Statement by
Craig Stewart, Senior Corporate Management Officer
MTA New York City Transit
before the
New York City Council
Committees on Transportation and Technology
250 Broadway 14th Floor
October 24, 2012 - 10:00 a.m.

Good Morning, Chairpersons Vacca and Brewer, and good morning to the members of the Transportation and Technology Committees. I am Craig Stewart, Senior Corporate Management Officer of MTA New York City Transit. I am joined this morning by Mark Bienstock, Program Officer, Systems & Security, Capital Program Management, and Craig Cipriano, Vice President, Business Strategies, Buses. NYC Transit President Tom Prendergast asked us to represent him today in addressing the topic designated by your committees, ***"The Impact of Modern Technology on the City's Buses and Trains."***

NYC Transit has fully committed itself to the pursuit of new technology to enhance the experience of our customers in using the system and increase our efficiency in managing and delivering bus and subway services. Today, I will discuss those new technology initiatives underway at NYC transit which focus on enhancing the experience of our train and bus customers

Before getting started on specifics, however, I'd like to review some of the challenges NYC Transit faces in pursuing new technology initiatives. For starters, new technology is inherently risky, but public agencies such as ours are inherently risk-averse. Therefore, the combination of a public transit agency and new technology is anything but an easy mix. This morning, I am happy to report that we're moving ahead with several high-technology ventures in spite of the enormous challenges they present.

Other hurdles that impedes new technology ventures at our agency are the age, vastness and sheer complexity of the New York City transit system that make for a uniquely difficult operating environment. The single best example is, of course, our subway system which is not a homogeneous system. The subway system is literally pieced together with components of different railroads built at different times with varying station architectural characteristics. Thus, we can rarely use "off-the-shelf" applications, and most technology applications must be customized. Even in our efforts to customize systems, we face tremendous technical challenges. Systems must be designed to withstand brutal environmental conditions; to meet exacting standards from location to location; and to interconnect diverse system components.

Finally, we face difficulties in identifying qualified vendors, as the number of vendors with the capability to design for our complex transit operating environment is very limited. There is a lack of competition is most instances that keeps prices high, and there is a particularly low supply of U.S. vendors. To help tackle the impediments we face, both culturally and logistically, in pursuing new technology ventures, President Prendergast has given my office executive oversight in facilitating new technology projects. We currently have several

projects underway at various stages of development which are designed to enhance the traveling experience of our customers.

MTA's Bus Customer Information System, commonly referred to as **MTA Bus Time**, is one such project. It communicates bus location information to the customer through a range of digital and mobile interfaces. The system integrates location and login information with schedules and map files to output real time "next bus information" to customers who will be able to obtain this information through their cell phones, smart phones, PCs and digital displays.

From a desktop, smartphone or cellphone, customers can enter the bus route, intersection or bus stop code. The map will show customers where buses are along the route and how many stops away the next bus is. Customers can also text a bus stop code or intersection to 511123 and they'll receive a text back stating how many stops away the next bus is. Bus stop codes can be found online at www.mta.info/bustime or at bus stops on the posted Guide-A-Ride schedules. In addition, customers can scan a Quick Response (QR) code available at bus stops on the Guide-A-Rides. If customers have a smart phone with a QR reader, they just scan it and get the same information. Bus Time was initially deployed on the B63 in Brooklyn in February 2011. In January 2012 we extended it to all routes in Staten Island and later this year to the B61 and SBS M34 routes. We are scheduled to fully deploy Bus Time in the Bronx by the end of this month and to have it in all remaining boroughs by the end of 2013. It is worth noting that customer feedback on the MTA Bus Time initiative has been overwhelmingly positive.

On the subway side, we began providing customers with **Next Train Arrival Information** via what are commonly known as "Countdown Clocks" in 2010, and that effort continues today. On the A Division (the numbered lines), the delivery of next train arrival information is nearly complete at all 156 stations, with the exception of three: Fulton Street on the 2 3 lines, Fulton Street on the 4 5 lines and Cortlandt Street on the 1 line, all of which are currently in construction or pending construction. The effort to accomplish this work required significant investment over the past decade to modernize the signaling system, develop the Rail Control Center (RCC) office systems, build the data transport system and construct the necessary infrastructure at each station to deliver this information.

With respect to the B Division (lettered lines), NYC Transit has completed work at 24 stations on the Canarsie L line. This system was commissioned in 2007 as a standalone system that interfaces with the Canarsie Communications Based Train Control (CBTC) system for train prediction information. The B Division has presented unique challenges due to its size and complexity when compared to the A Division. The B Division is twice as big as the A Division, having 288 stations versus 156 stations on the A Division, 141 route miles versus 66 route miles on the A Division and 317 peak trains versus 203 peak trains on the A Division. Furthermore, the B Division does not have the Automatic Train Supervision (ATS) system, which provided a common platform that greatly facilitated the installation of Next Train Arrival Information on the A Division. Finally, most of the B Division is comprised of territory with four tracks and many interconnecting lines along its routes, making it impractical to replicate the approach taken for the A Division.

We have undertaken a few pilots in an effort to identify an interim measure for providing service information to B Division customers, including most recently, the use of electronic signage; however, those efforts have all fallen short in yielding the level and type of information we are seeking to provide our customers. Our ultimate goal is, of course, to develop similar capabilities for the B Division as exists currently on the A Division. However, it will take substantial investments to fully deploy the projected improvements in capability. To ease the delay, we are working on strategies to deploy functionality so that passenger benefits can be delivered as early as possible. This phased deployment will result in improvements that may not necessarily be across all areas. In order to begin providing benefits as quickly as possible, we have established an initial goal of providing the current B Division next train arrival information to customers by capturing dispatch/schedule information electronically.

NYC Transit will soon start design work under several projects to begin capturing train information across the B Division. Collecting train location information is a prerequisite step to providing real-time train arrival information and may take several years to accomplish. This design effort will also help us to determine the most viable options for implementation.

NYC Transit has also established another goal of providing all B Division stations with reliable public address capability in order to better communicate information to our customers. Several projects are already in the design phase to expand the public address system at B Division passenger stations. Public address (PA) functionality will be provided at 87 stations on the B Division that do not currently have any public address functionality at all. We are planning to advertise and award that contract early next year. Tied into the new Public Address/Customer Information Screens (PA/CIS) system that was placed into service in 2011 for the A Division, these stations will allow Operations staff the capability to make audio announcements and display virtual messages centrally from the RCC. Announcements from B Division stations are currently made from various field sites. Additional capital investments are necessary to upgrade and/or replace the infrastructure for these PA systems at these stations and subsequently provide an interface into the central PA system at the RCC.

Another of our customer-service initiatives is **The Station Advisory Information Display (SAID)** which is designed to provide enhanced subway train status information in real time to NYCT customers. This project utilizes the latest wireless communication technology to display the "Current NYCT Train Service Status" on 52 electronic displays in 26 subway stations. Currently, passengers entering the subway system are not aware of the current train service status. Consequently, they are uncertain as to whether they can complete their subway trip as intended. The SAID signs provide updates of the status of all NYCT subways lines to customers prior to entering a station's fare array. This allows our customers an opportunity to alter their trip in the event that train service is disrupted. Design completion for this project is scheduled for November 2012. Construction will be performed by in-house Capital Construction in coordination with other projects starting early next year.

Yet another high-technology-service initiative underway is the **On The Go! Travel Station** (OTG), an interactive customer information kiosk. It is a touch screen device with digital applications and messages in real time. OTG has two key functions which are to provide a wide variety of assistance to our customers and to provide critically needed non-fare revenue via digital advertisement. The kiosks improve customer communication and perception as

customers are able to customize and navigate trips in stations/terminals. The kiosks are also beneficial because they replace paper signage. OTG is a 46 inch 1080p touch screen with a computerized operating system. Currently, our information is displayed on the top of the screen and advertising is displayed on the bottom. An applications bar separates our information and advertising.

OTG creates a flexible system with the ability to adapt to future innovations and technologies. Some of the digital applications available to customers are travel itinerary planning, a variety of maps (such as subway, bus and neighborhood), dining and shopping guides, and subway service status. The default screen can display a variety of applications including real time arrival of trains, service status, escalator and elevator outages, real-time bus information and live assistance.

The first phase of the On the Go! pilot, launched in September 2011, included five units deployed at Bowling Green, Atlantic Avenue-Pacific Street, Jackson Heights-Roosevelt Avenue, Penn Station (LIRR) and Grand Central Terminal (MNR). OTG has been well received by our customers and received a 2012 award from Intelligent Transportation Society America for Best Advanced Traveler Information System. We are currently undertaking the second phase of the pilot extension for which we are negotiating public-private partnerships. Beginning in January, we plan to install 100 to 150 kiosks in some of our busiest stations. The advertising firms who agree to take part in the program will pay to purchase the kiosks, and recoup their investment through advertising revenue generated by the devices over a 12-month period.

Another recently-launched initiative are our new **Help Points** which are user-friendly, ADA-compliant devices to be located in stations, replacing the current analog-based Customer Assistance Intercom system and the existing customer talkback device. For the first time, customers on the platform level will have immediate access to the station booth and personnel at the Rail Control Center (RCC). The Help Point is designed to be an easily recognizable communications tool for customers who need to either report an emergency or ask for travel assistance.

Since April 2011, a pilot has been underway at the 23 Street 6 and Brooklyn Bridge 4 5 6 stations on the Lexington Avenue line. The pilot has allowed us to determine not only the usefulness of the units to our customers, but also to evaluate which system of installation, wireless or hard-wired, is best. To date, both systems have performed reliably. Moving forward, our plan is to install approximately six to ten new Help Point devices along subway platforms and in paid and unpaid control areas and mezzanines within every station. Beginning next year, we will be moving to install Help Point units in another 80 sttions.

The Help Point devices highly visible with a bright blue beacon light that pulses when it is in action. This feature is designed to alert first responders in the case of an injured or sick customer at a specific location. The control panel includes a red emergency button and a green information button along with a speaker and microphone. Emergency calls are routed to the RCC while routine inquiries concerning fare payment, station access and trip planning are sent to the station agent. This new system is also being equipped with induction-loop capability which allows hearing impaired customers with tele-coil-equipped hearing aids to communicate with enhanced clarity with the customer service agent and the RCC supervisor.

It's worth noting that the new Help Point devices are vandal-resistant and also self-diagnostic so that supervisory personnel will not have to check each unit several times a day as is done with the current Customer Assistance Intercom devices. Finally, the Help Point units will be able to accommodate the future addition of video cameras, so that NYCT personnel can observe customers while interacting with them.

The use of modern technology to enhance the experience of subway customers is also very much evident in our **New Subway Car Program** under which our newest train cars have computer-regulated climate control, automated voice announcements digitally mastered for improved audio clarity, electronic strip maps highlighting station stops on the line, electronic message signs displaying station stops and special messages. The new cars also feature the ability to communicate directly to the train crew via electronic intercom in the case of an emergency.

Another enhancement to our customer's travel experience can be found in one of MTA Chairman Lhota's strategic initiatives, **MTA Tap & Ride,** which responds to the need to replace our outdated MetroCard system and holds the promise of bringing the latest fare collection technology to the MTA to make fare payment more convenient for our customers, while helping to reduce the cost of doing business at the same time. The New Fare Payment System project that was originally based at MTAHQ has recently been moved to NYC Transit. Consequently, a group has recently been set up at NYC Transit to manage the development and implementation of NYC Transit's fare payment system of the future. The overall strategic approach remains contactless technology and account-based, "open" standards/architecture where possible. However, given the changing payments landscape, and recent developments in transit fare payment technology, we are currently resetting and refining the project's milestones and capital funding needs.

The Tap & Ride initiative seeks to take advantage of new developments in open payments technology, allowing the MTA to simplify the fare payment process for customers by deploying systems that accept devices, like chip-enabled cards and smartphones, customers already have in their possession. The use of advanced communications technologies, such as 4G wireless and fiber optic networks, are being explored to support this fare payment initiative which is intended to help speed up entry and boarding on MTA services. By designing a system based on open standards for contactless payments and proven processes utilized by the payments industry around the world today, the MTA hopes to cost-effectively accommodate future fare policy and operational needs -- making it easily adaptable to a variety of merging technologies. Moreover, as other public transit agencies in the tri-state region adopt similar open payments systems, intermodal travel will become seamless and increase mobility in the region, a critical factor in the vitality of the region's economy. NYC Transit's effort will fit into a larger MTA Agency-wide initiative to coordinate, and where possible, share systems and services, on all of the MTA's various fare and toll payment systems.

Next, I'd like to provide you with a status update on a major new technology project being undertaken by NYC Transit in which the Council has expressed great interest, the **Transit Wireless Project.** In 2007, NYC Transit entered a license agreement with Transit Wireless, LLC (TW) which was most recently amended this past July. Under this agreement, NYC Transit has licensed to TW the exclusive right to place a network that transmits and receives

FCC licensed frequencies, WiFi and WiMax in the 277 underground NYCT subway stations (but not in the tunnel between the stations). TW completed a six-station initial build component in 2011 which provided ATT and T-Mobile service at locations of varying complexity. TW commenced the first phase (30 stations) of the seven-phase full build for the additional 271 stations in August 2012. It has 24 months from that date to complete Phase 1 and 71 months to complete all seven phases.

Finally, I'd like to discuss the MTA's **Open Data Policy** and its role in the development of marketplace data applications that benefit our customers. Since May 2010, the MTA has continued to prepare and publish data to both increase organizational transparency and facilitate development of third-party applications that benefit the riding public. To date, this initiative has resulted in unprecedented access to MTA reports and finances, and more than 120 mobile apps for nearly every mobile device type, all at no cost to the MTA. It has also allowed us to produce our own software technologies that assist customers, including MTA Bus Time, The Weekender web site and phone app, and our new On-the-Go! customer information kiosks. Going forward, our online Developer Resource Center will continue to expand the data available to software developers, including real-time service status data for subway lines as it becomes available. Importantly, when considering new data sets for public release, we will continue to consult with the MTA Office of Security to ensure that doing so will never compromise the safety of the riding public.

As you can see, we've made tremendous strides in incorporating modern technology into New York City's transit system in ways that directly benefit our customers. We have quite a distance to go in modernizing our operations, but we're certainly well on our way. Thank you for this opportunity to discuss our efforts. We are now happy to respond to any questions you may have.

TRANSPORT WORKERS UNION OF GREATER NEW YORK
LOCAL 100

Testimony of Angel Giboyeaux, Administrative Vice President
Transport Workers Union Local 100
On the Impact of Modern Technology on the City's Buses and Subways

BEFORE THE COMMITTEE ON TRANSPORTATION AND THE COMMITTEE ON TECHNOLOGY
OF THE COUNCIL OF THE CITY OF NEW YORK

Wednesday, October 24, 2012 at 10:00 a.m.
14th Floor Committee Room, 250 Broadway, New York, New York

The MTA invests huge amounts of money in high-tech projects, but once the funds are committed it often turns a blind eye to how well the funds are being spent and whether the projects are on time and on budget. The MTA's huge cost overruns on its high-tech projects are legendary, with costs routinely escalating to double or triple original estimates. Out-of-control costs not only afflict the construction "mega projects" like the Second Avenue Subway, East Side Access, and the Fulton Transit Hub, but also plague high-tech projects like the ordering of police radios that allow law enforcement to communicate below and above ground, the installation of New York City Transit's fiber optic "SONET" network, and its associated network of surveillance cameras in the subways. On the positive side, the MTA has made progress upgrading to solar technology in certain facilities and ordering new state of the art subway cars and buses with improved HVAC systems and more protection for operators. But it still resists training its own workforce to meet new-tech challenges, often preferring to contract out work and pay much higher prices than it would to trained MTA employees.

One illustration of the inability of the MTA to control costs with contractors is its attempt to install communications equipment in the subway tunnels to allow police to effectively communicate by radio, both above and below ground. Decades ago, VHF antennas were installed in the subway system to enable police to communicate from point to point. From the 1960's through the late 1980's, there were many dead spots, extensively documented in crime reports where police could not hear one another and get help to crime scenes. But in the early 1990's, with funding obtained through President Clinton's anti-crime bill, the then Transit Police Department was able to obtain funds that allowed them to make huge improvements in the VHF system. They purchased new synthesized portable radios, Motorola SABREs, got rid of the old 300 ohm twin-lead antennas and replaced them with better radiax antennas in the tunnels, and contracted with Verizon, then Bell-Atlantic, to install dedicated audio lines from each base station back to the transit command center at Jay Street. After these fixes, the VHF system was working very well. Transit police were able to communicate both above and below ground. However, it wasn't possible for the City Police to communicate with transit police. Then, as now, they coordinate responses through dispatchers in common central command locations.

But the MTA reacted to the bad publicity about the radio system, even though the problems in the subway system had been corrected. They decided to bid out a new system which would operate on UHF frequencies and allow for the use of up to 14 new frequencies by the transit police as well as allowing them to

communicate with the city police. In 1996, the MTA bid out the police radio UHF project. The likes of GE, Erickson, and Motorola put in bids that consisted of designs that specified that there should be a separate UHF antenna system. But the MTA went with the low bidder, EA Technologies, which said that the MTA could use the existing VHF antennas to propagate the UHF signals. Local 100 members who maintain the radio equipment advised against it.

It turned out that the VHF antennas were the wrong design to propagate the UHF signals. EA Technologies installed thousands of extra feet of antennas to allow better UHF operation, and then tens of thousands of devices into the old antennas to boost the UHF signals. MTA engineers told the New York Times in 2007 that the antennas were being upgraded with new antenna wires because many had corroded. This was flatly untrue. The changes to the antenna system were made to boost the weak UHF signals, and in the process, thousands of new points of potential failure were introduced, with dozens of breaks in the antenna wire and insertions of connecting cables. These devices had been installed in very hard to get to places, including the ceilings of express tracks. Because there are many more components, the antenna system requires much more servicing and associated testing. In many cases, work trains have to be deployed just to fix one defect in an antenna.

The original plan was to allow for the use of up to 17 frequencies, 14 by the NYPD, 2 for FDNY, and 1 for EMS. But to date, the MTA has only been able to set up two frequencies for the NYPD in just some of the 48 communications zones within the transit system. And in spite of the MTA spending $450 million, the police radio communications system is still plagued by technical and interference problems. EA Technologies was dropped by the MTA after their costs for the project increased by a factor of 300%. The MTA then turned to in-house engineers to fix the interference problems, without significant improvement. Last year, facing continuing complaints about the inability of police to effectively communicate on this UHF system, Mayor Bloomberg approved $9 million to purchase "dual band" radios, which work on both the old VHF frequency and the new UHF frequencies.

By its nature, the UHF system is much less robust than the old VHF system. Just one failure in any radio antenna component makes it inoperable, rendering it impossible for two police officers to speak to one another within the same station and possibly to the command center, depending on where the break is. By contrast, the VHF system can sustain multiple breaks along its radial tie lines and antennas, or even the destruction of the command center. Under these conditions, the police would still be able to communicate with each other in a span of up to four train stations, because of its local repeat feature, which is not possible on the UHF system. Today, to achieve acceptable performance of the UHF system in certain zones only, transit engineers have instructed the radio communications technicians to lower the power output of the existing VHF system permanently to dangerously low levels.

Today, police officers have the conventional VHF system to fall back on if they cannot get a signal on the UHF system (the reason for the "dual band" radios). However, the FCC is mandating that, in 2013, wideband VHF must be abandoned to allow the government to sell the bandwidth to other providers. More about this transition at the conclusion of my testimony. The old VHF system actually works better than the new UHF system that the MTA spent so much money to install.

An even more shocking example of waste is the MTA's installation of a fiber optic network called SONET, beginning in 1999. There are two types of fiber optic communications networks – synchronous and asynchronous. Synchronous communications allow people to connect at a single point in time, at the same time. I hope that your eyes are not glazing over at this point, because, if you have ever purchased a metrocard or put a token into turnstile in New York, this is your money.

Between 1989 and 1991, the MTA contracted Northern Telecom to install an asynchronous fiber optic system throughout the subway system. It worked well and is actually still carrying 80 to 90% of the communications traffic in the subways. TWU Local 100 members have been maintaining it since it was installed. The Northern Telecom system has "nodes" – where signals are delivered and transmitted – in 96 locations around the city – many of the old power substations. From these nodes, communications signals fan out to various subsystems and communications outlets.

When the MTA wanted to upgrade its communications network to a synchronous system (SONET stands for Synchronous Optical Network), it turned to Siemens, a major multinational telecom company. Paul Eliea, who was the MTA's Chief Telecommunications Officer until 2001, worked with Siemens to design the SONET network, and then promptly resigned from Transit and became Siemens's Project Director. The original price tag for SONET was approximately $500 million.

Think about it: SONET was supposed to provide the capability for real-time streaming video and face recognition. The system designers said that with appropriate software, controllers at remote locations would be able to monitor any subway station on live TV, and that the system would be able to immediately identify customers via face recognition. Terrorist threats could be immediately identified before they had a chance to act.

Siemens began installing SONET in 1999, making the decision to use the Northern Telecom system as a backbone. When Local 100 members who service the telecommunication network tested the existing cables for SONET capability in 2000, they found unacceptable signal losses, because SONET has less tolerance for error than did the Northern Telecom system. The plan was to install nodes for SONET in every subway station – 435 of them. But because the new cabling was splicing into cable that was already faulty, signal strength was still being lost to an even greater degree. Meanwhile, Siemens was making money hand over fist. Siemens then recommended new cabling throughout the system, a huge new cash outlay, only recently approved.

Then the MTA noticed another problem associated with SONET which Local 100 had warned them about. The communications rooms underground, which store CCTV and radio equipment, as well as the fiber optic cables, were overheating. In these rooms, Siemens had installed equipment cabinets with air conditioners – but since the rooms were poorly ventilated, there was nowhere to vent the excess heat and the rooms became extremely hot, sometimes reaching 130 degrees F, resulting in many air conditioner failures. So now Siemens recommended that pipes be run up to street level from every communications room to vent the air conditioners. By this time the price tag for SONET was up to $1.5 billion.

In order to take the heat off the huge escalating costs of SONET and to show some progress, the MTA and Siemens installed the countdown clocks. Now, the countdown clocks are not particularly high-tech. They are in most major subway systems all over the world and in other US cities. The countdown clocks could easily have

run on the old Northern Telecom network. It uses only two percent of the data traffic capacity that the SONET system was designed for. SONET has not delivered anything like its promise. There is no real-time video streaming in our subway stations, and no face recognition. Today, the best we can do after a terror attack is to retrieve the video from a hard drive and maybe find out how he did it.

Lockheed-Martin, the contractor which was supposed to set up the video streaming, high speed data transmission, and face recognition technology on SONET, was sued by the MTA for failure to deliver as promised. Lockheed-Martin countersued, claiming correctly that the MTA had promised that a working fiber optic network would be in place to support its software. It wasn't.

Worst of all, SONET is now obsolete. If you have seen the new information wall of messages and route changes at the Bowling Green station, you should know that it is brought to you via satellite, with an antenna above the station receiving the signals. Local 100 believes that this is the way telecommunications will be done in our system going forward – meaning that all of the money spent on Siemens for SONET is now completely wasted. It's as useless as an Edsel automobile.

Positive Directions

There is not much good news to follow the bad, but there is some. In four MTA properties – Roosevelt Avenue, Corona, the Gun Hill Bus Depot, and the Stillwell Terminal at Coney Island, the MTA has installed working photovoltaic solar systems to save on electric bills and provide a showcase for solar power. Working with the MTA, TWU Local 100 has used a grant to train 450 union members in maintaining and troubleshooting the solar panel arrays. Local 100 encourages the MTA to construct more solar panel arrays on the many properties that could easily accommodate them and benefit from the net reduction in the need to purchase electrical power they make possible. This is in line with Governor Cuomo's "NY-Sun Initiative," that is supposed to create new jobs in the solar energy sector.

Training should also be expanded for MTA employees to be able to service and troubleshoot the new HVAC systems in state-of-the-art subway cars. Although the procurement process for new equipment takes at least a year, giving the MTA plenty of time to prepare to service what they buy, the Authority generally does not train enough personnel to maintain the high-tech products they purchase. Then, they must turn to contractors who are much more expensive than the in-house workforce.

In conclusion, modern technology is crucial to the performance of the MTA's mission, but mismanagement, lack of provision for training, and questionable relationships with large multinational corporations make this an area where tremendous waste has been the norm. These gigantic contracts are let without oversight, without regard to expert advice offered by the MTA's own employees, and without regard to tremendous cost overruns. Rather than take these lessons to heart, the MTA barrels forward with high-tech projects that end up putting a much greater hole in the budget than any other single factor.

Additionally, the police radio communications system within the subway system, is now slated to be made compliant with the FCC's narrow-band mandate. Therefore, once this transition takes place there is no need to ever use the UHF system, and it should be abandoned.

TRI-STATE TRANSPORTATION CAMPAIGN

NYC Council Committees on Transportation/Technology
Joint Oversight Hearing: The Impact of Modern Technology on the City's Buses and Subways
October 24, 2012

Testimony by:
Veronica Vanterpool
Tri-State Transportation Campaign

Good morning. My name is Veronica Vanterpool and I'm the executive director of the Tri-State Transportation Campaign, a non-profit organization working toward a more balanced, transit-friendly, and equitable transportation system in New York, New Jersey, and Connecticut.

Technology has become part of our daily lives, but until recently, has been missing from our daily transit commutes. Just a few short years ago, police officers were the only enforcement for speeding motorists and clogged bus lanes. Bus and subway riders waiting at a bus shelter or on a platform had no idea when their next bus or train was scheduled to arrive. Buses waited for a green light, idling along with cars, along busy corridors. Trains didn't operate themselves. Buses only accepted coins and ran on highly inefficient and polluting diesel fuel.

Today, our bus and subway network has benefitted greatly from the implementation and adoption of technology.

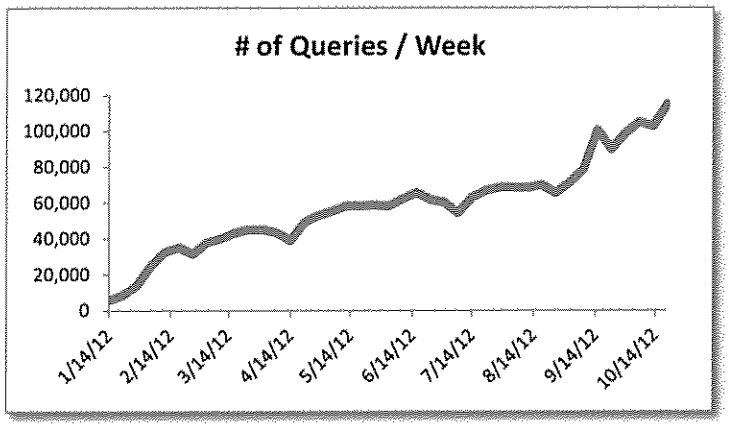
- **Camera technology** has helped keep "bus only" lanes clear and helped reduce speeding and red-light running, while simultaneously allowing police and traffic officers to focus on other violations. Bus riders have had a faster commute. Intersections where cameras were installed saw a 56% decline in serious injuries, a 44% decrease in pedestrian injuries and a 16% decrease in all injuries.
- **Countdown clocks** were first installed in NYC's subway in 2007 and today, have been installed at 177 stations throughout the system. Subway riders now know when their train is scheduled to arrive or when there are service delays. MTA Bus Time uses Global Positioning System (GPS) hardware and wireless communications technology to track the real-time location of buses.
- **Text/emails alerts** Subway, bus, and commuter rail riders can receive text and email alerts for selected routes that inform the passenger of delays or cancellations. Many times, the alerts are received with enough time to make a change. LIRR and MNR riders can text Coo-Coo to find out the next five departing trains from their desired station.
- **Transit signal priority** is a GPS signal priority system that gives buses an early green/extended green light at intersections reducing commuting time and increasing schedule reliability.
- **Signal optimization** of NYC traffic lights has improved traffic flow for all road users, but has helped improve bus traveling speeds. Modern signal technology on the subways, which is

currently underway as part of the MTA's current capital program, allows more trains to be on the track.

- **New fare technology** such as the Metrocard made it easier for riders to take buses and subways. Bus riders no longer have to fuss with making change for a dollar. Off-board fare collection along Select Bus Service routes has been integral in reducing travel time in SBS corridors. Though Metrocard revolutionized commuting throughout the five boroughs, and more recently, into Westchester and Nassau Counties, it is now an outdated fare medium. A more seamless system that allows users of the various systems in NYC (NJ Transit, PATH, NYCT, LIRR, MNR) is currently being explored by the MTA. This would benefit many NYC residents and employees who use more than one transit system.
- **Clean fuel and Hybrid-Electric buses** have helped reduce the perception of buses as pollution spewing vehicles. NYCT was the first public transit system in the country to switch all diesel buses to ultra-low sulfur fuel and is a leader in developing hybrid technology. Currently, 800 hybrid buses are operating on NYC streets.

Overall, investing in and supporting modern technology for our transit network are key ways of ensuring NYC and the region have a modern transit network. This investment helps reduce traffic congestion, improves the safety and utility of streets for all users, uses limited fiscal resources efficiently, reduces environmental pollution—all of which help create a sustainable city and economy. Continued investments in modern technology for buses and subways encourage more people to use transit. To sustain these benefits, NYC DOT and MTA must receive the fiscal resources needed for new technology and equipment and the proper authorizations from the NYS legislature for camera technology. The investments are worthwhile and have helped support the unprecedented ridership increases throughout the transit network, especially along the Select Bus Service corridors.

Thank you.



BusTime usage has grown exponentially. We received about 20,000 texts per week when the program started. We now receive about 120,000 texts per week. We've seen the highest growth in the past 8 weeks – nearly 47% - since the first 2 months of the program.

Not only is the adoption high within the population, but those riders who do use the program, use it frequently. The average bus rider who uses BusTime makes a query 9-10 times a week. They have incorporated this into their daily routines – Monday through Friday – the coming and the going. In fact, for you bus riders in the audience, you might be interested to know that the top three bus stops for BusTime are the intersection of Victory Boulevard and Clove Road on Staten Island, Battery Place and Washington Street in Manhattan and Hylan Blvd and Clove Road in Staten Island.

Why are BusTime and texting technology important for public transportation in NYC?

The success of BusTime is extraordinary. But it's not surprising. People takes their phones with them everywhere, and every phone can text. There are 332 million mobile subscribers in the US who send 6.4 billion messages in a day. 88% of American adults own a cell phone, which is greater than the number of adults with broadband or dial-up access. You could say that texting technology is the fundamentally democratic medium - the medium of the public.

Text messaging is ubiquitous across age groups.[I] Text messaging is ubiquitous across ethnicities.[II] Text messaging is ubiquitous across income level.[III]

In addition to ubiquity, the humble 160-character text message is efficient because it is read. Essentially every message that is sent is read by the recipient.

The Impact of Texting Technology on Public Transit and other Public Services

Texting can easily, effectively and efficiently improve service not just for transit riders but for all New Yorkers who use government services. The Department of Health sends texts to remind HIV+ urban youths to take their anti-retrovirals. In another campaign, the DOH works with urban males to encourage them to register for IDs like Social Security cards and State IDs. The Department of Education keeps parents informed via text about school issues, including the event calendar, lunch menus, and how to enroll their children in school programs. And a third agency will announce their rollout later this week.

We look forward to continuing to work with the MTA and the City. Thank you for your time today. I'm happy to share ideas for additional MTA services via text messaging as well as answer any questions.

[I] 73% of adults 18+ use their mobile phone to send/receive text messages. 95% of 18-29 year-old cell phone users send/receive text messages. 57% of 65+ year-old cell phone users send/receive text messages.

[II] 68% of all White, non-Hispanic adults use their mobile phone to send/receive text messages. 79% of all Black, non-Hispanic adults use their mobile phone to send/receive text messages., 83% of all Hispanic adults use their mobile phone to send/receive text messages.

[III] Less than $30,000 avg 58.7 texts per day / median 20. $30,000-$49,999 avg 40.2 texts per day / median 15. $50,000-$74,999 avg 25.9 texts per day / median 10. $75,000+ avg 31.9 texts per day / median 10

October 24th, 2012

Thank you Chairman Vacca. My name is Amanda Moskowitz. I am the General Manager at Mobile Commons, a mobile technology and strategy provider to multiple government agencies, companies, and nonprofits in New York City and around the country.

We live in an era when new technology is revolutionizing how governments can communicate with residents. Text messaging is an extremely effective way for governments to communicate with city residents across income, age and ethnicity. Text messaging improving the quality of life for all New Yorkers.

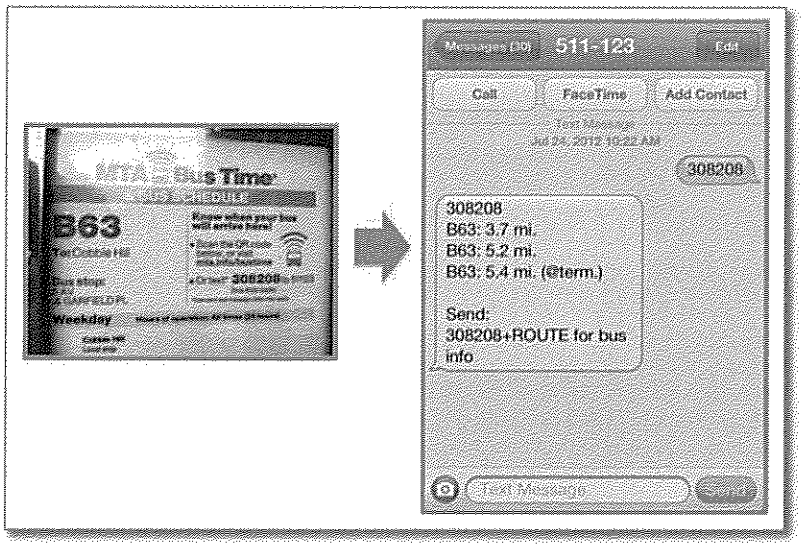
Today, I'm here to talk to you the MTA's BusTime platform.

About BusTime

Simply put, the MTA's BusTime is the mobile service that provides commuters with real-time information on the nearest bus. Riders can access this information through web, mobile web or texting. Mobile Commons provides BusTime's texting component.

The system is easy to use and very effective. Each bus stop in the program is assigned a keyword specific to that stop. When riders text that keyword to 511-123, they immediately receive a text back that tells them how far away the next three buses are from their stop. It's a simple concept but it has a huge impact. It's allowed people to avoid waiting unnecessarily at the bus stop. They can now use that time to grab a cup of coffee or spend a few extra minutes at home with their children. Commuters can now make smarter and more efficient decisions about their daily transit plans. These decisions at the person-level ultimately make a macro difference and improve efficiency and smooth commuting across the bus and public transit system. This improves quality of life.

BusTime is now borough-wide in Staten Island,, and also is operating along with a couple of pilot routes in Brooklyn and Manhattan. The MTA is planning to expand the service to the entire city, with the Bronx coming online next.



Rapid adoption of text messaging shows the public's enthusiasm for accessing public transit information via text.

If the reaction from Staten Island bus riders is any indication, BusTime is going to be used soon by hundreds of thousands – if not millions - of bus riders across the entire city.

Since BusTime launched in late January, over 51,000 bus riders have texted in to find out where their bus is. Over 38,000 riders in Staten Island have used it. That's more than 30% of Staten Island's bus riding population – an extraordinary usage rate.

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