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COMMITTEE ON TRANSPORTATION
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Oversight – Improving New York City's Subway System

INTRODUCTION

On August 8, 2017, the Committee on Transportation, chaired by Council Member Ydanis Rodriguez, will hold an oversight hearing on improving the New York City subway system. The Committee expects to hear testimony from representatives of the Metropolitan Transportation Authority (MTA) as well as other interested stakeholders.

With the recent surge in subway delays and disruptions, public outcry is growing and questions abound regarding the MTA's funding and its ability to keep the transit system in a state of good repair. Subway delays have soared to more than 70,000 delays per month, from about 28,000 per month in 2012.[1] In response to a number of recent incidents and growing pressure from the public, on June 29, 2017, Governor Andrew Cuomo declared the subway system was in a "State of Emergency,"[2] ordering the MTA to prepare a reorganization plan within 30 days and a review of its capital plan within 60 days.[3] Governor Cuomo also ordered the State's Public Service Commission, which regulates Con Edison, to conduct a 90-day review of the MTA's power system.[4]

MTA SUBWAY ACTION PLAN

On July 25, 2017, MTA Chairman Joe Lhota announced a new Action Plan to stabilize and improve the subway system.[5] Phase I of the plan focuses on the key drivers of 79% of "major incidents" causing delays in the system – 54% of these types of delays are caused by

[1] Emma G. Fitzsimmons, *Subway's Slide in Performance Leaves Straphangers Fuming*, N.Y. TIMES (Feb. 12, 2017), *available at* https://www.nytimes.com/2017/02/12/nyregion/subway-complaints-straphangers-fuming.html.
[2] Office of Governor Andrew M. Cuomo, Exec. Order No. 168, (Jun. 29, 2017), *available at* https://www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/Executive_Order_Disaster_Emergency.pdf; *see also* Emma G. Fitzsimmons, *Cuomo Declares a State of Emergency for New York City Subways*, N.Y. TIMES (Jun. 29, 2017), *available at* https://www.nytimes.com/2017/06/29/nyregion/cuomo-declares-a-state-of-emergency-for-the-subway.html?_r=0.
[3] Emma Whitford, *Cuomo Declares MTA 'State of Emergency,' Complains about 'Nasty' Tweets*, GOTHAMIST (Jun. 29, 2017), *available at* http://gothamist.com/2017/06/29/cuomo_mta_emergency_funds.php.
[4] *Id.*
[5] Metropolitan Transportation Authority, *NYC Subway Action Plan*, http://www.mtamovingforward.com/files/NYC_Subway_Action_Plan.pdf (*last accessed* Aug. 7, 2017) [hereinafter *NYC Subway Action Plan*].

signals, track and power; 4% by stations; 7% by medical incidents; 5% by fire; 5% by car problems; and 4% by water issues.[6] Phase I includes more than 30 action items (see chart below), many of which are expansions of action items from previous plans and are designed to deliver improvements within a year.[7] The MTA projects that Phase I will cost approximately $456 million in operating costs, which covers hiring 2,700 additional employees, plus $380 million in capital costs.[8] The MTA called on the State and the City to split the cost, though Mayor Bill de Blasio has instead called on the Governor to fund the entire cost by using state resources such as MTA-dedicated tax revenues previously diverted to the State's general fund.[9]

Signal and Track Maintenance
• Expediting the repair of 1,300 signals detected to be the most problematic by the end of 2018. • Launching an emergency Water Management Initiative in order to seal leaks with chemical grouting, clean 40,000 street grates to ensure proper water diversion, and eliminate debris that is clogging drains. • Cleaning the entire underground subway system to remove debris and reduce fire hazards. • Accelerating the repair of potential track issues across the entire underground system, dispatching 31 specialized teams that will target the places with the highest rate of incidents. • Tripling the rate of installation of continuous welded rail and increasing track welding capacity by 30%. • Installing 50,000 friction pads over the next 16 months to increase resiliency of the rail and reduce incidents impacting service. • Tripling the number of Combined Action Teams, which consist of specialists from a variety of disciplines who can respond to a range of track, power, and signal issues, cutting response time from 45 minutes to 15 minutes.
Car Reliability
• Expanding major overhaul capacity from 950 to 1,100 cars per year. • Adding an additional full repair and maintenance shift so that the maintenance shop can be open 24/7.

[6] *NYC Subway Action Plan*, *supra* note 5.
[7] *Id.*
[8] *Id.*
[9] Press Release, Office of Mayor Bill de Blasio, *The Money for the MTA's Subway Crisis Plan is in Governor Cuomo's Budget*, Jul. 27, 2017, *available at* http://www1.nyc.gov/office-of-the-mayor/news/524-17/the-money-the-mta-s-subway-crisis-plan-in-governor-cuomo-s-budget.

- Prioritizing the inspection and repair of doors, with the goal of inspecting and repairing every car door system within a year.
- Adding 20 pre-positioned Emergency Subway Car Response Teams at 12 locations, supported by 5 mobile repair trucks, to ensure faster response times.
- Adding cars to trains where possible. Certain lines, such as the C line, have platforms that are currently longer than trains.
- Launching a pilot program to remove seats from some cars, increasing capacity on the 42nd Street Shuttle and the L by 25 riders per car. A similar pilot program in Boston begun in 2008 received mostly negative feedback, was scaled back two years later, and is planned to be phased out completely by 2023.[10]
- Including interior upgrades as part of the regular maintenance cycle to improve the customer experience.

System Safety and Cleanliness

- Calling on the NYPD to increase its police presence in stations to enforce the law and deter illegal activity such as harassment, panhandling, and littering (in an effort to reduce track fires caused by trash).
- Launching an aggressive public awareness campaign to educate customers on the consequences of littering.
- Increasing the frequency of heavy-duty station cleaning by 30%, from every 6 weeks to every 4 weeks.
- Expanding the number of stations across the system with dedicated EMTs from 5 to 12 teams to respond faster to sick customer incidents.
- Launching a station program to repaint, repair tile, service elevators and escalators, and conduct a deep cleaning at "priority stations" across the network.

Customer Communications

- Revising communications protocols and providing clearer, more timely information to customers during incidents, including less reliance on generic, pre-recorded announcements.
- Providing better information about the work the MTA is doing to the system.
- Overhauling communication assets, including launching a new, integrated MTA app.
- Providing data in an open protocol basis for software developers to use.
- Placing MTA Customer Representatives at high-traffic stations to provide guidance to customers.
- Accelerating the system-wide installation of countdown clocks, to be completed by the end of this year.
- Clearer signage for planned service changes.
- Retraining staff to improve communication with customers.

Critical Management Group

- Rebuilding the management and operations organization to eliminate silo-based decision

[10] *See* Jaclyn Weiner et al., *Removing seats from subways could lead to this scary problem*, N.Y. POST (Jul. 26, 2017), *available at* http://nypost.com/2017/07/26/removing-seats-from-subways-could-lead-to-this-scary-problem/.

making, in an effort to achieve faster and more effective solutions.
- Establishing an MTA-wide Emergency Operations Center at MTA HQ that brings together key decision makers who monitor incidents in real time and rapidly dispatch resources.
- Adding a State Public Service Commission power utility representative to the Critical Management Group.
- Empowering MTA staff to encourage initiative and invest in training across all disciplines. According to a recent report released by the University Transportation Research Center, New York City Transit is facing major staffing issues. 45% of all managers are over the age of 55 and 20% are 65 or older. The report concluded that coupled with the agency's inability to retain young recruits, this will require the MTA to improve both its culture and its hiring practices.[11]
- Streamlining the procurement processes and transforming the MTA's approach for major capital investments.

Phase II of the Action Plan includes approximately $8 billion worth of capital investment in the MTA's 2020-2024 Capital Plan focused on signals, rolling stock (train cars), and communications technology, including incorporating ideas from the ongoing Genius Competition launched by Governor Cuomo to solicit ideas for improving the subway system.[12] The MTA is expected to complete the review of the current capital plan by the end of August.

Con Edison also recently issued its plan to address power issues that often result in disruptions to subway service.[13] Its plan includes:[14]

- Identifying subway stations and other MTA facilities where design changes or equipment upgrades can be made with power line connections that will help prevent service interruptions to signals or track systems.
- Inspecting all signal-related structures.
- Installing monitoring devices to help proactively deploy crews once even small defects are detected.
- Accelerating planned installation of smart meters and advanced communications technology in the subway system, to be completed by mid-March 2018, which will

[11] University Transportation Research Center (UTRC), *Major Workforce Challenges Confronting New York City Transit* (May 2017), *available at* http://www.utrc2.org/sites/default/files/Final-Report-Major-Workforce-Challenges.pdf.
[12] *NYC Subway Action Plan*, *supra* note 5.
[13] Press Release, Con Edison, *Statement From Con Edison Re: MTA Project Plan*, (Jul. 27, 2017), *available at* https://www.coned.com/en/about-con-edison/media/news/20170727/statement-from-con-edison-mta-project-plan.
[14] *Id.*

provide Con Edison with control rooms with near-immediate notification of equipment and/or power quality issues.

- Replacing selected vulnerable secondary cable feeding stations and on the blocks outside these stations at approximately 50 critical stations by the end of 2017.
- Developing a plan with the MTA to maintain a supply of generators that can be deployed immediately to respond to service disruptions.
- Working to better understand how power quality issues affect train operations and identify ways to remedy those issues.

BACKGROUND

I. Historic Context of the Subway System and the MTA

New York City's first official subway system opened in Manhattan on October 27, 1904, a 9.1-mile long subway line operated by the Interborough Rapid Transit Company (IRT) that consisted of 28 stations from City Hall to 145th Street and Broadway.[15] In 1915, the Brooklyn Rapid Transit Company (BRT), which was later taken over by the Brooklyn-Manhattan Transit Corporation (BMT), began subway service between Brooklyn and Manhattan.[16] In 1932, the City's Board of Transportation constructed a new line along Eighth Avenue and created the Independent Rapid Transit Railroad (IND).[17] When the City purchased the BMT and IRT in 1940, it became the sole owner and operator of all New York City subway and elevated lines.[18] The City also acquired private bus and trolley routes.[19] Today, the subway system includes 472 stations, 665 miles of track, and 24 lines. It operates 24 hours per day, 7 days per week, and serves 6 million riders every day.[20]

On June 15, 1953, the State Legislature created the New York City Transit Authority (NYCTA) as a public benefit corporation to manage and operate all City-owned bus, trolley, and

[15] Metropolitan Transportation Authority, New York City Transit – History and Chronology, http://web.mta.info/nyct/facts/ffhist.htm (*last accessed* Aug. 4, 2017).
[16] *Id.*
[17] *Id.*
[18] *Id.*
[19] *Id.*
[20] Metropolitan Transportation Authority, Introduction to Subway Ridership, http://web.mta.info/nyct/facts/ridership/ (*last accessed* Aug. 4, 2017).

subway routes.[21] By lease agreement dated June 1, 1953,[22] which has subsequently been amended and renewed, the City transferred to the NYCTA all of the transit facilities (and any other materials, supplies, and property incidental to the operation of such transit facilities) owned by the City at the time.[23] The lease agreement authorized the NYCTA "to take jurisdiction, control, possession and supervision of such transit facilities, materials, supplies and property."[24] State law and the lease agreement obligate the City to pay the NYCTA's capital costs, "provided, however, that the total amount of such capital costs which the authority may incur without the approval of the mayor in any city fiscal year shall not exceed five million dollars and that no other such capital costs shall be incurred by the authority without such approval."[25]

On March 1, 1968, the New York State Legislature created the Metropolitan Transportation Authority (MTA), a public benefit corporation, to oversee all transportation operations in the City and the suburban counties of Dutchess, Nassau, Orange, Putnam, Rockland, Suffolk and Westchester.[26] The MTA controls the NYCTA (now renamed MTA New York City Transit),[27] as well as the MTA Bus Company, MTA Long Island Rail Road, MTA Metro-North Railroad, MTA Bridges and Tunnels, and MTA Capital Construction.[28] The MTA is North America's largest transportation network, with an average weekday ridership of more than 8 million people.[29]

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[21] Metropolitan Transportation Authority, *supra* note 15; *see* Title 9 of Article 5 of the N.Y. Pub. Auth. Law.
[22] The lease agreement has since been amended and renewed on April 19, 1960; March 6, 1962; March 20, 1962; October 5, 1962; April 7, 1965; March 31, 1982; and April 11, 1995.
[23] N.Y. Pub. Auth. Law § 1203.
[24] *Id.*
[25] *Id.*
[26] Metropolitan Transportation Authority, *supra* note 15; *see* Title 11 of Article 5 of the N.Y. Pub. Auth. Law.
[27] N.Y. Pub. Auth. Law § 1201.
[28] Metropolitan Transportation Authority, The MTA Network, http://web.mta.info/mta/network.htm (*last accessed* Aug. 4, 2017).
[29] *Id.*

The MTA's Board consists of a Chairperson and 16 other voting members, two non-voting members, and four alternate non-voting members, all of whom are appointed by the Governor with the advice and consent of the State Senate.[30] Members are nominated by the Governor, with four recommended by the Mayor of the City of New York and one each by the county executives of Nassau, Suffolk, Westchester, Dutchess, Orange, Rockland, and Putnam counties (the members representing the latter four cast one collective vote).[31] The other voting members, including the Chairperson, cast one vote each (except that in the event of a tie vote, the Chairperson is allowed one additional vote).[32] The MTA's Capital Program Review Board, which must approve the MTA's capital program plan unanimously, is composed of one voting member each as recommended by the Governor's Office, the State Senate, the State Assembly, as well as the Mayor of the City of New York for the New York City Transit portion of the program.[33]

In the 1970s and 1980s, the subway system faced a crisis that grew out of years of underfunding and deferred maintenance.[34] In the postwar era, politics, economics, and increasing automobile dependence combined to weaken the financial condition of New York City Transit and the commuter railroads.[35] Weaker finances meant less capital investment and, in the City, much of that investment was spent on expansion projects that were never completed, rather than

[30] N.Y. Pub. Auth. Law § 1263; *see also* Metropolitan Transportation Authority, MTA Leadership, http://web.mta.info/mta/leadership/ (*last accessed* Aug. 4, 2017).
[31] *Id.*
[32] *Id.*
[33] N.Y. Pub. Auth. Law §§ 1269-a and 1269-b; *see also* Metropolitan Transportation Authority, *MTA Board Approves 2015-2019 Capital Program* (Oct. 28, 2015), *available at* http://www.mta.info/news-capital-plan/2015/10/28/mta-board-approves-2015-2019-capital-program.
[34] Mark Seaman et al., *From Rescue to Renaissance: The Achievements of the MTA Capital Program 1982–2004*, NYU Wagner Rudin Center for Transportation Policy & Management (Dec. 2004), *available at* https://wagner.nyu.edu/files/news/rescue.pdf.
[35] *Id.*

upkeep.[36] The result was that the subway and the commuter lines were depreciating at more than four times the rate of capital replenishment.[37] By some calculations, the subway alone had an estimated value of $40 billion in 1980, yet it was receiving less than $140 million annually for capital maintenance (in current dollars).[38] Consequently, in May 1981, then MTA Chairman Richard Ravitch appealed to then Governor Hugh Carey, members of the State Legislature, and then New York City Mayor Ed Koch, pleading "that prompt action be taken to meet the increasingly desperate situation of public transit in New York: first, by immediately enacting the MTA's capital legislation; and second, by adopting a subsidy program to alleviate the impact on the fare of MTA's spiraling deficit."[39] In June 1981, the State Legislature responded and passed the Transportation System Assistance and Financing Act of 1981, which gave the MTA authority to issue bonds for needed funding.[40] The following September, the first modern five-year capital program (1982-1986) totaling $7.2 billion was approved, thus initiating the decades long rebuilding of the City's public transportation system.[41] Soon after, capital programs for 1987-1991, 1992-1999, 2000-2004, 2005-2009, and 2010-2014 followed.[42] Today, the MTA is implementing its seventh iteration of the capital program, the 2015-2019 Capital Plan.[43] Funded totals through 2016 in current dollars are well over $100 billion.[44]

[36] Mark Seaman et al., *supra* note 34.
[37] *Id.*
[38] *Id.*
[39] Permanent Citizens Advisory Committee to the MTA, *The Road Back: A Historic Review of the MTA Capital Program* (May 2012), *available at* http://www.pcac.org/wp-content/uploads/2014/09/The-Road-Back.pdf.
[40] *Id.*
[41] *Id.*
[42] *Id.*
[43] Metropolitan Transportation Authority, *MTA Capital Program 2015-2019 Amendment No. 2* (May 2017), *available at* http://web.mta.info/capital/pdf/WEB2015-2019Program_reduced.pdf.
[44] Metropolitan Transportation Authority, MTA Publishes 2015-2019 Capital Program, Sept. 23, 2014, http://www.mta.info/news-capital-plan-five-year-plan-east-side-access-second-avenue-subway-lirr-metro-north-new-york (*last accessed* Aug. 4, 2017).

II. Current State of the Subway System

A. Recent Incidents

The New York City subway system and the passengers it transports have endured a number of serious service disruptions in the past several months. The incidents reveal major deficiencies within the MTA, both in its handling of incidents and in the overall operation of the system.

On Friday, April 21, 2017, a power outage at 7th Avenue and 53rd Street station in Manhattan disrupted the signal system, causing delays during the morning rush hour.[45] The delay caused a ripple effect on the B, D, F, M, A, C, E, J, Q, G, and R trains.[46] The MTA claimed that the disruption was due to Con Edison equipment malfunction that caused the signal system to lose power.[47] On Tuesday, May 9, 2017, another power outage occurred during morning rush hour at the DeKalb Avenue station in Brooklyn.[48] That power outage began at 8:30 a.m. and lasted several hours. Passengers complained that the MTA was not effectively communicating alternate travel options and the extent of the delay.[49] This was the second outage in three days on the Q, B, N, and R lines in Brooklyn.[50] The first outage took place on Sunday, May 7, a result of an explosion at a Con Edison substation, which caused service disruptions on Sunday afternoon.[51] The cause of the May 9th power outage is still unknown.[52]

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[45] Eli Rosenberg, *Why A Midtown Power Failure Snarled Your Morning Subway Commute*, N.Y. TIMES (Apr. 21, 2017), *available at* https://www.nytimes.com/2017/04/21/nyregion/manhattan-power-outage-subway-commute.html.
[46] *Id.*
[47] *Id.*
[48] Nicole Brown and Vincent Barone, *Power outage at DeKalb Avenue Causes service changes, delays, MTA says*, AMNY (May 9, 2017), *available at* http://www.amny.com/transit/power-outage-at-dekalb-avenue-causes-service-changes-delays-mta-says-1.13586278.
[49] *Id.*
[50] *Id.*
[51] *Id.*
[52] *Id.*

On June 5, 2017, during evening rush hour, passengers were stranded in an F train without power between the West 4th Street and Broadway-Lafayette Street stations.[53] Passengers were forced to wait in the train without air-conditioning and lights.[54] Passengers on the train were initially told that they were stuck because of train traffic; only after 30 minutes did the MTA announce that there was an equipment malfunction.[55] Passengers posted images on social media of train car windows covered with condensation. In total, passengers were stuck on the train for over 45 minutes.[56] The MTA is investigating the response time for the incident.[57]

On Tuesday, June 27, 2017, a southbound A train derailed at 125th Street.[58] The train careened off the track at 9:45 a.m.[59] The momentum caused one of the subway car doors to peel off and sparks from the derailed train caused a track fire.[60] The subway cars filled with smoke and hundreds of people were forced to evacuate both the derailed train and three other trains.[61] In total, 34 people suffered non-life-threatening injuries.[62] The MTA attributed the derailment to a replacement rail that was improperly secured from overnight work, and subsequently suspended two employees[63] The MTA worked extensively from Tuesday evening through early Wednesday morning to repair the tracks, signal switching mechanisms, and actual walls of the subway tunnel

[53] Sarah Maslin Nir, *A Hot Mess for F-Train Subway Riders Trapped in Cars*, N.Y. TIMES (Jun. 6, 2017) *available at* https://www.nytimes.com/2017/06/06/nyregion/f-train-subway-no-power-panic.html.
[54] *Id.*
[55] *Id.*
[56] *Id.*
[57] Maxine Powers, *This Night-mare commute on New York's F Train sounds an awful lot like the metro*, WASH. POST (Jun. 9, 2017), *available at* https://www.washingtonpost.com/news/dr-gridlock/wp/2017/06/06/this-nightmare-commute-on-new-yorks-f-train-sounds-an-awful-lot-like-metro/?utm_term=.ef9c9182890a.
[58] Noah Goldberg et al., *Two subway supervisors suspended in aftermath of A train derailment*, N.Y. DAILY NEWS (Jun. 28, 2017), *available at* http://www.nydailynews.com/new-york/subway-supervisors-suspended-train-derailment-article-1.3284904.
[59] *Id.*
[60] *Id.*
[61] *Id.*
[62] *Id.*
[63] *Id.*

that were damaged by the derailed train.[64] By the morning of June 28, 2017, service on the A, B, C, and D trains resumed with delays.[65]

Major incidents continued throughout the month of July. On July 17, 2017, a track fire blazed near St. Nicholas Avenue from 7:24 a.m. until 9:25 a.m.[66] Nine people were treated with non-critical injuries and B and C trains were suspended in both directions until 10 a.m.[67] On Friday, July 21, 2017, a southbound Q train derailed at 8:55 a.m.[68] The wheels on the second car of the train came off the track.[69] The train was carrying 135 passengers who were evacuated to the nearest station.[70] Delays continued on the B and Q lines until 5 p.m.[71] The MTA was not immediately able to identify the cause of the incident.[72] This was the fourth passenger train derailment in 2017.[73]

B. Impact of Declining Subway Service

Commuters have been frustrated by the poor, unpredictable, and sometimes dangerous subway service. The primary purpose of public transportation is to get people to work and other engagements on time, but when the system fails people, the economy suffers.[74] To gain a sense of the professional and personal consequences of subway delays, the Office of New York City

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[64] Jen Kirby, *MTA Says 'Improperly secured' rail cause of A train subway derailment*, N.Y. MAGAZINE (Jun. 28, 2017), *available at* http://nymag.com/daily/intelligencer/2017/06/mta-says-improperly-secured-rail-caused-a-train-derailment.html.
[65] *Id.*
[66] Aidan Gardiner, *9 People Injured after track fire suspends B and C trains, FDNY says*, DNA INFO (Jul. 17, 2017) *available at* https://www.dnainfo.com/new-york/20170717/inwood/b-c-train-subway-track-fire-fdny-mta.
[67] *Id.*
[68] Danielle Furfaro and Natalie Musumeci, *Another Subway derails during 'Summer of Hell',* N.Y. POST (Jul. 21, 2017), *available at* http://nypost.com/2017/07/21/another-subway-derails-during-summer-of-hell/.
[69] *Id.*
[70] *Id.*
[71] *Id.*
[72] *Id.*
[73] *Train derailment alter B/Q service in Brooklyn; Signal problems impact service in Queens*, NY1 NEWS (Jul. 21, 2017), *available at* http://www.ny1.com/nyc/all-boroughs/news/2017/07/21/rail-condition-causes-friday-rush-delays-.html.
[74] Emma G. Fitzsimmons, *'Money Out of Your Pocket:' New Yorkers Tell of Subway Delay Woes*, N.Y. TIMES (May 31, 2017), *available at* https://www.nytimes.com/2017/05/31/nyregion/money-out-of-your-pocket-new-yorkers-tell-of-subway-delay-woes.html.

Comptroller Scott Stringer conducted a citywide survey of subway riders in June 2017.[75] In the survey of 1,227 riders, the Comptroller's Office found that declining subway service adversely affected the job security, family life, and health of riders.[76] Among survey respondents who were employed, subway delays in the last three months caused 74% of respondents to be late for a work meeting, 18% to be reprimanded and 13% to lose wages.[77] An additional 22% of respondents were late for a job interview due to subway delays and 2% reported that they were fired.[78] Outside of work, 65% of parents said that they had been late to pick up, drop off or attend a child's function in the last three months on account of subway delays, and 29% of respondents were late for a medical appointment.[79]

The survey results also indicate that these effects are particularly acute in the City's lower income zip codes.[80] Residents in these lower income neighborhoods were 14% more likely to be reprimanded at work due to subway delays than those from higher income areas, 7% more likely to be late for a job interview, 4% more likely to have lost wages, and 8% more likely to be late for a doctor's appointment.[81] Overall, 42% of respondents from lower income areas experienced significant delays "Always" or "More than Half the Time," compared to 34% of those from higher income zip codes.[82]

Due to subway delays, more and more New Yorkers are left to rely on alternate forms of transit, which can be both costly and inconvenient. Among survey respondents, 50% reported

[75] Office of New York City Comptroller Scott M. Stringer, *The Human Cost of Subway Delays: A Survey of New York City Riders* (July 2017), *available at* https://comptroller.nyc.gov/wp-content/uploads/documents/The-Human-Cost-of-Subway-Delays.pdf.
[76] *Id.*
[77] *Id.*
[78] *Id.*
[79] *Id.*
[80] *Id.* The survey report categorizes lower income zip codes as those zip codes where average incomes are below the U.S. Department of Housing and Urban Development's $62,150 threshold for a three-person household.
[81] *Id.*
[82] *Id.*

that they were forced to take a taxi or other for-hire vehicle to work, 42% walked to work, 40% took a bus, 10% drove, and 6% biked.[83] Manhattan subway riders were far more likely to take a taxi or other for-hire vehicle (60%) than those in the rest of the City (47%), increasing the presence of automobiles in a borough already choked with traffic.[84]

C. Service Reliability by the Numbers

The MTA's publicly-reported data reflects the deterioration of service that has become obvious to subway riders. The two primary metrics that the MTA uses to measure the reliability of subway service are Wait Assessment (WA) and On Time Performance (OTP).[85] WA is defined as "the percentage of actual intervals between trains that are no more than the scheduled interval plus 25%."[86] It is designed to measure what the MTA views as most important to riders: whether trains arrive at a station as frequently as they are supposed to. In May 2017, weekday WA was 75.9%, down from 78.1% in May 2016.[87] OTP, which measures the percentage of scheduled trains arriving at their terminals within five minutes of their scheduled arrival time during a 24-hour weekday period, was 61.7% in May 2017, down from 68.8% in May 2016.[88] Overall OTP has fallen from 85.4% in 2011 to 66.8% in 2016.[89] The trends in both WA and OTP can be seen below:

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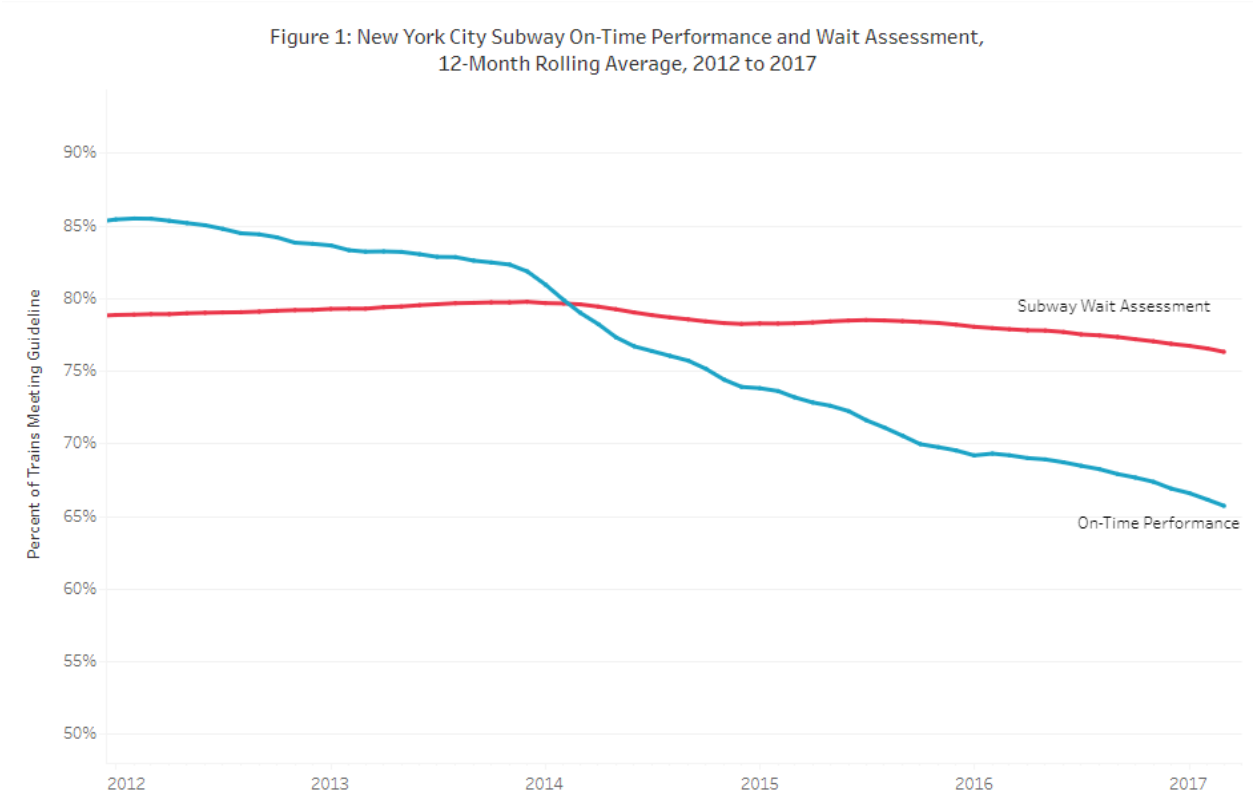
[83] *Id.*
[84] *Id.*
[85] Metropolitan Transportation Authority, Performance Data Sets, http://web.mta.info/developers/performance.html (*last accessed* Aug. 4, 2017).
[86] MTA Board New York City Transit and Bus Committee, Meeting Book 20 (Jul. 24, 2017), *available at* http://web.mta.info/mta/news/books/pdf/170724_1030_Transit.pdf.
[87] *Id.*
[88] *Id.* at 23.
[89] Metropolitan Transportation Authority, *Mission Statement, Measurements and Performance Indicator Report Covering Fiscal Year 2012* (Mar. 7, 2013), *available at* http://web.mta.info/mta/compliance/pdf/2012_annual/MissionPerfMeasurementFY2012.pdf; MTA Board Corporate Governance Committee, Meeting Book (Mar. 20, 2017), *available at* http://web.mta.info/mta/news/books/pdf/170320_1545_Governance.pdf.



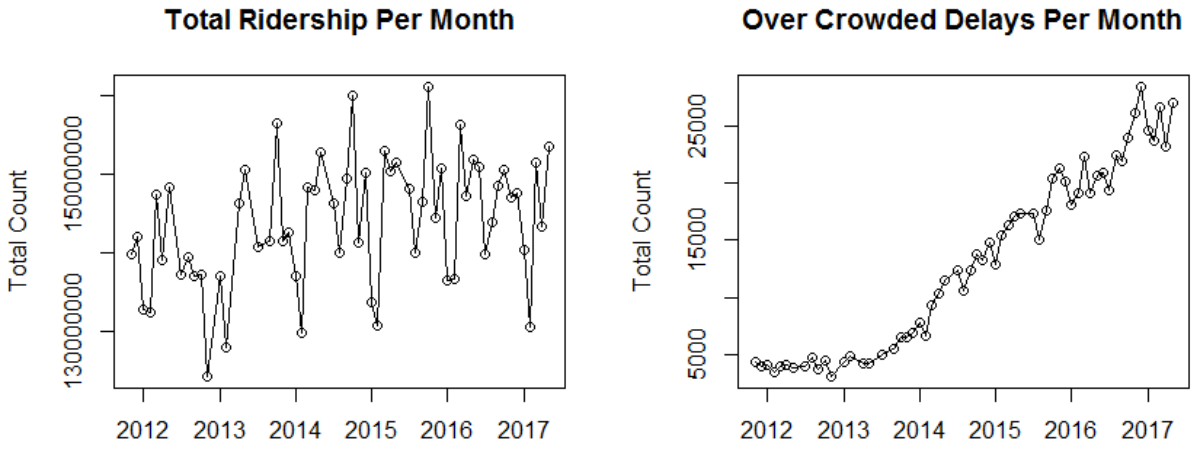
Source: Citizens Budget Commission based on MTA data, June 26, 2017, *available at* https://cbcny.org/research/welcome-back-joe-lhota

Between May 2012 and May 2017, the total number of trains delayed more than doubled from 24,993 to 67,452.[90] The MTA attributes a large portion of this increase in delays to increasing overcrowding conditions,[91] which causes trains to wait longer in stations as passengers get on and off. In May 2012, overcrowding was the third most common reason recorded for a delayed train; in May 2017, it was by far the most common reason, accounting for more than double the number of delays caused by the next highest category.[92]

It is certainly true that subway ridership has reached historically high levels in the years since the 2008 financial crisis, with the system handling more trips than at any time since the

[90] MTA Board New York City Transit and Bus Committee, Meeting Book 4.10 (Jul. 23, 2012), *available at* http://web.mta.info/mta/news/books/archive/120723_1000_Transit.pdf; MTA Board New York City Transit and Bus Committee, Meeting Book 25 (Jul. 24, 2017), *available at* http://web.mta.info/mta/news/books/pdf/170724_1030_Transit.pdf.
[91] *Id.*
[92] *Id.*

years right after World War II.[93] However, in the past five years, ridership has not increased nearly as much as have the delays blamed on overcrowding. Between May 2012 and May 2017, average weekday ridership increased by about 5%, from 5,553,000 to 5,836,000.[94] Overall annual ridership actually dropped in 2016 compared to 2015 for the first time since 2009.[95]



Source: Council Data Science Unit based on MTA data

As some observers have noted, it is not clear how many delays attributed to overcrowding were actually rooted in other causes, such as equipment breakdowns, which in turned caused crowding conditions.[96] Indeed, a City Council analysis of MTA data revealed that the rate of delays related to car equipment, work equipment, "employees," and, particularly, "operational diversions" is much more closely correlated to the increase in overcrowding delays than is the rate of delays attributed to police activity, fire, and sick customers. If overcrowding was truly the root cause of "overcrowding delays," police activity, fire, and sick customer delays

[93] Emma G. Fitzsimmons, *Surge in Ridership Pushes New York Subway to Limit*, N.Y. TIMES (May 3, 2016), *available at* https://www.nytimes.com/2016/05/04/nyregion/surge-in-ridership-pushes-new-york-subway-to-limit.html.
[94] Metropolitan Transportation Authority, Introduction to Subway Ridership, http://web.mta.info/nyct/facts/ridership/ (*last accessed* Aug. 4, 2017).
[95] *Id; see also* Charles Komanoff, *The Boom in Subway Ridership Is Waning. Why?*, STREETSBLOG NYC (Mar. 30, 2016), *available at* http://nyc.streetsblog.org/2016/03/30/the-boom-in-subway-ridership-is-waning-why/.
[96] Ben Fried, *Crowding Is a Symptom of What Ails the Subways, Not a Cause*, STREETSBLOG NYC (Jun. 28, 2017), *available at* http://nyc.streetsblog.org/2017/06/28/crowding-is-a-symptom-of-what-ails-the-subways-not-a-cause/.

should also have risen at a similarly proportional rate to the rise in overcrowding delays. The fact that police activity, fire, and sick customer delays have not risen at a similar rate, while other delays have, means that it is much more likely that the rise in overcrowding delays has actually been caused by disruptions with other root causes.

Beyond overcrowding, the most common causes of delays that the MTA lists in official statistics are "right of way delays," which include track problems, signal problems, and track workers on the tracks.[97] Using May 2017 data as a snapshot, these three categories taken together account for over 70% of delays.[98] Other problems, such as car equipment problems, sick customers, police activity, and track fires, each account for less than 5% of delays.[99]

There have been calls for the MTA to improve the way it measures and reports delays and service reliability. The Office of the State Comptroller noted some of the limitations of the WA statistic in an April 2016 report.[100] One major flaw of WA is that it does not take into account the extent of the impact of a delay; a delay during rush hour at a busy station is captured in the same way as a delay at a less busy station during an off hour.[101] WA also fails to account for delays experienced by a passenger once on the train, as opposed to delays experienced while waiting for a train in the station.[102] It should be noted that the MTA's focus on maintaining evenness of service (which is measured by WA) may itself result in decreased OTP. Dispatchers sometimes choose to hold a train in a station even when there is an incident *behind* it in an effort

[97] MTA Board New York City Transit and Bus Committee, Meeting Book (Jul. 24, 2017), *available at* http://web.mta.info/mta/news/books/pdf/170724_1030_Transit.pdf.
[98] *Id.*at 23.
[99] *Id.*at 28.
[100] Office of State Comptroller Thomas DiNapoli, *Subway Wait Assessment* (Apr. 2016), *available at* https://osc.state.ny.us/audits/allaudits/093016/14s23.pdf
[101] *Id.*
[102] *Id.*

to lessen the length in any gap between trains arriving in stations ahead of the incident.[103] Some transit advocates have called on the MTA to begin using a new metric to measure reliability in a way that more accurately and fully captures the passenger's experience. TransitCenter suggests using Excess Journey Time, which "compares passengers' average actual journey time (including time spent waiting at stops and delays once aboard vehicles) with the amount of time the schedule says their journeys should take" and is used in London and Singapore.[104]

There are other important metrics related to service reliability that show that the system is not performing as well as it should be. Mean Distance Between Failure (MDBF) measures how often train cars break down. MDBF decreased by about 5% in May 2017, compared to May 2016.[105] The overall five-year MDBF trend, while not as stark as that of OTP, has nonetheless trended downward.[106] It is worth noting, however, that May 2017's systemwide MDBF of 133,209 remains more than 20 times higher than the system's low point of 6,640 in 1981.[107] It is important to note that improving MDBF does not just require ordering new subway cars. Other factors, such as maintenance and overhaul schedules and the specific operating environment of the car, can affect performance, and even brand-new cars often exhibit problems that manufacturers need to fix as they are introduced to the subway system's infrastructure.[108]

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[103] The Daily News recently ran an article describing the internal debate at the MTA regarding these practices. *See* Dan Rivoli, *EXCLUSIVE: MTA ignoring 'abysmal' on-time performance of subway trains*, N.Y. DAILY NEWS (May 22, 2017) *available at* http://www.nydailynews.com/new-york/mta-ignoring-abysmal-on-time-performance-subway-trains-article-1.3184544.

[104] Memorandum from Zak Accuardi, TransitCenter, to Board of the Metropolitan Transportation Authority Re: Subway and Bus Performance Indicators, (Jan. 25, 2017) *available at* http://transitcenter.org/wp-content/uploads/2017/01/MTA-Testimony-Jan-17.pdf

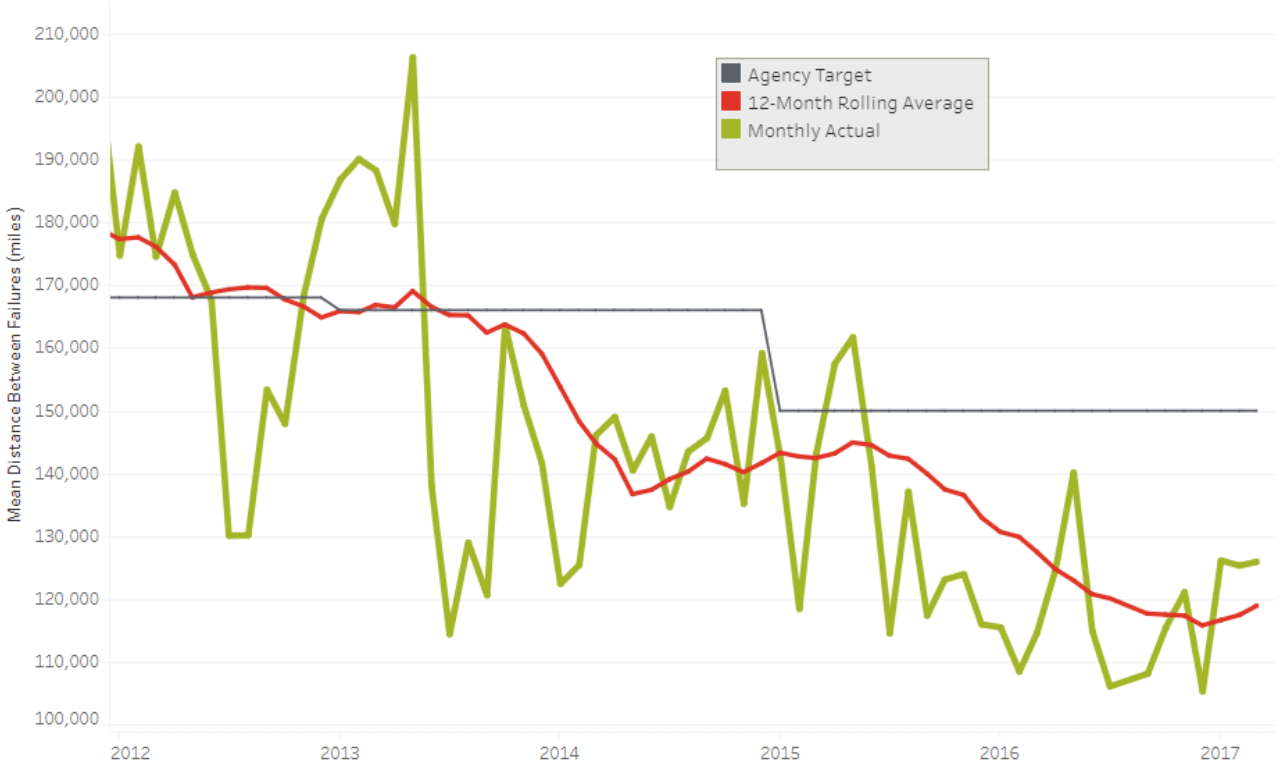
[105] MTA Board New York City Transit and Bus Committee, Meeting Book 29 (Jul. 24, 2017), *available at* http://web.mta.info/mta/news/books/pdf/170724_1030_Transit.pdf.

[106] *Id.*

[107] Mark Seaman et al., *supra* note 34; *id.*

[108] Dan Rivoli, *Newer MTA train cars taking a beating, performance even lagging behind older cars*, N.Y. DAILY NEWS (May 22, 2017), *available at* http://www.nydailynews.com/new-york/newer-mta-trains-beating-performance-starting-lag-article-1.3184932.

Figure 2: New York City Subway Mean Distance Between Failures, 2012 to 2017



Source: Citizens Budget Commission based on MTA data, June 26, 2017, *available at* https://cbcny.org/research/welcome-back-joe-lhota

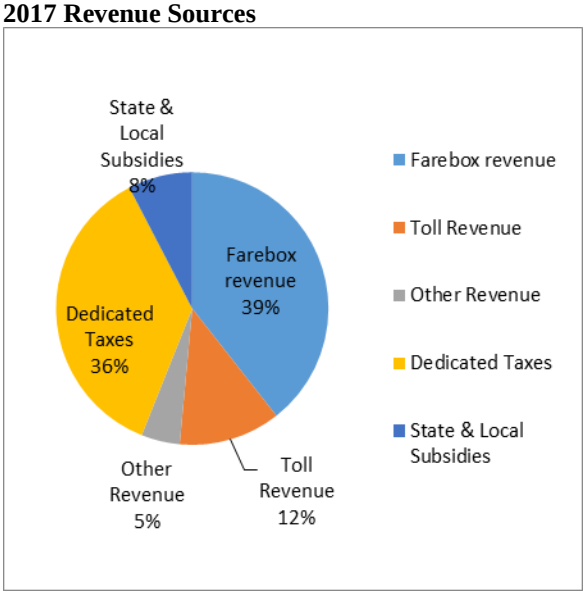
D. Funding the Subway

1. Expense Budget

Each year, to balance its operating budget, the MTA relies on a variety of revenue sources that include fare and toll revenues, state and local direct subsidies, a variety of state dedicated taxes enacted for its benefit, and other revenue sources that include paratransit reimbursement, advertising and concessions, and parking and fare reimbursements (students/seniors) as reflected below. The MTA's Calendar Year (CY) 2017 expense operating budget is approximately $15.6 billion.[109]

[109] Finance Division, New York City Council, *Report to the Committee on Finance and the Committee on Transportation on the Fiscal 2018 Executive Budget for Metropolitan Transportation Administration* (May 17, 2017), *available at* http://council.nyc.gov/budget/wp-content/uploads/sites/54/2017/03/MTA-exec.pdf.

2017 Revenue Sources



MTA Revenue Sources Calendar Year 2017 ($ in millions)		
Farebox Revenue	$6,087	39%
Toll Revenue	1,867	12%
Other Revenue	707	5%
Dedicated Taxes	5,069	36%
State & Local Subsidies	1,181	8%
TOTAL	**$15,451**	**100%**

2. Capital Budget

State law requires the MTA to submit to the MTA's Capital Program Review Board (CPRB), for its approval, successive five-year capital plans. Since 2010, funding for the capital plans has generally come from federal, state, and city grants, and MTA borrowing sources.[110]

Sources of MTA Capital Program Funding 1982-Present

	1982-1991	1992-1999	2000-2004	2005-2009	2010-2014	2015-2019*
Federal Grants	33%	33%	27%	39%	22%	23%
State Grants	15%	1%		6%	2%	26%
State Dedicated Tax Fund Bonds		11%	18%			
City of New York Grants	10%	9%	3%	11%	3%	8%
MTA Bonds	29%	26%	26%	39%	47%	32%
MTA Debt Restructuring			21%			
Sandy Reimbursement					20%	
Other MTA Sources	13%	20%	5%	5%	6%	11%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

** MTA 2015-2019 Capital Program Amendment*
Source: Metropolitan Transportation Authority, PCAC

Numbers may not total due to rounding

[110] Metropolitan Transportation Authority, *MTA Capital Program 2015-2019 Amendment No. 2* (May 2017), *available at* http://web.mta.info/capital/pdf/WEB2015-2019Program_reduced.pdf.

The MTA's $29.5 billion 2015-2019 Capital Plan approved by the CPRB on May 23, 2016 remains fully funded.[111] In February 2017, the MTA Board approved its first amendment to the Capital Plan, adding $399 million in station investments. The amendment was subsequently approved by the CPRB in March of 2017, bringing the full program value to $29.6 billion.[112] In May 2017, the MTA Board approved for submission to the CPRB a second amendment that would increase the 2015-2019 Capital Plan to $32.5 billion.[113]

3. City's Contribution

The current direct annual contribution from the City to the MTA's operating budget is approximately $1 billion.[114] The City's subsidies (operating assistance and reimbursement) include funding for reduced fares for students, seniors, and people with disabilities; Access-A-Ride; MTA Bus Company bus lines; and maintenance for commuter railroad stations in the city.[115] In addition to the abovementioned expense subsidies, the City makes an annual contribution to support the MTA's capital program. The City's contribution to the capital program prior to the 2015-2019 Capital Plan averaged about $100 million each year since 2000. Prior to that, the City's contribution averaged approximately $135 million annually for the 1982-1984 Capital Plan, $190 million for the 1987-1991 Capital Plan, and $175 million for the 1992-1999 Capital Plan. After extensive negotiations between the City and the State, the City's pledged commitment to the current 2015-2019 Capital Plan now stands at $2.5 billion, an average of $500 million per year, over the Plan period.[116]

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[111] Metropolitan Transportation Authority, *MTA Capital Program 2015-2019 As Approved by the CPRB May 23, 2016* (May 2017), *available at* http://web.mta.info/capital/pdf/MTA_15-19_Capital_Plan_Board_WEB_Approved_v2.pdf.
[112] Metropolitan Transportation Authority, *supra* note 110.
[113] *Id.*
[114] Finance Division, New York City Council, *supra* note 109.
[115] *Id.*
[116] *Id.*

It should be noted that New York City residents and businesses are also responsible for approximately two-thirds of the State's contribution to the MTA. A 2015 Citizens Budget Commission analysis found that city residents and businesses were the source of approximately $3.6 billion of the State's $5.4 billion annual operating contribution to the MTA, which is comprised of both State-authorized dedicated MTA taxes and appropriated general State tax revenue.[117] The City also directly spends approximately $613 million a year on subway-related expenses including debt service and transit police expenses.[118] And City residents pay approximately $5.3 billion per year in fares and tolls.[119]

4. 20-Year Capital Needs Assessment

Recognizing that continuous investment is essential to ensuring the viability of the transit system for generations to come, the State Legislature mandated in 1982 that the MTA prepare five-year capital plans to rebuild and improve the New York region's transit network.[120] To establish the planning context prior to the development of each of these five-year capital plans, the MTA prepares a 20-Year Capital Needs Assessment that sets forth the long-term capital investments that would be made in a program.[121] These investments focus on two priorities: rebuilding the system and expanding the system.[122] The most recent assessment plan put forth by the MTA (2015-2034) identified nearly $106 billion in core asset investment need over the next 20 years.[123] Even so, on a fully unconstrained basis, the MTA's needs are even greater than what

[117] Charles Brecher and Jamison Dague, *Who Pays When "The City" Gives Money to the MTA?*, Citizens Budget Commission (May 5, 2015), *available at* https://cbcny.org/research/who-pays-when-city-gives-money-mta.
[118] Office of New York City Comptroller Scott M. Stringer, *The "Invisible Fare": Revealing NYC's Full Contribution to the MTA* (May 2015), *available at* https://comptroller.nyc.gov/wp-content/uploads/documents/MTA_Report_Invisible_Fare.pdf.
[119] *Id.*
[120] Metropolitan Transportation Authority, *MTA Twenty-Year Capital Needs Assessment 2015-2034* (Oct. 2013), *available at* http://web.mta.info/mta/capital/pdf/TYN2015-2034.pdf.
[121] *Id.*
[122] *Id.*
[123] *Id.*

is included in the assessment because more backlogged repair needs exist than can be implemented.[124] In October 2012, Superstorm Sandy caused substantial damage to the MTA's infrastructure.[125] Thereafter, the MTA incorporated programs in the 2010-2014 Capital Plan to repair assets damaged by the storm, mainly with anticipated federal funding.[126] As such, Sandy-related recovery and resiliency work is not reflected in the assessment.

III. Previous MTA Plans

The 2017 Action Plan is not the first time the MTA has attempted to address its challenges. In 2014, Governor Cuomo created the MTA Transportation Reinvention Commission, an international panel of 24 experts in transportation, planning, business, and other disciplines, to examine the challenges facing the MTA in the next century and identify investment opportunities to address those challenges.[127] In November 2014, the Reinvention Commission released a final report outlining strategies to reinvent the MTA as a world-class, resilient transportation system that can meet the challenges of the next century.[128] Specifically, the report calls on the MTA to accelerate investments to keep the network in a state of repair, streamline the project delivery system, and work more effectively with its regional partners to enhance and expand the system in a more efficient and effective way.[129] The report challenges the MTA to implement a comprehensive program to cut costs and generate more revenue, and offers several examples of funding mechanisms that have been successfully used to fund transit systems around the world.[130]

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[124] *Id.*
[125] Metropolitan Transportation Authority, *MTA Capital Program 2010-2014 Amendment as approved by the MTA Board* (Jul. 2013), *available at* http://web.mta.info/mta/capital/pdf/TYN2015-2034.pdf.
[126] *Id.*
[127] MTA Transportation Reinvention Commission, *A Bold Direction for Leading Transportation in the Next 100 Years* (Nov. 2014), *available at* http://web.mta.info/mta/news/hearings/pdf/MTA_Reinvention_Report_141125.pdf.
[128] *Id.*
[129] *Id.*
[130] *Id.*

In May 2015, the MTA announced a series of steps it would undertake to target delays and overcrowding, including the completion of the first comprehensive and system-wide revision of subway schedules since the 1990s by the end of 2016.[131] Other initiatives, focused on the 6, 7, and F lines, included monitoring platform crowding conditions via cameras and staged personnel, responding to real-time conditions, improved communications during disruptions, and incident prevention and response efforts.[132] In November 2015, MTA staff reported that they were seeing positive results from the program.[133] They reported that the 6 line achieved at least 70% WA on 29% of weekdays in September 2015 compared to 0% of weekdays in March 2015.[134]

In May 2017, the MTA announced a Six Point Plan "to address the top causes of subway delays in order to reduce the disruptions that impact service reliability for customers."[135] This plan, largely focused on the A, C, and E Eighth Avenue Line, calls for (1) reorganizing the MTA leadership structure; (2) new subway cars and improved car maintenance procedures; (3) improving tracks and signals; (4) mitigating delays associated with sick passengers and law enforcement activity; (5) streamlining passenger loading and unloading at stations; and (6) targeting system bottlenecks.[136]

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[131] Notes from MTA Board New York City Transit and Bus Committee, May 18, 2015, *available at* https://www.youtube.com/watch?v=gHYk0qUnmqI.
[132] *Id.*
[133] Notes from MTA Board New York City Transit and Bus Committee, Nov. 16, 2015, *available at* https://www.youtube.com/watch?v=dAuNU6oELR8.
[134] *Id.*
[135] Press Release, Metropolitan Transportation Authority, *MTA Announces 6-Point Plan to Restructure Management of the MTA, Improve System Reliability and Service*, May 15, 2017, *available at* http://www.mta.info/news/2017/05/15/mta-announces-6-point-plan-restructure-management-mta-improve-system-reliability-and
[136] *Id.*

IV. Select Areas for Improvement

A. Current Capital Priorities

In May 2017, the MTA Board approved for submission to the CPRB a second amendment that increases the 2015-2019 Capital Plan from $29.6 billion to $32.5 billion.[137] Surprisingly, the largest changes outlined in the proposed amendment to the Plan are not for signals and communications but rather primarily involve increases in funding for network expansion projects and the agency's new "Enhanced Station Initiative" championed by the Governor, which would improve and enhance 32 stations to include new signage, LED lighting, countdown clocks, and cellular and Wi-Fi services.[138] To cover the costs for the additional projects, the MTA will borrow additional $1.6 billion to support the 2015-2019 Capital Plan, an action that would likely increase its total outstanding debt, which now totals $36.5 billion.[139] Although MTA officials at the time offered assurances that the amendment would not put added pressure on fares and tolls, ultimately the backstop to all of the MTA's debt is the farebox. None of the Mayor's representatives on the Board voted for the amendment, citing a lack of public discussion and concerns about increased debt.

Undoubtedly, the subway signal system is a key component of the MTA's ability to increase train frequency to minimize delays and ultimately reduce passenger overcrowding. As reflected in the New York City Transit portion of the MTA's 20-Year Needs Assessment Plan in the table below, signal systems constitute the single largest need of the subway system, consisting of 23% of the MTA New York City Transit's 20-year total. Nonetheless, a review of the approved capital plans, including the current 2015-2019 Capital Plan, shows that the MTA

[137] Metropolitan Transportation Authority, *MTA Capital Program 2015-2019 Amendment No. 2* (May 2017), *available at* http://web.mta.info/capital/pdf/WEB2015-2019Program_reduced.pdf.
[138] *Id.*
[139] *Id.*

has failed to fund signal systems at the levels recommended in the 20-Year Needs Assessment plans. Rather, the MTA's focus has been more on network expansion projects. In addition, as recently reported by the Independent Budget Office, the share of the MTA New York City Transit capital plans devoted to spending on signal repairs and modernization has declined over the past three plans.[140] The commitment level decreased from 20% of the 2005-2009 Capital Plan to 17% of the 2010-2014 Capital Plan, and is less than 13% of the current 2015-2019 Capital Plan at $2 billion.[141]

NYCT Identified Investment Needs & Planned Commitments 2015-2019

Category	Needs Assessment Nominal	Needs Assessment 2012 Dollars	Current Board Plan Nominal	Plan vs. Need Nominal
Subway Cars	$ 3,306	$ 2,717	$ 1,728	$ (1,578)
Buses	1,399	1,150	1,216	(183)
Passenger Stations	2,745	2,256	4,001	1,256
Tracks	1,764	1,450	1,845	81
Line Equipment	1,073	882	285	(788)
Line Structure	964	792	988	24
Signals	3,711	3,050	2,032	(1,679)
Communications	1,149	994	696	(453)
Traction Power	829	681	884	55
Shops and Yards	482	396	372	(110)
Depots	814	669	597	(217)
Services Vehicles	498	409	250	(248)
Miscellaneous	911	749	942	31
Staten Island Railway	135	111	479	344
Total 2015-2019 NYCT Program	**$ 19,780**	**$ 16,256**	**$ 16,315**	**$ (3,465)**

Source: Metropolitan Transportation Authority, Citizens Budget commission

Numbers may not total due to rounding

Note: Nominal dollars for Needs Assessment calculated based on a 4% annual inflation for 2012 to 2017.

The improvement to the signal system that would make the biggest difference in improving service is replacing the current "fixed block" signal system with Communications

[140] Letter from Ronnie Lowenstein, Director of N.Y.C. Independent Budget Office, to Gale Brewer, Manhattan Borough President (Jun. 11, 2017), *available at* http://www.ibo.nyc.ny.us/iboreports/mta-service-delays-disruptions-letter-2017.pdf

[141] *Id.*

Based Train Control (CBTC).[142] CBTC uses computers to allow trains to communicate with one another and with the control center to maintain safe distance between train, which allows trains to run closer together significantly increasing "through-put", or trains per hour, on a line compared to the fixed-block system, which does not allow a train to enter a the "block" between two signals until the train ahead has completely cleared the block.[143] It took the MTA 10 years to install CBTC on the L line at a cost of $340 million.[144] It is scheduled to be complete on the 7 line by the end of this year.[145] In 2014, the Regional Plan Association estimated that at the MTA's pace it would take more than 50 years to install CBTC in the whole system.[146]

The 2015-2019 Capital Plan amendment also reduces funding for new subway cars by $1.23 billion "to align with actual delivery of cars."[147] The apparent delay in the MTA's planned production and delivery schedule for new cars is not an isolated issue. The new R179 class of cars has been delayed at least 18 months due to issues encountered by the manufacturer during production.[148]

B. Alternative Funding Options

In order to provide consistent reliable subway service, analysts, advocates, and policy makers have called on the MTA to find a reliable source of funding for both its current operational budget and its capital commitments.

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[142] Emma G. Fitzsimmons, *Key to Improving Subway Service in New York? Modern Signals*, N.Y. TIMES (May 1, 2017), *available at* https://www.nytimes.com/2017/05/01/nyregion/new-york-subway-signals.html.

[143] Regional Plan Association, *Moving Forward: Accelerating the Transition to Communications-Based Train Control for New York City's Subways* (May 2014), *available at* http://library.rpa.org/pdf/RPA-Moving-Forward.pdf

[144] *Id.*

[145] Emma G. Fitzsimmons, *supra* note 142.

[146] Regional Plan Association, *supra* note 143.

[147] Metropolitan Transportation Authority, MTA Capital Program 2015-2019 Amendments Briefing to the MTA Board, May 2017, *available at* http://web.mta.info/mta/news/books/docs/May%20Board%20Presentation_Board.pdf

[148] Notes from Notes from MTA Board Committee Meetings, Jan. 25, 2016.

In recent years, a coalition of advocacy groups have proposed a type of congestion pricing plan called "Move NY."[149] This plan includes adding tolls to the East River bridges owned by the City, which consist of the Williamsburg, Brooklyn, Manhattan, and Queensboro bridges, and to every avenue that crosses 60th Street, including the FDR and the West Side highway.[150] The East River bridges are often the most congested and lead into Manhattan's Central Business District (CBD). Currently, outer borough bridges experience less congestion but have high tolls. The plan suggests decreasing the toll prices by 45% on these bridges, which include the Triborough, Whitestone, Throgs Neck and Verrazano Narrows bridges.[151] Proponents argue that adding tolls to enter the CBD would encourage more mass transit use, and car-pooling, and would decrease congestion while increasing revenue for the MTA.[152]

The Move NY toll plan would require the State Legislature to approve any cuts in toll rates. However, a group of law professors has begun to push a "home rule" version of Move NY that would not require the passage of legislation in Albany, arguing that under State Vehicle & Traffic Law, the City has the power to impose tolls on the use of City-owned roads and bridges.[153] Their plan would impose a $2.75 toll on the four East River bridges and 60th Street.[154] Under the State-authorized Move NY plan, all tolls in the City would be uniform, eliminating the incentive to use the City bridges and the local streets that connect to them.[155] Though MTA tunnels have better connections to highways, the relatively high tolls encourage drivers to take

[149] Move NY, Why Move NY?, http://iheartmoveny.org/#why-moveny (*last accessed* Aug. 4, 2017).
[150] N.Y.S. Senate, *Senator Andrew Lanza Introduces "Move NY" Bill in State Senate* (Jun. 22, 2016), *available at* https://www.nysenate.gov/newsroom/articles/andrew-j-lanza/senator-andrew-lanza-introduces-move-ny-bill-state-senate..
[151] *Id.*
[152] *Id.*
[153] Testimony of Alex Matthiessen, Hearing of the Committee on Transportation (June 5, 2017), *available at* http://legistar.council.nyc.gov/LegislationDetail.aspx?ID=3053413&GUID=347CF03A-2A96-4456-9429-1C04DC5191BC&Options=&Search=.
[154] *Id;* Emma Whitford, *There's a New Push to Charge Drivers in Manhattan Below 60th Street,* GOTHAMIST (Jun. 5, 2017), *available at* http://gothamist.com/2017/06/05/congestion_pricing_nyc_home_rule.php.
[155] N.Y.S. Senate, *supra* note 150.

the free bridges, clogging the local roads leading to them. According to the Move NY plan, the State plan would generate an annual revenue of $1.345 billion.[156]

Another funding option is to institute a surcharge on the fare for for-hire vehicles, including vehicles used app-based services such as Uber and Lyft.[157] These services are exempt from the current 50-cent MTA surcharge that is applied to green and yellow cab fares.[158] Instead, black cars, including those used in most app services, are subject to a sales tax of which the MTA receives 0.375%.[159] Given the increasing number of for-hire vehicles in the City, a surcharge would generate significant revenue for the MTA.[160] For instance, in 2016, there were over 131 million for-hire vehicle trips, so if a 50-cent surcharge had been applied to these trips, it would have generated approximately $65 million for the MTA. By contrast, the revenue generated from the taxi and green cab MTA surcharge has decreased in recent years as those trip volumes have fallen, partly due to increasing competition from app-based services.[161]

Advocates have also suggested reinstating the commuter tax. The commuter tax was a 0.45% income tax on commuters who worked in the five boroughs but resided elsewhere that was repealed in 1999.[162] Estimates suggest that if the commuter tax were reinstituted at the same tax rate, it would generate $860 million annually.[163]

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[156] Move NY, *supra* note 149.
[157] Empire State Transportation Alliance, Revenue Options for a Fully Funded 2015- 2019 MTA Five-Year Capital Plan, *available at* http://nyc.smartparticipation.com/sites/default/files/RPA-ESTA_2015-2019-MTA-Capital-Program_Revenue-Options%5B2%5D.pdf.
[158] Stephen Miller, *Uber Should Pay an MTA Fee Like Yellow Cabs, But the Fee Should be Smarter*, STREETSBLOG NYC (Aug. 26, 2015), *available at* http://nyc.streetsblog.org/2015/08/26/uber-should-pay-an-mta-fee-like-yellow-cabs-but-the-fee-should-be-smarter/.
[159] *Id.*
[160] *Id.*
[161] *Id.*
[162] Lisa Rainwater, *Filling the Gap by Reinstating the Commuter Tax* (Jun. 10, 2015), *available at* https://movenewyork.wordpress.com/2015/06/10/filling-the-gap-by-reinstating-the-commuter-tax/.
[163] Fiscal Policy Institute, *New York City Taxes- Trends, Impact and Priorities for Reform* (Jan. 13, 2015), *available at* http://fiscalpolicy.org/wp-content/uploads/2015/01/NYC-Tax-Report-Jan-13-2015.pdf.

Value capture is a way to raise revenue for transit, particularly for network expansion and enhancement projects. The term "value capture" encompasses several distinct methods that governments or transit agencies can use to pay for transit projects by allowing them to collect revenue in specific areas and then direct that revenue to specific improvements.[164] The City paid for the 7-train extension to Hudson Yards by using a form of value capture called Tax Increment Financing (TIF), which captures property tax increases from the area around the infrastructure project, based on the assumption that property values and property taxes will increase because of the transit infrastructure project.[165] Some advocates have called on the MTA to explore similar financing strategies for Phase II of the Second Avenue Subway.

Another funding option, which is supported by State Senator Michael Gianaris and others, is an income tax on earnings over $1 million.[166] Senator Gianaris introduced legislation in Albany in June 2017 to establish a three-year temporary state income tax surcharge on millionaires living within the 12 counties served by the MTA.[167] On August 6, 2017, Mayor Bill de Blasio announced support for a similar millionaire's tax.[168] Mayor de Blasio's plan would raise the income taxes of New York City residents.[169] This would apply to individuals who earn over $500,000 or married couples who earn over $1 million.[170] The income taxes would be

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[164] American Public Transportation Association, *Value Capture for Public Transportation Projects: Examples*, (Aug. 2015), *available at* https://www.apta.com/resources/reportsandpublications/Documents/APTA-Value-Capture-2015.pdf.
[165] N.Y.C. Independent Budget Office, *Fiscal Brief – Learning from Experience: A Primer on tax Increment Financing* (Sept. 2002), *available at* http://www.ibo.nyc.ny.us/iboreports/TIF-Sept2002.pdf.
[166] Kenneth Lovett, New York State lawmaker pushes bill to fund transit repairs with new tax on the rich, N.Y. DAILY NEWS, (Jun. 19, 2017), *available at* http://www.nydailynews.com/news/politics/queens-pol-seeks-new-tax-rich-fund-transit-repairs-article-1.3257736.
[167] *Id.*
[168] Emma G. Fitzsimmons, *Bill de Blasio Will Push for Tax on Wealthy to Fix Subway,* N.Y. TIMES (Aug. 6, 2017), *available at* https://www.nytimes.com/2017/08/06/nyregion/bill-de-blasio-will-push-for-tax-on-wealthy-to-fix-subway.html.
[169] *Id.*
[170] *Id.*

raised by .534%, from 3.876% to 4.41%.[171] The Mayor's plan is estimated to generate approximately $750 million annually in revenue for the MTA.[172] This revenue would provide $500 million a year for capital upgrades and $250 million for discount MetroCards for low income New Yorkers.[173]

Other funding proposals include:

- Increasing the MTA dedicated sales tax surcharge from 0.375% to either 0.5% or as high as .625%;
- Increasing the DMV personal vehicle registration fee from $25 to $50;
- Allocating bank settlement funds for infrastructure projects;
- Increasing the Petroleum Business Tax (BPT) from 17.8 cents per gallon to 18.6 cents per gallon; and
- Removing the ceiling on the State Gas Tax, which is currently capped at 8 cents per gallon.

Recently, Governor Cuomo announced two public-private partnership programs to encourage corporations to invest in the subway system.[174] The Subway Partnership Program asks for a minimum contribution of $250,000 to join the Subway Partnership Program, which will work to develop private sector solutions to problems facing the subway system.[175] The Adopt-a-Station Program is a separate program from the partnership that will allow businesses to contribute up to $600,000 for station adoption.[176] Eighteen stations in Bronx, Brooklyn, Manhattan, and Queens will be selected based on customer complaints, high traffic volume, and

[171] Eric Durkin, *De Blasio to propose taxing rich to help pay for much-needed subway repairs*, N.Y. DAILY NEWS (Aug. 6, 2017), *available at* http://www.nydailynews.com/news/politics/de-blasio-propose-taxing-rich-pay-subway-repairs-article-1.3388722.
[172] *Id.*
[173] *Id.*
[174] Press Release, Office of Governor Andrew M. Cuomo, *Governor Cuomo Announces Launch of Subway Partnership Program* (Jul. 27, 2017), *available at* https://www.governor.ny.gov/news/governor-cuomo-announces-launch-subway-partnership-program.
[175] *Id.*
[176] *Id.*

intersections of several lines.[177] To ensure companies do not only choose stations in Manhattan, at least one station on the priority list must also be sponsored.[178]

C. Capital Project Cost and Timeliness

In comparison to other global cities, transit expansion has been limited in New York City. The MTA recently completed Phase I of the Second Avenue Subway, which now serves over 176,000 riders daily;[179] but at a cost of $4.5 billion, the project is only about 2 miles long, includes only 3 stations, and took decades to complete.[180] By contrast, other dense urban centers around the world are making major investments in transit expansion. London is planning $59 billion in investments, including 31 new miles of rail.[181] Paris is investing $25 billion to create four new lines with more than 120 miles of track.[182] Los Angeles voters recently approved a sales tax increase to fund $44 billion in transit projects over 40 years, including 45 new miles of rail by 2031.[183]

Part of the reason the City has not been able to expand its transit system at the same pace as other cities is the high cost of construction. Subway tunnels in other cities usually cost between $200 million and $1 billion per mile.[184] In comparison, Phase I of the Second Avenue Subway cost $2.3 billion per mile. On a per mile basis, the Second Avenue Subway is the

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[177] *Id.*
[178] *Id.*
[179] *See* Testimony of the N.Y.C. Department of Transportation, Hearing of the Committee on Transportation (Jun. 5, 2017), *available at* http://legistar.council.nyc.gov/LegislationDetail.aspx?ID=3053413&GUID=347CF03A-2A96-4456-9429-1C04DC5191BC&Options=&Search=.
[180] *Id.*
[181] *Id.*
[182] *Id.*
[183] *Id.*
[184] Stephen J. Smith, *Does New York Know It Has a Transit Cost Problem?*, NEXT CITY (Feb. 27, 2014), *available at* https://nextcity.org/daily/entry/does-new-york-city-know-it-has-a-transit-cost-problem; *see also* US Rail Construction Costs, Pedestrian Observations (Jun. 5, 2011), *available at* https://pedestrianobservations.com/2011/05/16/us-rail-construction-costs/; Comparative Subway Construction Costs, Revised, Pedestrian Observations, (June 3, 2013), *available at* https://pedestrianobservations.com/2013/06/03/comparative-subway-construction-costs-revised/; Julia Vitullo-Martin, Regional Plan Association, *Building Big for Less* (May 16, 2017), *available at* http://lab.rpa.org/building-big-less/.

world's most expensive subway, with Phase I eventually costing $4.5 billion and coming in $700 million over budget.[185] The MTA has largely avoided publicly answering the question of why construction costs are higher in New York City compared to other cities. According to former Chairman Tom Prendergast, "the cost of construction is what the cost of construction is."[186]

In addition to the high cost of construction, the MTA's capital projects also take a long time to complete. The Second Avenue Subway was first proposed in the late 1920s, but work on Phase I did not begin until 2004 and was not completed until 2016.[187] As of May 31, 2017, the MTA is substantially behind on meeting its 2017 capital project milestones (see chart below).[188] Only 22% of its planned projects have closed and only 52% of projects have been substantially completed.[189]

2017 Year-to-Date Capital Program Status

	($ in Millions)		
	Planned	Achieved	%
Design Starts	$135.1	$83.5	62
Design Completions	$107.5	$45.9	43
Construction Awards	$2,364.7	$1,783.1	75
Substantial Completions	$833.7	$432.8	52
Closeouts	$949.7	$211.7	22

Regulations, labor costs, work rules, management inefficiencies, the complicated network of infrastructure beneath the streets, the fact that the system operates 24/7, political gridlock, population density, and the public's intolerance for disruptions have all been cited as possible reasons for chronic cost overruns and delays.[190] It has also been suggested that cost overruns are

[185] Raphael Pope-Sussman, *The Insanely Expensive Second Avenue Subway*, GOTHAMIST, (Dec. 29, 2016), *available at* http://gothamist.com/2016/12/29/2nd_ave_subway_explainer.php#photo-1.
[186] *Id.*
[187] *Id.*
[188] MTA Board New York City Transit and Bus Committee, Meeting Book 104 (Jul. 24, 2017), *available at* http://web.mta.info/mta/news/books/pdf/170724_1030_Transit.pdf.
[189] *Id.*
[190] Dana Rubenstein, *Where the transit-build costs are unbelievable*, POLITICO, (Mar. 31, 2015), *available at* http://www.politico.com/states/new-york/city-hall/story/2015/03/where-the-transit-build-costs-are-unbelievable-000000; Stephen J. Smith, *Does New York Know It Has a Transit Cost Problem?*, NEXT CITY, (Feb. 27, 2014), *available at* https://nextcity.org/daily/entry/does-new-york-city-know-it-has-a-transit-cost-problem; Benjamin Kabak, *Known Unknowns, or why does everything cost so much?*, SECOND AVENUE SAGAS, (Apr. 2, 2015), *available at* http://secondavenuesagas.com/2015/04/02/known-unknowns-or-why-does-everything-cost-so-much/.

the rule rather than the exception for transportation infrastructure projects, generally.[191] Robert Moses would reportedly underestimate on purpose the cost of an infrastructure project to get approval from the Board of Estimate, and then force them to allocate more funds after the project went over budget in order to complete the project.[192]

The MTA has previously attempted to examine project efficiency. In 2008, the MTA released the report of a "blue ribbon" panel on the topic of megaprojects and appointed Michael Horodniceanu to head MTA's Capital Construction Company to implement ideas generated by the panel. However, even during Horodniceanu's tenure, projects were delayed and over budget.[193] The 2014 Reinvention Commission tackled the issue, as well.[194] The Reinvention Commission specifically recommended the creation of a "center for excellence" that would "reform project delivery by reengineering procurement procedures, to ensure contract provisions and project execution practices are best-in-class, and to use more alternative delivery and non-traditional project, financial, and organizational structures."[195] The report recommended the expansion of design-build, public-private partnerships, and other project delivery tools.[196] The MTA is using the expedited design-build[197] process for some subway projects, including recently for the renovation of 31 subway stations.[198] However, despite the recommendations in these

[191] *See* Dana Rubenstein, *Where the transit-build costs are unbelievable*, POLITICO, (Mar. 31, 2015), *available at* http://www.politico.com/states/new-york/city-hall/story/2015/03/where-the-transit-build-costs-are-unbelievable-000000 (citing a 2002 Danish study).
[192] *Id.* (citing Robert Caro's *The Power Broker*).
[193] *Id.*
[194] *Id.*
[195] MTA Transportation Reinvention Commission, *A Bold Direction for Leading Transportation in the Next 100 Years* 11 (Nov. 2014), *available at* http://web.mta.info/mta/news/hearings/pdf/MTA_Reinvention_Report_141125.pdf.
[196] *Id.*
[197] Design-build is "a method of project delivery in which one entity – the design-build team – works under a single contract with the project owner to provide design and construction services." Design-Build Institute of America, What is Design-Build?, https://www.dbia.org/about/Pages/What-is-Design-Build.aspx (*last accessed* Aug. 4, 2017).
[198] Press Release, Office of Governor Andrew M. Cuomo, *Governor Cuomo Unveils Design of Reimagined MTA Subway Cars and Details Ambitious Plan to Enhance Subway Stations* (Jul. 18, 2016), *available at*

reports, cost overruns and delays persist. Many advocates have called on the MTA to examine and report on why its capital projects are many times more expensive than comparable projects in other peer cities and why MTA capital projects chronically fail to meet deadlines.

D. Customer Communications and Incident Response

The incident on June 5, 2017 that left F train passengers stuck in the subway for 45 minutes without air conditioning has become an example of just how poor the MTA can be at communicating with passengers.[199] The problem goes beyond the conductor simply withholding information; some transit workers often feel they do not have information to tell passengers.[200] The Rail Control Center, which is the operations control center for the subway system, often fails to communicate with conductors on the extent of delays.[201] The way the system is designed also obstructs communication, with dead zones in tunnels creating communication difficulties.[202] The F train incident is just one example of commuters' overall feelings about how train information is communicated. The Comptroller survey found that most subway riders do not find on-train announcements useful.[203] The MTA has recently decided to move away from automated announcements to live announcements. The MTA believes that personalized announcements will provide passengers with accurate information as quickly as possible. Going forward, the train

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https://www.governor.ny.gov/news/governor-cuomo-unveils-design-reimagined-mta-subway-cars-and-details-ambitious-plan-enhance.

[199] Dan Rivoli, *This is the biggest lie told in New York City each day to the largest number of people,* N.Y. DAILY NEWS (Jun. 6, 2017), *available at* http://www.nydailynews.com/new-york/biggest-lie-told-new-york-city-day-article-1.3225724.

[200] *Id.*

[201] *Id.*

[202] *Id.*

[203] Office of New York City Comptroller Scott M. Stringer, *The Human Cost of Subway Delays: A Survey of New York City Riders* (July 2017), *available at* https://comptroller.nyc.gov/wp-content/uploads/documents/The-Human-Cost-of-Subway-Delays.pdf.

conductor stationed in the middle of the train will be responsible for providing real-time announcements.[204]

The MTA continues to take steps to improve passenger communication by continuing to install Help Points in stations.[205] These Help Points have two buttons, one for emergency services and the other connects to a station monitor who can provide service information.[206] As of July 2017, the MTA installed 35 Help Points, working toward their year-end goal of installing 79.[207] Help Points will be installed on subway platforms and in fare collection areas. Customers can request information or report an emergency to trained MTA personnel who will respond accordingly.[208]

The MTA also provides customer information via Twitter, on its website, and on its mobile application. However, there are limitations to transit Wi-Fi. In order to improve communication, the MTA created the Genius Competition; the third challenge of the competition involves increasing the communications infrastructure in the subway system.[209] The objectives are to either identify communications infrastructure to support a modern train control system or identify communications infrastructure to support rider applications, including cellular Wi-Fi service. Wi-Fi was added to all underground subway stations in 2017 but is not available in tunnels. The challenge is to develop a way to get Wi-Fi through the narrow tunnel system.[210]

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[204] Notes from MTA Board Meeting, June 19, 2017 and June 21, 2017.
[205] Metropolitan Transportation Authority, Learn More About Help Point, http://web.mta.info/innov-hp.htm (*last accessed* Aug. 3, 2017).
[206] *Id.*
[207] MTA Board New York City Transit & Bus Committee Meeting, Monthly Operations Report: Leading Indicators (Jul. 24, 2017), *available at* http://web.mta.info/mta/news/books/pdf/170724_1030_Transit.pdf.
[208] *Id.*
[209] MTA Genius Transit Challenge, Challenge III Increase Communications Infrastructure in the Subway System, *available at* http://www.geniustransitchallenge.ny.gov/challenges/challenge-3.
[210] *Id.*

E. Operational Issues: Speed, Schedules, and Routing

Some observers have criticized a variety of the MTA's operating practices related to train speeds and the routing of the subway network itself. Writing recently in *Vox*, transit writer Alon Levy addresses many of these issues.[211] He asserts that the MTA has imposed a series of reductions to speed limits and train acceleration rates, partly as a result of the 1991 Union Square subway crash and the 1995 Williamsburg Bridge crash, but has not adjusted the signal system or its train schedules to reflect the new reality, exacerbating the problem further. He also argues that the highly branched nature of the subway system means that delays on one line easily spread to other lines. The Regional Plan Association has similarly called on the MTA to alleviate problematic bottlenecks and choke points, like the Nostrand Avenue Junction on the 2, 3, 4, and 5 lines, either through physical reconstruction or service changes.[212]

F. Improving Bus Service to Relieve Pressure on the Subway System

Local bus service is a vital element of the City's public transportation network. MTA New York City Transit and MTA Bus serve over 2.4 million riders every weekday, providing essential connections for communities that lack adequate subway access.[213] However, while the City's subway system has experienced historically high and growing ridership, the bus system is experiencing a decline in ridership.[214] Between 2010 and 2015, subway ridership increased by 159 million, but NYCT bus ridership fell by 46 million.[215]

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[211] Alon Levy, *The real reason New York City can't make the trains run on time*, VOX (Jul. 11, 2017), *available at* https://www.vox.com/policy-and-politics/2017/7/11/15949284/new-york-subway-crisis

[212] Kate Slevin, *How Governor Cuomo Can Fix the Subways*, Regional Plan Association, May 22, 2017, *available at* http://lab.rpa.org/governor-cuomo-can-fix-subways/.

[213] Metropolitan Transportation Authority, Facts and Figures – Ridership, http://web.mta.info/nyct/facts/ridership/ (*last accessed* Aug. 2, 2017).

[214] *Id.*; MTA Board New York City Transit and Bus Committee Meeting, Comments of Peter Cafiero, MTA NYCT Chief of Operations Planning, Mar. 3, 2017, *available at* https://www.youtube.com/watch?v=GBRuzRHt2lg&t=5280s.

[215] N.Y.C. Department of Transportation, *New York City Mobility Report* (May 2016), *available at* http://www.nyc.gov/html/dot/downloads/pdf/mobility-report-2016-print.pdf.

A number of factors are contributing to the decrease in citywide bus ridership. Average bus speeds have steadily declined from 7.8 miles per hour in 2000 to 7.4 miles per hour in 2014.[216] Bus speeds in the most congested areas of the City often average less than 4 miles per hour, not much faster than travel on foot.[217] Slow bus speeds in recent years appear to be the result of an increase in the City's population, record high number of tourists, congestion caused by deliveries, and construction-related disruptions.[218] Longer travel times and unreliable service due to slow bus speeds drive down ridership.[219] Other contributing factors include the availability of new transportation options, such as Citi Bike and app-based ride services, and shifting demographics.[220]

Improvements to the City's bus service has been proposed as a way to possibly help alleviate overcrowded subways and make delays or disruptions more manageable. At an MTA Board meeting held in March 2017, the New York City Transit and Bus Committee presented strategies for increasing bus speeds and reversing the decline in bus ridership.[221] Most of the strategies entail expanding features of Select Bus Service (SBS), New York City Transit's version of bus rapid transit, which according to DOT and MTA has improved speeds by 10 to 30%.[222] The proposed strategies are as follows:[223]

- Add bus lanes on local routes: There are approximately 120 miles of bus lanes in the City, and half are used by SBS routes. Citywide, however, only 5% of the City's bus route network has bus lanes. Bus lanes can increase speeds up to 10%.

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[216] TransitCenter, *Turnaround: Fixing New York City's Buses* 3 (Jul. 2016), *available at* http://transitcenter.org/wp-content/uploads/2016/07/Turnaround_Fixing-NYCs-Buses-20July2016.pdf.
[217] *Id.*
[218] N.Y.C. Department of Transportation, *supra* note 215; Comments of Peter Cafiero, *supra* note 214.
[219] Comments of Peter Cafiero, *supra* note 214.
[220] *Id.*; N.Y.C. Department of Transportation, *supra* note 215.
[221] Comments of Peter Cafiero, *supra* note 214.
[222] N.Y.C. Department of Transportation, Select Bus Service – Routes, http://www.nyc.gov/html/brt/html/routes/routes.shtml (*last accessed* Aug. 2, 2017); N.Y.C. Department of Transportation and Metropolitan Transportation Authority, *Select Bus Service B44 SBS on Nostrad Avenue – Progress Report* (Jun. 2016), *available at* http://www.nyc.gov/html/brt/downloads/pdf/brt-nostrand-progress-report-june2016.pdf.
[223] Comments of Peter Cafiero, *supra* note 214.

- Expand Transit Signal Priority (TSP): TSP allows DOT to receive real time GPS-based locations of buses and adjust traffic lights to allow approaching buses to continue through intersections. TSP has reduced bus travel times by about 18%.[224] TSP is currently in place on five corridors in the City, with an additional five TSP routes to be added by the end of 2017.[225] DOT plans to accelerate its implementation of TSP, expanding the network by an additional 550 intersections (about 10 routes) by the end of 2020, in concert with MTA's new bus technology.[226]
- Increase all-door boarding: On SBS routes, the use of off-board fare payment has sped up the boarding process considerably. The new tap-and-go fare payment system will speed up boarding, as it is significantly faster than the Metrocard dipping process.
- "Right-size" the network: MTA plans to restructure routes, particularly in congested areas; re-evaluate service in areas where ridership has declined; and shift resources to support growing routes and new markets.

Other suggestions for improvement include better management of bus spacing using headway-based metrics, installment of bus bulbs and boarding islands to eliminate time spent weaving in and out of traffic, and early intervention when buses get off track.[227] A potentially longer-term idea that has been raised is to give DOT more control of the bus system, as the City controls the streets that the buses run on.[228] The Committee on Transportation explored many of these issues related to the bus system at an oversight hearing on October 6, 2016.[229]

CONCLUSION

Today, the Committee plans to examine the MTA's Subway Action Plan and the state of the subway system in general. The Committee is particularly interested in hearing about the MTA's capital priorities and the factors that have led to the recent deterioration of service.

[224] N.Y.C. Department of Transportation, *Green Means Go: Transit Signal Priority in NYC* (Jul. 24, 2017), *available at* http://www.nyc.gov/html/brt/downloads/pdf/brt-transit-signal-priority-july2017.pdf.
[225] *Id.*
[226] *Id.*
[227] TransitCenter, supra note 216.
[228] Regional Plan Association, How Governor Cuomo Can Fix the Subways, *available at* http://www.rpa.org/article/how-governor-cuomo-can-fix-subways (*last accessed* Aug. 2, 2017).
[229] *See* Hearing of the Committee on Transportation, Oct. 6, 2016, *available at* http://legistar.council.nyc.gov/MeetingDetail.aspx?ID=505597&GUID=C45DFA69-19DA-43CF-B515-DCBA0C57D1C8&Options=info&Search=.

Finally, the Committee also plans to explore long term solutions to address the MTA's challenges.