program continues to develop grant programs to assist public and private fleets in the city. Last year, DOT granted over \$6 million in assistance to private fleets, doubling the program's 2007 scale, and also invested \$3 million assisting other City agencies. The funding purchased hybrid-electric

and CNG trucks as well as diesel particulate filters for trucks already on the road. All told, the 2008 program will result in savings of five tons of hydrocarbons, 18 tons of particulate matter, 790 tons of oxides of nitrogen and 2,791 tons of carbon dioxide emissions. Fuel savings are approximately 5.8 million gallons.

- DOT continues to incorporate clean vehicles into its fleet as part of its normal replacement schedule. Nearly 30% of the light duty vehicles and 10% of the heavy duty vehicles that the agency buys this year will be hybrids. 75% of the Department's passenger sedans are now hybrids.
- DOT asphalt paving machines currently use oil burning screeds, which are heated machine arms that level and shape asphalt. The Department is in the process of replacing oil burning screeds with electric ones. Two paving machines with electric screeds will be purchased over the next year. Elimination of the open-air combustion of oil will reduce greenhouse gas emissions from DOT's paving operation by over 3,500 tons per year.
- Three Staten Island Ferry boats received emissions reduction engine upgrades over the last year. This means that four out of the eight Staten Island Ferry boats have now had engine upgrades or exhaust after-treatments. The remaining four boats will have engine upgrades by July 2011. All boats will also be retrofitted with diesel oxidation catalysts in the next 24 months.
- Staten Island Ferries run on ultra low sulfur diesel fuel, but are not currently using biodiesel because of cost escalation.
- NYCDOT continues to work with the Mayor's office to develop a comprehensive private ferry policy,

and to partner with private ferry operators to evaluate and install emissions control equipment.

Reduce DOT's energy and resource consumption

- DOT's administrative IT operation is moving to a greener data center. It uses the latest virtualization technologies to maximize processing and storage capacity while using efficient blade servers.
- DOT's 158th Street and 2144 Webster Avenue Fleet Service shops have been approved for energy efficiency audits. These audits will be completed through the PlaNYC Energy Cost Reduction (ENCORE) program, and will be used to guide later rounds of energy efficiency upgrades at other DOT sites.
- NYCDOT's new 55 Water Street headquarter features a water filtration system instead of bottled drinking water. In addition to



Mayor Bloomberg signed Executive Order 109, directing the City to reduce its greenhouse gas emissions by 30 percent by 2017 through energy efficiency and other upgrades to City-owned facilities

environmental benefits, the system will save over \$90,000 a year.

- All chemicals and materials used to clean DOT offices at 55 Water Street are environmentally friendly. To ensure a better-quality workspace for DOT employees, harsh or reactive chemicals are no longer used.
- DOT's Ferry Division is working with Con Edison and EDC staff to activate a photovoltaic system at Whitehall Ferry Terminal. Some of the work may be contracted out during 2009.
- DOT maintains a "living roof" at the St. George Ferry Terminal. The building's vegetated roof is irrigated by stormwater.
- The Ferry Maintenance Facility will undergo improvements to improve energy efficiency and reduce environmental impacts. These include an upgrade to high

efficiency lighting, replacement of the air conditioning unit and conversion of the boiler to reduce emissions.

Reduce employee use of light-duty vehicles

- DOT has reduced its in-house parking permits by 20% and has reformed the parking placard system for all City agencies other than law enforcement. The City's effort in 2008 resulted in an overall placard cut of 53%.
- In response to a recent mandate from City Hall, NYCDOT has reduced its light-duty fleet by 10% or 72 vehicles.

Maximize energy efficiency of all street lighting and signals

- NYCDOT is reducing the wattage of a quarter million light bulbs on city streets, highways, and East River bridges. The current contract

to replace approximately 82,000 street light fixtures in Brooklyn and Queens concluded in May 2009. The next contract to replace them in the Bronx, Manhattan and Staten Island, which covers approximately 84,000 street light "heads," is beginning as of this writing and has an 18 month duration. Before the end of 2009, DOT will start a similar contract for the highways (3,000 heads), and a fourth and final miscellaneous contract for 84,000 heads. When complete, the overall replacement effort will save nearly 110 million kilowatt hours of energy, over 55,000 tons of greenhouse gases and almost \$14 million annually.

- Over the past year, DOT's Street Lighting division has been testing light-emitting diode (LED) technology for pedestrian walkways and roadway lighting. DOT began with several small pilots, one in Central Park and at two locations in Queens. Planning has begun to expand these pilots.

Data from this effort is being submitted to an international Low Carbon Lighting Program coordinated by the Climate Group, which is comparing experiences of energy efficient street lighting initiatives in Europe, Asia and North America.

- DOT will replace the necklace lights on the four East River bridges with efficient light emitting diodes (LED), beginning in 2009. The overall replacement will reduce necklace lighting energy use by about 70%.

Maximize use of reclaimed asphalt

- DOT is working with the NY State Department of Environmental Conservation to win approval to use recycled asphalt pavement (RAP) as fill. Over the last year DEC approved the use of RAP in utility street cuts.



Before: Hylan Boulevard—No sidewalk



After: Hylan Boulevard—Rubber sidewalk, trees saved

NYCDOT provides safe and convenient access to a bus stop and signposted crosswalk while avoiding the removal of more than 60 trees at Hylan Boulevard by installing a rubber sidewalk which is made of 100% recycled materials.

- DOT's Hamilton Avenue asphalt plant currently produces 40% asphalt with 40% recycled content. By 2011 the Department will have finished upgrading the plant so that its output will reach a 50% RAP rate.
- DOT's asphalt vendors now supply the Department with asphalt that contains, on average, 25% recycled content.
- The NYC Economic Development Corporation has released an RFP to rehabilitate the rail barge system in the area adjacent to the Brooklyn Army Terminal. This could provide an opportunity to transfer excess RAP to interested municipalities while reducing truck-miles traveled on local and regional roadways.

Pollution prevention

- Spill Prevention Control and Countermeasures Plans (SPCC Plans) are in place at 10 NYCDOT locations and will be updated as needed. Four plans are presently under development and two additional locations will be evaluated to determine if they require plans. Location-specific SPCC training has been conducted at all DOT sites with final SPCC Plans.
- The Division of Ferries continues to update its practices based on new environmental standards and new rules as they are promulgated. For example, over the last year, NYCDOT implemented measures to respond to new regulations to reduce operational discharges — deck run-off, bilge and ballast water — from vessels.

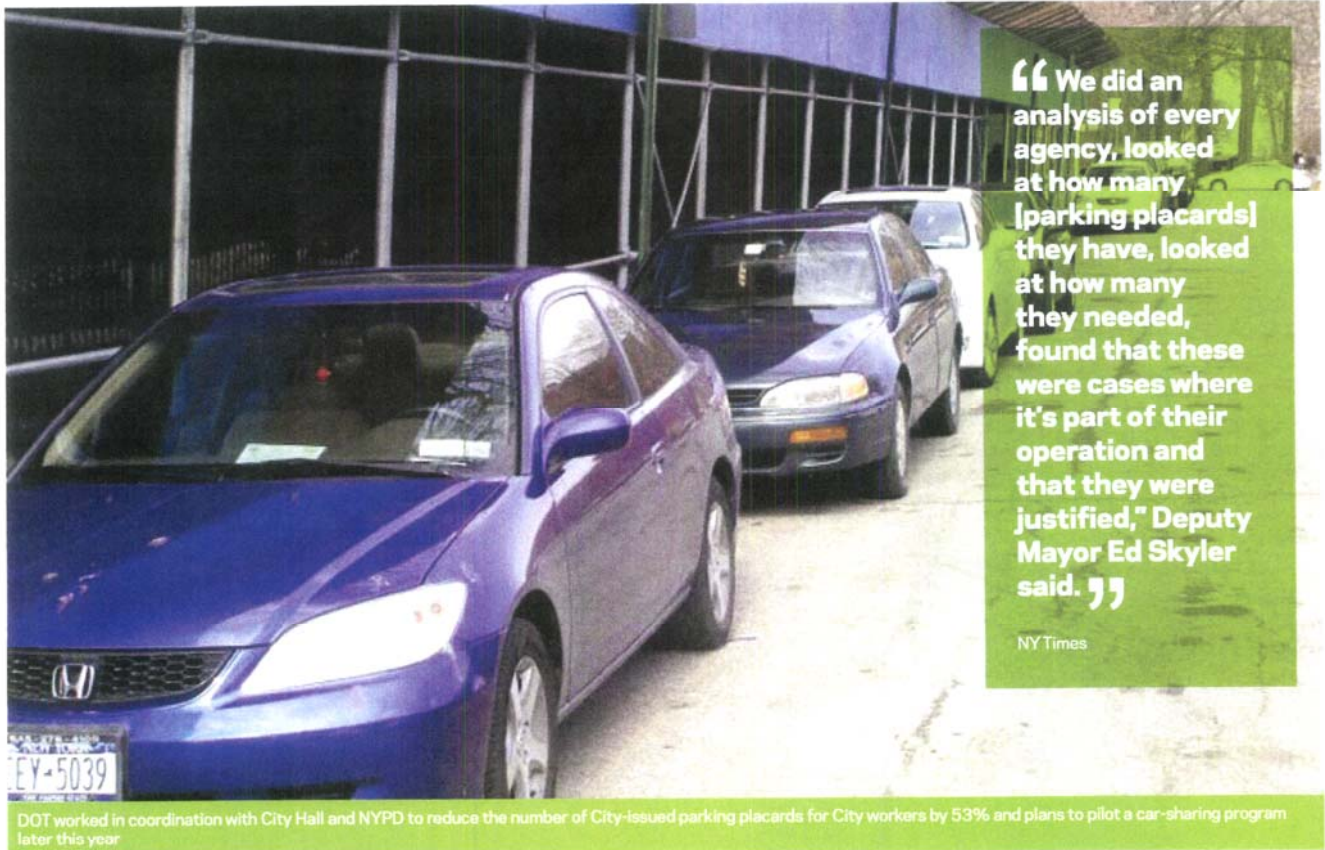
New Goals for 2009

- DOT is developing a car sharing system pilot for its Lower Manhattan-based units. When it is launched this year, the car share system will establish a vehicle pool of 20 shared vehicles that will replace 57 vehicles dedicated to specific units.
- NYCDOT will expand its large scale alkaline battery recycling program.

Reducing Parking Placards

Mayor Bloomberg announced an agency parking placard reduction program in January 2008 for the purpose of reducing the impact of agency parking in high impact areas like Lower Manhattan, Downtown Brooklyn, and around court complexes throughout the city. The initiative consolidated placard issuance under NYPD for law enforcement agencies and under DOT for all other agencies, and reduced the total number of placards issued by at least 20 percent. DOT's Planning and Sustainability division, IT and Telecommunications division, and Authorized Parking and Permits unit in the Traffic Operations division worked with City Hall, NYPD, and the affected agencies to reduce the number of issued placards by 53 percent. NYPD also established a special enforcement unit within the Internal Affairs Bureau. Going forward, DOT is overhauling its parking permit issuance software and is investigating the feasibility of a smart placard that would facilitate management of placard use and enforcement.

In support of the Mayor's announced 10 percent reduction of the municipal auto fleet, DOT is developing a car-sharing system pilot for its Lower Manhattan units. When it is launched in the second half of 2009, DOT will establish a vehicle pool of approximately 20 shared vehicles that will replace 57 vehicles dedicated to specific units based in Lower Manhattan. We expect this program will yield savings of more than \$700,000 over three years and will significantly reduce DOT's parking footprint in Lower Manhattan. We will simultaneously undertake a fleet utilization analysis, which will help us expand the program if the pilot is successful. We anticipate that the program can be expanded to other City agencies.





Warm mix asphalt being laid in Queens

High Tech Asphalt — Saving Money, Cutting Pollution

Although DOT is already a national leader in the use of reclaimed asphalt pavement, it is still looking for ways to further green its street resurfacing operations. This search led to DOT's recent experiment with warm mix asphalt.

Traditional asphalt must be heated to 300–325°, and then quickly transported to the work site. However, DOT has recently been experimenting with warm mix asphalt technology that only requires heating to 200°, and can be applied at even cooler temperatures. Warm-mix asphalt is relatively new to the industry and New York City is one of the first cities to actively test it.

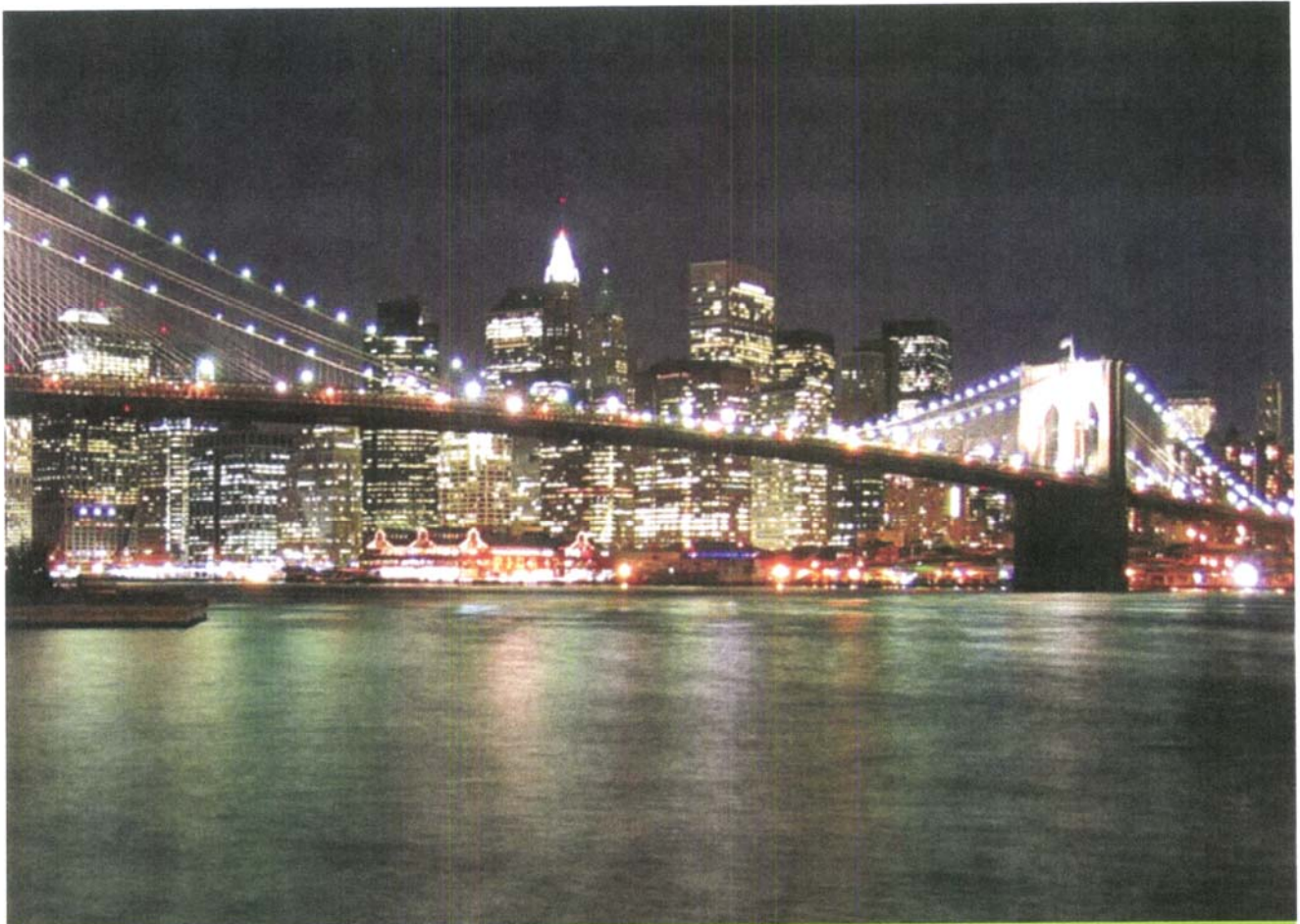
Widespread use of warm mix asphalt would decrease emissions, fumes, and odors both at asphalt plants and at resurfacing work sites, and would reduce the amount of energy needed for asphalt production. In addition, it would allow for greater RAP content, possibly up to 60%. It would also extend the paving season into the colder winter months. For DOT, a longer paving season means better roads, quicker response time for pothole repair, expanded job opportunities and a general improvement in overall street maintenance.

Over the last year, DOT used warm mix asphalt to resurface two low volume streets in Queens. One site was laid in the dead of winter, the other in the heat of summer. Thus far both sites are holding up well. DOT will continue to monitor their progress and will assess opportunities for expanded warm mix use.

DOT recently committed to recycling batteries from its parking meters and will continue and expand this program. NYCDOT operates and maintains 54,525 single space parking meters in the 5 boroughs. These parking meters use 2 alkaline batteries each that are changed approximately every 6 months, generating approximately 218,000 waste batteries. As part of NYCDOT's commitment to greening its operations, the agency instituted a program to recycle the batteries. This diverts them from landfills and allows reclamation of metals, conserving energy and virgin resources. It is one of the largest known alkaline battery recycling programs.



Parking meter batteries



DOT will replace the necklace lights on all four East River bridges with energy efficient LED lights



CUSTOMER SERVICE

Expanding Access and Collaboration

Each day residents and visitors turn to NYCDOT for a vast array of information. From details on local projects to the Staten Island Ferry schedule, from alternate side parking regulations to the latest NYC cycling map, we provide the resources New Yorkers need to keep moving. At the same time, DOT launches dozens of new projects every year, from bridge replacements to changes in street markings that New Yorkers need to know about.

We are constantly striving to improve our service to city residents and visitors by using the most modern on-line communications, as well as increasing our capacities for both community and mass-media outreach.

In keeping with the Mayor's Executive Order 120, DOT has created a Language Access Plan to provide better service for limited English proficiency customers. DOT has already begun to translate key outreach materials including our "What's Going on Here?" cards used to advise communities of upcoming DOT projects.

Improve community outreach on new projects

- DOT is refining its process for outreach to Community Boards and elected officials to ensure earlier notification about upcoming projects.
- DOT has organized professional presentation and speaking workshops for staff who make public presentations.
- DOT's Borough Commissioner's offices regularly distribute "What's Going on Here?" informational cards in neighborhoods and along corridors where new projects are planned to give better advance notification to the people who live and work in the area. These cards also provide points of contact in case the public has additional questions or concerns.
- DOT has translated a key set of agency documents into Spanish, Chinese, Russian, Korean, Polish and Urdu and is expanding the set

of translated documents — both basic public information such as traffic safety guidance, and project-specific materials — on an ongoing basis.

Better use of the Internet to foster collaboration

- In the past year, DOT has posted information about its projects online, creating better public and media access to this information. Many projects that require in-depth planning also feature feedback forms, allowing community members to provide input even if they cannot attend meetings.
- DOT has created and posted two videos for its website, a first for the agency.
- DOT created a Facebook page for its Summer Streets events and thousands of New Yorkers found out about Summer Streets through this social networking site.

ТРАНСПОРТНАЯ СЕТЬ МТА/NYC

СТЕИТЕН-АЙЛЕНД (станции ST. GEORGE TERMINAL)

АВТОБУСНОЕ СООБЩЕНИЕ:

S42 Pleasant Hook	S74 Tottenville
S43 City Place	S75 Elizabeth
S44 Staten Island Mall	S76 Tottenville
S46 West Shore Plaza	S81 Great City (проезд, выход)
S48 Mariner Harbor	S84 Tottenville (проезд, выход)
S70 Great City	S79 Westport Park (проезд, выход)
S22 S. Lacks Height	S27 Staten Island Mall (проезд, выход)
S45 Staten Island Mall	S40 Fresh Meadows (проезд)
S42 Sweet	S24 Fulton Island Mall (проезд, выход)
S46 Fort Richmond	S16 Mariner Harbor (проезд, выход)
S47 Fort Richmond	S18 Hudson Mall (проезд, выход)

КБС СООБЩЕНИЕ: Staten Island Parkway

МАНХЭТТЕН (станции WHITEHALL TERMINAL и район BATTERY PARK)

***АВТОБУСНОЕ СООБЩЕНИЕ**
M1 M2 M3 M4 M5 M6 M7 M8 M9

***МЕТРО**

Whitehall Street **N R W**

South Street **4 5**

South Ferry **1**

Broad Street **J M Z**

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STATEN ISLAND

РАСПИСАНИЕ ПАРОМА СТЕИТЕН-АЙЛЕНД

ИНФОРМАЦИЯ О РАБОТЕ ПАРОМА:
www.nyc.gov/dot или по телефону 311



New York City
Mayor Michael Bloomberg

New York City
Department of Transportation
John J. Corrao, Deputy Mayor for Transportation



DOT staff discuss parking management strategies at a workshop in Forest Hills, Queens



The DOT/HealthPlus Asthma Calendar Contest educates students about the connections between transportation, air quality and better health

- DOT created a blog for its CityRacks design competition, which generated over 200,000 views and hundreds of comments from around the globe.
- DOT has streamlined its online forms, creating a "report-a-problem" center where citizens can report anything from potholes to missing signs to streetlights on the blink with a few simple clicks.
- DOT has several e-mail lists to distribute information to residents. The number of subscribers for NYCycles, our bike information e-newsletter, has doubled this year.
- DOT is testing a protocol to provide information about unplanned traffic events to the NYC Taxi & Limousine Commission, so that it can rapidly update taxi drivers via in-vehicle devices to avoid congestion.
- DOT's Traffic Cameras will be presented in a new interface linked to Google maps. They will be more accessible and useful for trip planning.

Train community leaders

- The DOT Academy program, launched in early 2008, educates community leaders about DOT's core programs, policies and procedures, including traffic calming, street repair and sidewalk maintenance. This year, DOT invited Community Board leaders and elected officials in every borough to attend in-person sessions. The Department will post the training on-line as an audio-narrated presentation to allow even more New Yorkers to participate.

Enhance emergency response capabilities

- The new Joint Traffic Management Center NYCDOT operates with the NY State DOT and NY Police Department is equipped with the most modern emergency response technologies, and improves the City's capacity to respond rapidly to emergencies on roadways and bridges.

Better service for Staten Island Ferry riders

- The New York City Economic Development Corporation is letting a contract for the utility build-out of the retail spaces in the St. George Ferry Terminal. The first lease is also in progress and we anticipate the first retail shops will begin to open in Summer 2009.
- NYCDOT is committed to a strong relationship with the Staten Island Ferry Riders Association and will return to regular meetings and our "Ask the Ferry Program" upon conclusion of the Association's reorganization.

Improve the Neighborhood Transportation Study Program

- Starting in Jackson Heights, Queens, DOT will pilot a new methodology for conducting neighborhood transportation studies. It will be designed to deliver preliminary results more quickly so that short-term improvements can be started while capital improvements are planned.

New Goals for 2009

- Create a searchable database of citywide curbside parking regulations and make it available through DOT's website.
- DOT will provide a better user interface for computers and mobile devices for its traffic cameras and also provide new information about traffic speeds, allowing the public to make more informed travel decisions and avoid congested routes with real-time information on traffic conditions. DOT will also make more of its map-based data available in open source standards via its website.

Engaging the Online Generation

This year, NYCDOT and the Cooper Hewitt National Museum of Design held the CityRacks design competition to generate a new standard on-street bike rack. The competition had a top-notch jury and small honoraria for the winning designs but no budget for marketing or promotion. Hopes were high that the competition would attract entries from the most talented designers, artists and engineers from around the country. But how would they find out about it?

DOT created the CityRacks Design Competition blog using a simple Wordpress template. DOT and Cooper Hewitt promoted the content through e-mail blasts, press releases and tips to bloggers that referred people to the blog for more information. The blog was a repository for official competition documents and schedule. It also allowed for an ongoing Q&A between designers and the competition staff. The blog received over 200,000 visitors and helped to generate hundreds of competition entries from around the globe.

As the competition unfolded, DOT also posted snapshots of the finalists' designs and allowed the public to comment on them. This expanded the dialogue beyond the jury room and generated even more interest in the contest.

The lessons DOT's communications staff learned from the creation and management of the blog will help in planning future projects. DOT has also given advice on blogging to a number of other City agencies. The CityRacks Design Competition blog was recognized by the Mayor's Customer Service working group as a model of excellence for its use of new technology to engage constituents.



A Community Board District Manager recently gave her high school intern a challenge — to answer ten tough questions about DOT, using the DOT website as a reference. The result? She found the website “pretty easy to navigate” and was able to answer all ten questions.



Local Knowledge, Local Improvements

DOT's neighborhood transportation studies allow the agency to take a holistic approach to solving transportation problems. Programs such as Safe Routes to Schools and Safe Streets for Seniors often wind up focusing on specific locations and the improvements they bring are geared towards improving safety. Neighborhood transportation studies can bring area-wide solutions for mobility, sustainability and safety. One issue with these studies, however, has been their length. Many have gone on from two to four years, and neighborhoods have often had to wait even longer for improvements the studies identify. In Jackson Heights, Queens, NYCDOT will launch an effort that will conduct more small-group input sessions with key community stakeholders, go with these stakeholders on walking tours of neighborhoods, and using intercept surveys and other means to collect more qualitative data in addition to DOT's standard quantitative data. The study will have a stronger emphasis on improving conditions for bicycling and walking, and a special focus on improving access to transit. The Jackson Heights study will be conducted in phases, so that short term improvements can begin while consideration of longer-term measures is still underway. DOT is also committed to monitoring the effectiveness of these short-term improvements to ensure that it has taken appropriate actions to meet the study goals.



House Transportation and Infrastructure Committee Chairman James Oberstar and NYCDOT Commissioner Janette Sadik-Khan call for more attention to big cities in the next federal transportation bill

GLOBAL LEADERSHIP

A 21st Century Transportation Department

NYCDOT's innovations such as Green Light for Midtown and Summer Streets are making a world-wide splash. In the past year, DOT has received inquiries and visitors from around the globe. From the Prime Minister's office in the United Kingdom to the Governor of Sao Paulo, Brazil, from Toronto to Boston, everyone wants to know what we are doing in New York City and how we are getting it done. Gehl Architects, the Copenhagen-based consultant specializing in urban improvement strategies, recently remarked that "Other cities that we are presently working with around the world, from Mexico City to Beijing, London and Sydney are all looking to Janette Sadik-Khan and New York for inspiration."

Implementation of new policies and ground-breaking projects is possible because NYCDOT is constantly researching and examining developments and applications from around the world, in technology, planning and communications, all while always pushing the envelope with our considerable home-grown resources. In the past year, DOT further expanded its capacities in this regard by building up the new Division of Planning & Sustainability and its Project Management Office.

The LOOK traffic safety campaign is expanding significantly, with new television and radio spots and an expanded run of outdoor poster ads. A new anti-DWI campaign will also be launched during 2009.

Build staff capacity and Division of Planning and Sustainability

- The Division of Planning & Sustainability is running at full steam, with staff devoted to Select Bus Service projects and the rapid bus master plan, creating a new Manhattan traffic model, innovative parking programs, freight mobility and truck management and alternative fuels programs, DOT's Urban Art Program and the NYC Plaza Program. Both the Urban Art and NYC Plaza program issued application criteria, materials and program guidelines in 2008 and recently announced the first rounds of projects for selection.

Elevate the profile of research in policy and operations

- DOT is compiling staff research on the DOT intranet to facilitate information exchange among staff. Staff presentations at major conferences are also now posted on DOT's external webpage.
- DOT has invited expert speakers to give several presentations to staff throughout the year. This year, DOT has been involved in organizing events open to staffers with urban expert Jan Gehl, Denis Baupin, Paris Deputy Mayor, Peter Newman, Sustainability Commissioner for New South Wales and others. A member of the U.S. DOT Commission on national transportation infrastructure financing briefed DOT's senior staff.
- DOT is collaborating with major research institutions through the University Transportation Research Center to conduct studies of both its traffic calming program and a more comprehensive study that seeks to identify root causes of crashes that result in pedestrian serious injuries and fatalities.

- DOT is developing a Manhattan Traffic Model to expand the agency's capability to assess the traffic impacts of street projects, taking into account mode shift and route shifting. The model will give DOT the ability to accurately assess system-wide adjustments that occur in response to major changes in the grid. It builds on the traffic analysis conducted to assess Green Light for Midtown. It will be the first of its kind in a major U.S. city, and will be used for environmental analysis for the 34th Street busway, and other projects as necessary.

Create strategic communications strategy

- The 2008 issue of *Sustainable Streets*, this update and the publication of the first and forthcoming editions of the *Sustainable Streets Index* are important elements of DOT's ongoing strategic communications effort regarding the City's transportation goals, policies, actions and the objective transportation trends on our streets, highways, rails and waterways.
- DOT has formed a communications working group that consists of staff from External Affairs, Borough Commissioners, the Press Office and the Policy group.
- DOT has issued an RFP for an advertising and marketing agency to assist the Department to create effective public safety campaigns and campaigns to promote increased use of sustainable transportation.
- The LOOK traffic safety campaign is expanding significantly, with new television and radio spots and an expanded run of outdoor poster ads. A new anti-DWI campaign will also be launched during 2009.



DOT staff led trainings on Jan Gehl's acclaimed public life survey methods for colleagues at DOT and other agencies

Implement agency-wide project management procedures

- DOT's Performance Management and Accountability office was established in 2007 and now has 5 staff members.
- DOT initiated the study of project management and project delivery through two case studies (street reconstruction and Staten Island Ferry-related contracts) that were completed in 2008.
- Project management consultants completed their work on a conceptual design and set-up for DOT's "Enterprize" project management system in May 2008. The remainder of the development and implementation continued in house and the system has been roughly 60% implemented as of June 2009. The system is allowing agency staff to better manage project delivery.

Implementation is slated to begin by the end of 2009. A project management Quality Assurance unit providing oversight on federally funded projects will be established during summer and fall 2009.

Overhaul data collection

- In 2008, DOT issued the first annual *Sustainable Streets Index* report, which set benchmarks for the City's progress towards achieving more sustainable mobility. Subsequent SSI reports, beginning in Fall 2009, will update these benchmarks and also contain before-and-after data about the impacts of DOT projects, including BRT and traffic congestion relief measures. Data collected and reported in the *Sustainable Streets Index* will achieve full compliance with requirements set out in Local Law 23 (Intro 199).
- DOT conducted public life surveys at 9 locations throughout New York City.
- DOT held a one-day training for its staff and staff from other City agencies in the public life survey methodology.
- DOT reviewed transportation performance measures in connection with both the Mayoral Citywide Performance Report (CPR) and City Council's Intro 199 initiatives. As part of CPR, new metrics stressing performance outcomes have been in place since July 2008. They include: street pavement ratings; percent of lane miles assessed in the 12 months ending this quarter; overall traffic accidents and a pedestrian volume index.
- DOT began a comprehensive review of all metrics and reporting methods and tools in March 2009. The purpose of this review is to provide scope for a new "business

intelligence" tool for the agency and to develop automated links with the reporting systems of the Mayor's Office of Operations. The review is expected to be completed in the fall of 2009; the tool is expected to be in place by summer 2010.

- DOT and the NYC Taxi & Limousine Commission are using TLC's GPS-based trip sheet database to estimate aggregate travel speeds in the Manhattan CBD. The agencies are exploring ways to use this data to track daily and seasonal changes in traffic speeds.
- DOT is improving its coordination with the NY State Department of Motor Vehicles, the State DOT and the NY Police Department to facilitate more rapid exchange of crash data.

Attract and retain a top notch staff

- We have identified agency personnel whose roles are critical to the continuation of agency operations. In-house succession candidates for these individuals have been identified where such exist. We have identified managers who are eligible to retire within one year and continue this as an ongoing exercise.
- DOT attended over 15 recruiting events both in New York City and further afield to recruit talented new graduates and veterans returning from Iraq and Afghanistan.

Global Recognition



DOT accepts the International Sustainable Transport Award. L-R: Walter Hook (ITDP) Commissioner Sedik-Khan, Congressman Earl Blumenauer and former Mayor of Bogotá, Colombia, Enrique Penalosa

NYCDOT's work was acknowledged from many quarters over the past year, but perhaps foremost was the January 2009 presentation to the City of New York of the prestigious Sustainable Transport Award, chosen by a global selection committee of representatives from the Institute for Transportation and Development Policy, Environmental Defense Fund, the U.S. Transportation Research Board, Clean Air Initiatives for Asia, Latin America, and Africa; the Deutsche Gesellschaft für Technische Zusammenarbeit (part of Germany's foreign aid establishment); The World Resources Institute Center for Sustainable Transport; Local Governments for Sustainability, the International Association of Public Transport and the U.N. Centre for Regional Development. New York City was recognized for use of street space for rapid bus service, bike lanes, pedestrian areas and public plazas; the installation of 140 miles of new bicycle lanes (including new protected lane designs), a high use of recycled asphalt and the institution of Summer Streets. Beijing, Mexico City, Istanbul and Milan were runners-up in the selection. New York is the first American city to be so honored since the award was first presented in 2005.

Selected DOT Awards Since 2007

**Municipal Art Society
2009 Certificate of Merit
for Sustainable Streets
Strategic Plan**
July 2009

**Green Event Award from the
Metro NYC Chapter of the
International Special Events
Society, for Summer Streets**
June 2009

**American Institute of Architects
Special Citation to Assistant
Commissioner Wendy Feuer for
promotion of quality design and art
in public places**
June 2009

**Finalist – Best New Innovative
Practices, Best of ITS Awards
VTCS 2 Advancing State-of-the-
Art Traffic Management using a
Large Scale Wireless Network. For
converting our traffic control signal
management from hard-wired
(via telephone lines) to the City's
wireless network (NYCWIN)**
June 2009

**NYU Rudin Center Annual
Leadership in Transportation
Award, jointly with NYC Transit,
for launch of Select Bus Service**
February 2009

**United States Coast Guard
Certificate of Merit**
Staten Island Ferry in recognition
for services rendered to U.S. Air
Flight 1549
Feb 18, 2009

**Sustainable Transport Award
to the City of New York – from
the Institute for Transportation &
Development Policy and a range
of international organizations
and institutions**
January 2009

**Platinum Award in the structural
systems category**
Design-Build re-decking project
on the Belt Parkway Bridge over
Mill Basin
American Council of Engineering
Companies of New York
March 2008

Diamond Award, Special Projects
Construction management of the
reconstruction of the Third Avenue
Bridge over Harlem River
American Council of Engineering
Companies of New York
March 2008

Best Bridge Project of 2008
Reconstruction of the Hamilton
Avenue over the Gowanus Canal
New York Construction Magazine
December 2008

Outstanding Achievement Award
Andy Lalchandani, Director
of DOT's Engineering Audit
Bureau South Asian American
Association, Inc.
October 22, 2008

**World Traffic Safety Symposium
Award for Pedestrian Programs
for Older Adults**
2008

**AAA Community Traffic Safety
Gold Award**
2008

**Sol Gitlin Humanitarian
Memorial Award**
Captain James DeSimone and the
Staten Island Ferry in recognition
for assisting individuals with
disabilities or maintaining their
independence Staten Island Center
for Independent Living
April 25, 2008

**Institute for Transportation
Engineers Program of the
Year Award**
2008, to NYCDOT for the 9th
Avenue protected bicycle lane

**AAA Community Traffic Safety
Gold Award**
2007

AAA Best Practices Award
2007

Big City Transportation—Our Policy Roadmaps

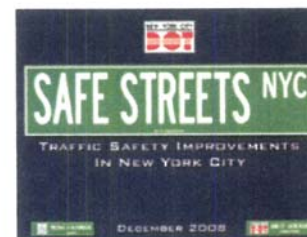
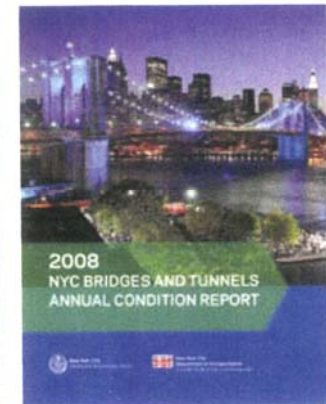
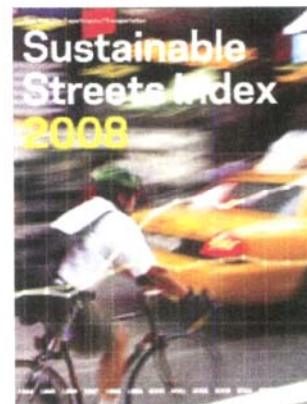
DOT has produced a series of policy and research reports in the past year including *Sustainable Streets*, *World Class Streets*, the *Sustainable Street Index* and, mostly recently, the NYC Street Design Manual. DOT also publishes annual traffic safety and bridge reports detailing our many innovative projects in these critical areas. This growing body of work is a valuable roadmap for the agency and for the people of New York. The documents have also traveled far and wide, inspiring and informing transportation policy discussions around the world.

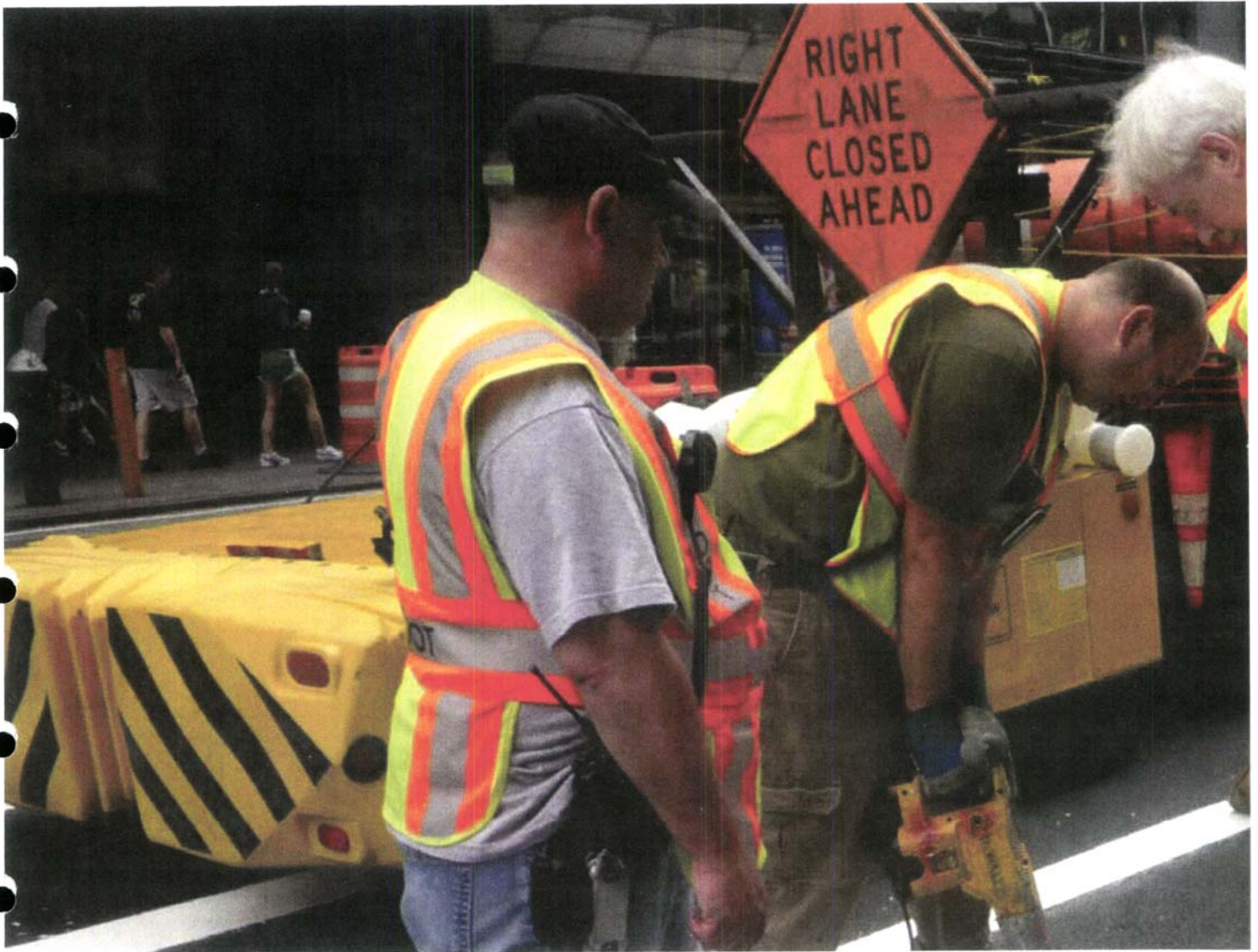
A few short years ago, if you wanted to learn about sustainable transportation, you might visit Copenhagen or London, or Portland, Oregon. These cities have made impressive steps to green their transportation systems.

Now New York has risen to the top of this list. Our policies and projects are becoming the new model for governments around the world. Officials in the UK Prime Minister's office charged with developing an urban transportation strategy are interested in our approach to the public realm and the citywide bicycle network, and are looking closely into how we implement our vision. Even a Danish Member of Parliament has come to take a look at New York City's work to encourage bicycling.

Over the past year, the DOT has been visited by governors from Brazil, mayors from Quebec, Denmark and Vancouver and the heads of agencies from U.S. cities from Boston to San Francisco. These visitors come to learn how we have been able to accomplish projects ranging from Select Bus Service to increasing commuter cycling, to achieving a world-class traffic safety record, to the transformation of Times and Herald Squares.

Filled with photographs and planning graphics, and written in an accessible way, NYCDOT's reports are meant to speak to anyone searching for new answers to the issues of congestion, sustainability and quality of life.







Benchmarks

SAFETY

ACTIONS	Progress	2007-2009	Lead Divisions	Supporting Divisions or Agencies	Action outside DOT
STREET DESIGNS TO MAXIMIZE PUBLIC SAFETY					
Implement more Safe Routes to Schools	<ul style="list-style-type: none"> ● ● ● ● 	<ul style="list-style-type: none"> Complete capital construction at 12 priority schools Continue slow speed school zones pilot project Short Term measures at 135 schools complete Evaluate and initiate studies at 40 high schools 	Traffic	External Affairs, BCs, NYCDOT, NYSDOT	Funding
Launch Safe Streets for Seniors	<ul style="list-style-type: none"> ● ● ● 	<ul style="list-style-type: none"> Identify 25 Senior Pedestrian Focus Areas (SPFAs) based on top senior pedestrian crashes in the five boroughs Implement early action measure in five pilot locations (i.e., signal timing for seniors, upgraded signage, marking and pedestrian refuge islands) Study, develop improvements, and implement early action items at 20 SPFAs 	Traffic	External Affairs, BCs, NYCDFTA, NYCDOTMHI	
Make traffic safety measures a focus of neighborhood transportation studies	<ul style="list-style-type: none"> ● 	<ul style="list-style-type: none"> Develop scope of work templates that focus on traffic safety deliverables 	Planning and Sustainability, Traffic	BCs	
Streamline traffic calming projects	<ul style="list-style-type: none"> ● ● 	<ul style="list-style-type: none"> Create recommendations to speed project planning and delivery, create project management toolkit Implement recommendations, including completion of Downtown Brooklyn Phase A 	PMO	BCs, Finance, Traffic, DDC	
Expand and improve safety-oriented signal strategies	<ul style="list-style-type: none"> ● ● ● 	<ul style="list-style-type: none"> Expand test of pedestrian countdown signals and evaluate results Re-engineer leading pedestrian intervals (LPIs) giving 9 additional seconds for pedestrians to cross intersections Implement one-way corridor signal timing patterns to increase pedestrian crossing time and discourage speeding 	Traffic		
Complete bus stops under elevated trains improvements	<ul style="list-style-type: none"> ● 	<ul style="list-style-type: none"> Finalize installation of raised concrete medians at 3 bus stops under elevated trains 	Planning and Sustainability	T/M	
BRIDGE INSPECTION					
Implement "Safe Spans" bridge inspection program	<ul style="list-style-type: none"> ● 	<ul style="list-style-type: none"> Increase frequency of bridge component inspection 	Bridges		Funding, FHWA Cable Monitoring Study
CHANGE PUBLIC BEHAVIOR					
Expand marketing campaigns	<ul style="list-style-type: none"> ● 	<ul style="list-style-type: none"> Expand "Look" marketing campaign that includes pedestrian and motorist themes 	External Affairs	NYCDPR, NYCDOTMHI, NYC & Co., NYPD	

Legend ● Completed ● In Progress ● Pending

ACTIONS

Revise and expand Safety City education programs

Progress

2007-2009

Lead Divisions

Supporting Divisions or Agencies

Action outside DOT

- Update materials, branding, and overall message to engage school children
- Explore potential partnership with Dept. of Education

External Affairs

NYCDOE

SAFETY ENFORCEMENT

Expand automated enforcement

- Pursue legislation for additional red light cameras and introduction of speed cameras

External Affairs, Traffic

Legislative approval

Fund additional NYPD traffic enforcement

- Assess enforcement and equipment needs

Finance

NYPD, NYCDOE

Funding

Improve construction zone safety for pedestrians

- Establish strong and explicit pedestrian safety measures in all Maintenance and Protection of Traffic (MPT) plans
- Launch enhanced safety monitoring unit for construction sites with high pedestrian volumes

Legal

External Affairs, SIM-HQA, RRM, PMCC, NYPD

INJURY/FATALITY ANALYSIS

Undertake studies regarding collisions

- Complete study of pedestrian incident data
- Complete study of traffic calming techniques and their effect on collisions

Traffic

MIS, Planning and Sustainability

Improve pace and flow of detailed crash information

- Streamline process with NYSDOT

PMO

MIS, Traffic, NYPD

Coordinate with New York State DOT

EMPLOYEE SAFETY

Implement enhanced work zone safety measures

- Implement enhanced work zone safety measures agency-wide
- Work with NYPD to establish a greater police presence at construction sites and stricter enforcement of parking restrictions
- Pursue stricter workzone safety legislation
- Participate in work zone safety awareness week

Legal, HR and Facilities

RRM, Brand, SIM

Evaluate safety of DOT employees at all facilities

- Conduct hazard assessments for all DOT job functions and facilities
- Develop training programs based on hazard assessments

HR and Facilities

Legal

TRUCK SAFETY

Implement truck-related safety initiatives

- Expand overweight truck permitting unit
- Require all trucks to install cross-over mirrors
- Distribute truck route maps and summary of truck access rules to all police precincts

Planning and Sustainability

External Affairs, Traffic, Bridges, NYPD

Funding, Legislation

New Goals for 2009

- NYCDOT will triple the number of 20 mph speed zones around schools from 25 to 75 by 2010

Legend ● Completed ● In Progress ● Pending

MOBILITY

ACTIONS

BUS RAPID TRANSIT

Implement Bus Rapid Transit

Progress

2007-2009

Lead Divisions

Supporting Divisions or Agencies

Action outside DOT

- Launch two BRT corridors
- Finalize testing and implement queue jumps and traffic signal priority (TSP) in BRT Corridors
- Initiate legislative campaign for authorization of bus-camera enforcement system

Planning and Sustainability, Traffic

External Affairs, Traffic

Legislative approval of bus lane camera implementation with NYC Transit

BETTER BUS LANES

Improve streets for existing bus network

- Launch 2 new Midtown bus priority corridors with NYC Transit
- Test new bus-priority elements such as colored lanes, and bus signal priority
- Address bus hot spots through queue jumps, signal improvements, and other measures
- Construct 15 new sidewalks at bus stops
- Identify underperforming bus routes

Planning and Sustainability

Traffic, Sidewalks, SIM, CSFF

Funding NYC Transit

PARKING MANAGEMENT

Manage curb-side parking more effectively

- Launch pilot parking program aimed at greater curbside vacancy rates
- Complete conversion of all multi-space meters to accept credit cards

Planning and Sustainability

Traffic, BCs

Manage municipal lots more effectively

- Develop a demonstration project to provide real-time space availability information in municipal parking lots

Traffic

BICYCLING

Make bicycling safer and more convenient

- Test new lane designs and expand implementation of designs that work
- Install 37 bicycle parking shelters and 800 City Racks
- Complete installation of 200 bicycle lane miles by 2009
- Install 15 additional miles of protected on street bike lanes
- Pursue indoor bicycle parking legislation at City level
- Install 5000 City Racks (1600 annually)

Traffic

Planning and Sustainability, CSFF, External Affairs, BCs

Funding, legislative action

FERRY SERVICES

Improve the quality and expand the availability of ferry services

- Improve access for all users of City-owned ferry landings
- Open Slip 5 at the Battery Maritime building
- Work with EDC to launch new routes and services

Ferries

NYCEDC

Better connections with transit, More marketing/promotion

HOV NETWORK

Expand the HOV network

- Implement Manhattan Bridge HOV lane
- Establish interagency working group to implement Southbound Gowanus bus/HOV lane and Verrazano Bridge bus lanes

Planning and Sustainability

RPI, Bridges, Traffic

NYSDOT, MTA Bridges and Tunnels

Legend ● Completed ● In Progress ● Pending

ACTIONS

Progress

2007-2009

Lead Divisions

Supporting Divisions or Agencies

Action outside DOT

CONGESTED CORRIDORS

Improve mobility and access for all modes in congested corridors

- Identify 10 corridors to address mobility, traffic congestion, truck traffic, pedestrian mobility, safety, air quality, and quality of life
- Conduct studies, public meetings, develop recommendations, and plans for 5 corridors
- Implement action measures at 5 corridors
- Initiate study for final 5 corridors

Traffic

Planning and Sustainability

Funding

IMPROVE FREIGHT MOBILITY

Expand access for appropriately-sized trucks to limited-access parkways

- Review Grand Central, Henry Hudson, and Belt Parkways as possible candidates

Planning and Sustainability

External Affairs, Traffic

Work with NYSDOT and Port Authority

TECHNOLOGY

Use technology to fight congestion

- Finalize testing of transit signal priority (TSP) pilot project on Victory Boulevard
- Implement bus TSP on Fordham Road
- Install VII TestBed that demonstrates in-vehicle signing, warnings, traveler information

Traffic

Planning and Sustainability, External Affairs

Funding, NYC Transit implementation of bus measures

New Goals for 2009

- During 2009, NYCDOT and NYC Transit will issue a Phase II bus rapid transit plan recommending 8-10 new routes.
- NYCDOT and NYC Transit will test a real-time bus arrival information system on 34th Street in Manhattan.
- NYCDOT has accelerated targets for bike commuting following the rise in bicycle counts in 2008 and developments such as bicycle parking legislation. DOT now anticipates doubling bike commuting from 2007 levels by 2012 and tripling it by 2017.
- NYCDOT will explore opportunities for a large scale public bicycle system in Manhattan and adjoining areas. Bike share would provide a new mobility option for short trips and increase bicycling's share of overall travel.
- NYCDOT will expand installation of on-street bike parking by re-fashioning single-space parking meter poles into bicycle racks as part of the uni-meter installation process.
- NYCDOT will expand the PARK Smart curbside management program to additional neighborhoods.
- With the NYCEDC, NYCDOT will launch an expanded East River ferry network with six landings, including new docks in Greenpoint and North Williamsburg, by 2012.
- NYCDOT will begin to establish new rules and conditions for use of curb and layover space by private buses, whose presence on city streets has dramatically proliferated.
- Use cameras on buses to catch taxicabs in bus lanes and partner with the TLC to summons drivers through Administrative Law system.
- Explore the addition of new HOV lanes as part of the Select Bus Service master planning process.

Legend ● Completed ● In Progress ● Pending

WORLD CLASS STREETS

ACTIONS

Progress

2007-2009

Lead Divisions

Supporting Divisions or Agencies

Action outside DOT

ADOPT COMPLETE STREETS DESIGNS TO ACCOMMODATE ALL USERS

Develop a Main Streets public life program

- Use complete streets designs to create or revitalize public space in commercial districts
- Move Main Street design templates into early action engineering projects
- Implement projects from Public Life report
- Create weekend pedestrian streets

Planning and Sustainability	Traffic, SCs, NYCDCC, NYCCA	Funding
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Improve street design process and methods

- Partner with city agencies to make public life/streetscape improvements
- Streamline construction design review
- Define better streetscapes as a necessity

Planning and Sustainability	Traffic, Finance, NYCDCC, NYC Art Commission	
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Construct and improve pedestrian ramps

- Continue progress towards full ADA compliance on ramps at street corners

S/M		
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PUBLIC PLAZAS

Develop and implement plaza program

- Develop plaza maintenance strategies
- Create community-based process for development of 4 new plazas per year

Planning and Sustainability	Traffic	Funding, Local maintenance agreements
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ENJOYING THE CITY

Showcase alternative uses for public space

- Implement weekend pedestrian/bike corridors
- Initiate temporary art program
- Reduce car use in major city parks

Planning and Sustainability	SIM-Special Events, Traffic, NYPD, NYC B Co, Mayor's Office	
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Increase beautification efforts throughout the city

- Augment Adopt-a-Highway program with landscaping projects
- Coordinate repairs in neighborhoods with other city agencies

RRM, FDC	Commissioner's Office, Planning and Sustainability, Mayor's Office, NYCDPR, RRM, NYCCA, NYCDNY, NYCDPR	Funding
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URBAN DESIGN

Continue to implement street furniture improvements

- Install over 1,600 CEMUSA-designed bus shelters, 159 newsstands, 37 bike parking shelters and 9 automatic pay toilets
- Launch CityRacks design competition
- Re-open historic Water Street Arch at the Manhattan Bridge

Log, Planning and Sustainability, Traffic		
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LOWER MANHATTAN PEDESTRIANIZATION

Implement Lower Manhattan pedestrianization plan

- Develop pedestrianization plan in conjunction with NYPD
- Secure funding and support for the plan with city and district leadership and state and federal partners
- Define pilot projects and implement

Planning and Sustainability	Traffic, SCs	Funding
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New Goals for 2009

● NYCDOT will develop and implement a program of the new street design template and design the City of New York's "Main Street" program.

● NYCDOT will develop business streets to additional goals and projects in 2009.

Legend ● Completed ● In Progress ● Pending

ACTIONS	Progress	2007-2009	Lead Divisions	Supporting Divisions or Agencies	Action outside DOT
STREET CONSTRUCTION MANAGEMENT					
Minimize frequency of street cuts	●	Initiate best practice & asset management studies	PMD	RRM, Permit Management and Construction Control, SIM-HIQA	
	●	Adopt comprehensive street management plan			
BRIDGE AND ROADWAY MAINTENANCE					
Expand bridges preventive maintenance	●	Replicate success of East River program on movable bridges	Bridges	Finance	Funding
Eliminate poor conditions on operating city bridges			Bridges		Funding
All city streets to state of good repair	●	Increase annual roadway resurfacing to 1,000 lane miles	RRM	SIM-HIQA	Funding
	●	Enhance street cut inspections with hand-held computer devices			
ASPHALT RECYCLING					
Establish use of recycled asphalt pavement as fill	●	Establish pilot program for roadway fill	RRM	Legal	NY State Department of Environmental Conservation approval
Increase RAP usage and pavement production at Hamilton Avenue plant			RRM		
Acquire and retrofit a 2nd City asphalt plant	●	Win approval for 2nd City asphalt plant	RRM		
STREET MATERIALS					
Expand standard materials in use on streets and sidewalks	●	Review and assess materials in use	Planning & Sustainability	NYCDDC, NYCDPR, NYCCMB, NYCEDC, NYCDOP	
	●	Compile best practices database			
	●	Develop and adopt new materials palette based on visual impact, cost, sustainability, durability, and maintenance			
TRUCK DAMAGE					
Reduce truck damage to low bridges	●	Begin improvements in signage and enforcement to warn trucks in advance of low structures	Planning & Sustainability	Bridges	NYSDOT Truck industry cooperation
	●	Implement pilot project to place signage on four bridge fascia locations			

Legend	● Completed	● In Progress	● Pending
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INFRASTRUCTURE

ACTIONS

FERRY MAINTENANCE AND REPAIR

Issue restructured contract for ferry dry-docking

Issue RFP for fleet planning & replacement

Increase preventive maintenance for ferry fleet, terminals, and support facilities

AGENCY VEHICLE REPLACEMENT

Review fleet, productivity problems of worn vehicles, and adopt new policy

Progress

2007-2009

Lead Divisions

Supporting Divisions or Agencies

Action outside DOT



Carry out all scheduled dry dockings on schedule

Ferries

Finance-ACCO



Issue RFP

Ferries

Finance-ACCO



Implement preventive maintenance program for the ferry fleet, the Cosgrove, and service vessels, and the inclusion of maintenance work at Whitehall, St. George, the ferry maintenance facility, and the fuel pier

Ferries

Funding



Begin normal replacement cycle for DOT vehicles

RRM

PMO

Funding

Legend Completed In Progress Pending

ACTIONS

Progress

2007-2009

Lead Divisions

Supporting Divisions or Agencies

Action outside DOT

GREENING

STORM WATER

Develop and implement innovative storm water management techniques

- Coordinate with DEP to create streets that detain a maximum volume of storm water
- Increase the use of permeable surfaces and porous pavements to decrease runoff
- As part of our greenstreets program, in coordination with DPR, create planted medians, curb extensions, and traffic triangles to capture storm runoff

Planning and Sustainability

PRM
S.M.
NYCDDC
NYCDEP

Funding

CLEAN FUEL

Expand alternative fuels program

- Include clean fuel/high MPG/clean engine technologies in all DOT vehicle procurements and retrofits

Planning and Sustainability

Ferries:
RRM

Funding

Implement Staten Island Ferry clean fuels strategy

- Install and upgrade emission reduction technology on all Staten Island Ferry passenger ferries

Ferries

Planning and Sustainability

Funding

VEHICLE REDUCTION

Reduce vehicle trips by DOT employees

- Review city-wide parking placards and policies
- Reduce agency parking placards by 30%, possibly with vehicle pool or car-sharing
- Adopt an at-work agency travel policy urging DOT employees to use the most sustainable possible method of work-related transportation

Planning and Sustainability

FDIC Traffic

Funding

Legend ● Completed ● In Progress ● Pending

GREENING

ACTIONS

Progress

2007-2009

Lead Divisions

Supporting Divisions or Agencies

Action outside DOT

REDUCE ENERGY AND RESOURCE CONSUMPTION

Reduce energy demands of DOT facilities

- Conduct annual audits and generate reports for all DOT facilities to maximize reduction of electricity use, air pollution, and water use
- Activate photovoltaic system at the Whitehall Ferry Terminal and continue to maintain "Living Roof" at the St. George Ferry Terminal

HR and Facilities

Ferries, DDC, DCAS

Improve efficiency of street lights and traffic signals

- Replace street lights throughout Brooklyn and Queens with lower-wattage bulbs
- Replace 250-watt lamps with 150-watt lamps along highways
- Identify new DOT projects to reach citywide goals of 30% energy reduction

Traffic

Mayor's Office

Funding

Reduce DOT's resource consumption

- Cease purchasing plastic water bottles at the new 55 Water Street offices
- Explore the feasibility of switching to non-toxic cleaning supplies at 55 Water Street and other DOT leased facilities as building maintenance contracts permit

HR and Facilities

FD/C, Legal

RECYCLED ASPHALT PAVING

Expand in-house and vendor use of recycled asphalt

- Maximize use of Recycled asphalt pavement (RAP) to avoid use of nearly 840,000 barrels of oil and 321,000 local truck miles

RRM

Legal, Commissioner's Office

NYSDOT Department of Environmental Conservation approval

SPILL PREVENTION

Achieve compliance with local, state, and federal regulations

- Implement spill prevention control and countermeasure plans at 14 DOT locations
- Conduct location specific training to emphasize proper waste management and spill prevention practices

Legal

HR and Facilities

New Goals for 2009

- DOT is developing a car sharing system pilot for its Lower Manhattan-based units. When it is launched this year, the car share system will establish a vehicle pool of 20 shared vehicles that will replace 57 vehicles dedicated to specific units.
- NYCDOT will expand its large scale alkaline battery recycling program.

Legend ● Completed ● In Progress ● Pending

ACTIONS	Progress	2007-2009	Lead Divisions	Supporting Divisions or Agencies	Action outside DOT
FOSTER COLLABORATION WITH COMMUNITIES					
Use web site to better engage citizens	●	Post information on all current and ongoing projects	External Affairs	CCL, BCs, PMCC, NYSDOT	Funding
	●	Develop online feedback forms for all planning projects			
Coordinate all constituent databases	●	Develop regular "Ask the Commissioner" feature			
	●	Update online "report a problem" forms			
	●	Taxi text pilot			
Coordinate all constituent databases	●	Plan for consolidated system including 311, CCU, and BC systems	External Affairs	CCU, M.S, BCs, PMO	
TRAIN COMMUNITY LEADERS					
Deploy program to educate and train	●	Develop training materials and pilot with one Community Board in each borough	External Affairs	BCs	Funding
	●	Educate and train community board chairs, district managers, and heads of CB transportation committees			
NEIGHBORHOOD TRANSPORTATION STUDY PROGRAM					
Develop new neighborhood transportation study program	●	Review strengths and weaknesses of current and recent neighborhood efforts-recommend steps to strengthen such work, including streamlining time frame for implementing study findings	Planning and Sustainability, Traffic	BCs	
EMERGENCY RESPONSE					
Enhance emergency response capabilities	●	Ensure dissemination of emergency information in a critical situation via street level electronic roadway signage	SIM-Emergency Response	Traffic, NYC/OEM, Mayor's Office, NYPD	Transcom
	●	Continue to work with NYPD, OEM, Fire Department New York, and the NYC Department of Environmental Protection (DEP) for better sharing of information			
	●	Upgrade the TMC and share facility with NYSDOT and NYPD			
IMPROVE CUSTOMER SERVICE FOR FERRY PASSENGERS					
Enhance services and outreach to ferry passengers	●	Continue working with EDC to lease out retail space to high quality providers	Ferries		Funding
	●	Improve communication options for Staten Island Ferry passengers			
Augment services and outreach to stakeholders and customers	●	Continue meetings with Ferry Riders' Association and other relevant stakeholders	External Affairs	Ferries, NYC & Co	
	●	Develop bi-annual Ask the Ferry program			

New Goals for 2009

- Create a searchable database of citywide curbside parking regulations and make it available through DOT's website.
- DOT will provide a better user interface for computers and mobile devices for its traffic cameras and also provide new information about traffic speeds, allowing the public to make more informed travel decisions and avoid congested routes with real-time information on traffic conditions. DOT will also make more of its map-based data available in open source standards via its website.

Legend ● Completed ● In Progress ● Pending

ACTIONS

Progress

2007-2009

Lead Divisions

Supporting Divisions or Agencies

Action outside DOT

INCREASE CAPACITY FOR PLANNING, RESEARCH, AND COMMUNICATIONS

Build staff capacity of division of Planning and Sustainability

- Created new units, Public Plazas, and Urban Art and Design
- Enhance and align strategic planning and alternative fuels units with new division strategies

HR and Facilities

NYCOMB

Elevate the profile of research in policy and operations

- Inventory major research activity within the Department, compile, and distribute
- Initiate symposia featuring DOT personnel and guests, both within the department and in conjunction with other institutions-agencies & universities
- Develop forward-looking research agenda and begin outreach to universities to explore collaboration

Commissioner's Office

FD/C, NYCOMB

Create strategic communications strategy

- Create communications working group
- Identify and develop marketing campaigns with Dept. staff and outside experts to promote safety and sustainable transportation
- Issue RFP for ad agencies to create campaign content and adopt criteria to measure campaign efficacy

External Affairs

BCs

IMPLEMENT AGENCY WIDE PROJECT MANAGEMENT PROCEDURES

Analyze project and portfolio management throughout the department

- Created office of project management and develop scope of work
- Initiate study of project management and delivery issues through a series of case studies
- Implement preliminary recommendations from case studies

PMO

Planning and Sustainability, Finance, Commissioner's Office

improve Federal and projects

OVERHAUL DATA COLLECTION

Develop data collection needs and plans for new priorities

- Develop and implement data tracking strategies for congestion relief and BRT
- Conduct public life surveys at selected spots

MIS

Planning and Sustainability, PMO, Traffic

Create new performance measures

- Review key agency-wide, divisional, and city transportation performance measures
- Create new internal performance measures where necessary and a means of collecting and reporting additional data
- Align Citywide Performance Reporting indicators with new agency initiatives

PMO

Mayor's Office of Operations

Coordinate data collection with partner agencies

- Work with partner agencies to bring shared data such as accident reports closer to real-time

MIS

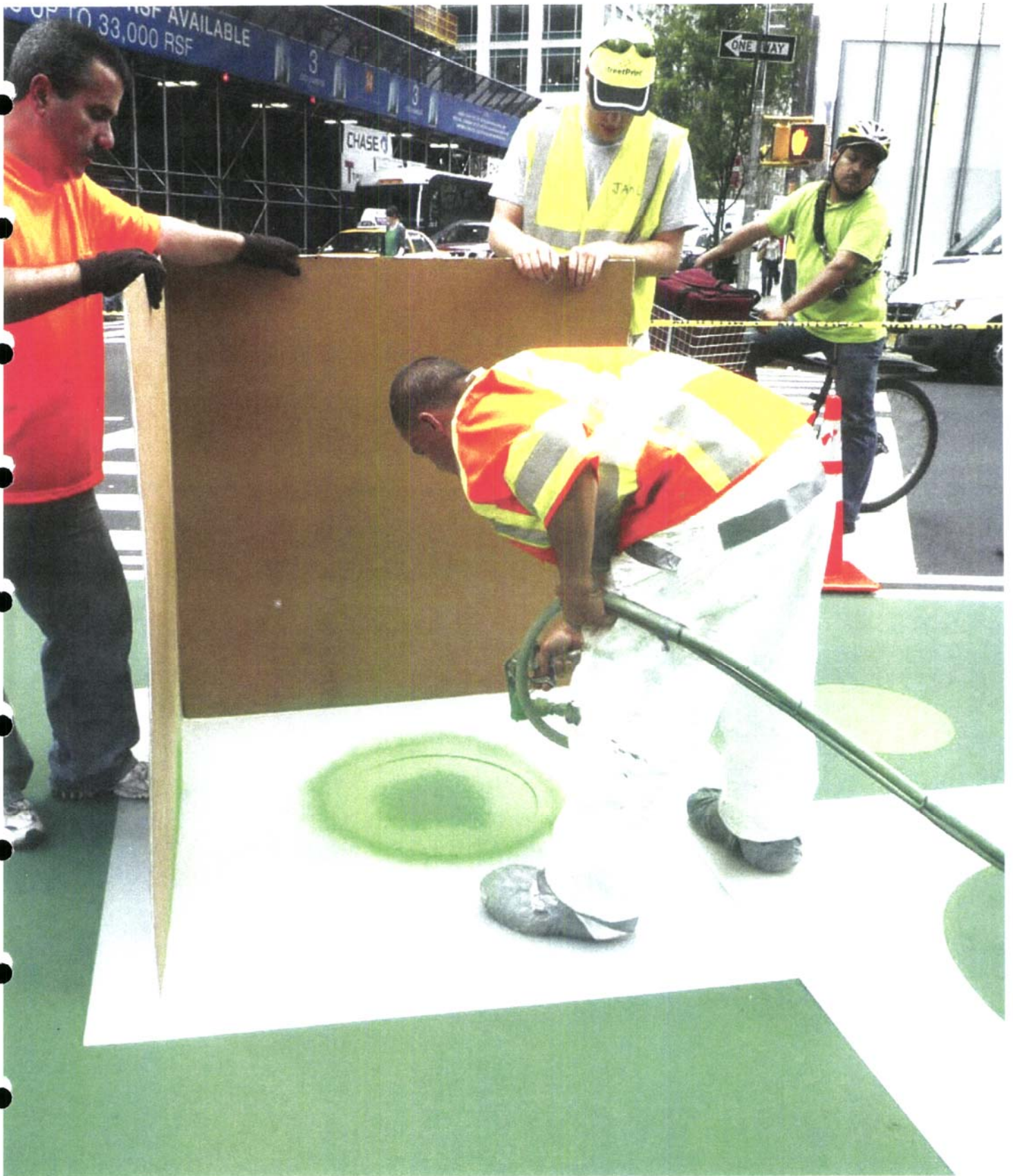
NYPD, NYSDOT

Legend ● Completed ● In Progress ● Pending

ACTIONS	Progress	2007-2009	Lead Divisions	Supporting Divisions or Agencies	Action outside DOT
ATTRACT AND RETAIN A TOP NOTCH STAFF					
<p>Develop enhanced succession planning and recruitment strategies</p>	●	Analyze essential operational roles and develop succession planning strategy	HR and Facilities	DCAS	Funding
	●	Strengthen university partnerships and augment recruitment strategies to increase the available pools of qualified candidates			
<p>Expand innovative professional development initiatives</p>	●	Initiate internal "DOT Fellows" management program where a cohort of staff learn about different parts of the agency and City Government through site visits and speakers	HR and Facilities	FDIC	Funding
	●	Encourage employees to take advantage of professional development opportunities			

GLOBAL LEADERSHIP

Legend	●	Completed	●	In Progress	●	Pending
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New York City Department of Transportation







NEW YORK CITY



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EXHIBIT H TO MCCAMPHILL AFFIRMATION - NEW YORK CITY DEPARTMENT OF TRANSPORTATION WEBPAGE — “TRAFFIC SIGNALS” [411 - 413]

NYC DOT

INFRASTRUCTURE [[infrastructure.shtml](#)]

Traffic Signals

Report a Problem

To report a problem with a traffic or pedestrian signal, call 311. Please have the exact location of the problem ready.

DOT's contractors are required to arrive at the scene of the most serious problems (e.g., all lights out, or a knocked-down pole) within two hours of notification. If a bulb is out, contractors are required to respond within 48 hours.

Accessible pedestrian signals

DOT installs special signals at crosswalks to assist blind or low vision pedestrians. The signals make sounds and vibrate when pedestrians push a button installed at the crosswalk.

» [Learn more and see a list of all accessible pedestrian signals \(\[accessiblepedsignals.shtml\]\(#\)\)](#) in New York City

Exclusive pedestrian signals

At some intersections, DOT programs traffic signals with an interval that stops traffic in all directions, giving pedestrians an exclusive time to cross the street.

» [Learn more and see a list of all exclusive pedestrian signals \(\[exclusive-ped-signals.shtml\]\(#\)\)](#) in New York City

Leading pedestrian interval signals

Traffic signals at some intersections give pedestrians a head start to cross the street before car traffic.

» [Learn more and see a list of all leading pedestrian interval signals \(\[leading-ped-intervals.shtml\]\(#\)\)](#) in New York City

Frequently asked questions about traffic signals

What does a traffic signal do?

A traffic signal controls the right-of-way for vehicles arriving at an intersection, which can reduce traffic delay and accident-producing conflicts. It also makes an intersection safe by determining whether vehicles or pedestrians should proceed.

Does a traffic signal control speed?

No. In some areas where speeding is a problem, residents believe that a traffic signal is needed to address the speeding problem. In fact, traffic signals sometimes result in greater speeds as drivers accelerate to try to get through the signal before it turns red. Other traffic control measures, such as speed humps, speed limit signs, and traffic enforcement, are more effective in controlling speed.

How many traffic signals are there in New York City?

As of June 30, 2011, there were 12,460 intersections with traffic signals citywide, including 2,820 in Manhattan, 1,605 in the Bronx, 4,371 in Brooklyn, 3,119 in Queens and 545 in Staten Island.

How long does it take lights to change?

Signal timing cycle lengths usually fall between 45 and 120 seconds. The timing for each signal is determined based on traffic volume and traffic patterns in each particular area.

A traffic signal's cycle is too long or too short, will DOT change it?

Sometimes the presence of a traffic signal will result in changes in the previous traffic patterns, as some drivers seek alternative routes to avoid the signal. This may mean that the current signal timing is no longer appropriate. If you believe that the timing of a particular signal is incorrect, [contact the Commissioner \(\[./contact/contact-form.shtml\]\(#\)\)](#) with your request. DOT will conduct a study of traffic patterns to determine if any adjustments are needed. A study will take approximately 12 weeks.

How can I request a new traffic signal?

You can request the installation of a traffic signal by [writing to the Commissioner \(\[./contact/contact-form.shtml\]\(#\)\)](#). You can also request an accessible pedestrian signal, which plays audible messages to assist visually impaired users.

How does DOT decide whether a traffic signal should be installed at an intersection?

DOT uses a detailed process called an intersection control study to determine if traffic signals or multi-way stop signs are appropriate for a location. The study includes (but is not limited to) these steps:

- DOT inspectors check all agency records (e.g. sign orders, pavement marking orders, school maps) for the location.
- A DOT inspector conducts a field investigation to create a Condition Diagram of the location. This diagram shows street and sidewalk widths, location geometry, street directions, location and conditions of DOT signs and markings, land use, street furniture, distance to the nearest traffic control

device, and other information.

- The inspector completes a Field Observation Report which has a checklist of conditions at the location. This includes drivers' compliance with existing controls, geometric or sight distance issues, and violations of the speed limit.
- DOT inspectors conduct manual counts of the number of vehicles and pedestrians, usually during morning and evening rush hours. Counts include the number of turning vehicles, and may also include counts during and after school hours or during off-peak hours.
- DOT may install Automatic Traffic Recorders (ATRs) to collect hourly vehicle volumes over a period of several weekdays or weekends.
- At designated school crossings, DOT determines the number of safe crossing opportunities for schoolchildren by recording the frequency and adequacy of gaps between vehicles.
- Sometimes DOT conducts spot speed studies to determine the 85th percentile speed of vehicles (the speed at which 85% of vehicles are traveling at or below) as they approach the location.
- DOT reviews the New York Police Department Accident Index System, which contains up-to-date summaries of accidents at the location. DOT also evaluates individual accident reports (MV-104) for the location.

DOT then compares all of the data collected to the warrants outlined in the Federal guidelines to determine if it is appropriate to install a traffic signal or a multi-way stop. If the data does not meet the warrants, DOT will not install a traffic signal or multi-way stop sign. In these instances, DOT frequently finds other ways to improve traffic conditions.

What are the Federal Guidelines for traffic signals?

The federal standards for traffic control devices can be found in the Manual on Uniform Traffic Control Devices (MUTCD), which is published by the Federal Highway Administration (FHWA). The MUTCD establishes criteria known as "warrants" which are used to determine if a new traffic signal is appropriate.

The latest edition of the MUTCD, published in 2009, sets forth nine warrants, which are summarized below.

» [Learn more about the MUTCD on the FHWA web site \(http://mutcd.fhwa.dot.gov/\)](http://mutcd.fhwa.dot.gov/)

1. Eight-Hour Vehicular Volume — For each of any 8 hours of an average day, there is a heavy volume of intersecting traffic, or the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.
2. Four-Hour Vehicular Volume For each of any 4 hours of an average day, there is a heavy volume of intersecting traffic.
3. Peak Hour — For a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.
4. Pedestrian Volume — The traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.
5. School Crossing — The number of adequate gaps in the traffic stream during the period when schoolchildren are using designated school crosswalks on the major street must be less than the number of minutes in the same period.
6. Coordinated Signal System — A signal is necessary as part of a coordinated signal system to maintain proper platooning of vehicles.
7. Crash Experience — The severity and frequency of preventable crashes that have occurred within a 12-month period reduce the thresholds in the vehicle volume warrants.
8. Roadway Network — A signal might be justified to encourage concentration and organization of traffic flow on a roadway network when two or more major routes intersect.
9. Intersection Near a Grade Crossing — There is proximity to the intersection of a grade crossing on an intersection approach controlled by a STOP or YIELD sign and heavy vehicle volumes.

What is the Red Light Camera Program?

The Red Light Camera Program uses technology that enables DOT to automatically take high-resolution photographs of vehicles that go through red lights, including close-ups of the license plates. Summonses are issued to the owners of the vehicles, as with parking violations. The photos are included with the summonses. The City had the first full-time red light photographic enforcement program in the United States, and was the first jurisdiction to send photos to respondents as part of the summons.

Are red light cameras effective in preventing drivers from running red lights?

Studies have shown a 40 percent decrease in the total number of incidents of motorists going through red lights at the locations where cameras have been installed. That means fewer accidents, making New York City much safer for pedestrians and other motorists.

Since the Red Light Camera program began in December 1993, more than 4 million summonses have been issued through 2007. Because the summonses include photographs of the vehicle going through the intersection, very few motorists have contested the summonses. About 88% have been found guilty.

In April 1998, legislation was enacted that authorized DOT to install cameras at 50 locations throughout New York City. In June 2006, legislation was enacted authorizing an additional 50 cameras. Another 50 cameras, for a total of 150, were authorized in legislation enacted in April 2009.

» [Learn about paying and contesting red light camera violations \(http://www.nyc.gov/html/dof/html/parking/park_red_light.shtml\)](http://www.nyc.gov/html/dof/html/parking/park_red_light.shtml) from the Department of Finance

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**EXHIBIT I TO MCCAMPHILL AFFIRMATION -
ONLINE PRESS RELEASE — “NYC DOT ANNOUNCES EXPANSION OF MIDTOWN
CONGESTION MANAGEMENT SYSTEM, RECEIVES NATIONAL
TRANSPORTATION AWARD” [414 - 415]**

NYC DOT

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Press Releases

FOR IMMEDIATE RELEASE

Press Release #12-25

Tuesday, June 5, 2012

Seth Solomonow/Nicholas Mosquera: (212) 839-4850

NYC DOT Announces Expansion of Midtown Congestion Management System, Receives National Transportation Award

First phase of Midtown in Motion has resulted in an overall 10% improvement in travel speeds, wins transportation technology award from ITS America

New York City Department of Transportation (DOT) Commissioner Janette Sadik-Khan today announced the expansion of Midtown in Motion, the congestion management system implemented last year to improve traffic conditions in Midtown by enabling city traffic engineers to identify and respond to traffic conditions in real time. The service area will more than double in size to include Midtown from 1st to 9th avenues and from 42nd to 57th streets. Installed in July 2011, the first phase of the program included 100 microwave sensors, 32 traffic video cameras and E-ZPass readers at 23 intersections to measure traffic speeds. Over the course of the year, engineers in DOT's Traffic Management Center (TMC) used the technology to quickly identify congestion issues as they occurred and use networked Advanced Solid State Traffic Controllers (ATSC) to remotely adjust Midtown traffic signal patterns, unplug bottlenecks and smooth the flow of traffic. Preliminary results of the first phase showed an overall 10% improvement in travel times on the avenues in the 110-block service area, as measured by E-ZPass readers, and taxi GPS data showed similar results. The expanded service area, covering more than 270 square blocks, will include an additional 110 microwave sensors, 24 traffic video cameras, and 36 E-ZPass readers, and will be fully operational this September, allowing engineers to respond to congestion throughout the heart of Midtown. Intelligent Transportation Society of America (ITS America) president Scott Belcher also awarded Commissioner Sadik-Khan a Smart Solution Spotlight award for using innovative technology to reduce congestion and minimize pollution.

"When Midtown moves, New York City moves," said Commissioner Sadik-Khan. "While every New Yorker talks about beating the traffic, by extending Midtown in Motion and speeding our reaction times to trouble spots, we've taken decisive steps towards managing it more effectively. We also welcome this Smart Solution Spotlight award for shining a light on our non-stop efforts to keep New Yorkers moving."

"From cameras to microwave sensors and EZ-pass readers to Advanced Solid State Traffic Controllers, Midtown in Motion is a showcase of the most sophisticated intelligent transportation solutions available to public agencies," said Scott Belcher, President and CEO of ITS America. "ITS America is excited to recognize this comprehensive use of technology and real time data which has resulted in a highly successful deployment that can be replicated in cities throughout the country."

"Innovative systems like 'Midtown in Motion' help keep America moving," said Federal Highway Administrator Victor Mendez. "This technology improves safety and reduces traffic congestion for drivers, bicyclists and pedestrians, which makes a big difference as they go about their day to day activities."

The cost of this Midtown in Motion expansion is \$2.9 million, with \$580,000 of that contributed by the City, and the remainder by New York State. A further \$2 million is being invested in 200 new ASTCs, \$1.6 million of that from the Federal Highway Administration and the remainder from the City. All Midtown in Motion data is transmitted wirelessly to the TMC in Long Island City, where engineers can immediately identify congestion issues and adjust the latest generation of networked traffic signals. Midtown in Motion, the TMC, and ASTCs are just some of the results of the nearly \$300 million DOT has invested in traffic management tools and advanced technology across the city, an important part of the more than \$4.9 billion dedicated to more than 800 capital projects and state of good repair initiatives over the last five years.

The 200 new ATSCs to be installed in conjunction with this Midtown in Motion expansion bring the citywide total to nearly 9,000. These new signals can be adjusted to more evenly distribute traffic flow, helping to clear congested areas, or allowing engineers to clear isolated backups caused by collisions or double-parked vehicles. On avenues, the ATSCs also allow engineers adjust signal timing plans, giving them the ability to choose a simultaneous signal progression, where all signals change concurrently, or a traffic signal progression, with which drivers travelling a constant speed encounter green lights as they move along a corridor. In addition to the role these controllers play in Midtown in Motion, this state-of-the-art equipment is also more weather-resistant and tamperproof, and requires less maintenance than previous generations, which could only be adjusted based on time of day, leaving no ability to respond to crashes, construction, or special events. DOT is nearing its goal of having all 12,500 signalized intersections converted to this advanced technology by the end of 2013.

The real-time Midtown in Motion traffic information is available on DOT's website, on smartphones and tablets and is also accessible to app developers in New York's burgeoning technology industry. All of this data transmission is made possible by the New York City Wireless Network (NYCWIn), developed by the Department of Information Technology and Telecommunications. NYCWiN provides real-time access to voice, video, and data

communications throughout the five boroughs for agency and emergency use. This innovative application of technology in the reduction of greenhouses gas emissions and air pollution is one of the top priorities of PlaNYC.

For more information, visit www.nyc.gov ~~http://www.nyc.gov/~~.

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