



openairboston.net

REQUEST FOR INFORMATION

April 2, 2007

WIRELESS BROADBAND NETWORK DEPLOYMENT & MANAGEMENT SERVICES FOR BOSTON

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REQUEST FOR INFORMATION (RFI) OVERVIEW WIRELESS BROADBAND NETWORK DEPLOYMENT & MANAGEMENT SERVICES

openairboston.net (OAB), a non-profit created to build and manage a wholesale, municipal WiFi network for the City of Boston (City), invites prospective companies (Respondents) to submit a high level description for the deployment and management of a wireless broadband network (Network) throughout the City (further background in Section 2.1). *OAB is not a department or an instrumentality of the City of Boston.* However, OAB has been designated by the City of Boston as its technology partner for the purpose of building and operating this network. RFI Responses are solicited in accordance with the terms, conditions and instructions as set forth in this Request for Information (RFI).

All materials related to the FINAL RFI will be available on the Internet at <http://www.openairboston.net/rfi>. In the event you do not have download capability, all materials may be obtained by calling the OAB hot line at 617-542-5690 and press 3 to leave a message.

An Organizational Conference Call and Webinar was held on **Monday April 2, 2007 at 1:00 P.M. EDT** to introduce interested parties to the OAB team, RFI process, and OAB goals. Podcasts of the audio portion of that event can be heard at <http://www.openairboston.net/rfi>.

There will be a Pre-RFI Response Meeting on **Wednesday April 11, 2007 at 1:00 P.M. EDT** at the law offices of Edwards Angell Palmer & Dodge, 111 Huntington Avenue, Boston, MA, 20th Floor. Verbal questions may be asked by Respondents at the Pre-RFI Response Conference; however Respondents must also submit these questions in writing by the deadline noted below in order to receive a formal response. Attendees must notify OAB via voicemail (617-542-5690) or email (info@openairboston.net) by Tuesday, April 10, 5:00PM of their intention so as to be listed for building security purposes.

Respondents must submit any questions concerning the RFI no later than **Friday, April 20, 2007 at 5:00 P.M. EDT** using the instructions provided at <http://www.openairboston.net/rfi>. All questions submitted will be correlated and made available on the Internet at this address.

OAB will post written responses to all questions submitted in writing by the date above no later than **Friday, April 27, 2007 at 5:00 P.M. EDT** at <http://www.openairboston.net/rfi>.

The OAB will receive RFI Responses at the law offices of Edwards Angell Palmer & Dodge, 111 Huntington Avenue, Boston, MA, 20th Floor until **May 25, 2007 at 1:00 P.M. EDT**. No RFI Responses will be accepted after the stated deadline.

1. GENERAL INSTRUCTIONS

1.1 Submittal Procedure

The deadline for the submittal of RFI Responses is no later than **May 25, 2007 at 1:00 P.M. EDT.** Respondents may submit their RFI Responses at any time prior to the above stated deadline. Failure to submit the require number of copies by this deadline may be subject for disqualification from the RFI process.

OAB shall bear no responsibility for submitting RFI Responses on behalf of any Respondent.

1.2 RFI Response Format

All RFI Responses should be electronically generated and the printed original signed in ink. RFI Responses should not be submitted in elaborate or expensive binders. Legibility, clarity and completeness are important and essential. One (1) electronic disk containing an Adobe Portable Document Format (PDF) version of all proposal materials should also be provided.

1.3 RFI Q&A Conference

A RFI Q&A Conference will be held **Wednesday April 11, 2007 at 1:00 P.M. EDT** at at the law offices of Edwards Angell Palmer & Dodge, 111 Huntington Avenue, Boston, MA, 20th Floor. Interested Respondents should plan to attend. It will be assumed that Respondents attending this meeting have reviewed the RFI in detail and are prepared to bring up any substantive questions. Attendees must notify OAB via voicemail (617-542-5690) or email (info@openairboston.net) by Tuesday, April 10, 5:00PM of their intention so as to be listed for building security purposes.

1.4 Additional Information and Questions

Requests for additional information and questions should be submitted using the instructions provided on the website at <http://www.openairboston.net/rfi> no later than **Friday, April 20, 2007 at 5:00 P.M. EDT.** Questions received from all Respondents shall be answered and posted to the website at <http://www.openairboston.net/rfi>. Any changes to the RFI or the RFI process shall be posted to the website as addenda.

1.5 Addenda & Modifications

All addenda, amendments, and interpretations to this solicitation shall be in writing. Any amendment or interpretation that is not in writing shall not legally bind OAB. Only information supplied by OAB in writing or in this RFI should be used in preparing your responses. All contacts that a Respondent may have had before or after receipt of this RFI with any individuals, employees, subcontractors, consultants or representatives of OAB and any information that may have been read in any news media or seen or heard in any communication facility regarding this RFI should be disregarded in preparing responses.

OAB does not assume responsibility for the receipt of any addendum sent to Respondents.

1.6 Examination of Documents and Requirements

Each Respondent shall carefully examine all RFI documents and thoroughly familiarize themselves with all Requirements prior to submitting a proposal to ensure that the proposal meets the intent of this RFI.

1.7 Terms, Conditions, Limitations and Exceptions

1. This RFI does not commit OAB to award a contract, issue a Purchase Order, or to pay any costs incurred in the preparation of a proposal in response to this request.
2. The RFI Responses will become part of OAB's official files without any obligation on OAB's part.
3. OAB shall not be held accountable if material from RFI Responses is obtained without the written consent of the Respondent by parties other than OAB, at any time during the proposal evaluation process.
4. In the event a Respondent submits trade secret information to OAB, the information must be clearly labeled as a "Trade Secret". OAB will maintain the confidentiality of such trade secrets to the extent provided by law.
5. Respondent(s) shall not offer any gratuities, favors, or anything of monetary value to any official or employee of OAB (including any and all members of proposal evaluation committees).
6. Respondent(s) shall not collude in any manner, or engage in any practices, with any other Respondent(s), which may restrict or eliminate competition or otherwise restrain trade. This is not intended to preclude subcontracts and joint ventures for the purposes of: a) responding to this RFI, or b) establishing a project team with the required experience and/or capability to provide the goods or services specified herein. Conversely, OAB can combine or consolidate RFI Responses, or portions thereof, for the purposes mentioned above.
7. All RFI Responses submitted must be the original work product of the Respondent. The copying or paraphrasing of the work product of another Respondent is not permitted.
8. Please note that if you choose not to respond to the RFI, you are requested to indicate if you plan on responding to an RFP that will be subsequently issued to this RFI.

1.8 Project Administration

Overall project administration shall be provided by the OAB RFI team. Questions regarding the scope of the project, requirements, etc. may be addressed to the Team using the instructions provided on the Internet at <http://www.openairboston.net/rfi> .

1.9 Schedule

Listed below are important dates and times by which actions related to this RFI should be completed.

<u>EVENT</u>	<u>DATE</u>
Public Organizational Conference Call	April 2, 2007
Date of Issue of the RFI	April 2, 2007
RFI Q&A Meeting	April 11, 2007
Written Questions from Respondents Due to OAB	April 20, 2007
Responses to Questions Due to Respondents	April 27, 2007
RFI Responses Due from Respondents	May 25, 2007

2. PROJECT OVERVIEW

2.1 Introduction and background

OAB is a non-profit entity (501(c)(3) status pending) organized exclusively for charitable and educational activities within the meaning of 501(c)(3) including lessening the burdens of government by developing, implementing and operating a network to provide wireless internet access throughout the City of Boston; providing low-cost high-speed internet access in the City of Boston to schools, nonprofit organizations and other community organizations; and, stimulating economic development in economically depressed areas in the City of Boston through availability of wireless internet access. To effectuate these purposes, OAB will be responsible for raising the funds required for network deployment and operation. OAB is not a department or an instrumentality of the City of Boston. However, OAB has been designated by COB as its technology partner for purposes of building and operating this network. It intends to deploy wireless services by: a.) contracting with a Network Integration Services provider who will be responsible for the design, construction and ongoing management of the wireless broadband network according to the requirements of OAB as set forth in this RFI, and b.) securing retail Internet access service providers who will use the OAB network for the delivery of their services to end-users in the Boston marketplace, be they consumers, businesses or City agency employees, as also set forth in this RFI.

In July 2006, the Honorable Mayor Thomas Menino designated Pamela Reeve to lead outside efforts to develop partnerships and seek the funding necessary for the implementation of Boston's wireless network. OAB, incorporated as a nonprofit in February, 2007 with Pamela Reeve as President, has been designated by COB as its technology partner for WiFi deployment and operation. The Mayor's plan envisions this new infrastructure providing three major benefits:

- **Economic Development and Innovation** – Make Boston the most advanced wireless city in the country by deploying an advanced and cost effective wholesale wireless platform that encourages both innovation for the development and delivery of new services and economic development for the entire City.
- **Bridge the Digital Divide** - This includes universally-available and affordably-priced Internet access for residents, businesses and visitors to the City, helping to promote digital inclusion for the entire population.
- **Improve Public Service** – This includes longer-term plans by the City to leverage the Network to improve the administration and delivery of City services by providing field personnel with better access to information.

Pam Reeve, former CEO of Lightbridge Inc., and currently CEO of openairboston.net, is tasked with the mandate to plan for the creation of the wireless network. This work has included leading an experienced team (please see <http://www.openairboston.net/team> for biographies) to perform detailed analysis of City assets, potential end-user network demand models, geo-economic network design constraints, detailed network cost drivers, and analysis of network design alternatives. This work was not done to design the final network but rather to determine OAB's business and operational goals. This is the basis for a comprehensive, multi-year deployment model and associated funding requirements. OAB has begun to solicit

donations and support for its plans in preparation for the final award of RFP process that will culminate later in 2007.

In addition with the assistance of the Museum of Science and built entirely with vendors donations, OAB began a series of pilots across the City of Boston. Ranging from single WiFi hot-spots to a full 1 square mile deployment, these pilots allowed OAB to better understand the issues and challenges of deploying WiFi systems including how best to work with the various municipal agencies and community groups within the City of Boston. These pilots (and others that may be considered in the future) will not be used to circumvent the final evaluation used to award the Winning Bidder of the RFP.

OAB primary role and responsibilities are to make available City infrastructure, provide funding, and to ensure that the OAB mandate is fulfilled through oversight and control of the network services. The Network Integrator's primary role, under contract to OAB, is to design, deploy, and maintain a wholesale network as described herein. In turn, the Network Integrator will offer the whole service to Retail Service Providers and major accounts or customers.

This RFI is both lengthy and detailed in order to better prepare potential respondents to the RFP and to allow OAB to ensure the final RFP clearly and concisely conveys OAB's requirements. While this RFI does not specify any timeline for the RFP, please note that final RFP process will be shorter than it otherwise would have been if this RFI was not issued.

2.2 Unique Approach to Municipal WiFi

OAB is building a network that we believe is unique, therefore requires special scrutiny by Respondents. The OAB network will be a wholesale network. End users will be serviced by Retail Service Providers. The Retailer Service Providers will range from those offering low-cost wireless internet services to city residents, to high-end high-performance offerings to small businesses. The objective is to build a network that is both low-cost and a platform for wireless innovation.

To encourage innovation, the OAB is creating an R&D ecosystem around the wireless network, especially aimed at the edge network (Access Points and in-building repeaters) and Open NOC services infrastructure (BSS and OSS interfaces for new business models). OAB is building a University consortium to run the Wireless Innovation Center (WIC) to be discussed below. Faculty and students in the WIC will design, develop and test advancements in Access Points, Repeaters and Services which will be ultimately deployed in the live OAB network. For this reason, we seek vendors that embrace open standards and support open source models of innovation. Vendors willing "open" their software, firmware and hardware platforms so that innovation may take place will be deemed most desirable. Intellectual Property may be shared with selected vendors for re-incorporation into their platforms, as they choose.

The WIC will be a breeding ground for potential new business models and company spin-outs. The WIC will also prioritize requirements from outside companies who wish to build business models based on the OAB network. The WIC will take a leadership role in wireless technology and services development for Boston, New England, and possibly globally.

2.3 Use of City Assets

As with the deployment of any outdoor wireless network of magnitude such as that planned by OAB, the availability of real estate and other mountable assets for field radio operation is of prime importance. OAB intends to leverage the City's significant infrastructure, as well as rights it may secure to assets owned by private property owners, to make them available for use by the Network Integration Services provider in the design and construction of the network.

The City's infrastructure includes the following:

- Approximately three hundred fifty (350) city-owned or city managed buildings
- Rights to various dark fiber assets throughout the City
- More than twenty-five thousand (25,000) light poles with usable power
- Another forty thousand street (40,000) light and/or utility poles, which are accessible but may lack continuous power (e.g. bank switched).

There is no guarantee as to the usability of locations or availability or cost of power. Details of the assets referenced above will be provided to prospective Respondents upon request following the release of the RFP. These details will be provided as addenda to the RFP and will be made available at <http://www.openairboston.net/rfp> (when it becomes available).

2.4 Access to Third Party Assets and Services

OAB has received letters of support from a wide variety of both for-profit and non-profit institutions across the region. Collectively, these institutions are referred to as the *OAB Founding Alliance*. They have each offered to share their assets (such as roof rights or private fiber), technical cooperation (such as assistance in network deployment or application development), community support (such as neighborhood development and encouragement of their staff or students to work with the OAB), and/or a desire to become an Early Adopter of OAB's wholesale offerings. It is the goal of OAB to encourage the broadest and deepest community involvement in the deployment of the OAB network. To keep the RFI process and eventual deployment as simple as possible, Respondents will work with OAB directly and in turn OAB will seek specific agreements with interested third parties.

Details of the assets referenced above will be provided to prospective Respondents upon request following the release of the final RFP (after the RFI process is complete). These details will be provided as addenda to the RFP and will be made available at <http://www.openairboston.net/rfp> (when it becomes available).

2.5 Expectations of Respondents – Network Integrators

It is intended that Respondents to this RFI will be Network Integrators that have the skills, experience and resources necessary to organize and manage a complex wireless broadband network design, construction, and ongoing operations as described by this RFI. A Network Integrator may be the systems integrator division of equipment vendors who possess the necessary capabilities to meet the requirements set forth in this RFI. In all cases, the primary network integration responsibility will be the contracted arrangement between OAB and the selected Network Integrator. In summary form, the Respondents to this RFI shall be able to:

- Provide all Equipment and Technology
- Provide Element Management System(s) (EMS) and Network Management System (NMS)
- Engineer and deploy vendor technology to build the OAB network.
- Engineer and build EMS and NMS in the NOC.
- Deploy Wholesaler Billing system (in support of Retail ISP requirements)
- Propose vendor hardware/firmware/software platforms that will accomplish OAB's goals.
- Respondents should describe how they will incorporate community-based organizations into the planning, implementation and services of the network.
- Respondents should describe their recommendations for cost- and energy-efficient solutions for lightpoles which are gang-switched
- Respondents should describe how they will support Wireless Innovation Center by enabling development of Layer 3-7 software/firmware applications on their hardware platforms (such as through the use of open standards, open-source software, and application development kits) as well as access to the NOC open interfaces
- Handle refresh of the Network.

2.6 OAB Wireless Innovation Center

The Wireless Innovation Center (WIC) is being formed in coordination with leading local universities in the Boston area and will be built at a single host University as part of OAB's mission. The intent of the WIC is to stimulate technology and services experimentation and refresh through use of academic talent, and offer new service capabilities for innovative ISP's. Through the WIC, Boston area technical and non-technical educational institutions and private businesses, local venture backed entrepreneurial start-ups or larger established ISPs, or other technology or service providers, can have easy access to a world class wireless development laboratory and test center. It is envisioned that the WIC will allow these innovators to test and learn how new technologies and services they create will operate in a live network environment, how technically effective and efficient they are, and how attractive they may be to real customer markets. The ability to support such experimentation without interference or disruption to the day-to-day service operation of the OAB wholesale network and the retail service providers and end-users it serves is of paramount importance.

OAB believes that the direct support of innovation in wireless technologies and services through the WIC initiative will promote the advancement of meaningful and valuable services to Boston as well as the worldwide wireless services markets, while also attracting creative people, ideas and investment capital to this Boston centered project, reinforcing the civic-business partnership fostered by the City leadership.

In summary form, some of the specific characteristics of the WIC are:

- Create platform to develop, test technologies and various business models to further the goals of OAB.
- Stimulate technology advancement and non-obsolescence across the OAB network.
- Create dedicated wireless network lab, composed of volunteers and students from the Boston community and area academic institutions.
- Full cooperation and contributions from wireless vendors involved in Boston network.

- Create wireless “test zone(s)” in Boston to deploy and test ideas and developments from the Lab.
- Involvement with business and startup community to develop and test innovative business models.
- Work with other city/neighborhood wireless initiatives on standards and internetworking, and share results of innovation.

2.7 Network Design and Deployment

It is desired that all Respondents to this RFI approach the design, construction and ongoing management of the OAB wireless broadband wholesale network as an end-to-end activity and responsibility. While there are many modular sub-operations within any large network deployment, such as: a.) the backbone network, b.) the backhaul network, c.) the access network, d.) the NOC, and e.) the back office operations; it is expected that the selected Network Integrator Service Provider will operate the whole with specified Service Level Agreements (SLAs) as described within this RFI.

Further, given the intent to offer wholesale network services to various retail service providers, the Respondents should provide for SLAs considered appropriate to support the competitive business operations of these wholesale network customers, these SLAs are also included in the RFI.

2.8 Expectation of Respondents - Retail Service Provider

Respondents to this RFI may be Retail Service Providers who have the skills, experience and resources necessary to deliver competitive retail services to consumer and business end-users. OAB encourages Retail Service Providers to consider a wide range of offerings including, but not limited to, the following:

- Low-cost, consumer wireless Internet access
- High performance, premium consumer and business Internet access
- Telemetry and low bit rate services
- Visitor services for both business travelers and tourist

OAB’s intent is to deliver to each Retail Service Provider a traffic volume based pricing arrangement and associated SLA. To this end, each retail service provider should specify:

- The specific retail services they intend to offer and target performance characteristics for their end-user.
- The traffic carrying volume and throughput requirements for the wholesale network, detailing the time-of-day and busy-hour loads.
- Any special billing and metering requirements needed for their services.

3. RESPONSE OUTLINE AND CONTENT

Respondents responding to this RFI must submit the following information, in the order specified below:

3.1 Introduction and Executive Summary

Submit a letter of introduction and executive summary of the RFI response. The intent of this RFI is to determine vendor/integrator's capabilities in supporting OAB's goals, and help refine our requirements to be stated in the OAB final RFP.

3.2 Firm Description

Provide information on your firm's background and qualifications which addresses the following:

- Name, mailing address, e-mail address, telephone number and fax number of the primary contact person for your firm;
- A brief description of your firm, to include number of years in business, major business lines, major markets served, company history, relevant operating segments, primary vision and strategy, number of employees, office locations and any Joint Venture Partners;
- Financial details that demonstrate your firm's financial capacity to undertake and complete the project as proposed, which shall include;
 - A list of other business pursuits of similar size and scope to this RFI that your firm is currently involved in;
- If you intend to respond to the future RFP with Joint Venture Partners, provide full information concerning the nature and structure of the Joint Venture, including;
 - Entity (ies) that will be guaranteeing contract performance;
 - Date of any Joint Venture formation; and
 - A statement as to whether the agreement between Joint Venture Partners makes each partner jointly and severally liable for contractual obligations of this project.
- Provide references for not more than three projects - similar in size and scope - performed by your firm including client, reference and telephone numbers, staff members who worked on each project, budget, schedule and project summary. Descriptions should be limited to one page for each project. If Joint Venture Partners are proposed, provide references for each;

3.3 Solution Approach

Respondents should include the following:

- General Approach: Give an overview of how you developed your proposed solution and how the various OAB requirements factored into your solution design. To the extent that certain requirements could not be met please explain why this was so.
- WiFi Technology Roadmap: Specify preferred technology/vendor equipment and software you might propose for the final RFP including what emerging technologies, including open source and open standards, you would recommend. Detail reasons for selecting this technology. Given OAB's emphasis on innovation and open architecture, what elements of your strategy would need to adjust in order to meet OAB's goals?
- Support of the WIC - The WIC adds the complexity of working with "cutting edge" technology but it may not be as stable or as well characterized as other older, more mature technologies. Describe your approach to testing, deploying and monitoring new technologies while mitigating risk.
- Coverage model to handle deployment across residential, mixed commercial/residential and dense urban terrains. Be prepared to focus on issues such as AP density, contention/collision models, and installation challenges.
- Capacity development model to handle both growth and increasing network performance. Specifically describe strategies to handle peak B Hr traffic, bandwidth shaping, and site splitting.
- Approach to "future-proofing" the network.
- Cost containment through phased deployment to accommodate a mixture of low cost and subsidized network elements.
- Wholesale Service delivery implications and approach to handle:
 - Wholesale SLAs
 - NOC services
 - Integration with retail service providersWholesale issues may be different than how this works in other municipalities.
- NOC Construction: Have you built and supported Network Operations Centers in the past? Describe scope and rough costs of build. Describe technologies and software used for operating WiFi networks. Specifically comment on elements of the NOC that allow for access by the WIC.
- OSS/BSS Describe support systems you have used/deployed and might recommend in running WiFi networks. Include descriptions of vendors and capabilities for billing, call center, provisioning, network inventory, maintenance,

capacity management, fraud and security. Where possible discuss for different software products capabilities.

3.4 Deployment Plan

OAB desires an expedited deployment strategy and plan in order to realize the benefits of the initiative. Respondents shall provide a strategic outline for deployment with a high level plan for deployment over a proposed period of time. Respondents shall also describe the project management methodology that will be used to execute on the deployment strategy and plan. Special emphasis should be placed on risk mitigation strategies and tools for site selection and acquisition, site preparation including power, and phased deployment models.

3.5 Budget

Respondents should provide a high level budget model with both capital and ongoing operational costs. This must include critical assumptions such as demand models, network design, maintenance and refresh costs, cost/performance trade-offs, and contingency costs will be carefully reviewed.

3.6 Organizational, Service and Quality Experience

- Outline your company's proposed account management and customer service representative teams to support all locations relating to your proposed solution;
- Describe any "value added" services your company provides that should be considered in the evaluation process;
- Describe internal performance metrics used to quantify key customer support responsiveness;
- Describe any formal quality or continuous improvement process programs currently in place within your company;
- Indicate any quality awards or quality certifications that your company has achieved. Please provide supporting documentation and background information about these awards and/or certifications. Highlight relevance to the solution and/or services proposed as part of this RFI;
- Describe how your company measures and tracks quality. Describe the types of tools and procedures (auditing, surveys, focus groups, etc.) you use to verify that service performance standards are being met. Please provide examples of quality performance measurements; and
- OAB's ability to manage its risk throughout the implementation and ongoing relationship is critical. Pertinent issues include sustainability, relationship flexibility, strong contracts, competent project management, system and data security, minimal business impact, and the Respondent's stability. Describe the resources and methods that will be used by your firm to manage these risks.

4. EVALUATION CRITERIA

This RFI is specifically designed to allow OAB to better prepare its final RFP and to allow Respondents time to better understand OAB's unique requirements. However, we do not believe the final evaluation criteria will differ significantly between the RFI and RFP.

Firms with extensive experience in partnering with local governments to build and manage wireless broadband infrastructure - consistent with the vision, objectives, policy goals and requirements defined in this RFI - are encouraged to respond.

Following an evaluation of written RFI Responses, the Respondent(s) that are determined to meet the needs of OAB will be invited to participate in a subsequent RFP. While responding to this RFI is not required to ultimately bid on the final RFP, it is OAB intentions to incorporate into the RFP critical insights and requirements that will be gained from Respondents.

The categories are as enumerated below.

4.1 Ability to Support Innovation/Entrepreneurial Activities

OAB will give significant preference to vendors who are able to demonstrate a commitment to innovation through their response. Respondents should detail their plans for open APIs into the OAB network and software infrastructure. In addition the OAB prefers that partners implement a standardized hardware platform for radio/access points.

4.2 Impact of Inclusion via Bridging the Digital Divide

The proposed solution will be evaluated for its ability to provide universally-available and affordably-priced Internet access across the city, and its ability to cost effectively scale up, and down, to serve all neighborhoods with the same grade of service based on a set of end-user penetration and usage assumptions. Special attention will be paid to success based network growth strategies as usage surpasses the initial assumptions.

4.3 Wholesale rates that stimulate End User Affordability

The RFI response should detail a network build and operating plan that will achieve wholesale economies of scale. OAB's wholesale price rate must allow for appropriate margin at the retail level, while enabling end-user rates that are in reach of all residents.

4.4 Experience and Ability

This will be determined by the relevance and quality of references demonstrated in response to Section 3.2 and organization, quality and service experience demonstrated in response to Section 3.6 of this RFI.

Respondents' ability to execute while working with multiple vendors to get optimal solutions, with the most features for least dollars is very important. Experience deploying similar scale and class of networks is also critical.

4.5 Total Cost of Ownership

Respondents will be evaluated on how total costs covered in Section 3.5 can be managed over a multi-year period and strategies for aligning costs with growth of wholesale revenues.

4.6 Deployment Strategy and Timeline

This will be determined by the timeliness and reasonableness of the proposed deployment strategy and plan demonstrated in response to Section 3.4 of this RFI. Respondents will also be evaluated on their detailed estimate of time to build out the initial network, and for the interval of time it will take to augment network capacity in any given neighborhood after launch.

4.7 Efficient Use of City Assets

City assets should be used to reduce the build out and operating cost of the OAB network. Respondents should provide recommendations for optimal use of City assets.

4.8 Support for Network Neutrality

The Network will be operated on behalf of OAB by the selected Network Integrator Service provider in a manner that will not discriminate against any content, application or services provider, except in cases to prevent abuse of the Network. Respondents will be evaluated based on their ability to provide a neutral and open architecture for the OAB network.

EXHIBIT A – DEFINITION OF TERMS

Capture Portal shall refer to the web page that unauthenticated users will be redirected to when their computing device first attaches to the Network.

CBO shall refer to Community Based Organizations such as nonprofits, churches, faith-based organizations, social service organizations and community technology centers.

City shall refer to the City of Boston, MA.

Core ISP Services shall refer to value added features which are bundled with Internet access by Service Providers such as email accounts, newsgroup access and virus and/or spam protection.

CPE shall refer to Customer Premise Equipment.

Fixed Broadband shall refer to a service that provides Internet access for a stationary subscriber at a single location (the location where service is provisioned).

BFD shall refer to the Boston Fire Department.

BPD shall refer to the Boston Police Department.

Joint Venture Partner shall refer to any organization proposing to provide products or services in response to this RFI through a partnership with the Respondent.

Mbps shall refer to Megabits per second.

MPH shall refer to Miles Per Hour.

Mobile Broadband shall refer to a service that provides Internet access for an in-motion subscriber at a variety of locations throughout the City.

MTBF shall refer to Mean Time Between Failures.

MW/DBE shall refer to Minority/Women/Disadvantaged Businesses Enterprises

Network shall refer to a wireless broadband Internet access system that is deployed throughout the City.

Network Integrator shall refer to the respondents to this RFI who are responsible for the deployment and management of the Network.

NOC shall refer to Network Operations Center.

Nomadic Broadband shall refer to a service that provides Internet access for a stationary subscriber at a variety of locations throughout the City.

OAB shall refer to openairboston.net.

Open Access shall refer to the Winning Bidder's commitment to provide access to its wireless broadband Internet access transport services to multiple unaffiliated Retail Service Providers.

Open NOC shall refer to elements of the NOC that allow for third party innovation and access points for the Wireless Innovation Center.

Perimeter Room shall refer to a room within a building that has at least one wall facing a public street.

POP shall refer to an Internet Point of Presence.

Respondent shall refer to any respondent to this RFI.

RFI shall refer to Request for Information.

Requirements shall refer to items defined in Exhibit B of the RFI.

Retail Service Provider shall refer to any organization, whether affiliated with a Network Integrator or not, who markets, sells and supports retail services over the Network.

SLAs shall refer to specific Service Level Agreements that determine the Network's wholesale performance characteristics including, but not limited to, floor and peak wholesale performance, MTBF, maximum number of users, and useful aggregate throughput.

Tier 1 Support shall refer to the process of responding to, diagnosing and attempting to resolve issues reported by users of the Network.

Tier 2 Support shall refer to the process of responding to issues escalated by Tier 1 Support representatives who are unable to resolve issues reported by users of the Network.

Tier 3 Support shall refer to the process of responding to issues escalated by Tier 2 Support representatives who are unable to resolve issues escalated from Tier 1 Support representatives.

VPN shall refer to Virtual Private Network.

VLAN shall refer to Virtual Local Area Network.

WIC shall refer to the Wireless Innovation Center as more fully described in Section 2.6.

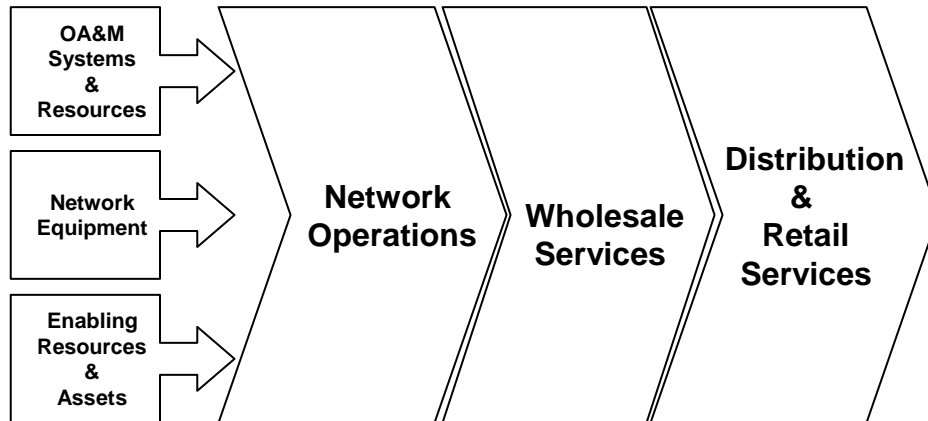
WiFi (Wireless Fidelity) shall refer to wireless technologies adhering to the IEEE 802.11b and 802.11g technical standards.

WiMAX (Wireless Interoperability for Microwave Access) shall refer to wireless technologies adhering to the IEEE 802.16 technical standards.

Winning Bidder shall refer to the Network Integrator that ultimately is awarded the prime contract to design, build, and operate the Network.

EXHIBIT B - DETAILED REQUIREMENTS

B.1 Business Model



1. The winner of the final RFP (Winning Bidder) will design, deploy and manage a citywide wireless broadband network under contract to OAB.
2. OAB will retain full governance rights over the design, deployment, and use of the Network.
3. OAB will make available street and/or utility-poles, rooftops, electricity and other assets to the Winning Bidder.
4. The Winning Bidder will make access to the network available on a wholesale basis to multiple and competing Retail Service Providers, who will market the service to residents, businesses and visitors. These Service Providers will also be responsible for subscriber billing, customer care and other required retail functions. OAB will regulate wholesale rates through its contract with the Winning Bidder in order to stimulate competition for lower-priced retail services.
5. OAB will retain the right to the Capture Portal, in terms of both revenue related to commercial content and advertising on this page, as well as management of the pages' design, branding, layout, development and maintenance.
6. OAB will retain the right to review and suggest alternative providers and solutions for the Internet connectivity required at the POP.
7. OAB and the Winning Bidder will collaborate with social service, nonprofit and other community groups to affect low-cost computer purchase, training and content for low-income and disadvantaged residents.
8. OAB may desire to extend its services under any resulting contract to other organizations across the region - with the same or similar terms and conditions. This may result in the Winning Bidder having the right, but not the obligation, to perform the financing and management of similar networks in other communities throughout the region.

B.2 Wireless Innovation Center

OAB will create the Wireless Innovation Center (WIC). The WIC will be located, staffed and supported by one or more Boston-area universities (in current negotiations). OAB wishes to

build a low-cost, flexible technology platform that avoids obsolescence and encourages innovation. This RFI will require integrator/vendor to work with OAB to establish quality standards and a process to handoff new technology from the WIC to the NOC, before the NOC deploys technology into the live network

The WIC will:

- Create a platform to develop, test technologies and various business models to further the goals of OAB.
- Stimulate technology advancement and non-obsolescence across the OAB network. This will be accomplished by R&D on wireless access point hardware, firmware and software with intent to deploy in OAB network.
- Stimulate development of applications that make use of OAB network infrastructure.
- Help incubate ventures to spin out of the WIC to launch innovative business models.
- Be composed of students and faculty from the Boston community and area academic institutions. Faculty may develop curriculum around WIC for educational purposes.
- Establish open-source initiative to accelerate software development for software and business applications.
- Develop innovative processes to marry the best of both open-source and proprietary advancements.
- Have full cooperation from wireless vendors involved in Boston network.
- Work with the NOC to create wireless “test zone(s)” in Boston to deploy and test ideas and developments from the Lab.
- Work with other city/neighborhood wireless initiatives on standards and internetworking, and share results of innovation.
- Create open Application Program Interfaces (APIs) into the OAB network software infrastructure. Also create standard hardware platform for radio/access points.

OAB understands this part of the municipal WiFi network has little precedent, and wants to work with integrator/vendors to develop the WIC concept and implementation. We also understand that conventional hardware vendors may find this approach contrary to their current business models (that is, opening up their hardware/software platforms for outside development). We are willing to investigate, for example, use of newer startups that may be open to this architectural requirement. OAB realizes and is willing to assume the potential additional risk of self-developed hardware/software platforms versus use of established vendors' own hardware/software platform. This RFI will require integrator/vendor to work with OAB to establish quality standards and a process to handoff new technology from the WIC to the NOC, before the NOC deploys technology into the live network.

B.3 Coverage

- a. Wireless Internet access shall be provided throughout the entire City within an agreed to timeline. Solutions that provide access in only parts of the City that are more densely populated or commercially attractive, or that leave entire neighborhoods underserved, will not be considered.
- b. Outdoor coverage shall be provided for a minimum of 95% of all areas of the City. An area is considered covered under this requirement if a laptop, handheld or other personal computing device - equipped with a minimum of an 802.11b/g (WiFi) interface - can access the network at the provisioned service level with no additional hardware required beyond the device's standard wireless interface.
- c. Indoor, Perimeter Room coverage shall be provided for a minimum of 90% of all residential buildings throughout the City. A building is assumed covered under this Requirement if a there is a Perimeter Room on every floor for each dwelling or apartment (unique household) of the building can access the Network at the provisioned service level. This coverage requirement may be met by using inside wiring, repeaters or bridges, a WiFi interface built into a user's device, a signal amplifier, a high-gain antenna and/or a dedicated WiFi bridge or other type of CPE. Respondents shall address the following as it relates to this Requirement:
 - Does your solution propose to meet this Perimeter-Room coverage Requirement using Wi-Fi or another wireless technology?
 - If so, will your solution meet this Perimeter-Room access Requirement using an indoor or outdoor mounted antenna?
 - If not, what commitment is your organization willing to make to outreach to - and cooperate with - building owners, landlords, the OAB or other parties to meet this Requirement using in-building distribution networks?

B.4 Multi-Use

- a. The Network shall support concurrent usage by multiple Retail Service Providers serving residents, businesses, institutions and visitors to the City. Furthermore, City agencies (Public Service and Public Safety), will require the ability to segregate its own traffic through the use of secure VLANs and QoS systems. Examples of usage scenarios and demand may include:
 - Residents and visitors may use the Network for such uses as E-mail, web browsing, instant messaging, and entertainment and voice services. To assist Respondents in forecasting demand for residential usage, and planning for the required capacity, summary residential demographics and links to additional resources are provided below.
 - The City of Boston is 49 square miles and is home to nearly 590,000 residents, many institutions of higher education, some of the world's finest

inpatient hospitals, and numerous cultural and professional sports organizations. Boston-based jobs, primarily within the finance, health care, educational, and service areas, numbered nearly 660,000 in 2002. The City also attracts over 12 million visitors annually making it one of the top business and tourist destinations in the United States.

- Detailed information about the City of Boston can be found at the City's official website at <http://www.cityofboston.gov/>. Specific information on individual neighborhoods can be found at the following website <http://www.cityofboston.gov/neighborhoods/>.
- Detailed information about visitors and events can be found at the Boston Visitor and Convention Center website at <http://www.bostonusa.com/>.
- Businesses may use the Network for such uses as remote office connectivity, mobile workers, small to medium business internet access, and access to their own customers and partners. To assist Respondents in forecasting demand for business usage, and planning for the required capacity, summary business demographics and links to additional resources can be found via the Boston Chamber of Commerce at <http://www.bostonchamber.com/>.
- Institutions such as libraries, universities, healthcare organizations and nonprofits may use the Network for increased interaction between their institutions and constituents. To assist Respondents in forecasting demand for institutional usage, and planning for the required capacity, summary institutional demographics and links to additional resources are provided below.
 - Boston is home to over 30 large colleges, universities and institutes. An index of universities in the Boston area can be found at http://www.bostonyouthzone.com/resources/college_guide/college.asp.
 - Boston is home to some the world's premier teaching hospital and medical research institutions. The Longwood Medical Area region of Boston is one area of concentration that includes Beth Israel Deaconess Medical Center, Brigham and Women's Hospital, Children's Hospital, Dana-Farber Cancer Institute, and Harvard Medical School. Massachusetts General Hospital (MGH) is another area of concentration near the Beacon Hill neighborhood, with the Massachusetts Eye and Ear Infirmary and Spaulding Rehabilitation Hospital nearby. Boston also has VA medical centers in the Jamaica Plain and West Roxbury neighborhoods. Many of Boston's major medical facilities are associated with universities. The facilities in the Longwood Medical Area and MGH are world-renowned research medical centers affiliated with Harvard Medical School. New England Medical Center, located in the southern portions of the Chinatown neighborhood, is affiliated with Tufts University. Boston Medical Center, located in the South End neighborhood, is the primary teaching facility for the Boston University School of Medicine as well as the largest trauma center in the Boston area.

- Boston is also home to hundreds of nonprofit organizations that contribute to public benefit in the region. Many of these organizations have indicated their interest and support in OAB's goal.
 - The City's various operating agencies may use the network to support their operations. These uses may include traffic-control/monitoring centers; telemetry from widely deployed traffic-sensors, environmental-sensors, parking-meters and RFID-readers; hand-held GIS/GPS units; VoIP communication between and within City agencies and Real-time, form-based database access by city-workers doing site-visits and/or asset-inspections using WiFi-enabled iPads, laptops, etc.
 - The City's Public Safety agencies may use the Network to support their operations. These uses may include remote stationary requirements such as real-time video feeds from remote IP-based video-cameras and real-time access to data located in centrally based information systems. Public Safety agencies may also use the network to support mobility applications as apparatus moves across the City. Respondents are encouraged to submit approaches to address the level of service and resiliency required by public safety applications
- b. The Network shall support the logical segmentation of different "domains" of users (e.g. secure access by Public Service and/or Public Safety usage, secure and/or open access for public users, residential users, business users, etc.). This shall include the ability to define and manage different profiles (e.g. VLANs) for authentication, encryption and other service characteristics based on the requirements of each user-domain.
 - c. The Network shall support the ability to prioritize traffic for Public Service and/or Public Safety usage in cases of emergency or as required by the OAB. Respondents shall define the methods that will be used to prioritize municipal traffic in cases of natural disaster or other emergency.

B.5 Open Access

- a. The Winning Bidder shall provide access to any Retail Service Providers that enters into a wholesale contract with OAB.
- b. The Network shall support unilateral, inbound roaming relationships whereby subscribers to other fee-based WiFi roaming services may gain access to the Network.
- c. The Network shall support unilateral, outbound roaming relationships whereby subscribers to the Network may gain access to other fee-based WiFi roaming services.
- d. The Winning Bidder, and any Service Provider affiliated with the Winning Bidder, may also provide retail-branded services over the Network.

B.6 Services and Provisioning

- a. The Network shall allow Retail Service Provider to offer a Fixed Broadband service. This retail service must initially support 802.11 b/g devices at a best-effort minimum average 1.0 Mbps symmetric data transmission rate, a dynamic IP address and other Core ISP Services. Additionally, the Respondent should provide additional sensitivity analysis on a variety of asymmetric offerings such as 1.5 Mbps/384Kbps or 1.5 Mbps/768 Kbps. This service will be provisioned on wholesale data ports with specific SLAs that would allow the Retail Service Provider to reasonably achieve its own retail performance characteristics. At each refresh cycle, the network must support an upgrade path so that Retail Service Providers can provide retail offerings that are within 80% of the speed of competitive wireless offerings in the market at that time.
- b. The Network shall allow Retail Service Provider to offer a Nomadic Broadband service. This retail service must initially support 802.11 b/g devices at a best-effort minimum average 1.0 Mbps symmetric data transmission rate, a dynamic IP address and other Core ISP Services. This service will be provisioned on wholesale data ports with specific SLAs that would allow the Retail Service Provider to reasonably achieve its own retail performance characteristics. At each refresh cycle, the network must support an upgrade path so that Retail Service Providers can provide retail offerings that are within 80% of the speed of competitive wireless offerings in the market at that time.
- c. The Network shall allow Retail Service Providers unique pricing and bit plans that have lower performance needs than the Fixed Broadband, Nomadic Broadband, and Mobile Broadband offerings. The wholesale cost of these alternative services shall be commensurate with the demand they place on the network.
- d. The Network may provide free public access in City-designated areas surrounding convention centers, libraries, parks and other public spaces, not to exceed 5% of the geographic coverage area of the Network. Additional detail on OAB-designated spaces will be provided in the final RFP.
- e. The Network may allow Retail Service Provider to offer a Mobile Broadband service. This retail service must initially support 802.11 b/g devices at a best-effort minimum average 1.0 Mbps symmetric data transmission rate, a dynamic IP address and other Core ISP Services. Session-level connectivity must be maintained for in-motion subscribers at a minimum speed of 30 MPH. This service will be provisioned on wholesale data ports with specific SLAs that would allow the Retail Service Provider to reasonably achieve its own retail performance characteristics. At each refresh cycle, the network must support an upgrade path so that Retail Service Providers can provide retail offerings that are within 80% of the transmission speed of competitive mobile, wireless offerings in the market at that time.
- f. The Network may allow Retail Service Providers to offer a Fixed Broadband business-class service at a guaranteed minimum 3 Mbps symmetric data transmission rate (e.g. wireless T-1 alternative). This service will be provisioned on wholesale data ports with specific SLAs that would allow the Retail Service Provider to reasonably achieve its own retail performance characteristics. At each refresh cycle, the network must support an upgrade path so that Retail Service Providers can provide retail offerings that are within 20% of the speed of competitive business wireless offerings in the market at that time.

- g. The Winning Bidder shall allow Service Providers to provision services on a monthly, weekly and daily basis.
- h. Payment methods for all residential services must include credit and debit card. Other methods must be proposed for users who do not have the ability or do not wish to pay with credit or debit cards (e.g. pre-paid vouchers, top-off cards).
- i. Respondents shall include in their proposal the expected costs of any required CPE for each Coverage Requirement and Service defined above. Respondents shall also state who will be responsible for CPE costs during the provisioning process.
- j. The Network shall support a wide variety of devices (e.g. personal computers, laptop computers, handheld devices, smart phones, etc.) as well as proprietary, standards-based and open source operating systems (e.g. Microsoft Windows, Apple Macintosh, Linux, etc.)

B.7 Service Pricing

- a. Respondents shall propose specific wholesale costs for this network (including adequate reinvestment capacity) as well as suggested wholesale rates in their RFI Responses for each service defined in the Services and Provisioning Requirements above. All rates, terms and conditions for Service Providers not affiliated with the Winning Bidder shall be as favorable as those provided to the Winning Bidder and/or Service Providers affiliated with the Winning Bidder.
- b. Respondents shall describe the trade-offs between any proposed discounted rate for certain subscribers and any proposed citywide free service tier in terms of their impact to the OAB's digital inclusion goals, community program Requirements and economic viability and sustainability of the Network.

B.8 Network Infrastructure

- a. The Network shall include a wireless Access Tier that supports connectivity from 802.11b/g (and 802.11n/s as available) devices through the City.
- b. The Network shall include a fixed wireless point-to-multipoint or point-to-point solution as a Backhaul Tier for aggregating WiFi traffic from the Access Tier. Other technologies (wired or wireless) may be proposed for this Backhaul Tier if they are demonstrated to be more suitable and/or cost effective.
- c. The Network shall include integration with OAB's network via a fixed wireless point-to-point solution, using licensed or leased spectrum, or via a Distribution Tier for aggregating traffic from the Backhaul Tier back to an Internet POP. Optical fiber may be used as an alternative to wireless technology for this Distribution Tier if it is demonstrated to be more suitable and/or cost-effective.
- d. All Network traffic shall be aggregated back to a high-speed Internet backbone service at a POP, which shall support layer-three network transit for registered Service Providers. Provisions shall be made for redundancy of the POP facility.

- e. The Network shall support fault tolerance mechanisms to mitigate and/or eliminate single points of failure and ensure high reliability. The Network shall support reliability levels of 99.9% for the Access Tier and 99.999% for the Backhaul Tier, Distribution Tier and POP. Respondents shall identify the MTBF for any proposed network equipment and explain the processes that will be used to guarantee these service levels.
- f. The Network shall support contingency mechanisms to insure operation during a natural or other disaster. Respondents shall describe their proposed disaster recovery plan for the Network.
- g. The Network shall be easily scaled and upgraded in a modular fashion to support additional subscribers, new applications and new requirements, in order to meet evolving user demands. Respondents shall estimate the percentage of the initial Network capital cost that will be invested in upgrades during the contract term and will describe the technology roadmap for any planned upgrades.
- h. All outdoor equipment shall comply with IP56/NEMA4 dust and water ingress ratings, must withstand ambient temperature ranges of –40 C to +50 C and must adhere to all other applicable local ordinances.
- i. Respondents shall define any initial and/or future ability for their solution to provide, integrate with, coexist with or complement 4.9 GHz wireless public safety technology that may be of value to the City's public safety agencies. The Network shall not prohibit or negatively impact any initiative by the OAB during the contract term related to the deployment of wireless or other public safety technology.
- j. The Network shall support backup power for all network equipment sufficient to ensure continuous operation during a loss of electrical power. Respondents shall state the amount of time their solution will operate without electrical power and elaborate on any initial or future commitments they will make to increase backup power support.

B.9 Customer Service

- a. Tier 1 Support for all services shall be provided by all registered Retail Service Providers (including the Winning Bidder if they are also providing retail services). Tier 1 Support shall provide subscribers with phone, web, e-mail and instant messaging support options for at least the following issues:
 - Sales inquiries
 - Order status
 - Service cancellation
 - Service setup
 - Connectivity problems
 - Service interruption/degradation
 - Credits and refunds processing
 - Account and billing inquiries
 - Disconnect and relocation requests

- b. Tier 2 Support shall be provided by the Winning Bidder for all registered Retail Service Providers. Tier 2 Support must provide Retail Service Providers with phone and email support options for at least the following issues:
 - Escalation of issue not resolved by Service Provider's Tier 1 representatives
 - Proactive network status information
 - Three-party calling with Tier 2 Support agents, Tier 1 Support agents and subscribers
 - Settlement and billing inquiries between Service Provider and the Winning Bidder
- c. Tier 3 Support shall be provided by the Winning Bidder for all registered Retail Service Providers. This shall include at least the following:
 - 7x24 management of personnel at the NOC
 - 7x24 pager and phone support for registered Service Providers
 - Call escalation of critical issues not resolved by Tier 2 Support representatives
 - Proactive publishing of network status information, alerts, etc. by the Winning Bidder
- d. Wining Bidder will describe quality of service and Tier 1,2,3 support for major accounts/anchor customers which may not be Retail ISPs.

B.10 Security

The Network shall support multi-layered security protocols and methods, to include at a minimum the following:

- a. Physical security for all critical network equipment components via secured facilities.
- b. Mechanisms to prevent or mitigate the risk of hackers, spammers, denial of service and other forms of malicious attacks on or through the network. These mechanisms should balance the need to prevent these attacks, while at the same time not punishing or burdening unnecessarily all users of the Network.
- c. No client software that is specific to the Winning Bidder or Service Provider(s) shall be required on PCs, laptops or other mobile devices in order to use the network.
- d. Support for Media Access Control ("MAC") address filtering.
- e. Support for Wired Equivalent Privacy ("WEP") encryption, including both 64 and 128 bit keys.
- f. Support for Temporal Key Integrity Protocol ("TKIP") encryption.
- g. Support for Advanced Encryption Standard ("AES") encryption.
- h. Support for WiFi Protected Access ("WPA").

- i. Support for 802.1x authentication using Extensible Authentication Protocol (“EAP”) and Remote Authentication Dial-In User Service (“RADIUS”).
- j. Support for the suppression of Extended Service Set Identifier (“ESSID”) broadcasts.
- k. Support for multiple ESSIDs and the ability to map ESSIDs individually to Virtual LANs (“VLANs”).
- l. Support for filtering of traffic based on Internet Protocol (“IP”) addresses, subnets and Transmission Control Protocol (“TCP”) ports.
- m. Support for VPN tunneling using Internet Protocol Security (“IPSec”). This VPN support must support true end-to-end encryption, regardless of at what point in the Network users elect to terminate their session.
- n. Support for encryption of all control and network management traffic.
- o. The Network’s systems infrastructure (nodes, servers, access points, etc.) must offer compliance with applicable regulatory requirements; monitoring and logging of device activity (i.e., logon, logoffs, privileged/authorized user access activity; program access activity, file/folder access activity, security violations, and production environment changes); real-time alerts and notifications; and allow detailed customizable reporting for auditability and ensuring the privacy, integrity and accountability over the network information and assets.
- p. The Network’s system infrastructure must be capable of real-time identification, monitoring, auditing and alerting of inappropriate network access activity (i.e. denial of service attacks).

B.11 Privacy

The OAB requires that consumer privacy be protected for all users of the Network.

- a. A full disclosure of the privacy policy for all Retail Service Providers is required. This privacy policy shall adhere to all applicable federal and state laws, shall be communicated to all users on the Network and shall require users’ explicit acceptance before any service is provisioned.

Retail Service Providers’ privacy policy should, at a minimum, address the following:

- b. What information is collected, how it will be used, how long it will be stored, who it will be shared with (under what conditions) and whether it is correlated to a specific user, device or location.
- c. Mechanisms be provided to allow users to opt-in or opt-out of any service that tracks information about the user’s physical location.
- d. Mechanisms be provided to allow users to opt-in or opt-out of any service that collects, stores, profiles, shares or markets information - whether correlated to a specific user,

device or location or on an aggregate basis - on the searches performed, websites visited, emails sent or any other use of the network or transmission of data by users.

- e. Users not be “enumerated” or assigned any unique number that can be used to track individuals from session to session without their express consent.
- f. Data about users not be commercialized in any way without their express consent.
- g. Policies be in place to respond to legal demands for users’ personal information in accordance with applicable laws.
- h. Personal information about users be kept only as long as it is operationally necessary.
- i. No blocking of applications, ports or other communication be used, except in situations where this blocking is solely to prevent Network abuse or is required by law.
- j. Users be allowed reasonable access to any information collected about them, including a reasonable opportunity to review information and to correct inaccuracies or delete information.