Office of Bronx Borough President
Ruben Diaz Jr.

Policy Considerations and Recommendations for New York City PPT to Wi-Fi Conversion

Office of the Bronx Borough President — 851 Grand Concourse, St. 301, Bronx NY 10032

T: 718-590-3500 **E:** webmail@bronxbp.nyc.gov

November 20, 2014

Executive Summary

Borough Presidents serve as voting members of the New York City Franchise and Concession Review Committee ("FCRC"). The New York City Department of Information Technology ("DoITT") issued a request for proposals ("RFP") that closed on July 21, 2014, to convert certain payphones into a new continous free public Wi-Fi network. Specifically, the RFP seeks a vendor for the "installation, operation, and maintenance of up to 10,000 Public Communications Structures providing advertising, Wi-Fi, and phone services in all five boroughs."[1] The winning proposal will then enter into contract negotions with the City for a non-exclusive franchise that must be approved by a vote of the FCRC.

On November 17, 2014, DoITT announced the winning RFP respondent ("Respondent"). The design selected has several desirable feautures. However, the twenty-four hour battery backup is insufficient. After Hurricane Sandy, lower Manhattan was out of power for five days.[2] Internet access is vital to the delivery of life-saving emergency services and public safety during these extreme weather situations. Respondent should be required to implement a design that is resistant to exteme weather and will stay operatable in emergency situations. We recommend Respondent incorporates solar power and other design modifications that eliminate the network's dependence on ConEdison. We conducted a review of existing Wi-Fi networks and solar technologies. Adding solar power while also maintaining a sleek, modern and minimalist design are neither mutually exclusive nor contradictory goals. The enclosed memorandum reviews the implemention of municipal Wi-Fi networks in a diverse group of

[1] "The City Of New York Department Of Information Technology And Telecommunications Request For Proposals For A Franchise To Install, Operate And Maintain Public Communications Structures In The Boroughs Of The Bronx, Brooklyn, Manhattan, Queens And Staten Island" - Pin # 8582014 Franch3, April 30, 2014.

http://www.nyc.gov/html/doitt/downloads/pdf/DoITT-Public-Communication-Structure-RFP-4-30-14.pdf

[2] http://blog.al.com/wire/2012/11/electricity_restored_in_lower.html

cities and the variety of services in which Wi-Fi technology has been leveraged. Certain features are highlighted for DoITT's consideration to either emulate or include in the final contract. The magnitude of the opportunity necessitates that DoITT includes as much input from stakeholders as possible during the contract negotiations and prior to seeking FCRC approval.

Policy and Legal Questions

New York City has over 7,000 public pay telephone ("PPT") installations across the five boroughs; approximately 4,000 of these include advertising. The new RFP provides for the installation, operation, and maintenance of up to 10,000 public communication points to replace and supplement current payphones. A minimum of 4,000 advertising installations are guaranteed; of which 2,600 are located in Manhattan. DoITT aspires for a targeted phase-in schedule to provide for an equitable distribution of the new structures across the five boroughs within four years.

The release of the DoITT PPT to Wi-Fi RFP (hereafter "the RFP") has generated significant debate. Most notably, several New York City Council Members have written the DeBlasio administration raising concerns regarding the Authorizing Resolutions ("ARs") employed by DoITT to issue the RFP.[3] The ARs expire on December 21, 2014. Moreover, the issue of whether the Telecommunications Act of 1934 ("TCA") prohibits DoITT from awarding one vendor the franchise has been raised. Advocates for awarding more than one franchisee for the RFP cite Coastal Communications Service, Inc. vs. New York City.[4] The case was ultimately settled out of court and left

[3] http://www.gothamgazette.com/index.php/government/5257-as-deadlines-loom-criticism-mounts-for-payphone-wifi-plan
[4] 658 F. Supp. 2d 425, *; 2009 U.S. Dist. LEXIS 91592.

unresolved certain questions; most pertinent, whether this is a telecom monopoly or an advertising monopoly on the proposed new physical and electronic networks:

> "The Court certainly agrees that the TCA does not exist to open up the billboard market to competition. Whether this portrayal accurately characterizes the TCA's applicability to the PPT industry in New York City is another question altogether. *Section 253(a)* mandates that no state or local law or requirement "may prohibit or have the effect of prohibiting the ability of any entity to *provide* any interstate or intrastate telecommunications service." The relevant clause does not refer to ultimate viability of the targeted telecommunications market, or the success of individual participants in that market. *Section 253(a)* concerns itself solely with the provision of service, not whether the putative service can survive economically."

In this case, the DoITT is exercising its option not to renew existing franchises on City owned rights of way. This is neither a regulatory nor legislative act. No one is contesting that DoITT has the right to decline or renew these contracts. Rather, the opposition is to DoITT's stated preference to select a singular non-exclusive franchisee, which would allegedly result in creating a monopoly in violation of the TCA. The policy concerns regarding monopolies generally center on the fear that the reduction of competition would produce unfair pricing to the consumer, inflate profits to the monopoly holder and stifle innovation. However, in this case, the primary services to be provided to the public would be free. Both the Wi-Fi and telephone services would be free. The revenue to the RFP winner would not be from the Wi-Fi users but those who would sell advertising to the franchisee recipient for use at the physical installations, as well as electronically to be displayed via the network. The Wi-Fi and related services are being offered as contract consideration for the right to operate lucrative billboards on City-owned real estate. It is asserted that multiple franchisees are needed to spark competition. Yet, vendors would not be competing to offer better and free Wi-Fi; they are competing for the potential revenue streams from the billboard advertising. The debate over whether to award a singular non-exclusive franchise versus several non-exclusive franchises seems misplaced because the Wi-Fi using public will likely be unaware of, if impacted at all, by more than one franchisee being awarded. In this case, New

Yorkers would ultimately prefer one reliable, widely accessible, fast and secure network. In the end, the decisions around implementing the RFP should be made from the perspective of the end user and prioritizing the public interest.

To that end, the winning RFP will create kiosks with "Wi-Fi range [that] will extend 150 feet in any direction."[5] Ideally the range of each installation would overlap, resulting in the creation of a communications corridor (hereafter "the Corridor"). New Yorkers would stay connected to the network as they move across the City. Nevertheless, DoITT should also anticipate how its network would be scaled and leveraged in the highly foreseeable event other City agencies issue comparable RFPs to create additional Wi-Fi capacity. In fact, the New York City Parks Department ("Parks") already lists on its website parks in all five boroughs that have free Wi-Fi.[6] New Yorkers should be able to move seamlessly from the DoITT network into the free Parks Wi-Fi spots. A logical progression for the roll out of this Corridor would be the New York City Department of Transportation ("DOT") Pedestrian Plaza Program. Should DOT issue a new RFP to expand the Corridor, it's possible that a different entity would be a selected for the franchise. A number of opportunities exist to extend the reach of the Corridor and award multiple franchises; including, but not limited to, libraries, public schools, and FDNY fire alarm call boxes. Upgrading the FDNY fire alarm call boxes is an especially important opportunity; which Borough President Diaz has raised in meeting with both the FDNY and DoITT. Respondent's design should supplant the FDNY fire alarm call boxes, which would bring needed revenue to the FDNY while providing additional services. In fact, in 2011, the City had approximately the "same number of payphones (14,500) as alarms (15,077)."[7]

[5] http://www.nytimes.com/2014/11/18/nyregion/pay-phones-in-new-york-city-will-become-free-wi-fi-hot-spots.html?_r=0
[6] http://www.nycgovparks.org/facilities/wifi
[7] http://www.nydailynews.com/new-york/federal-judge-rules-city-bid-costly-street-fire-alarm-boxes-deaf-article-1.948261

Moreover, DoITT should consider a client facing application that would both connect the end-user to the DoITT Corridor and serve as a Wi-Fi connection manager to search and extend the range of connectivity to existing free Wi-Fi and future free City sponsored networks. Wi-Fi connection manager applications are already available.[8] In fact, software designers are using Wi-Fi connection managers to design new services, including but not limited to, combining multiple connections into faster, more reliable singular connections.[9] Additionally, the application should have a Wi-Fi finder feature similar to that in Philadelphia, which has a system for residents to text a number and it will inform the person of the nearest free Wi-Fi spot.[10] It is also recommended that the application have features that streamline the submission of service request to the New York City 311.

If the Corridor can serve as a foundation network that could be layered with additional hot spots and networks across the City, then it would be a significant step toward DoITT's stated goal to achieve equity across the five boroughs for access to the Corridor**.** However, the PPTs are disproportionately located in Manhattan, and the other boroughs should benefit equally from this public investment. DoITT must articulate the metrics it will utilize to achieve equity prior to requesting FCRC approval. As of February 2014, there are 4,325 installations of pre-existing PPTs that include advertising panels in the five boroughs; these installations include 12,260 advertising panels.[11] They are distributed as follows:

[8] See: https://play.google.com/store/apps/details?id=org.kman.WifiManager&hl=en,
http://www.amazon.com/roamingsoft-WiFi-Connection-Manager/dp/B0056HBGWS
http://gizmodo.com/take-control-of-your-connection-with-these-wi-fi-manage-1625223400
[9] http://techcrunch.com/2012/08/08/connectify-dispatch-lets-you-combine-all-your-wifi-connections-into-one-super-connection/
[10] http://philadelphia.cbslocal.com/2012/04/06/mayor-michael-nutters-new-connect-philly-helps-wireless-users-find-free-wifi-hot-spots/
[11] See supra note 1.

Advertising Installations by Borough

Borough	Total	Side Panel	Back Panel
Bronx	241	478	192
Brooklyn	511	1,003	403
Manhattan	2,925	5,665	2,710
Queens	629	1,250	507
Staten Island	19	38	14
Total	***4,325***	***8,434***	***3,826***

For example, the Bronx has 636 payphones and the Wi-Fi range of Respondent's kiosks will be 150 feet. Consequently, certain payphones will be consolidated to reduce redundancy and new sites for kiosks will be identified. DoITT has communicated to this office it will decommission some of the exisiting 636 and create 100 additional sites. What are the metrics and factors DoITT will use to decide which payphones will be disconnected and where the new sites will be located, and how will they be weighed? How did DoITT come up with the number of 100? Why not 150? Is it an arbitrary number? This issue merits greater transparency.

Review of other Wi-Fi Networks

Prior to seeking FCRC approval, DoITT should demonstrate it has reviewed existing free municipal Wi-Fi networks for best practices and optimization. Additionally, it should demonstrate risk controls implemented to avoid cost overruns; millions of taxpayer dollars were wasted during the previous

administration through new technology initiatives including the CityTime Scandal.[12] Philadelphia, Seattle and Akron have had fiscal calamities in their efforts to implement free municipal Wi-Fi. Philadelphia attempted free Wi-Fi and discontinued it in 2008:

> "When Philadelphia's Wi-Fi network goes dark come June 12, it will mark the end of one of the first and largest citywide Wi-Fi projects in the US. The move is reflective of overall problems in municipal Wi-Fi, too. San Francisco's planned network has yet to launch (despite having been planned since 2005), and Chicago's was canned last August after the city butted heads with EarthLink and AT&T over the city using the network itself as an anchor tenant. On the other hand, Corpus Christi, Texas has managed to keep its network running just fine, due in part to the city's willingness to use the network to transmit data for its own services."[13]

Ultimately, Philadelphia repurchased the existing wireless assets from Network Acquisition Company ("NAC") for $2 million and is attempting to build the system themselves.[14] The city planned to create a "multi-purpose public safety and municipal wireless network that will improve government operations as well as providing free Internet to citizens in targeted public spaces."[15] Without this initial investment, the city said it would cost more than $30 million, plus several more years of construction, to complete the build-out alone.[16] Akron spent $6 million and its network never launched.[17] After seven years and spending $50 million, Seattle shutdown their free municipal network in 2012.[18] Additionally, DoITT should be able to answer the following questions:

1. Will the Wi-Fi network use sustainable/green technologies to increase efficiency?
2. How much power do these networks generally require?
3. Whether these facilites can generate excess power to be sent back to the electrical grid?

[12] http://www.nydailynews.com/new-york/federal-judge-rules-city-bid-costly-street-fire-alarm-boxes-deaf-article-1.948261
[13] http://arstechnica.com/gadgets/2008/05/philadelphias-municipal-wifi-network-to-go-dark/
http://www.smartplanet.com/blog/thinking-tech/seattle-ends-free-wi-fi/
[14] Id.
[15] http://www.pcmag.com/article2/0,2817,2357395,00.asp
[16] Id.
[17] http://www.ohio.com/news/local/bob-dyer-failure-of-connect-akron-was-predictable-expert-says-1.440304
[18] http://www.govtech.com/wireless/Free-Community-Wi-Fi-Coming-End-Seattle.html

For example, London has converted thousands of its classic red telephone boxes into Wi-Fi spots; with 137 London Underground stations Wi-Fi enabled, almost four times as many as in New York City.[19] "Residents of several London boroughs are already able to access free public Wi-Fi, and a further 16 are currently implementing their plans to provide similar free public Wi-Fi schemes."[20]

Spectrum of Features Available

Diverse applications of Wi-Fi technology are being developed constantly including solar polar, surveillance, mustering, and beach safety.

Solar Power and Wi-Fi

A number of existing Wi-Fi systems are solar powered. Wialan Technologies, created a Wireless Early Warning System ("WEWS") to be rolled out in as many as six cities in Florida.[21] Apprion Technologies have a unique solar powered Wi-Fi badge reader "Mustering Tower" for real-time personnel check-in during emergency situations.[22] Goulburn, Australia, provides free internet through a small solar panel and battery system. In Leeds, United Kingdom, they announced plans to restore 1930s phone boxes; the boxes will be painted blue instead of the classic red and configured with a low-impact solar powered installation. They have "designed the boxes to house a unique low energy, high bandwidth network, which will allow unmetered, free Wi-Fi access to anyone within the vicinity."[23]

Petra Solar has implemented solar powered solutions in a diverse group of cities. Petra Solar focuses on pole-mounted energy generation and communication technologies, and in delivering "Smart

[19] http://www.wired.co.uk/news/archive/2014-05/07/new-york-wifi-phonebooth
[20] Id.
[21] Wialan Technologies Builds New WIFI Prototype Application, Expands Board of Directors; Applies for New Patents to Accommodate National and International Market Expansion, Marketwire, L.P., Oct 14, 2013.
[22] Apprion Extends Safety Application Offering With Innovative ION Mustering Tower for Improved Personnel Safety; Industrial Application Leaders Bring First of Its Kind Solar Powered, WiFi Badge Reader Mustering Tower to Market for Real-Time Personnel Check-In During Emergency Situations Marketwire, L.P., April 25, 2014.
[23] Aql To Deploy 'Blue Box' Free Wifi Interactive Kiosks In Leeds, EFYtimes.com, June 29, 2013.

City" technologies including advanced control LED street lighting.[24] This approach would strengthen city economics by harnessing the value of energy savings associated with the high efficiency lighting combined with the revenue generation of renewable and clean solar energy. This fully integrated and networked approach enables valuable services to be added to any municipality or community for added safety and security of the citizens, while improving resiliency and sustainability by establishing a mesh communication and data network that can be grid independent during periods of power disruption.

In partnership with the New Jersey power utility PSE&G, they've implemented 200,000 systems (equals about 40 million watts of solar energy generating capacity) across much of the state of New Jersey to make a large communication platform. They also installed 5 million watt solar system in the country of Bahrain; they monitor the entire Bahrain and PSE&G systems at their South Plainfield communication nerve center. Similarly they partnered with Vermont utility Green Mountain Power, and 150 of their units will be installed in a state-wide system. The Los Angeles Bureau of Street Lighting began with 350 units, and is expanding to 9,000 units (LED and solar). The demand is growing with pilot demonstration systems in the Virgin Islands, Orlando (in conjunction with Florida Power and Light), and in Palo Alto, California; and 16,000 LED and solar poles being developed for Long Beach, CA. In the City of Boston, Petra Solar is developing an LED/solar evacuation route. Lastly, the City of Willingboro is having developed a project for over 3,000 poles to have LED/solar combined with a whole city solution being developed to include communications, energy storage, and citizen services.[25]

In the case of the DoITT opportunity, Petra Solar Systems can provide the solution for the wireless mesh networking capability having multiple bandwidth options that is required while implementing a host of ancillary features which may be desired, including:

[24] http://www.petrasolar.com/technology/the-petra-smart-city-solution/
[25] Per proprietary communications provided by Petra Solar.

1. Smart LED streetlights and controllers comprised of smart technology that will allow for the dimming and operational control of each individual streetlight. Surveillance and sensor networks for security, parking and traffic monitoring
2. A grid-connected solar power generator that leverages the industry's most mature and proven micro-inverter technology. Each solar panel is remotely monitored for performance.
3. Battery backup to manage operations during grid interruption

The Petra Systems Smart City Solution connects streetlight, energy generation, surveillance and data and communication networks to a city's public works department to enable the strongest project economics for cities considering a Smart City deployment.

Mustering

Mustering services are generally applied in factory setting to mitigate risk in the event of sudden hazardous conditions that pose a threat to employee safety. These types of technologies would also be helpful in the coordination of a city response to a terrorist attack or if extreme weather conditions disables communications infrastructure. For example, muster towers enable employees that have arrived at a designated area to automatically check-in via a wireless badge scan and the tower's Wi-Fi reader immediately updates the system.[26] This automated wireless system and reader eliminates manual processes and provides real-time mustering and personnel accounting during critical emergency situations.[27] "It provides real-time information and communication about the status of employees and contractors, enabling plants to locate personnel in real-time and providing efficient communication that can save lives."[28]

Beach Safety

The Wialan Technologies WEWS product was created to utilize Wi-Fi technology to communicate with beach goers; specifically it was created:

[26] See supra note 22.
[27] Id.
[28] Id.

> "in response to municipal government requests for a public safety notification process that allows lifeguards and other public safety officers with 24/7 surveillance capabilities coupled with the ability to notify beachgoers of dangerous beach conditions . . . Wialan's patented hermetically sealed base unit coupled with a Public Announcement System and wireless High Definition video surveillance powered by solar panels."[29]

New York City beaches would benefit from the implementation of similar features to the network. The City has made substantial investments to expand and promote pedestrian use of our beaches and waterfront. Consequently, if the new network can be utilized to promote safety at our waterfront we should make every attempt to take full advantage of the occasion.

Conclusion

DoITT has presented a compelling franchise opportunity; however, the contract approval should not be rushed because of the impending expiration of the ARs. Our office has serious reservations at this time given the policy issues raised above. The aftermath of Hurricane Sandy has taught us that all major infrastructure investments need to be implemented in a manner that incorporates sustainability and resiliency for major emergencies. If DoITT cannot address these issues with the RFP winner then it should consider reopening the RFP.

[29] See supra note 21.