

**Department of Information Technology and Telecommunications  
Testimony before the City Council Committees on  
Fire and Criminal Justice Services, Public Safety, and Technology in Government  
Oversight – Implementation Status of the New York City Wireless Network  
Monday, February 25, 2008**

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Good morning Chairpersons Brewer, Martinez and Vallone, and members of the City Council Committees on Technology in Government, Fire and Criminal Justice Services, and Public Safety. My name is Paul Cosgrave, Commissioner of the Department of Information Technology and Telecommunications, or DoITT. Thank you for the opportunity to testify today regarding the New York City Wireless Network. When complete, this network will represent a truly historic and unprecedented enhancement to the administration of both public safety and public service across the City of New York. Joining me today is Chief Thomas Gangone from the New York City Police Department, Chief of Communications John Coloe from the Fire Department, and Deputy Commissioner Henry Jackson from the Office of Emergency Management. As you know, the City's public safety agencies are major beneficiaries of this network, and these agency representatives are here to answer questions you may have about how they plan to utilize this technology.

New York City has made substantial improvements in communications technology for first responders during the Bloomberg Administration. In describing these improvements, however, it is important to first distinguish between traditional voice communication, achieved through radios used by public safety personnel, and data communication—the subject of today's hearing—which will be greatly enhanced by the New York City Wireless Network.

Nearly four years ago, DoITT issued a Request for Proposals aimed at addressing the City's critical need for a high-speed network to provide advanced, interoperable data communications among and across key agencies. In developing this RFP, the City embarked on a collaborative process of developing robust technical requirements and defined network specifications that included the Police Department, Fire Department, Office of Emergency Management, the Department of Transportation, and DoITT. After issuing the RFP in March 2004, this committee reviewed responses from some of the country's top systems integrators, held vendor presentations, completed exhaustive technical evaluations, and selected two vendors to participate in a pilot program to assess which best demonstrated the ability to meet the City's requirements.

The result of these efforts, announced by Mayor Bloomberg in September, 2006 was the selection of the Northrop Grumman Corporation to build the New York City Wireless Network, or NYCWIN. To build, equip and maintain NYCWIN, and to provide technical support to DoITT, the City awarded Northrop Grumman a five-year, \$500 million contract. To help fund network build-out, the City also secured roughly \$20 million from the Department of Homeland Security.

The most aggressive commitment by any municipality in the country to provide a next-generation public safety network, NYCWIN will give first responders high-speed data access to support large file transfers, including federal and state anti-crime and anti-terrorism databases, fingerprints, mug shots, city maps, automatic vehicle location, and full-motion streaming video. A fully-interoperable, IP-based network, NYCWIN will enhance coordination by linking first responder personnel, on-scene, with incident managers at remote sites through real-time data and video feeds.

As significant as NYCWiN will be in enhancing public safety, its role in improving the daily delivery of non-emergency City services will also be transformative. NYCWiN will support a range of additional public service applications, providing substantial improvements over existing technologies for the City's mobile workforce by automating and streamlining time-consuming transactions and processes. Through NYCWiN, the City's mobile workforce will have the ability to work from anywhere, at any time, accessing a wealth of data such as agency files, databases, high-resolution photos—or any application otherwise accessible from the worker's office-bound, desktop PC.

Since January 2007, NYCWiN has been operational throughout lower Manhattan—the area below Canal Street, river-to-river—and is now being built throughout the city. Initial launch of the network is scheduled for April, at which point approximately 70% of the City's police precincts and fire houses will be encompassed within the service area. By this summer, the service area will have expanded to include over 95% of the City, with full coverage for the city's entire 322 square miles achieved by year's end. On the attached map, the shaded yellow region represents the area of the city covered at initial network launch in April; light green, the portions added by this summer; and dark green, the citywide implementation by year's end.

In total, NYCWiN will consist of 400 network sites across the five boroughs, managed from two fully-redundant network operation centers, which have already been completed, protected with 24-hour generator backup power, linked via multiple diverse fiber circuits, and staffed around the clock with technical support from the vendor. From an agency perspective, DoITT will be dedicating nine staff members to full-time operational support of City agencies running applications on the network. Unlike commercial networks, NYCWiN is designed for greater reliability, resiliency and redundancy. It will provide prioritized access for first responder data transfers in the event of an emergency, thereby ensuring the City the ability to manage network traffic, which can otherwise degrade performance.

As to the 400 sites themselves, the vast majority—over 95%—consist of rooftop antennas sited with approval from the Department of Buildings. The remaining sites, fewer than 20 citywide, require additional zoning approval by the Board of Standards and Appeals and/or City Planning Commission, due to the need for unipoles to achieve appropriate coverage in certain neighborhoods. As DoITT proceeds with these sites in particular, we have taken the opportunity to meet and brief a number of Council Members, elected officials and community groups in these districts to gather input before submitting BSA and CPC applications. NYCWiN sites are lower-powered and less obtrusive than their counterparts typically used by wireless carriers.

In advance of April's initial launch—and since the network first became operational in lower Manhattan early last year—we have been working with our agency partners to test a variety of public safety and public service applications on the network. As a result of this testing and our close collaboration with City agencies, the first devices will be ready for deployment on NYCWiN following launch in April. These include wireless vehicle modems for the NYPD, FDNY and OEM, wireless traffic control modems for DOT, and handheld units for agencies conducting enforcement and inspection activities in the field. In addition, wireless cards will be available to all City agencies for use by their mobile staff in accessing agency systems remotely via NYCWiN. Currently, some 53 applications across 19 agencies are planned or in trial on NYCWiN, allowing agencies to evaluate the citywide opportunities for programs that run the gamut of the City's key service areas: from public safety to inspectional services, from citywide administration to health and human services.

As it relates to public safety side, for example, the network will enhance emergency response, command and control, and situational awareness capabilities by enabling real-time access to vital information. NYCWiN will enable police officers to access real-time photo, warrant, and license plate databases, for the identification of suspects in criminal investigations, and enhance access for detective units to the NYPD Real Time Crime Center. In addition, mobile cameras can operate on the network and be tied back to existing command centers to support, for example, the Lower Manhattan Security Initiative. NYCWiN can also support wireless emergency call boxes for the public to summon emergency responders when needed. These self-contained, IP-based phone boxes, operated by solar battery power, are intended for deployment in areas without access to wired telephony or commercial power.

Through NYCWiN, the Fire Department will be able to establish reliable, wireless connectivity between its Operations Center and responders in the field to transmit on-scene data and full-motion, streaming video, and provide remote access to operating procedures, maps and other geographic information.

Another type of application supported by NYCWiN is Automatic Vehicle Location, or AVL technology. As you know, this technology has already been installed in nearly 1,100 ambulances and fire trucks citywide—contributing to decreased ambulance response times—and the network will further enhance these systems by providing real-time map and database updates.

By also allowing for the expansion of AVL technology to the vehicles of other City agencies, NYCWiN can help attain more efficient fleet management and increased safety for field workers. For example, the Department of Sanitation is currently using the network to pilot the use of AVL technology in more than 50 collection, supervisory and salt-spreading vehicles in DSNY's Queens 8 District. Moreover, as mentioned by Mayor Bloomberg in his *State of the City Address* last month, we are currently working with the Department of Education to explore the use of AVL technology in City school buses to help measure on-time performance and keep track of the fleet. Other agencies planning to install AVL technology utilizing NYCWiN include the Departments of Correction, Health and Mental Hygiene, and the Administration for Children's Services.

In addition, a number of public service agencies will be utilizing NYCWiN at launch to more efficiently conduct inspections and various maintenance activities in the field. For instance, with the Department of Environmental Protection, we are coordinating citywide rollout of an Automated Meter Reading system, or AMR. Implementation of this technology comes on the heels of a pilot project conducted on the meters of 800 homes in lower Manhattan and Brooklyn Community Board 1, and will be more efficient than conventional methods of water meter reading. This technology will also improve customer service by increasing actual read rates, providing customers with better consumption information, and detecting potential water leaks. Other agencies rolling out handheld devices on NYCWiN include the Departments of Buildings, Health and Mental Hygiene, and the New York City Housing Authority.

Finally, the Department of Transportation is utilizing NYCWiN to enable its Wireless Traffic Signal Control program, which through the use of wireless modems will expand the City's ability to remotely monitor and program traffic signal controls, both on a daily basis and during emergency events. NYCWiN will provide secure, redundant and reliable transmission of incident information—including photos and video—and further enable DOT to ensure that lights remain in sync, ease congestion, and improve response times to traffic signal control and maintenance issues.

Beginning with the April launch of NYCWiN, DOT will be installing 2,400 of these wireless traffic control modems throughout the City over the next year, and plans to eventually have all of the City's intersections equipped with NYCWiN-enabled modems.

As we implement the network citywide, we are also conducting demonstrations and briefings for various elected officials and agencies to apprise them of NYCWiN's capabilities. Included in these have been:

- Workshops for City agencies to review NYCWiN's capabilities and strategize about options for migration to the network, including the demonstrating devices that receive broadcast alerts, streaming video, and provide access to agency systems as well as the City's intranet;
- A demonstration of NYCWiN's capabilities in lower Manhattan in December for the United States Department of Homeland Security's Assistant Secretary for Cyber Security and Telecommunications. The Assistant Secretary was pleased with what he saw in New York City, and the meeting fostered excellent exchange of information with DHS about the City's wireless initiatives; and
- Demonstrations and briefings for several Council Members and their staffs, which we would be pleased to extend to all Council Members.

Thank you again for the opportunity to testify today. As you can imagine, my colleagues citywide and I very much anticipate the launch of NYCWiN in the coming months. When complete, this system will provide robust, reliable and resilient data communications, enhancing coordination and ensuring that critical information reaches our mobile workforce, to the benefit of all City agencies and the people they serve.

Thank you for your support of this important initiative. We welcome your feedback and comments, and would now be pleased to address any questions you may have.

Thank you.

**Northrop Grumman Information Technology  
Vice President Sam Abbate**

**New York City Council Testimony on:  
The New York City Wireless Network (NYCWiN)  
Monday, February 25, 2008**

Good morning. Chairpersons Brewer, Vallone, Martinez - and members of the City Council Committees on Technology in Government, Public Safety and Fire and Criminal Justice Services. My name is Sam Abbate and I am Northrop Grumman's Vice-President for Wireless technologies and the program manager for the New York City Wireless Network, known as NYCWiN. It is a pleasure to appear before you today to discuss the progress that we have made on the NYCWiN program, and the promise that this system will deliver to New York City.

In my 26 years with Northrop Grumman I have had the opportunity to work on programs that have shaped the future of our nation and protected our troops throughout the world. Through these programs I have experienced first hand how technology can empower government. While I am proud of each and every one of those accomplishments, I am even more excited about the potential that NYCWiN brings to this City. I am also particularly proud of the team that has been working so hard for the past 18 months on this program. Through a solid partnership between Northrop Grumman, DoITT, and each of the agencies involved in this effort, we are excited to see all of our hard work quickly coming to fruition.

Across the nation State & Local Government Agencies are investigating ways to transform the manner in which they operate. As budgets tighten and demands increase, it is becoming evident that traditional methods to reform government only result in marginal improvements. In order to make significant and substantive change, government must look towards technology to achieve the types of return that is necessary to move forward with rigor and stamina.

Northrop Grumman has taken a leading position in helping government to define tomorrow's operational and technological challenges, and is committed to delivering secure, reliable solutions that help transform government - today. That's why we are proud to say that we are helping the City of New York as it leads the nation in developing the most robust and secure, private high-speed network ever created for local government.

The New York City Wireless Network (NYCWiN) is a broadband wireless infrastructure created to support public safety and mission critical operations for the New York City Government. It is a dedicated, highly secure and redundant wireless network that provides government users real time access to high-speed voice, video, and data communications throughout the five boroughs. These new capabilities will allow government to improve the efficiency of its operations while providing interoperability between departments and providing public safety responders the tools they need to more effectively protect life and safety.

We believe that NYCWiN will have two transformational impacts on the City:

First, NYCWiN will enhance public safety and City operations by enabling a mobile workforce.

For the first time, government agencies will be able to extend their reach directly to where services are needed most. Traditional technological constraints such as fixed computers in office

buildings will no longer limit how government provides service to the public. For instance, field workers (such as police officers, case workers, and inspectors) will be able to access case records and databases in the field, rather than having to return to City Offices just to look up or enter information into City systems. By using the Automatic Vehicle Location or AVL capabilities that we have created on NYCWiN we will be able to better manage the City's vehicle fleet, resulting in reduced response times, better awareness of fleet location, and even a better ability to ensure that the fleet is running with the least possible impact to the environment. All of this will result in better productivity, improved informational awareness, and the ability to bring government directly to the City's residents, visitors, and businesses.

Second, it will extend the reach and capabilities of the City's existing infrastructure.

This means that the City can wirelessly enable its existing infrastructure to better leverage its capital investments. For instance, as the City improves its traffic management system, NYCWiN will enable the City's Department of Transportation to remotely manage traffic patterns through the wireless system. In addition to saving millions of dollars in wired circuit costs, the wireless network will enable the traffic system to integrate with the nation's future traffic infrastructure.

It also means that as new challenges result in new infrastructure, that infrastructure can be remotely monitored and managed through NYCWiN. For instance, as the City deploys sensors that detect nuclear, biological, and chemical agents, those sensors can securely transmit data using the wireless system.

The work that we have embarked upon has the ability to truly revolutionize the City's operations. In the work that we are doing with the Police Department, Fire Department, Office of Emergency Management and so many others, we see a clear translation to safer streets, safer working environments for the City's employees, smarter decisions, more cost effective operations, improved response times, better customer service, and improvements in the City's ability to manage traffic.

Let me briefly tell you why the system that we are building is the leading solution in the nation:

The NYCWiN network will be limited to government users in order to ensure availability – especially during emergencies. Using a standards based technology our system further ensures usability during emergencies by allowing multiple levels of prioritization so that “critical” users are guaranteed access and bandwidth when they need it. For instance, during a fire, a firefighter would have access and bandwidth priority over a building inspector – that way the firefighter can access the information they need to save lives. The system allows us to control bandwidth allocations so that groups of users can gain access to additional bandwidth when required. The network is also built with multiple levels of redundancy including back up battery and generator power, redundant 24-hour operations centers, diverse telecommunications capabilities as well as microwave and ground based redundant communications. Finally, NYCWiN delivers a wireless infrastructure with a full array of cyber and physical security features including multi-level encryption, user authentication, firewall management, as well as cyber and physical intrusion detection, prevention and tracking.

Deploying a network like this in a City as complex as New York is no small feat. That's why we are particularly proud of the progress that has been made to date. From the initial pilot program it was clear that our technology solution offered the best, most comprehensive solution for the

City. But deploying the technology was not the only challenge in this program. In order to launch such a large system we first needed to install our technology infrastructure around the City. This meant identifying sites that provided the desired radio coverage but had the least impact on the surrounding community. It meant negotiating leases with hundreds of landlords, and obtaining building permits to ensure that our work was done according to the same high standards that the City requires of all its contractors. As we march forward towards our goal of deploying nearly 400 sites Citywide, we take pride in the speed at which this deployment was conducted. When compared with commercial network deployments we have proven to far exceed the rate at which traditional telecommunications wireless infrastructure is built. We have also worked closely with the City to ensure that our antenna sites are deployed in as discrete a manner as possible. In neighborhoods where geography and local housing stock do not allow us to deploy in manufacturing or commercial zones, we are strictly adhering to the City's zoning process, and going through approval at the BSA and CPC.

Through the leadership of DoITT, and hard work of all those involved, we are marching forward towards an April timeframe for the initial launch of the system. This launch will represent an opportunity for the City to deploy applications on the network and begin fine tuning the manner in which we manage and operate the network. Beyond April we will continue to commission sites and expand the network footprint so that by the summer we have more than 95% citywide coverage. Finally, as we move through the zoning process we expect to have full coverage by the end of the year.

While many in the government arena have longed for the day when ubiquitous, secure broadband access is available, that day is now here. The City of New York has chosen to make an investment that will ensure that our public resources have access to the best information when they need it, and where they need it. The deployment of this network is not just a technology initiative, it is a transformational initiative. It provides our government with the tools that it desperately needs to operate in the most efficient and effective manner. Just like the Internet changed the way that we live, New York City's Broadband Wireless Network will change the way that government provides services – and ultimately, the manner in which citizens receive those services from government. On behalf of Northrop Grumman we are thankful that the City has placed its trust in us to deliver this network and proud to have been part of what will be a remarkable success.

I appreciate the opportunity to appear before you today, and would be happy to answer any questions that you may have.