



The City of Wilkes-Barre

REQUEST FOR INFORMATION AND COMMENT (RFI/C)

Wire Free Wilkes-Barre  
*Community Wireless Broadband Initiative*

Released: 6 October 2005

Responses due: 19 October 2005  
10 a.m.  
The City of Wilkes-Barre  
I.T. Department  
City Hall  
40 East Market Street  
Wilkes-Barre, Pennsylvania 18711

RFI/C Meeting: 12 October 2005  
Question and Answer 10 a.m.  
The City of Wilkes-Barre  
City Hall, City Council Chambers, 4<sup>th</sup> Floor  
40 East Market Street  
Wilkes-Barre, Pennsylvania 18711

## **Introduction**

Since taking office in 2004, Mayor Leighton has worked diligently to bring the City of Wilkes-Barre (the "City") back from years of neglect and poor planning. After first repaying \$10.8 million in outstanding financial obligations and eliminating deficit spending, Mayor Leighton's administration focused on advancing the City's technology. The first step in this process was to computerize City Hall. By updating our technology, the City has made daily activities more efficient, provided security and enhanced overall operations. The City's first website was launched in June 2005, providing a direct connection between the City's government and its constituents.

Currently, Mayor Leighton is aggressively pursuing state of the art technology services for not only downtown Wilkes-Barre, but for the entire City. There are \$150 million of economic project developments in various stages throughout the City, including a 14 screen movie theater, revitalization of the riverfront, new streetlights and streetscape of the downtown, and numerous retail and residential space on South Main Street. The addition of wireless internet and other advancements throughout Wilkes-Barre will spur future projects of that caliber, truly making Wilkes-Barre a first-class city. The City of Wilkes-Barre has made great progress technologically since Mayor Leighton took office, and it will continue to embrace the opportunities future advancements have to offer.

## **Geography**

The City is located in northeastern Pennsylvania along the Susquehanna River and covers 7 square miles. It lies approximately 125 miles from New York City and 100 miles from Philadelphia.

## **Downtown Wilkes-Barre**

Downtown Wilkes-Barre has the largest concentration of office space in Northeastern Pennsylvania and is home to 686 businesses, including the headquarters of Blue Cross of Northeastern PA, Commonwealth Telephone Company, GUARD Insurance Group, Lackawanna Casualty Company, Parente Randolph, and Penn Millers Insurance Company. Downtown Wilkes-Barre is the seat of government for Luzerne County, the site of Federal courts for the Middle District of Pennsylvania and home to numerous state and Federal offices.

In 2004, 3,970 people called Downtown Wilkes-Barre home, and it contained 1,855 housing units, including 237 single-family residences. Downtown Wilkes-Barre's 195 retail businesses, anchored by a 190,000 square foot Boscov's Department Store, serve a total population of 202,600.

Downtown Wilkes-Barre hosts the campuses of two four-year institutions of higher education -- Wilkes University, with 3,570 students enrolled, and King's College, with 2,233 students enrolled -- as well as Luzerne County Community College's Corporate Learning Center.

## **Goals**

The city has identified the following critical goals for this initiative:

- Have a wireless broadband system operational in the service area (the "Service Area") consisting generally of the City of Wilkes-Barre (which includes Kirby Park) by December 31, 2005.
- Have the ability for the wireless broadband system to interconnect with wireless networks of local institutions of higher education, including Kings College and Wilkes University.
- Residents would benefit from the availability of affordable wireless internet access as well as free access to local online government services.
- Improve the efficiency of government service delivery.
- Promote job creation, business growth and economic development.
- Streamline the interaction between government and constituents.
- Ensure in-home access to the greatest extent possible for all residential subscribers.
- Ensure universal, affordable wireless broadband access for all Wilkes-Barre residents.
- Security throughout the City for residents, tourists and business owners would be enhanced through the use of a community surveillance system composed of Wi-Fi enabled cameras.

- Expandability of the wireless broadband network to other communities in Luzerne County.

In addition, the City anticipates that this initiative will provide the following benefits:

- Complement the City's strategy to connect all Wilkes-Barre residents to modern technology.
- Spur economic development by allowing businesses relying on internet connectivity to locate in Wilkes-Barre.
- City employees would benefit from mobile internet access while conducting off-site tasks such as inspections and surveying.
- Public Safety employees would benefit from having continuous access to vital data while in the field. Wireless enabled laptops will allow EMS and hospitals to check a patient's health records while in transit or at remote locations to quickly identify medical issues.
- Improve public safety through better communications and interoperability.
- Improve the experience for visitors to the City.
- Promote the City's brand/image.
- Provide backup/contingency measures for disaster response/recovery.
- Promote more innovative solutions for consumers

The City invites information and comments regarding these goals and objectives.

### **Policy Standards**

The Mayor of the City may create a nonprofit corporation ("Wire Free Wilkes-Barre"), with a majority of its board of directors appointed by the City, to contract for the development, construction, implementation, operation and maintenance of the wireless network. The City will select a vendor which will install the network and operate it under the following guidelines:

- Have a wireless broadband system operational in the Service Area by December 31, 2005.
- The City will have reduced-cost use of the wireless network for City business, including public safety.
- In case of a natural disaster or other public emergency, the network should have the capability to prioritize traffic for emergency services and public safety access.
- The City will maintain control of the wireless security cameras within the City limits.
- The City will retain the authority to provide free or reduced cost wireless access to areas or zones for public access or events.
- The City will reserve the right to provide unlimited free wireless access for web-based or internet based government services.
- The network will be updated at sufficient intervals to prevent obsolescence.

The City is currently considering the following alternatives for the financing of the acquisition and construction of the network:

- The City (by itself or in conjunction with other parties) will finance the acquisition and construction of the network and the network will be owned by Wire Free Wilkes-Barre. The vendor will have a contract with Wire Free Wilkes-Barre to install and operate the network and for selling network access. Revenues from the network will be revenues of Wire Free Wilkes-Barre. The vendor will be paid a fee for such services, which fee may contain profit sharing provisions or other incentives for the vendor.
- The vendor will finance the acquisition and construction of the network and the network will be owned by such vendor (subject to takeover by the City upon certain material contract defaults). The vendor will install and operate the network and sell network access to subscribers. Revenues from the network will be revenues of the vendor. Wire Free Wilkes-Barre will be paid a fee for each paid subscriber to the network, which can be applied to its other corporate purposes, such as addressing digital divide issues. All profits from the network, after operational and maintenance costs and fees paid to Wire Free Wilkes-Barre, will be retained by the

vendor to maintain the network and compensate for the risks of financing the network construction.

- The City will also consider other innovative financing structures proposed by Respondents, including joint ventures or partnerships between the Respondent and the City.

In conjunction with the contract to build and operate the network, the vendor will separately contract with the City for access to City-owned facilities (such as light poles and buildings) on which to install the equipment for the network. It is not anticipated that the City will charge rentals or any other fees for such access.

It is not anticipated that either the City or Wire Free Wilkes-Barre will take an active role in the daily maintenance or operation of the network, but will monitor and oversee the performance of the vendor in operating and maintaining the network.

### **Costs**

Though there are distinct advantages of wireless solution over a fixed broadband configuration, it is important to maintain a competitive pricing structure to remain competitive with the DSL and Cable markets. Subscription costs should be lower than other contending technologies to attract users. The vendor selected to maintain and operate the network will set prices for access, subject to review by Wire Free Wilkes-Barre.

### **Bandwidth and Throughput**

The design for the wireless network should be able to support an average throughput of no less than 1 Mbps per user for typical residential use.

### **Quality of Service**

Wireless broadband systems operate within a non-licensed spectrum, and as such, cannot provide the assurance of uninterrupted service and full availability of bandwidth. There exists a balance between service levels, subscription cost, expediency, and availability that is considered by users of all broadband technologies. As such, the design of the wireless network should take into consideration the issues of reasonable reliability for residential use as well as the prioritization of specific traffic for use in public safety and official capacities.

## Security

Security is a major issue with every computer system. Our network will employ all necessary security measures to ensure integrity of Governmental and private data as well as the privacy of the residential users. Wireless protection is robust and implemented in multiple layers with the following traits.

- Network access control with robust authentication
- Protection of wired assets from malicious wireless clients
- Protection of wireless clients from other malicious clients
- Secure point to point transmission of sensitive data
- Secure network configurations and management

## Management Components of a WiFi System

- External Wifi Access Points and wireless backhaul.
  - Usually managed by same vendor contracted to install External WiFi equipment via annual support contract.
- Data center operations.
  - Data center operations would typically managed by the entity managing the ISP operations.
  - Data center may also be managed by government or agencies or by an appropriate third party.
- Customer Service/Billing ISP operations.
  - Customer and revenue operations can be managed within the government or agencies, however, this area of operations might be more efficiently managed via partnerships with experienced local businesses.

## Primary Contact

The name, address, and contact information for the City's Primary Contact for this RFI/C are as follows:

City of Wilkes-Barre I.T. Department  
40 East Market Street  
Wilkes-Barre Pa. 18711  
llau@wilkes-barre.pa.us  
570-208-4179

No oral response by any employee, consultant or agent of the City shall be binding on the City, or shall in any way constitute a commitment by the City. If a Respondent finds any inconsistency or ambiguity in the RFI/C, the Respondent is requested to notify the City.

### **Special Provision**

The information and comments provided by Respondents will be used to determine what further steps the City will take in connection with the deployment of a wireless broadband network. Those steps could include, but are not necessarily limited to, issuance of a Request for Qualifications or a Request for Proposals, or discussions or negotiations with one or more prospective vendors that could lead to one or more contracts related to deployment of a Network. The submittal of a response to this RFI/C does not guarantee use of the information provided.

### **Responsibility For Submission Costs**

The Respondent shall be solely and fully responsible for all costs associated with the development, preparation, transmittal, and submission of any material in response to this RFI/C. The City may, in its sole discretion, ask selected Respondents to present their material in person to City's representatives at the City's offices, and the costs of such presentations shall be solely the responsibility of the Respondent. The City assumes no contractual or other obligations as a result of the issuance of this RFI/C, the preparation or submission of materials by a Respondent, the evaluation of materials, the Respondent's conducting of presentations, or the selection of any Respondent for further negotiations. There may be no claims whatsoever for reimbursement from the City or any of its consultants or agents for such costs.

### **Definition of Basic Requirements**

Throughout this RFI/C, the City has elected to define basic requirements for the Network, while encouraging maximum flexibility and creativity by Respondents. The requirements below are defined on a summary level, and Respondents are encouraged to propose (and elaborate on) a solution that best meets the City's stated goals. The City's basic requirements are:

- Have a wireless broadband system operational in the Service Area by December 31, 2005.

- Primary justification is for public safety reasons and to provide a low-cost, affordable service to residents and visitors in the Service Area via any typical IEEE 802.11b/g (WiFi) interface.
- The design for the wireless network should be able to support an average throughput of no less than 1 Mbps per user for typical residential use as well as be defined as a “best effort” coverage solution.
- 95% outdoor coverage with no additional hardware required beyond a standard WiFi device’s wireless interface.
- 90% indoor coverage for residences and businesses throughout the Service Area. A residence or business is assumed covered under this requirement if a single, first or second floor room which is adjacent to an exterior wall in the residence or business can access the network at the stated best-effort service levels. Should additional customer premise equipment be required or assumed in order to deliver our stated required in-building coverage level, respondents are expected to state this in their response and elaborate on this requirement and their assumptions. Respondents should also describe how this coverage can be expanded within the residence or business through such sort of mechanism. The City’s ultimate goal is 100% in-building coverage; respondents should describe impediments to in-building coverage beyond the 90% level and describe how these impediments will be addressed.
- Coverage indoors above second-floor levels for residence’s or businesses. The City understands that in special cases additional customer premise equipment may be needed to meet this requirement, particularly in multi-dwelling-units. Respondents should elaborate on how they propose to address this condition.
- Employ all necessary security measures to ensure integrity of Governmental and private data as well as the privacy of the residential users such as network access control with robust authentication, protection of wired assets from malicious wireless clients, protection of wireless clients from other malicious clients, secure point to point transmission of sensitive data, and secure network configurations and management.
- Seamless movement of a user from one point to another without losing connectivity. This is crucial for uses with public safety officials and field workers.

- The option for the City to designate certain common areas and other residential and business zones within the City as free and open access areas to the network.
- The wireless network should be designed as a self-sustaining system with regard to choice of technologies and financial structure. As the wireless broadband technologies are emerging, careful consideration must be given to the selection of hardware and software to ensure the upgradeability and compliance with future standards. The vendor selected to operate and maintain the network should demonstrate the ability to upgrade the entire system as technologies are enhanced.
- Support for the logical segmentation of the Network to support different types of users (e.g., secure access by government agency personnel, secure and/or open access for public users, residential users, business users, etc.). This must include the ability to define and manage different profiles for authentication, encryption and other service characteristics based on the requirements of each user type.
- Scalability to support additional users, capacity, and functions throughout the life of the network.
- Fault tolerance mechanisms to ensure high reliability.
- The following service and solution components :
  - Architecture and Design Services
  - Installation Services
  - Telecommunications Provisioning and Services
  - Network Monitoring and Management Services
  - Network Maintenance and Upgrade Services
  - Business and Operations Support Systems (BSS/OSS) Services
  - Customer Service and Technical Support Services
  - Software Hosting and Facilities Services
  - Program and Project Management Services

### **Implementation Schedule and Phases**

Wire Free Wilkes-Barre must have a wireless broadband system operational in the Service Area by December 31, 2005.

Following implementation of the basic wireless broadband system in the Service Area, Wire Free Wilkes-Barre intends to implement other functions in the network, such as operation of wireless cameras, public safety uses and use by City employees, in one or more phases.

### **RFI/C Response Format**

Respondents who have a commercial interest in the project are requested to provide the following:

One signed original and two (2) copies of the solution proposed by the Respondent. The required contents are:

- Name, street address, telephone number, fax number, e-mail address
- Year of establishment and country and state of incorporation or organization of business entity.
- An overview of the operations of the Respondent and the number and scope of similar projects that are currently underway or are scheduled to begin in the future.
- Type of solution proposed to meet the goals that have been defined in this RFI/C including:
  - Business Model
  - Proposed technical solution including technical drawings/diagrams
  - Information demonstrating the proposed solution meets the basic requirements in Section x of this document.
- Answers to the “Questions for Respondent” outlined below.
- Any additional information, at the Respondent’s option, not specifically requested which demonstrates any experience or expertise of the Respondent that might be relevant to the project.
- An electronic copy of all submitted materials on a CD-ROM or DVD ROM in Microsoft Word or Adobe Acrobat (PDF) format.

## **Pre RFI/C Meeting**

There will be a meeting on October 12, 2005 at 10 a.m. at The City of Wilkes-Barre, City Hall, City Council Chambers, 4th Floor, 40 East Market Street, Wilkes-Barre, Pennsylvania 18711, where potential Respondents will be given a chance to ask questions concerning this RFI/C.

## **Questions to Respondents**

The City expects Respondents to provide answers to the following questions. Respondents are encouraged to elaborate as much as possible and address any relevant issues that are not expressly stated below.

### **Business Model and Policy Questions**

1. The City is committed to the goal of expanding public safety as well as universal, affordable wireless broadband access for all residents. How can you help the City best accomplish this goal?
2. How does your proposed solution/approach specifically address the City's stated goals and requirements defined above?
3. Please describe key business terms that might be required to support your proposed solution/approach (e.g., compensation for the use of City assets, revenue sharing, etc.)
4. In the future the City seeks to complement universal, affordable wireless broadband access with other social programs to facilitate affordable PCs in the home, training, technical support and on-line content for low-income and disadvantaged residents. How does your proposed solution/approach support these broader goals?
5. The City seeks to leverage the network to streamline the interaction between government and residents and to better connect the community. What ideas do you have to accomplish this goal?
6. What basic privacy policies and security standards will you put in place to protect the privacy and information transmitted by users?
7. What terms do you propose to ensure continuity of the network in the event of a default and/or material breach of contract by one of the participants?

## Technical Requirements Questions

1. Describe the architecture proposed by your organization to meet the Basic Requirements defined in the section above.
2. Provide a summary of your proposed solution/approach for the following solution elements:
  - Architecture and Design Services
  - Installation Services
  - Telecommunications Provisioning and Services
  - Network Monitoring and Management Services
  - Network Maintenance and Upgrade Services
  - Business and Operations Support Systems (BSS/OSS) Services
  - Customer Service and Technical Support Services
  - Software Hosting and Facilities Services
  - Program and Project Management Services
3. What solution/approach can be used to ensure interior-room access for residences, multi-dwelling units, apartments and/or businesses?
4. How does your solution/approach specifically address the need for indoor coverage above the second floor of residential, business and government locations?
5. How does your solution/approach mitigate or eliminate the risk of unintentional self-interference with—and promote cooperation between other commercial wireless ISPs, community wireless groups or other services using unlicensed spectrum?
6. How does your solution/approach address the need to provide different levels and qualities of service, security and other characteristics for multiple types of users over a single physical network (e.g., municipal employees, public safety, public access, etc.)?
7. The City anticipates leveraging the network for existing and new internal city needs, including automatic vehicle location, access by field staff, remote meter reading, remote camera and video surveillance. How would your proposed solution/approach enhance the capabilities of the City?
8. Describe the security capabilities of your proposed solution/approach and how it might address the need for advanced levels of authentication and encryption required for residents, businesses, institutions and government agencies.

9. Describe the way in which prioritization of traffic for municipal use (e.g., public safety) is accomplished with your solution, especially in the event of an emergency.
10. Describe the benefits of the technology and hardware you will be using over other comparable alternatives.
11. How does your proposed solution/approach guarantee a wireless broadband system operational in the Service Area by December 31, 2005?