
Wireless Winston

Request for Proposal



Community Wireless Broadband Network for Winston-Salem and Forsyth County

FINAL DRAFT DATE: MAY 4, 2006
ANTICIPATED RELEASE: MAY 8, 2006
Bidder's Conference: 3:00 pm, May 23, 2006
Deadline for Submission: 2:00 pm, July 7, 2006

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DEFINITION OF TERMS

Broadband shall refer to an internet service with a data-transmission rate in both directions (upstream and downstream) of at least 1 Mbps.

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

Requester shall refer to Wireless Winston and all of its member institutions.

Compensation shall comprise both cash and/or non-cash (in-kind) compensation, the forms of which may include but not be limited to, revenue sharing, profit participation, and equity, and free and discounted services provided to the Requester or to the public. For evaluating in-kind compensation, free or discounted service will be compared to the most favorable commercial rates offered by the Network Operator for the same service.

Core ISP Services shall refer to value-added features that are bundled with Internet access by Service Provider, such as e-mail accounts, newsgroup access and virus and/or spam protection.

Coverage Area shall refer to the area within the City of Winston-Salem and Forsyth County that the Proposer must provision with wireless service. Coverage area specifications are defined in Appendix D.

CPE shall refer to Customer Premise Equipment.

Digital Inclusion shall refer to the incorporation of information technologies into the community in order to promote education and improve the quality of life)

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

Interior Room shall refer to a room within a building that does NOT have at least one wall directly adjacent to and facing a public street.

IP shall refer to Internet Protocol.

Joint Venture Partner shall refer to any organization proposing to provide products or services in response to this RFP through a partnership with a prime bidder.

Mbps shall refer to Megabits per second.

MPH shall refer to Miles Per Hour.

MTBF shall refer to Mean Time Between Failures.

Network shall refer to a wireless broadband Internet access system that is deployed throughout the Requester and City of Winston-Salem.

Network Operator shall refer to the winning Proposer to this RFP who is responsible for the design, deployment, operation, maintenance, and upgrade of the Network.



NOC shall refer to Network Operations Center.

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

Open Access shall refer to the offering of open, non-discriminatory access to the wireless broadband Internet access transport to non-affiliated and affiliated service providers at equitable rates and terms.

Perimeter Room shall refer to a room within a building that has at least one wall directly adjacent to and facing a Public Street.

POP shall refer to an Internet Point of Presence.

Mobile Broadband Service shall refer to a service that provides Internet access for an in-motion subscriber at a variety of locations throughout the Requester's coverage area.

Proposer shall refer to a prime bidder to this RFP.

Public Street shall refer to a constructed dedicated public right-of-way.

Requester shall refer to WinstonNet and the Wireless Winston program that WinstonNet leads.

RFP shall refer to Request for Proposal.

Service Provider shall refer to any qualified organization, whether affiliated with the Network Operator or not, who markets, sells, and supports Premium Services over the Network.

Specifications shall refer to items defined in Section 2 of this RFP.

WinstonNet shall refer to the non-profit entity that operates the current fiber broadband program for its members as well as providing community computing centers.

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.

Wireless Winston shall refer to the wireless broadband project initiated by WinstonNet and its members but also including major businesses in the area.



Wi-Fi (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 80216 technical standards.

1. INTRODUCTION

Winston-Salem is a city famous for tobacco. Historically this area thrived through a traditional southern economy of textiles, manufacturing, and tobacco. Times have changed, and the area has quickly adapted. Winston-Salem and Forsyth County now count 37,000 biotech employees as residents. These biotech efforts contribute an estimated \$10B in annual revenue to the area.

The changes run beyond the local economy. The City of Winston-Salem is recognized as one of the best digital cities year after year. Wake Forest, one of the top universities in the US, hosts a diverse student body where every student receives a laptop and printer and most receive financial aid. Wake Forest Health Sciences is developing a new office park downtown that covers 220 acres. To provide more and better housing, tobacco warehouses are being redeveloped into residential lofts.

Wireless Winston, initially started by WinstonNet, will enable the area's citizens, businesses, educational institutions, and government to continue to transform Winston-Salem.

WinstonNet has a long history of creatively utilizing the best telecommunications infrastructure to serve this community. Currently classified as a 501(c)(3) non-profit corporation, WinstonNet has 25 miles of fiber and a GigaPoP peering point with low rates for both non profit and commercial traffic. WinstonNet also operates 44 community computer labs with over 350 computers.

WinstonNet's members include all major educational institutions in the area, as well as city and county government. Specifically, the members of WinstonNet are:

- City of Winston-Salem
- Forsyth County
- Forsyth Technical Community College
- North Carolina School of the Arts
- Salem Academy and College
- Wake Forest University
- Wake Forest University Health Sciences
- Winston-Salem Chamber of Commerce
- Winston-Salem/Forsyth County Schools
- Winston-Salem State University

WinstonNet is unusual as a non-profit in its ability to quickly and efficiently facilitate decisions and results across its membership base. As proof points, all members have taken a very active role in creating this RFP, and the RFP presents cumulated assets, potential demand, and potential applications for all ten member organizations. Additionally, the following businesses have already signed Memorandums of Understanding supporting the project:

- Alladin Travel
- Allegacy Federal Credit Union
- BB&T
- Flow Motors, Inc.
- Novant Health
- Reynolds American, Inc.
- Sara Lee Corp.
- Wachovia
- Womble, Carlyle, Sandridge, and Rice Attorneys

- **PROJECT GOALS**

Wireless Winston’s goals for the project are shown in the following two tables:

Benefits/High Priority	
Benefits	Priority
Enable WN Members to better serve their individual institutions Benefits: <ul style="list-style-type: none"> - Enhance education; Improve Interaction between teacher/student/parent - Improve public safety through better communication and interoperability - Enhance health education, telemedicine, patient monitoring - Improve capabilities of mobile workers 	High
Reduce existing or avoid future telecom costs	High
Lower broadband prices for low-to-moderate income families	High
Provide backup/contingency for disaster response/recovery	High
Promote job/business growth, economic development	High

Benefits/Medium Priority	
Benefits	Priority
Promote city image/brand	Medium
Streamline interaction between citizens and government	Medium
Improve experience for visitors to city, tourists, business travelers	Medium
Stimulate more private investment for broadband services	Medium

Wireless Winston has worked to facilitate the best response possible from the vendor community. The program has generated potential demand that encompasses more than 20% of the population, is involved in active discussions with Duke Power and others concerning pole attachments and other siting details for wireless access points, has GIS encoded information for all towers and lists their specifications with photos, has provided specifications on the use of the WinstonNet GigaPoP for this project, and has provided for creative responses by listing required and preferred specifications throughout this RFP.

In return, Wireless Winston asks that vendors present the best possible proposal for network services at low or no capital cost to the program and at competitive rates for on-going broadband services. These services should be provided to all residents, businesses, non profits, and government in Forsyth County. In addition, WinstonNet desires to receive an annual fee for its provision of assets to sustain operation of its community centers and digital divide programs.

2. SPECIFICATIONS

WinstonNet desires the best possible network from the most qualified vendor. To facilitate this result, WinstonNet has set forth the following specifications in two categories:

1. Required: These items are minimums that vendors are required to address to comply with the RFP
2. Preferred: These items are additional items that, if met by a vendor's proposal, will be favorably considered in the selection process.

The Specifications defined in Section 3 are considered a general requirements list and are not a design or list of hardware, software, and services needed for the solution.

These specifications form the basis of an RFP response. Proposals should describe the vendor response to each item below.

2.1. BUSINESS MODEL

a. Required:

1. The Network shall be designed, deployed, operated, maintained and upgraded at no cost to the Requester. Proposers shall identify any assumed or potential co-ownership, co-branding, co-marketing or other roles of the Requester.
2. The Network Operator shall compensate the Requester for the use of its assets, if any, and can state the forms and value of any such proposed compensation in exchange for which, as permitted by law and any required authorizations or approvals, the Requester shall facilitate on behalf of the successful Proposer non-exclusive permission to use municipal and member assets, which may include rights of way, towers, buildings and other mounting locations along with fiber access and PoP access
3. The Network shall support fixed, nomadic, and mobile broadband services for Wireless Winston members.

b. Preferred:

1. The Network will support fixed, nomadic, and mobile broadband services for the public, including residents, visitors, and businesses.
2. The Network Operator will support low cost access for low income residents.
3. The Network Operator will support Open Access for additional retailers to competitively sell broadband services over the network.

2.2. TERM

- a. The Proposer shall indicate an initial term, which shall be of no less than five years and no more than ten years. The proposer shall further indicate whether it proposes any option periods and, if so, the number and length of option periods, provided that no more than two option periods shall be proposed and the combined proposed initial term and extended term(s) should not exceed eighteen years in total. The Requester shall have the authority to approve or disapprove any proposed option periods at its sole, absolute discretion. Details of term(s) including conditions for renewal and obligations for abandoned equipments will be negotiated with the successful Proposer.

2.3. COVERAGE

- a. Required:
 1. Wireless internet access must be provided throughout the entire City. Phased rollouts will be considered.
 2. Wireless internet access must be planned for future rollout for the entire County.
- b. Preferred
 1. Wireless internet access that provides smooth handoffs between different technologies, should they be required, to cover the full county, particularly for matters of public safety.
- c. For all areas that are covered the following Required specifications shall apply:
 1. Outdoor broadband service coverage shall be provided a minimum of 95% of all areas covered. 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 (Wi-Fi) interface - can access the network at the provisioned service level with no additional hardware required beyond the device's standard wireless interface.
 2. Indoor, Perimeter Room coverage for the ground and second floors of a building shall be provided for a minimum of 90% of all residential and commercial buildings throughout the coverage area. A building is assumed covered under this Specification if a device located in each Perimeter Room on the ground and second floor of the building can access the Network at the provisioned service level. This coverage requirement may be met by using a Wi-Fi interface built into a user's device, a signal amplifier, a high-gain antenna and/or a dedicated Wi-Fi bridge or other type of CPE.
 3. In the above Outdoor and Indoor coverage specifications, the vendor may propose technologies other than 802.11b or g in all or part of the coverage area. Coverage shall be described using the vendor's recommended hardware.

2.4. MULTI-USE

- a. Required:
 1. The Network shall be able to support concurrent usage by its users. Examples of usage scenarios may include:
 - Institutions such as universities and nonprofits may use the Network for such uses as increased interaction between their institution and students/constituents as well as redundant T1 or higher network connectivity.
 - Government agencies may use the Network for such uses as automatic vehicle location, access by field staff, remote meter reading, public safety, and remote camera/video surveillance.
 - Residents and visitors may use the Network for such uses as E-mail, web browsing, instant messaging, entertainment, and voice services.

- Businesses may use the Network for such uses as primary and remote office connectivity, supply chain integration, customer relationship management, and inventory control.

b. Preferred:

1. The Network will support the logical segmentation of different “domains” of users (e.g., secure access by government personnel, secure and/or open access for public users, residential users, and business users.) This would 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.
2. The Network will support the ability to prioritize traffic for municipal use in cases of emergency or as required by the Requester. Proposers should define the methods that will be used to prioritize municipal traffic in cases of natural disaster or other emergency.

2.5. INTERCONNECTION

a. Preferred:

1. The Requester seeks the capability to integrate existing Wi-Fi coverage throughout the interiors of buildings of to be decided Wireless Winston participants with the overall network provided by the Proposer.

2.6. OPEN ACCESS

a. Preferred:

1. The Network Operator will provide access to its wireless broadband Internet access transport services to multiple unaffiliated Service Providers. This access will include at least one option with reasonable set up fees appropriate for small businesses wishing to become Service Providers.
2. When any unauthenticated user is redirected to a Capture Portal on the Network, the user shall have an option to choose between multiple Service Providers and service plans. The Network Operator may receive priority placement for any Services it may offer on the Capture Portal; however all Service Providers shall also be clearly and reasonably presented.
3. The Network shall support unilateral, inbound roaming relationships whereby subscribers to other fee-based Wi-Fi services (e.g., T-Mobile, Sprint) may gain access to services provided over the Network.
4. The Network shall support unilateral, outbound roaming relationships whereby subscribers to services over the Network may gain access to other fee-based Wi-Fi services (e.g., T-Mobile, Sprint).
5. The Network Operator, and any Service Provider affiliated with the Network Operator, may also provide retail-branded services over the Network.

2.7. SERVICES AND PROVISIONING

a. Required Services:

1. The network shall provide 1 mbps symmetrical for all fixed, nomadic, and mobile accounts.
 2. The network shall provide 3 mbps symmetrical for all point to point accounts.
- b. Required Provisioning:
1. The Network Operator shall provide the following options for WinstonNet members or other major entities to purchase accounts:
 - a. Up front, bulk account contracts between each member of WinstonNet and the selected Vendor. Activation of accounts should be able to be completed by individuals or an IT department.
 - b. Individual purchase of accounts by any user.
 2. Proposals shall include the expected costs of any required CPE, how CPE shall be supplied, and who shall be responsible for CPE costs during the provisioning process.
- c. Preferred Services:
1. Any additional services the Network Operator proposes.
- d. Preferred Provisioning:
1. The Network Operator will allow Service Providers to provision services on a monthly, weekly and daily basis.
 2. Payment methods for all consumer and business services should include credit and debit card. Other methods should be proposed for users who do not have the ability to pay with credit or debit cards (e.g., pre-paid vouchers, top-off cards).
 3. The Network Operator will facilitate the provision of low-income accounts.

2.8. SERVICE PRICING

- a. Required:
1. Proposers shall estimate the rates for all services to be marketed on the network.
 2. Proposers shall estimate price changes over the term of the contract.
- b. Preferred:
1. Should the Proposer offer Open Access:
 - i. The proposer should estimate all rates, terms and conditions for Service Providers not affiliated with the Network Operator, and these rates, terms, and conditions shall be as favorable as those provided to the Network Operator and any affiliated Service Providers.
 - ii. The proposer should estimate the rates for any Services to be marketed to the public by the Network Operator.
 2. Should the Proposer offer public access, Proposers should guarantee WinstonNet members and those participating via MOU the most favorable rates.
 3. Should the Proposer offer public services, a free or low cost service will be viewed favorably if the proposer's business model is considered viable and sustainable.

4. Digital Inclusion internet access services will be at least at a cost that is substantially less than the average market rate.
5. Digital Inclusion accounts will be capped at no lower than 20% of the total residential accounts provisioned.

2.9. NETWORK INFRASTRUCTURE

Wireless Winston believes that open standards based networks provide the lowest cost communications solutions.

a. Required:

1. The network shall include a wireless edge for access and a point to multipoint solution for T1 and higher replacement service, network redundancy, and other business class connectivity.
2. All outdoor network 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.

b. Preferred:

1. The Network will include a wireless Access Tier that supports connectivity from 802.11b/g devices throughout the coverage area.
2. The Network will include a fixed wireless point-to-multipoint solution as a Backhaul Tier for aggregating Wi-Fi traffic from the Access Tier.
3. The Network will include a fixed wireless point-to-point solution, using licensed or leased spectrum, as a Distribution Tier for aggregating traffic from the Backhaul Tier back to an Internet POP. This Distribution Tier may also make use of WintonNet fiber defined in Appendix G.
4. 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 Service Providers. Provisions shall be made for redundancy of the POP facility.
5. The Network shall support latency intensive applications such as VOIP.
6. The Network shall support standards based VOIP handsets.
7. 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 99.99% for the Access Tier and 99.999% for the Backhaul Tier, Distribution Tier and POP. Proposers shall identify the MTBF for any proposed network equipment and explain the processes that will be used to guarantee these service levels.

8. 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. Proposers shall estimate the percentage of the initial Network capital cost that will be invested in upgrades during the contract term and elaborate on what steps they will take to determine when network upgrades are required and how they will be rolled out. Proposers shall describe how the Requester can evaluate the Network Operator's performance relevant to this sub-section.
9. The Network shall support backup power for all network equipment sufficient to ensure continuous operation during a loss of electrical power. Proposers 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.

2.10. CUSTOMER SERVICE

1. Required:

1. Tier 1 Support for all Services shall be provided by all Service Providers (including the Network Operator if they are also directly providing Service). 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
2. Tier 2 Support shall be provided by the Network Operator for all Service Providers. Tier 2 Support must provide Service Providers with phone and e-mail support options for at least the following issues:
 - Escalation of issue not resolved by Service Provider's Tier 1 representatives
 - Proactive and reactive 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 Network Operator
3. Tier 3 Support shall be provided by the Network Operator for all Service Providers. This shall include at least the following:
 - 7x24x365 management of personnel at the NOC
 - 7x24x365 pager and phone support for Service Providers
 - Call escalation of critical issues not resolved by Tier 2 Support representatives
 - Proactive publishing of network status information, alerts, etc. by the Network Operator

2.11. SECURITY

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

Required:

- 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. Support for Media Access Control (“MAC”) address filtering.
- d. Support for Wired Equivalent Privacy (“WEP”) encryption, including both 64 and 128 bit keys.
- e. Support for Temporal Key Integrity Protocol (“TKIP”) encryption.
- f. Support for Advanced Encryption Standard (“AES”) encryption.
- g. Support for Wi-Fi Protected Access (“WPA”).
- h. Support for 802.1x authentication using Extensible Authentication Protocol (“EAP”) and Remote Authentication Dial-In User Service (“RADIUS”).
- i. Support for the suppression of Extended Service Set Identifier (“ESSID”) broadcasts.
- j. Support for multiple ESSIDs and the ability to map ESSIDs individually to Virtual LANs (“VLANs”).
- k. Support for filtering of traffic based on Internet Protocol (“IP”) addresses, subnets and Transmission Control Protocol (“TCP”) ports.
- l. 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.
- m. Support for encryption of all control and network management traffic.

Preferred:

- n. No client software that is specific to the Network Operator or Service Provider(s) shall be required on PCs, laptops, or other mobile devices in order to use the Network.

2.12. PRIVACY

Wireless Winston requires that consumer privacy be protected for all users of the Network.

- a. A full disclosure of the privacy policy for all Proposers 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.

Proposers' 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 should 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 should 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 should not be commercialized in any way without their express consent.
- g. Policies should be in place to respond to legal demands for users' personal information in accordance with applicable laws.
- h. Personal information about users should 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 should be allowed reasonable access to any information collected about them, including a reasonable opportunity to review information and to correct inaccuracies or delete information.
- k. Trackback for appropriate Law Enforcement purposes needs to be specified.

2.13. COMMUNITY PROGRAMS / DIGITAL INCLUSION

The deployment of the Network will be supplemented with various programs to meet WinstonNet's Digital Inclusion goals of easy and affordable access for everyone, anywhere and at anytime.

The two current projects are the Computer Access Centers Project and the WinstonNet Beehive. The two projects are outlined below:

1. WinstonNet has established 44 computer centers throughout Forsyth County. Each center offers free high speed access to the Internet, the latest Microsoft Office software, free email accounts and file storage space for portability between centers. Computer skills' training is provided at many of the centers – all free.

2. WinstonNet is launching the WinstonNet Beehive in late spring 2006. The Beehive is a web portal that provides quality information on important areas affecting our community, such as health, schools, jobs, finances, family, government, etc. This portal also provides information on how to access local services. The Beehive is written at a fifth grade reading level and totally translated into Spanish.

a. Required:

1. If the Proposer uses a Network Subscriber Portal it shall prominently display a Digital Inclusion point that shall provide easy access to the resources of the WinstonNet Beehive Portal.
2. The Network shall provide free access to the current 44 WinstonNet Access Centers with the same benefit extended to at least 25 additional computer centers for possible future expansion.

b. Preferred:

1. The Proposer will provide a high level plan that provides an option for a single point of contact for the purchase / lease of home computers and broadband access for all low to moderate income households with a primary focus on students in grades K14.
2. The Proposer will provide low to no interest loans for purchase of computers and ancillary hardware and/or ways to back bad debt on Digital Inclusion purchases.
3. The Proposer will fund or arrange for the funding of free Internet access, computer skills training, and quality technical support for the connectivity, web usage, and productivity software.

Maximum consideration will be given to the Proposer who demonstrates a strong commitment in working toward the goals of Digital Inclusion.

2.14. ESTIMATED DEMAND

The Proposer should take into account the following potential demand from WinstonNet members and businesses having completed an MOU and provide discounted pricing for the account inquiry below. Wireless Winston is open to agreeing with the selected vendor, at a point to be negotiated, for a period of up to three years on aggregate quantities of access accounts. This agreement would then be renewed on a periodic basis upon agreement by all parties.

The Proposer should note “Access Method” refers to the edge technology of the network that connects particular users. Most entries are “wi-fi” meaning 802.11 b/g and make use of the large number of wi-fi clients already built into consumer and business devices. However, in controlled environments where a department can deploy hardware for specific applications, no particular technology is required and the Access Method “open” is designated below to provide additional flexibility to Proposers. In these cases, Wi-Fi or other communications technology are acceptable.

Wireless Winston Estimated Demand Matrix

	Mobile	Nomadic / Home	T1 Replacement	Access Method	User Description
Total	695	86,871	78		
Wake Forest University		5,500		wi-fi	students
		1,000		open	faculty / staff
			10		
City of Winston-Salem	150			open	field workforce
			19	open	recreation center connections
	350			open	Police and Fire
		100		open	electrical SCADA
			10	open	point to point installations
Forsyth County	135			open	Sheriff's Office
	16			open	EMS Units
	22			open	Fire and Fire Inspections
	17		17	open	Volunteer Fire
	5			open	Animal control trucks
			19	open	libraries with Community Access Centers
		20		open	Tablets for Public Health Inspectors (restaurants)
		28		open	Tax Assessors
Salem College		500		wi-fi	adult students and day students
		250		open	faculty and staff
		1,500		wi-fi	on campus students
Winston-Salem State University		2,000		wi-fi	on campus students
		650		wi-fi	faculty and staff
		3,800		wi-fi	off campus students
Forsyth Tech		2019		wi-fi	on campus students
		106		wi-fi	faculty and staff
		3,600		wi-fi	corporate and continuing ed
Wake Forest Health Sciences		11,000			faculty and staff
North Carolina School of the Arts		700		wi-fi	on campus students
		400		wi-fi	off campus students
		450		wi-fi	faculty and staff
			3	open	connections to downtown NCSA facilities
Winston-Salem / Forsyth County Public Schools		49,505		wi-fi	students
		3,743		open	faculty

Demographic information for Winston-Salem and Forsyth County is supplied in Appendix H for forecasting purposes.

2.15. PILOT

Required:

The successful Proposer, upon completion of contract negotiation, shall build out and operate for a period of no less than 3 months a pilot network to demonstrate its solution. This pilot shall be fully functioning and a complete representation of the Proposer’s business model and solution offering. The size of this pilot shall be no less than five square miles and will be at a location mutually agreed upon by the Proposer and Wireless Winston. A successful pilot is required before authorization of the full build out. The metrics and criteria for this success will be mutually agreed upon by the Proposer and Wireless Winston.

3. SUBMISSION REQUIREMENTS

3.1. TIME/PLACE FOR SUBMISSION OF PROPOSALS

Proposals must be **received** by 2:00 p.m. on July 7, 2006. Postmarks will not be considered in judging the timeliness of submissions. Proposals may be delivered in person and left with WinstonNet or mailed to:

WinstonNet, Inc.
Lynda Goff, Executive Director
115 South Chestnut Street
Winston-Salem, NC 27101

Proposers shall submit seven hard copies of the proposal and one CD with Microsoft Word and Adobe versions of the proposal in a sealed envelope clearly marked **Wireless Winston – Community Wireless Broadband Network** to the above location. Proposals that are submitted by fax will not be accepted. Late submissions will not be considered. Proposals must be submitted in 3-ring binders and printed on both sides of recycled paper.

In preparation for the submission, questions may be submitted in writing to Lynda Goff at the address above or to wireless@winstonnet.org. Questions will be received and responded to up until the Q&A cut-off date listed in the Schedule.

3.2. FORMAT AND CONTENT OF PROPOSALS

Firms interested in responding to this RFP must submit the following information, in the order specified below:

Volume 1 - Introduction and Executive Summary

Provide a letter of introduction signed by a person authorized by your firm to obligate your firm to perform the commitments contained in the proposal. Submission of the letter will constitute a representation by your firm that your firm is willing and able to perform the commitments contained in the proposal.

Provide an executive summary of the proposed solution.

Volume 2 - Firm Qualifications

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

- Name, address, e-mail address, and telephone number of a contact person
- A brief description of your firm, as well as any joint venture partner firms

- If the Proposal is submitted by a partnership and/or joint venture, provide full information concerning the nature and structure of the partnership and/or joint venture, including:
 - Entity(ies) that will be guaranteeing contract performance
 - Date of joint venture or partnership
 - Does the agreement between members comprising the joint venture make each member jointly and severally liable for contractual obligations of this project?
- 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 a one-page project summary. If joint venture partners are proposed, provide references for each.
- A summary of the estimated up-front and ongoing capital and operating costs to design, build and manage the network throughout the proposed term of the contract.
- Financial details that demonstrate your firm's financial capacity to undertake and complete the project as proposed, which shall include:
 - Current audited statement of financial condition and financial statements for the two prior years prepared by an independent certified public accountant;
 - Statement disclosing any state or federal bankruptcy or insolvency proceeding that Proposer has filed or with which Proposer is otherwise involved;
 - Most recent Form 10-K filed by the Proposer with the U.S. Securities and Exchange Commission, and copies of all Form 8-Ks filed since the filing of the most recent 10-K.
 - Any other information not specifically itemized above that demonstrates its financial capacity.

Volume 3 - Solution Explanation

Provide information on your firm's proposed solution to address the following:

- a. A detailed description of the proposed solution, including architecture that is expected to meet the Specifications identified in Section 2. Proposers shall enumerate their responses according to the Specifications stated in Section 2.
- b. Completion of the Specifications Matrix in Appendix B.

4. EVALUATION AND SELECTION CRITERIA

Written proposals will be evaluated by a selection committee representing the participants in Wireless Winston. The Requester intends to evaluate written proposals in accordance with the criteria itemized below.

4.1. FIRM QUALIFICATIONS

- a. Financial capacity
- b. Quality of customer references for projects of similar size and scope
- c. Level of technical expertise to design, deploy and operate the Network

4.2. DEGREE OF COMPLIANCE WITH REQUESTER'S SPECIFICATIONS

- a. Degree of satisfaction of Specifications set forth in this RFP
- b. Viability of proposed solutions
- c. Understanding of the Requester's vision, goals and benefits set forth in this RFP
- d. Value of proposed Compensation

4.3. ORAL INTERVIEW

Following the evaluation of the written proposals, the three Proposers evaluated highest from the above criteria shall be invited to an oral interview. The interview will consist of standard questions asked of each of the three Proposers.

5. SCHEDULE

5.1. BIDDERS' CONFERENCE

The Requester will conduct a pre-proposal conference on May 23, 2006. Attendance is strongly recommended and will be measured as a level of commitment to the project. Lack of attendance will not be accepted as a rationale for a lack of information in the RFP response.

All questions at the Bidder's conference will be documented. These and their respective answers will be posted on the website.

Bidders' Conference Details

Date: Tuesday, May 23

Time: 3p.m.

Location: 115 South Chestnut Street, Winston-Salem, NC 27101

Register for conference at http://www.winstonet.org/wireless_initiative/rfp.html

5.2. SCHEDULE

The anticipated schedule for this RFP is shown below:

Proposal Activities	Date
RFP is advertised and issued by the Requester	May 8, 2006
Bidders' Conference	May 23, 2006
Deadline for submission of written questions and requests for clarification	June 6, 2006
Requester's response to written questions and requests for clarification	FIFO (First In, First Out) onto the website
Proposals due	July 7, 2006, 2 PM

5.3. CONTRACT AWARD

The Requester will select a Proposer with whom Requester staff shall commence contract negotiations. The selection of any proposal shall not imply acceptance by the Requester of all terms of the proposal.

6. TERMS AND CONDITIONS FOR RECEIPT OF PROPOSALS

6.1. ERRORS AND OMISSIONS IN RFP

Proposers are responsible for reviewing all portions of this RFP. Proposers are to promptly notify Requester by e-mail to wireless@winstonnet.org, if the Proposer discovers any ambiguity, discrepancy, omission, or other error in the RFP. Any such notification should be submitted to Requester promptly after discovery, but in no event later than five working days prior to the date for receipt of proposals. Modifications and clarifications will be made by addenda posted on the Requester's bid website.

6.2. INQUIRIES REGARDING RFP

All inquiries regarding the RFP and notifications of an intent to request written modification or clarification of the RFP, must be submitted by e-mail to wireless@winstonnet.org. Any substantive inquiries and replies will be issued as addenda posted on the Requester's bid website. No questions or requests for clarification will be accepted after June 6, 2006. Information regarding Requester assets that may potentially be available for use as part of a wireless broadband network can be found on the Requester's website at www.winstonnet.org.

6.3. OBJECTIONS TO RFP TERMS

Should a Proposer object on any ground to any provision or legal requirement set forth in this RFP, the Proposer must, not more than ten calendar days after the RFP is issued, provide notice to Requester setting forth with specificity the grounds for the objection. This notice shall be submitted by e-mail to wireless@winstonnet.org. Failure of a Proposer to object in the manner set forth in this paragraph shall constitute a complete and irrevocable waiver of any such objection.

6.4. ADDENDA TO RFP

The Requester may modify the RFP, prior to the proposal due date, by issuing written addenda. Addenda will be posted on the Requester's bid website. The Proposer shall be responsible for ensuring that its proposal reflects any and all addenda issued by the Requester prior to the proposal due date regardless of when the proposal is submitted. Therefore, the Requester recommends that the Proposer monitor the Requester's bid website to ensure the Proposer is aware of all addenda.

6.5. TERM OF PROPOSAL

Submission of a proposal signifies that the proposed services and prices are valid for 180 calendar days from the proposal due date and that the quoted prices are genuine and not the result of collusion or any other anti-competitive activity.

6.6. REVISION OF PROPOSAL

A Proposer may revise a proposal on the Proposer's own initiative at any time before the deadline for submission of proposals. The Proposer must submit the revised proposal in the same manner as the original. A revised proposal must be received on or before the proposal due date.

In no case will a statement of intent to submit a revised proposal, or commencement of a revision process, extend the proposal due date for any Proposer.

At any time during the proposal evaluation process, Requester may require a Proposer to provide oral or written clarification of its proposal. Requester reserves the right to make an award without further clarifications of proposals received.

6.7. ERRORS AND OMISSIONS IN PROPOSAL

Failure by Requester to object to an error, omission, or deviation in the proposal will in no way modify the RFP or excuse the vendor from full compliance with the specifications of the RFP or any contract awarded pursuant to the RFP.

6.8. CONFIDENTIALITY

The proposals will become part of the Requester's official files without any obligation on the Requester's part. All proposals shall be held confidential from all parties other than the Requester until after the contract is awarded. Afterward, the proposals shall be available to the public.

The Requester shall not be held accountable if material from proposals is obtained without the written consent of the Proposer by parties other than the Requester, at any time during the proposal evaluation process.

In the event a Proposer submits trade secret information to the Requester, the information must be clearly labeled as a "Trade Secret". The Requester will maintain the confidentiality of such trade secrets to the practical extent a non-profit with many member organizations can.

6.9. FINANCIAL RESPONSIBILITY

The Requester accepts no financial responsibility for any costs incurred by a firm in responding to this RFP. Submissions of the RFP will become the property of the Requester and may be used by the Requester in any way deemed appropriate.

6.10. RESERVATIONS OF RIGHTS BY THE REQUESTER

The issuance of this RFP does not constitute an agreement by the Requester that any contract will actually be entered into by the Requester. The Requester expressly reserves the right at any time to:

- Waive or correct any defect or informality in any response, proposal, or proposal procedure;
- Reject any or all proposals
- Reissue a Request for Proposals
- Prior to submission deadline for proposals, modify all or any portion of the selection procedures, including deadlines for accepting responses, the specifications or requirements for any materials, equipment or services to be provided under this RFP, or the requirements for contents or format of the proposals;

- Procure any materials, equipment or services specified in this RFP by any other means; or
- Determine that no project will be pursued.

6.11. NO WAIVER

No waiver by the Requester of any provision of this RFP shall be implied from any failure by the Requester to recognize or take action on account of any failure by a Proposer to observe any provision of this RFP.

6.12. DISADVANTAGED AND LOCAL BUSINESS GOALS

The successful proposer will be required to enter into an agreement with the Requester to provide opportunities for disadvantaged and local business in the performance of the project as appropriate and will also be required to agree to make good faith efforts to hire disadvantaged workers where appropriate. Large percentages of the overall project, and particularly highly skilled work, that involves disadvantaged and local business will be considered favorably considered.

APPENDIX A – SPECIFICATIONS MATRIX

Under Type, “R” represents a Required specification for the network. “P” represents a Preferred specification.

Spec No.	Summary	Type	Fully Compliant	Partially Compliant	Not Compliant	Detail or Comments
	Business Model					
3.1 A1	The Network shall be designed, deployed, operated, maintained and upgraded at no cost to the Requester. Proposers shall identify any assumed or potential co-ownership, co-branding, co-marketing or other roles of the Requester.	R				
3.1 A2	The Network Operator shall compensate the Requester for the use of its assets, if any, and can state the forms and value of any such proposed compensation in exchange for which, as permitted by law and any required authorizations or approvals, the Requester shall facilitate on behalf of the successful Proposer non-exclusive permission to use municipal and member assets, which may include rights of way, towers, buildings and other mounting locations along with fiber access and PoP access	R				
3.1 A3	The Network shall support fixed, nomadic, and mobile broadband services for Wireless Winston members.	R				
3.1 B1	The Network will support fixed, nomadic, and mobile broadband services for the public, including residents, visitors, and businesses.	P				
3.1 B2	The Network Operator will support low cost access for low income residents.	P				
3.1 B3	The Network Operator will support Open Access for additional retailers to competitively sell broadband services over the network.	P				
3.2 A	The Proposer shall indicate an initial term, which shall be of no less than five years and no more than ten years. Proposer should indicate the desired option periods with a total that does not exceed eighteen (18) years	R				

Spec No.	Summary	Type	Fully Compliant	Partially Compliant	Not Compliant	Detail or Comments
	Coverage					
3.3 A1	Wireless internet access must be provided throughout the entire City. Phased rollouts will be considered.	R				
3.3 A2	Wireless internet access must be planned for future rollout for the entire County.	R				
3.3 B1	Wireless internet access that provides smooth handoffs between different technologies, should they be required, to cover the full county, particularly for matters of public safety.	P				
3.3 C1	Outdoor broadband service coverage shall be provided a minimum of 95% of all areas covered.	R				
3.3 C2	Indoor, Perimeter Room coverage for the ground and second floors of a building shall be provided for a minimum of 90% of all residential and commercial buildings throughout the coverage area.	R				
	Multi-Use					
3.4 A	The Network shall be able to support concurrent usage by non profits, government, residents, visitors, and businesses	R				
3.4 B1	Network supports the logical segmentation of different “domains” of users (e.g. secure access by City agency personnel, secure and/or open access for public users, residential users, and business users)	P				
3.4 B2	Network supports the ability to prioritize traffic for municipal use in cases of emergency or as required by the Requester.	P				
	Interconnection					
3.5 A	The Requester seeks the capability to integrate existing Wi-Fi coverage throughout the interiors of buildings of to be decided Wireless Winston participants with the overall network provided by the Proposer.	P				
	Open Access					
3.6 A1	The Network Operator will provide access to its wireless broadband Internet access transport services to multiple	p				

Spec No.	Summary	Type	Fully Compliant	Partially Compliant	Not Compliant	Detail or Comments
	unaffiliated Service Providers. This access will include at least one option with reasonable set up fees appropriate for small businesses wishing to become Service Providers.					
3.6 A2	When any unauthenticated user is redirected to a Capture Portal on the Network, the user shall have an option to choose between multiple Service Providers and service plans. The Network Operator may receive priority placement for any Services it may offer on the Capture Portal; however all Service Providers shall also be clearly and reasonably presented.	P				
3.6 A3	The Network shall support unilateral, inbound roaming relationships whereby subscribers to other fee-based Wi-Fi services (e.g., T-Mobile, Sprint) may gain access to services provided over the Network.	P				
3.6 A4	The Network shall support unilateral, outbound roaming relationships whereby subscribers to services over the Network may gain access to other fee-based Wi-Fi services (e.g., T-Mobile, Sprint).	P				
3.6 A5	The Network Operator, and any Service Provider affiliated with the Network Operator, may also provide retail-branded services over the Network.	P				
	Services and Provisioning					
3.7 A1	The network shall provide 1 mbps symmetrical for all fixed, nomadic, and mobile accounts.	R				
3.7 A2	The network shall provide 3 mbps symmetrical for all point to point accounts.	R				
3.7 B1	The Network Operator shall provide the following options for WinstonNet members or other major entities to purchase accounts: a. Up front, bulk account contracts between each member of WinstonNet and the selected Vendor. Activation of accounts	R				

Spec No.	Summary	Type	Fully Compliant	Partially Compliant	Not Compliant	Detail or Comments
	should be able to be completed by individuals or an IT department. b. Individual purchase of accounts by any user.					
3.7 B2	Proposals shall include the expected costs of any required CPE, how CPE shall be supplied, and who shall be responsible for CPE costs during the provisioning process.	R				
3.7 C1	Proposers shall list any additional services the Network Operator proposes.	P				
3.7 D1	The Network Operator will allow Service Providers to provision services on a monthly, weekly and daily basis.	P				
3.7 D2	Payment methods for all consumer and business services should include credit and debit card. Other methods must be proposed for users who do not have the ability to pay with credit or debit cards (e.g., pre-paid vouchers, top-off cards).	P				
3.7 D3	The Network Operator will facilitate the provision of low-income accounts.	P				
	Service Pricing					
3.8 A1	Proposers shall estimate the rates for all services to be marketed on the network.	R				
3.8 A2	Proposers shall estimate price changes over the term of the contract.	R				
3.8 B1	Should the Proposer offer Open Access: i. The proposer should estimate all rates, terms and conditions for Service Providers not affiliated with the Network Operator, and these rates, terms, and conditions shall be as favorable as those provided to the Network Operator and any affiliated Service Providers. ii. The proposer should estimate the rates for any Services to be marketed to the public by the Network Operator.	P				
3.8	Should the Proposer offer public	P				

Spec No.	Summary	Type	Fully Compliant	Partially Compliant	Not Compliant	Detail or Comments
B2	access, Proposers should guarantee WinstonNet members and those participating via MOU the most favorable rates.					
3.8 B3	Should the Proposer offer public services, a free or low cost service will be viewed favorably if the proposer's business model is considered viable and sustainable.	P				
3.8 B4	Digital Inclusion internet access services will be at least at a cost that is substantially less than the average market rate.	P				
3.8 B5	Digital Inclusion accounts will be capped at no lower than 20% of the total residential accounts provisioned.	P				
	Network Infrastructure					
3.9 A1	The network shall include a wireless edge for access and a point to multipoint solution for T1 and higher replacement service, network redundancy, and other business class connectivity.	R				
3.9 A2	All outdoor network 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.	R				
3.9 B1	The Network will include a wireless Access Tier that supports connectivity from 802.11b/g devices throughout the coverage area.	P				
3.9 B2	The Network will include a fixed wireless point-to-multipoint solution as a Backhaul Tier for aggregating Wi-Fi traffic from the Access Tier.	P				
3.9 B3	The Network will include a fixed wireless point-to-point solution, using licensed or leased spectrum, as a Distribution Tier for aggregating traffic from the Backhaul Tier back to an Internet POP. This Distribution Tier may also make use of WintonNet fiber defined in Appendix G.	P				
3.9 B4	All Network traffic shall be aggregated back to a high-speed Internet backbone service at a	P				

Spec No.	Summary	Type	Fully Compliant	Partially Compliant	Not Compliant	Detail or Comments
	POP, which shall support layer-three network transit for Service Providers. Provisions shall be made for redundancy of the POP facility.					
3.9 B5	The Network shall support latency intensive applications such as VOIP.	P				
3.9 B6	The Network shall support standards based VOIP handsets.	P				
3.9 B7	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 99.99% for the Access Tier and 99.999% for the Backhaul Tier, Distribution Tier and POP. Proposers shall identify the MTBF for any proposed network equipment and explain the processes that will be used to guarantee these service levels.	P				
3.9 B8	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. Proposers shall estimate the percentage of the initial Network capital cost that will be invested in upgrades during the contract term and elaborate on what steps they will take to determine when network upgrades are required and how they will be rolled out. Proposers shall describe how the Requester can evaluate the Network Operator's performance relevant to this sub-section.	P				
3.9 B9	The Network shall support backup power for all network equipment sufficient to ensure continuous operation during a loss of electrical power. Proposers 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.	P				
	Customer Service					

Spec No.	Summary	Type	Fully Compliant	Partially Compliant	Not Compliant	Detail or Comments
3.10 A1	Tier 1 Support for all Services shall be provided by all Service Providers (including the Network Operator if they are also directly providing Service). Tier 1 Support shall provide subscribers with phone, web, e-mail and instant messaging support options	R				
3.10 A2	Tier 2 Support shall be provided by the Network Operator for all Service Providers. Tier 2 Support must provide Service Providers with phone and e-mail support	R				
3.10 A3	Tier 3 Support shall be provided by the Network Operator for all Service Providers.	R				
	Security					
3.11 A	Physical security for all critical network equipment components via secured facilities.	R				
3.11 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.	R				
3.11 C	Support for Media Access Control (“MAC”) address filtering	R				
3.11 D	Support for Wired Equivalent Privacy (“WEP”) encryption, including both 64 and 128 bit keys.	R				
3.11 E	Support for Temporal Key Integrity Protocol (“TKIP”) encryption.	R				
3.11 F	Support for Advanced Encryption Standard (“AES”) encryption.	R				
3.11 G	Support for Wi-Fi Protected Access (“WPA”).	R				
3.11 H	Support for 802.1x authentication using Extensible Authentication Protocol (“EAP”) and Remote Authentication Dial-In User Service (“RADIUS”).	R				
3.11 J	Support for the suppression of Extended Service Set Identifier (“ESSID”) broadcasts.	R				
3.11 K	Support for filtering of traffic based on Internet Protocol (“IP”)	R				

Spec No.	Summary	Type	Fully Compliant	Partially Compliant	Not Compliant	Detail or Comments
	addresses, subnets and Transmission Control Protocol (“TCP”) ports.					
3.11 L	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.	R				
3.11 M	Support for encryption of all control and network management traffic.	R				
3.11 N	No client software that is specific to the Network Operator or Service Provider(s) shall be required on PCs, laptops, or other mobile devices in order to use the Network.	P				
	Privacy					
3.12 A	Full disclosure of the privacy policy for all Proposers is required	R				
3.12 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.	R				
3.12 C	Mechanisms should be provided to allow users to opt-in or opt-out of any service that tracks information about the user’s physical location.	R				
3.12 D	Mechanisms should 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.	R				
3.12 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.	R				
3.12 F	Data about users should not be commercialized in any way without their express consent.	R				
3.12	Policies should be in place to	R				

Spec No.	Summary	Type	Fully Compliant	Partially Compliant	Not Compliant	Detail or Comments
G	respond to legal demands for users' personal information in accordance with applicable laws.					
3.12 H	Personal information about users should be kept only as long as it is operationally necessary.	R				
3.12 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.	R				
3.12 J	Users should be allowed reasonable access to any information collected about them, including a reasonable opportunity to review information and to correct inaccuracies or delete information.	R				
3.12 K	Trackback for appropriate Law Enforcement purposes needs to be specified.	R				
	Community Programs / Digital Inclusion					
3.13 A1	If the Proposer uses a Network Subscriber Portal it shall prominently display a Digital Inclusion point that shall provide easy access to the resources of the WinstonNet Beehive Portal.	R				
3.13 A2	The Network shall provide free access to the current 44 WinstonNet Access Centers with the same benefit extended to at least 25 additional computer centers for possible future expansion.	R				
3.13 B1	The Proposer will provide a high level plan that provides an option for a single point of contact for the purchase / lease of home computers and broadband access for all low to moderate income households with a primary focus on students in grades K14.	P				
3.13 B2	The Proposer will provide low to no interest loans for purchase of computers and ancillary hardware and/or ways to back bad debt on Digital Inclusion purchases.	P				
3.13 B3	The Proposer will fund or arrange for the funding of free Internet access, computer skills training,	P				

Spec No.	Summary	Type	Fully Compliant	Partially Compliant	Not Compliant	Detail or Comments
	and quality technical support for the connectivity, web usage, and productivity software.					
	Estimated Demand					
	No Specifications					
	Pilot					
3.15	The successful Proposer, upon completion of contract negotiation, shall build out and operate for a period of no less than 3 months a pilot network to demonstrate its solution. This pilot shall be fully functioning and a complete representation of the Proposer's business model and solution offering. The size of this pilot shall be no less than five square miles and will be at a representative location mutually agreed upon by the Proposer and Wireless Winston.	R				

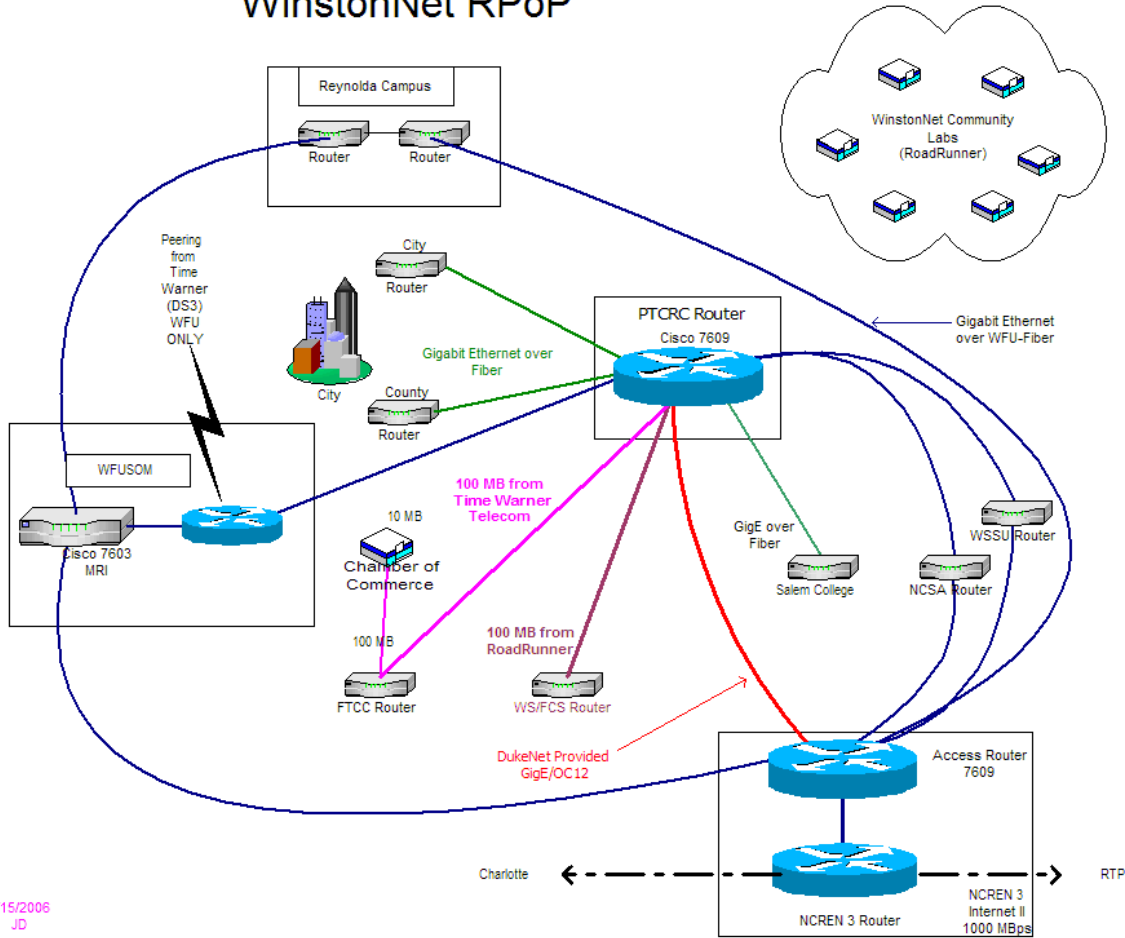
APPENDIX B – WINSTONNET FIBER AND GIGPOP

WinstonNet operates a regional Gigabit Ethernet Metropolitan Area Network for the benefit of its members. This network travels over fiber owned by Wake Forest and maintained by DukeNet, Inc. There are eight strands of fiber connecting the members together in a gigabit Ethernet network using Cisco 6500 class routers. A network diagram is attached. In addition to the fiber owned by Wake Forest, the City and County governments also have Fiber Optic networks that they operate. In particular, the City of Winston-Salem, has a fiber-optic connection to the top of the Winston Towers building.

The WinstonNet network is peered with Statewide networking resources at the Dukenet Beckerdite Road Point of Presence. All major carriers are present in this location, which is provided with UPS and backup power. In particular, WinstonNet peers with the North Carolina High Speed network NCREN at this location. NCREN is operated by MCNC, Inc, for the benefit of Higher Education, Government and K-12 in North Carolina. They also provide commercial service and access to the major carriers at competitive rates.

It is required that the successful bidder's network peer with WinstonNet at an acceptable location – preferably at PTCRC or at the DukeNet Beckerdite Road POP. Alternatively, if the bidder wishes to use the existing WinstonNet GigE Network or wishes to use the fiber directly, it should so indicate in the proposal. There is currently significant excess capacity on that GigE network and the addition of the wireless networking traffic should be able to be accommodated by WinstonNet. The eight fibers are currently in use, but it is possible to reengineer the network to provide fiber for the selected provider if so requested.

WinstonNet RPoP



APPENDIX C – WIRELESS WINSTON MOUNTING ASSETS

See file: Wireless Winston Mounting Assets.doc for towers and other medium and high elevation sites and descriptions.

APPENDIX D – WINSTON-SALEM CITY AND FORSYTH COUNTY DEMOGRAPHICS

See PDF file: WinstonNet Demographics.pdf. First page is below.

Wireless Winston Demographic Data

Square miles

Forsyth County: 420 square mile area
Winston-Salem : 108.9 square mile area

Total population

Forsyth County - 324,361
Winston-Salem - 193,922

Number of residences

Forsyth County

Total housing units	143,840
Occupied housing units	135,379
Owner-occupied housing units	92,067
Renter-occupied housing units	43,312
Vacant housing units	8,461

Winston-Salem

Total housing units	82,593
Occupied housing units	76,247
Owner-occupied housing units	42,539
Renter-occupied housing units	33,708
Vacant housing units	6,346

Internet Account Information:

The Census Bureau has some information but it's dated back to 2001. They are the only ones that have tracked this information and have not updated it since their first report. I hope that the below link helps.

<http://www.census.gov/population/socdemo/computer/ppl-175/tab01A.pdf>



APPENDIX E – MEMORANDUM OF UNDERSTANDING

The following are the MOUs currently executed in support of the project.