

RFI Response to City Wireless internet Access for New York City Parks and Other Open Spaces

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Overview

NYCwireless is a non-profit organization that advocates and enables the growth of free, public wireless internet access in New York City and surrounding areas. Founded in 2001, NYCwireless serves thousands of individuals throughout the New York City metro area through the dozens of hotspots installed in NYC Parks, Public Spaces, and Affordable Housing Buildings.

Over the past several years, NYCwireless has built free, public wireless networks in dozens of New York City parks and open spaces through partnerships with local organizations such as the Bryant Park Restoration Corporation and Madison Square Park Conservancy and business improvement districts such as the Alliance for Downtown New York. These include hotspots in Bryant Park, Madison Square Park, Wagner Park, Brooklyn Bridge Park, Jackson Square Park, Stuyvesant Cove Park (the first fully solar powered hotspot in New York), Tompkins Square Park, Bowling Green Park, City Hall Park, the South Street Seaport, the Winter Garden, the Atrium at 60 Wall Street, Stone Street, Wall Street Park, and the Vietnam Veterans Plaza, among others.

NYCwireless also assists under-served communities in getting affordable internet access. NYCwireless works with Dunn Development Corporation and Community Access, a non-profit housing organization, to train volunteers and building residents to build and maintain wireless networks in Manhattan, Brooklyn and the Bronx. The networks provide 8 buildings with more than 50 residents per building with private, high-speed wireless connections.

According to a survey by NYCwireless Board Member Laura Forlano, Wi-Fi is a factor in attracting people to specific locations throughout the city for 70% of those surveyed. These findings have potential implications for economic development and support the rationale that WiFi may enable commerce and productivity that would not have occurred otherwise. For example, one respondent commutes 20 minutes from Queens to use the Bryant Park wireless network on weekends in order to work on his food and wine website outside rather than at home.

At NYCwireless, we've worked with many local leaders. Some of them are BIDs like the Downtown Alliance or public benefit corporations like the Battery Park City Authority. Some are local developers, like the one we're

working with in the West Village who transformed a park and part of a neighborhood from being a place for homeless people to being a place for families and children. These local leaders have transformed their communities, and helped us bring internet to the people. Unfortunately so many more come to us with visions of helping out their neighborhood, but don't have the funds to make it happen. While NYCwireless provides a very low cost option for building public Wi-Fi, its not without installation and maintenance cost. And many of the local leaders we've spoken to have no current means to get the funding they need to build and create local broadband. In speaking with them, we know that with just enough funding, these people too could change their communities, and bring whole neighborhoods online. Funding must be injected into local communities in order to provide resources for these leaders to do their work.

How NYCwireless Works

Free public internet access in parks begins with NYCwireless seeking local interest and support. We work with local organizations, such as BIDs—like the Alliance for Downtown New York—and “Friends of...” groups, that approach our organization seeking help. Once locations are identified, we assist with the design of the wireless equipment deployment plan and seeking funding to support their build-out. NYCwireless provides design, installation, and support for the networks that we build through infrastructure, volunteer help, and the extensive know-how that we have developed over the past nine years.

The equipment that we use is open source and standards based, to ensure maximum compatibility with end-user equipment, including laptops, PDAs, and more recently iPhones and wireless VOIP phones. As a result, we ensure that both industry standard and novel uses of our networks are unrestricted, allowing residents, students and artists to invent new technologies and uses for public wireless networks.

Our hotspots are built using hardware from Metrix Communication LLC. The hotspots are mounted in a weatherproof metal case measuring approximately 6” x 8” x 3.5”, and utilize 802.11b/g mini-pci network cards. Two 70° sector antennas, measuring approximately 2 x 4.5 x 4.5 inches, are usually connected to the hotspot via low loss LMR cabling. Outdoor rated ethernet cabling connects the hotspot to the DSL modem or other internet



An NYCwireless Hotspot



Outdoor Sector Antenna

access line, which is mounted inside of the building. Power is supplied to the hotspot utilizing Power Over Ethernet (POE) to minimize the indoor/outdoor cabling.

Our hotspots have generally been deployed outside of park grounds and public facilities, or in the case of Bryant Park, using facilities provided by the licensed private park operator. We generally mount our equipment atop or on local buildings with the support of our partner organizations, beaming the wireless signal into the park. This deployment strategy is sometimes ideal, since equipment can be installed quickly and there are sometimes no facilities within the park to support the mounting of equipment.

We can often deploy a hotspot for only a few thousand dollars, and in under two months, to service most or all of a park. Much of this time is spent designing the network, ordering equipment and DSL internet service, and gathering necessary agreements. Actual equipment installation can take 1-2 days.

Broadband Service Availability

Access to city-owned property isn't the biggest issue in getting Wi-Fi deployed. Getting reasonably fast internet access lines (or WiMax uplinks) is the biggest problem. NYCwireless has had tremendous success rapidly deploying Wi-Fi equipment on building rooftops and even nearby businesses, but we (and WiFiSalon as well) have spent countless, fruitless hours getting internet lines from Verizon. In a recent example, it took over 4 months to get internet service to Wagner Park, even though our gear was installed within a month of signing a contract.

Ideally, the City would provide assistance facilitating the installation of internet access lines. This would include:

- Ensuring that ISPs, including Verizon, Time Warner Cable, and Cablevision, provide connectivity in a nondiscriminatory and timely manner
- Ensuring that ISPs provide connectivity for reasonable rates comparable to the rates normal businesses are charged
- Ensuring that when an ISP claims to "not know" about a particular address, even though that address is within the city limits and contains an actual physical building structure, that the ISP is required to fix/update their database with valid information and expedite the installation of an internet access line if a phone line already exists

Sustainable Business Model

DoITT is potentially open to other business models for building Wi-Fi hotspots, though as experience in NYC and many other cities has shown, there aren't any viable ones where businesses can independently fund the buildout and maintenance.

DoITT seems mostly steadfast in their insistence (as the Parks Department has been in the past) that no City funds should be spent on any buildout or maintenance of hotspots. This is still a really big sticking point: The

first Parks RFP required that a concessionaire pay significant money to the Parks department, and the second Parks RFP required that a concessionaire pay some proposed amount of money to the Parks department.

There have been only a handful of interested companies (we offered to pay \$1), and WiFiSalon, the only concessionaire that paid any fees under the Park's 1st RFP was driven out of business by that requirement. Ad revenue is negligible since such networks see a fraction of the impressions that even a second-tier website sees, and sponsorship dollars are only available to the most prominent parks like Madison Square Park and Bryant Park, and such deals are done generally only through whole-park sponsorship, not sponsorship of just the Wi-Fi network.

NYCwireless fundamentally believes and the industry has seen countless times (including the companies MetroFi and EarthLink, and cities San Francisco and Portland, for example) that Ad-based business models are unsustainable for individual hotspots and even reasonable sized hotspot networks. If DoITT and the City want to really ensure that free public Wi-Fi should be made available, and that locations other than the most highly trafficked and well-to-do are served, they need to step up and offer alternative funding models.

One thing to consider is that the companies that can do the installation and maintenance of high-quality outdoor hotspots (there are few) don't have big advertising or sales teams to make them self-funding. These are two orthogonal specialties and forcing a single company to be capable of both severely limits the applicant pool and threatens the business viability of any participating company. NYCwireless has been successful because we provide all of the back-end technical know how and support for free public Wi-Fi hotspots. We are paid by our partners (BIDs and others) to perform this service, and they do the money raising since that's what they are good at.

If DoITT and the NYC Government insist on Ad-based models, the best way to organize the funding of the organizations that build hotspots is to separately manage the sales of ads or sponsorship through either a centralized City agency or through a separate RFP that would be awarded to a marketing or ad-sales company. Hotspots would be required to use standard, open-source and free technology for displaying ads sold through the agency in order to receive funding through the RFP program.

Eligible Service Providers

Since each public space identified by DoITT has its own local community, and the problems and issues presented by each public space differ, NYCwireless has long believed that individually choosing providers for each city park is an important component in ensuring that appropriate Wi-Fi service is provided. Modeling its program after well-received plans put forth by Boston Wireless Task Force and implemented by OpenAirBoston, DoITT would do well to ensure that:

- Multiple providers are given the opportunity to install networks in each neighborhood, park, or set of parks
- Providers make use of interoperable equipment and technology so that a park's equipment need not be reinstalled should that provider go out of business or be found unable to provide service, allowing a new provider to assume management of the equipment

- Local providers (those who's base of operations is within the local neighborhood of the hotspot) or providers that have local community ties and affiliations, be preferred over those that are national or regional, since this will ensure the local community will help and support the hotspot

Additional Sites where Wi-Fi Makes Sense

Existing hotspots (with the exception for the Parks Department concession-based hotspots) sponsored by BIDs and other organizations have been built without much involvement by the Parks Department, and often in spite of any blockades the Parks Department has put up. BIDs and other organizations that have the resources to fund the creation of hotspots should be able to do so, and should be assisted by the NYC government (DoITT, Parks, etc.) without having to go through RFPs and other bureaucratic measures. When requested, the relevant City agency should facilitate all aspects of the creation of the hotspot, including providing free access to City owned building infrastructure.

Existing infrastructure must be made affordable and available. A big barrier to creating local community networks is getting access to places to put equipment. One solution would be to make City light poles available free or at low cost on an individual basis for the deployment of community supported networks. NYCwireless can help out with this initiative by helping to create a standard, weatherproof, upgradable hardware package, which we currently use in our outdoor wireless networks.

DoITT is looking mostly for one or a few companies to step up and do all the work. We've long talked about how the City can take a grass-roots approach to getting local parks and public spaces lit up, but for the most part, DoITT is focussing only on the biggest and most prominent locations. This is unfortunate, since the people in lower income neighborhoods and further afield areas are often the ones who benefit the most from such initiatives, but they seem to be mostly left out of this initiative.

DoITT and the City should make available to any interested local community organization or BID a set of resources to help them understand how they can help themselves set up a community-based hotspot. Such information resources would include technical information, organizational information and contacts for for-profit and not-for-profit organizations that can help the community strategize and build out the hotspot. It should also provide case studies for how other BIDs and community organizations built their hotspots, including cost structures, that would serve as models.

Most importantly, funding sources must be created that can support local organizations doing the heavy lifting. There are leaders in every community in New York City who have the power and will to create local solutions for bringing the internet to the people, and bringing all of their community members to the table. Setting up a fund such that any local group can apply for and be granted a few tens of thousands of dollars per year, for a period of 3-5 years, to use to bring Wi-Fi to a park or a public space would help tremendously.

Additionally, building developers and Condominium and Co-op boards have tremendous ability to create solutions, as NYCwireless' work with Dunn Development Corporation has proved. Providing a tax incentive for for-profit developers and funding for non-profit developers to light up the public and semipublic spaces they create would ensure that anywhere people go they would have internet access.

Funding can also be attracted via state and federal sources, as well as through private companies and individuals. NYCwireless has been successful, but why not have hundreds of NYCwireless-like organizations, each working to solve local broadband issues.

New Technologies

In the long term, it is important to recognize that laptops and mobile devices may ship with newer wireless standards. However, the industry is quite a number of years from this happening, and for the foreseeable future, Wi-Fi is it—Apple introduced Wi-Fi on laptops 10 years ago, and those laptops are still compatible with today's Wi-Fi networks. All laptops sold in the US today ship with Wi-Fi (802.11a/b/g/n) adapters and have so for the past few years. They will continue to do so for a number of years to come, and the various forms of Wi-Fi are all backwards compatible with each other such that an 802.11b network deployed 8 years ago (by NYCwireless) is still usable by today's computers. Wi-Fi is so widely distributed in homes and in businesses that it is almost unthinkable that computers 10 years from now won't be able to use Wi-Fi networks installed over the next few years.

Additionally, Wi-Fi equipment installed in hotspots by NYCwireless generally has a 3-5 year lifetime for the Wi-Fi radios (our hotspots consist of access point computers with Wi-Fi radio cards). Our hardware is field upgradable to new Wi-Fi radios, and we expect that our hotspots, with upgraded radios, to have a 5-10 year lifetime.

Furthermore, there exist no other widely deployed local wireless internet access technologies that are available on the market, let alone ones available for \$500-\$1000 per hardware installation. WiMax, though beginning to see wider deployment, is not suitable as hotspot equipment (it is much more similar to cell data towers), and no standard shipping laptop today contains a WiMax card.

The wide availability and deployment of Wi-Fi makes it the only reasonable wireless technology choice for hotspot deployment, and we urge DoITT to require Wi-Fi as the technology of choice for any hotspot installed in a City Park or Public Space. We also recommend that DoITT require that open-standard, field-upgradable equipment is used, and require industry standards and possibly open hardware that ensures vendor lock in isn't possible.

Insurance Requirements

NYCwireless has hotspots where there is NO equipment on park property at all (its on a neighboring building rooftop). Beyond insurance requirements for the actual installation and physical maintenance of equipment, no significant insurance requirements should be required. Furthermore, we have inquired of insurance agencies about seeking coverage according to the Parks Department's requirements, and were informed that such insurance



would be “an invitation for lawsuits” and would be expensive. The equipment used for NYCwireless hotspots is installed in publicly inaccessible locations, so liability for such equipment is inappropriate.