



RFP to Select OneBroward's Business Architecture and Infrastructure Partner(s)

ISSUANCE DATE: August 1st, 2008

ISSUING ORGANIZATION: One Broward, 503(c) Corporation

MAILING INSTRUCTIONS: Proposals must be in a sealed envelope clearly marked "RFP to Select OneBroward's Business Architecture and Infrastructure Partner(s)". E-mail one (1) original executed response and mail one (1) hard copy along with one (1) copy of a CD-ROM containing electronic copies and supporting documentation to the following individual. The Respondent's Company Name must be clearly marked on the front on the envelopes.

DELIVERED BY E-MAIL and US POSTAL SERVICE, OR ANY OTHER MEANS TO:

OneBroward
Dr. Phyllis Schiffer-Simon
Director, BECON
6600 Southwest Nova Drive
Davie, FL 33317
phyllis.schiffer-simon@browardschools.com
754-321-1000

Sealed Proposals, subject to the conditions of this RFP, will be accepted until:

4:30 p.m. Eastern Daylight Time on Wednesday, October 1st, 2008

A mandatory Pre-Proposal Tele-Conference is scheduled for prospective vendors:
Wednesday, August 13th, 2008, at 11:00 a.m. Eastern Daylight Time
Please limit the number of representatives attending to three people per organization.

A Notice of Intent to Propose and registration for the mandatory Tele-Pre-Proposal Conference is required by **Wednesday, August 6th, 2008, by 4:30 p.m.** Send the Notice of Intent to Propose and complete contact information to Pre-Proposal Conference attendees via E-mail to cathy@betagroup.us and to phyllis.schiffer-simon@browardschools.com.

Written questions concerning the RFP specifications will be received after the Pre-Proposal Conference and until **4:00 p.m. Eastern Daylight Time on Wednesday, August 20th, 2008**. E-mail questions to cathy@betagroup.us.

All written questions and answers will be posted on the www.onebroward.org web site as an addendum.

SUNSHINE LAW

Proposers are hereby notified that all information submitted as part of a response to this RFP will be available for public inspection after opening of proposals, in compliance with Chapter 286, Florida Statutes, known as the "Government in the Sunshine Law."

Table of Contents

1	EXECUTIVE SUMMARY	5
2	ONEBROWARD OVERVIEW	6
2.1	<i>The OneBroward Consortium</i>	6
2.2	<i>OneBroward Assumptions and Beliefs</i>	6
2.3	<i>OneBroward Consortium Assets</i>	7
3	REQUEST FOR PROPOSAL TIMETABLE AND PROCEDURES	8
3.1	<i>Release of Request for Proposal.....</i>	8
3.2	<i>Notice of Intent to Propose</i>	8
3.3	<i>Pre-Proposal Tele-Conference (Mandatory).....</i>	8
3.4	<i>Contact for Inquiries.....</i>	8
3.5	<i>Last Date to Submit Written Questions via E-mail.....</i>	9
3.6	<i>Proposal Due Date, Time and Location.....</i>	9
3.7	<i>Project Schedule – Anticipated</i>	9
3.8	<i>Proposal Cover Letter.....</i>	10
3.9	<i>Proposal Format and Required Submittals with Proposal Response.....</i>	10
3.10	<i>Proposal Evaluation</i>	11
4	PUBLIC / PRIVATE PARTNERSHIP BUSINESS PLAN (30 points)	12
5	TECHNICAL REQUIREMENTS (15 points).....	14
5.1	<i>Introduction.....</i>	14
5.2	<i>General</i>	16
5.3	<i>Network Head End</i>	17
5.4	<i>Grid Head End</i>	20
5.5	<i>Node Helper</i>	22
5.6	<i>Network Node</i>	24
5.7	<i>Customer Premise Equipment</i>	26
5.8	<i>Wi-Fi Deployment.....</i>	27
5.9	<i>Pricing Methodology</i>	29
6	SUPPORT AND SERVICES (15 points).....	38

7	APPLICATION DEPLOYMENT ROADMAP (15 points)	39
8	QUALIFICATION AND EXPERIENCE (15 points)	40
8.1	<i>Respondent Information and Financial Overview</i>	40
9	CONTRACT REQUIREMENTS, TERMS AND CONDITIONS	42
10	APPENDICES	43
	<i>APPENDIX A: SUMMARY OF EXISTING TECHNICAL ASSETS</i>	44
	<i>APPENDIX B: MAPS SHOWING PHYSICAL LOCATIONS OF ONEBROWARD CONSORITUM ASSETS</i>	46
	<i>APPENDIX C: APPLICATION PRIORITIES</i>	49

1 EXECUTIVE SUMMARY

OneBroward is a connected community initiative seeking to leverage broadband and pervasive wireless technologies to address community priorities. The success of a digital community requires changing how disparate organizations work together, how they deal with information and how individual stakeholders and knowledge workers view their jobs and interact with the public. Achieving success as a digital community requires an active partnership between the community, regional and local government and regional and local businesses.

Defined broadly, a connected community uses broadband connectivity to enable effective education and efficient government through readily accessible community services. It allows greater public access to information and makes governments, educators and the healthcare community more accountable to citizens. Services may be delivered via the internet, telephone, community centers (self-service or facilitated by others), wireless devices or other communications systems.

The broad categories of goals that are commonly pursued by connected communities are:

- o Improving services to citizens;
- o Improving public safety and law enforcement;
- o Improving the quality of life for underserved communities;
- o Promoting economic development;
- o Improving the productivity and efficiency of regional and local government;
- o Developing new applications, products and services in collaboration with researchers, students, clinicians and governments; and
- o Providing digital inclusion.

The OneBroward Consortium has developed the following technical and business objectives:

- o Promote increased safety and security via real-time enabled monitoring.
- o Provide parents, teachers and students access to educational programs, services and information outside the classroom.
- o Provide educational services equally to all students and communities.
- o Improve access to healthcare services, including patient and provider information.
- o Improve government operations including community-wide security and access to information.
- o Improve the region's ability to attract high technology businesses.

The purpose of this RFP is to solicit responses from private sector organizations that have the desire, technical competence, business experience and financial wherewithal to implement and operate a fixed and mobile broadband services network to meet current and future institutional needs and provide coverage throughout Broward County. The OneBroward Consortium will contract with the selected Respondent(s) for services to meet its collective institutional requirements. The Respondent(s) will be expected to facilitate the use of Consortium owned assets, to support the network deployment, and operational needs. The selected RFP partner will also be expected to provide a commercialization model that will enable future revenue from the network.

Evaluations of respondents will be rated based on criteria set forth within this RFP and will rest heavily on the creativity of the respondents in meeting the needs of the Consortium.

The following are expected from each respondent based on the detailed specifications presented in this document:

- o A detailed business plan showcasing creative public/private partnership models;
- o A detailed application identification and deployment plan; and
- o A proposed technical roadmap based on the requirements herein.

2 ONEBROWARD OVERVIEW

2.1 *The OneBroward Consortium*

The OneBroward Consortium has been established to maximize technology assets which may be utilized within a network that improves the operations of member organizations in terms of cost savings and workflow improvement. The network, as designed, will allow each member of the Consortium the opportunity to develop, design, implement and maintain world-class, leading-edge applications and services for its members which include hospitals, regional and local municipalities, educational institutions, universities and colleges and other not-for-profit organizations.

The Consortium will:

- o Transform the way each member operates by increasing utilization of existing resources, modernizing key architecture and by encouraging safety, collaboration and economic opportunities.
- o Provide for a business partnership or partnerships that will utilize the network generating income for maintaining and expanding the OneBroward network services model.
- o Enable applications and technologies that will improve and expand services.

2.2 *OneBroward Assumptions and Beliefs*

This RFP is based upon the following core assumptions and beliefs:

- o The OneBroward Consortium believes that by creating a shared network, each organization will be able to maximize existing resources and provide additional services to the community in a cost-effective manner.
- o The OneBroward Consortium will fund (in part or fully) the build-out and management of the network through cost savings and possibly leveraged assets.
- o The OneBroward Consortium may provide access to existing physical assets for a return on investment.
- o The OneBroward Consortium will seek grants and other available funding opportunities to help offset network costs.
- o Once the RFP is awarded, the Consortium members will convene to determine how best to leverage any of their separately-owned assets identified by a Respondent as a necessary part of its technical specification.

2.3 OneBroward Consortium Assets

Current Physical Assets

OneBroward Consortium members' technical assets include, but are not limited to, those assets contained in Appendix A. These assets may be included in the proposed technical architecture.

OneBroward Consortium members reserve the right to individually leverage owned assets as they see fit to maximize opportunity and value. OneBroward also reserves the right to contract with existing local and national service providers for portions of the Network, including mobile broadband wireless service.

See Appendix B for maps detailing the physical locations of each Consortium members' assets.

3 REQUEST FOR PROPOSAL TIMETABLE AND PROCEDURES

3.1 *Release of Request for Proposal*

This RFP is being issued for the acquisition, design, implementation, and ongoing management of a Broadband Network which will serve Broward County. This Network will serve the group collectively known as OneBroward, which includes:

- o Broward County Schools
- o Broward County Community College
- o Florida Atlantic University
- o Nova Southeastern University
- o Broward County
- o Broward County Sheriff's Office
- o Browardhealth Hospital District
- o Memorial Hospital

3.2 *Notice of Intent to Propose*

A Notice of Intent to Propose and registration for the mandatory Pre-Proposal Tele-Conference is required by **Wednesday, August 6th, 2008, by 4:30 p.m. Eastern Daylight Time**. The Notice of Intent to Propose and complete contact information for Pre-Proposal Tele-Conference attendees should be sent via E-mail to cathy@betagroup.us and phyllis.schiffer-simon@browardschools.com.

3.3 *Pre-Proposal Tele-Conference (Mandatory)*

A Pre-Proposal Tele-Conference will be held on **Wednesday, August 13th, 2008 at 11:00 a.m. Eastern Daylight Time**. A dial-in number and access code will be provided to those respondents who submit a Notice of Intent to Propose. The session will be recorded and disclosed to the public via the www.onebroward.org website to comply with the Florida Sunshine Law. Attendance on the pre-proposal teleconference is **mandatory**. A proposal will not be accepted from a Respondent that did not attend the mandatory pre-proposal teleconference.

3.4 *Contact for Inquiries*

Any questions regarding this RFP can be submitted in writing, via E-mail **ONLY**, to the following designated contact person:

Ms. Cathy Horton
CEO
Beta Strategy Group
cathy@betagroup.us

RE: OneBroward RFP Point(s) of Clarification

The contact person above is the only individual that can be contacted about the project by Respondents before proposals are submitted. That contact **MUST** be in writing **VIA E-MAIL ONLY**. The designated contact cannot vary the terms of the RFP.

Any contact with OneBroward executives could be grounds for rejection of a Respondent's proposal. This includes lobbyists and/or third party representatives of the Respondent's organization and affiliates.

3.5 Last Date to Submit Written Questions via E-mail

All questions regarding this RFP must be submitted in writing via E-mail by **Wednesday, August 20th, 2008, at 4:00 p.m. Eastern Daylight Time**. Inquiries received after that date and time will not be considered. Any response made by OneBroward will be provided in writing to all Respondents by addendum and will be posted to the OneBroward.org web site. No verbal responses shall be considered actionable. Questions will be answered in writing and E-mailed to all known Respondents by **Wednesday August, 27th, 2008 at 4:00 p.m. Eastern Daylight Time** in accordance with the Florida Sunshine Laws.

3.6 Proposal Due Date, Time and Location

Responses must be received by the OneBroward designated recipient listed below no later than **4:30 p.m. Eastern Daylight Time on Wednesday, October 1st, 2008**. Any proposal received after the designated time will not be considered and will be rejected and returned. Proposals must be responsive to all aspects of this RFP.

OneBroward
Dr. Phyllis Schiffer-Simon
Director, BECON
6600 Southwest Nova Drive
Davie, FL 33317
phyllis.schiffer-simon@browardschools.com
754-321-1000

3.7 Project Schedule – Anticipated

OneBroward expects to begin testing applications and services on the proposed network by **April 3rd, 2009**. General availability of the network will be phased by zone as described later in this document:

Following is an overview of the anticipated project schedule.

RFP Issue Date	08/01/08
Notice of Intent to Propose and Registration for Mandatory Pre-Proposal Conference	08/06/08
Pre-Proposal Conference (Mandatory)	08/13/08
Deadline for Submitting Questions	08/20/08
Response to Questions Provided	08/27/08

RFP Responses due	10/01/08
RFP Responses Evaluated / Offers for Pilots Selected	11/14/08
Consortium Approval of Negotiations	11/28/08
Consortium Approval of Contract	12/12/08
Engineering Completed	01/01/09
Design and Engineering Approved	02/06/09
Installation Completed	04/03/09
Testing Completed	06/05/09
Broadband IP Data Network Fully Launched	09/04/09

3.8 Proposal Cover Letter

Proposals must include a cover letter signed by a duly authorized officer(s) of the firm. In the event that a team submits, a prime contractor or one legal entity, which shall not be a subsidiary or affiliate with limited resources, must be designated as liable for the project delivery. The cover letter shall list the names, E-mail addresses, and phone numbers of persons who were responsible for the preparation of the proposal and how they may be reached, in the event that OneBroward poses questions regarding the proposal.

3.9 Proposal Format and Required Submittals with Proposal Response

One (1) copy marked "Original" of the Proposal must be submitted, in addition to one (1) CD-Rom version of the Proposal. The printed version shall be printed on standard 8.5" x 11" paper, with material on one side only. Foldouts containing charts, spreadsheets and oversized exhibits are permissible as long as they are packaged with the proposal. The response must be placed in a three-ring binder with tabs separating the major sections of the proposal, following the table of contents listed below. Pages of the response must be numbered consecutively within each section of the proposal, showing proposal section number and page number.

The electronic version on CD-ROM shall be included in the front pocket of each three-ring binder. Acceptable formats for electronic files include Microsoft Word, Microsoft Excel and Adobe Acrobat (PDF).

The proposal must be submitted using the following table of contents format:

- o Section 1 - Cover Letter and Table of Contents
- o Section 2 - Executive Summary
- o Section 3 - Response to Public / Private Partnership Model
- o Section 4 - Response to Technical Requirements
- o Section 5 - Support and Services
- o Section 6 - Recommended Application Deployment Roadmap
- o Section 7 - Respondent Information and Financial Overview
- o Section 8 - Supplemental Technical Information (including a listing of contents)

Respondent should include any additional information to explain how their proposed solution meets or exceeds defined requirements in Section 4 of the response. References to such supplemental information shall be made in the response to the appropriate section/sub-section that pertains to the supplemental information.

Respondents should provide individual pricing for each of the following 5 items, as detailed more fully in the content of this RFP:

- o Business Plan and Public/Private Partnership, including financing options.
- o The Core Network.
- o The Mobile Network, or detail any partnership with a mobile wireless service provider and its financial impact.
- o Support and Services.
- o A plan for developing and rolling out of network applications, including a cost-effective proposal for bespoke development.

If any Respondent wishes to demonstrate any cost savings that may be achieved by an award of the entire contract on a single vendor basis, that should be shown in detail by a comparative analysis of the individual pricing called for above versus a single, all-inclusive contract price.

The issuance of this RFP does not constitute an agreement by OneBroward nor its Consortium members to enter into a contract. OneBroward expressly reserves the right to:

- o Reject any or all proposals
- o Reissue the RFP
- o Accept portions of individual or multiple responses
- o Extend the deadline for submissions by notifying all parties who have expressed an interest in responding to the RFP
- o Request additional information or clarification of proposals from any Respondent
- o Waive immaterial defects or informalities

Acceptance of a proposal will result in exclusive negotiation rights. Granting exclusive negotiation rights does not bind OneBroward to accept any or all terms of the proposal. Final terms will be agreed upon during negotiation. OneBroward reserves the right to terminate negotiations at any time for failure to reach mutually acceptable terms.

3.10 Proposal Evaluation

Proposal evaluation criteria includes, but is not limited to:

- 1) Public/Private Partnership: Business Model & Net Economic Benefit (30 points)
 - a) Ability to deliver recurring financial benefit in the form of revenues
 - b) Ability to provide supporting evidence and case studies for business models presented
- 2) Technical Approach (15 points)
 - a) Ability to meet phased deployment specification
 - b) Outline clear deployment plan
- 3) Support and Services (15 points)
- 4) Innovative Approaches to Application Deployment (15 points)
- 5) Qualifications and Experience (15 points)
 - a) Contractor Organizational and Financial Viability
 - b) List of references and like projects
- 6) Communicating solely with contact person designated (10 points)

4 PUBLIC / PRIVATE PARTNERSHIP BUSINESS PLAN (30 points)

OneBroward is uniquely positioned to provide assets to a commercial vendor that would otherwise require substantial capital investment. This may include, among other things, physical assets, spectrum and fiber as identified on the maps contained in Appendix B.

The Consortium is seeking a partnership to maximize these assets such that revenue is used to operate and maintain the network for the betterment of the community in terms of education, safety and efficiency. Emphasis should be placed on developing the applications outlined in Appendix C.

Public/Private Partnership Scenarios

The OneBroward Consortium envisions several types of public/private partnership options. Hybrid approaches might include:

- Option A: Asset Licensure
- Option B: Application Provisioning
- Option C: Service Allocation

Finance and Lease Options

OneBroward may be interested in financing all or part of the assets described in the technical portion of this RFP. A detailed understanding of each respondent's financing options is requested and should be attached as a separate portion of the business plan response.

At a minimum, Respondent's business plan should include:

- o Summary of Public Private Partnership Model
 - Ownership
 - Contracting Vehicle
 - Remedy(s) for Mutual Exit of Shared Network
- o Strategy and Implementation
 - Strategy, Value and Competitive Edge
 - Marketing Plan
 - Regulatory Compliance
 - Pricing Strategy
 - Sales Strategy and Plan
- o Financial Plan
 - Assumptions
 - Risks and Risk Mitigation Strategies
 - Key Financial Indicators
 - Infrastructure Build-Out Costs
 - Other Fixed Expenses
 - Operating and Recurring Expenses
 - Funding and Sources of Funds
 - Sources of Revenue by Product Line
 - Re-investment in the Network
 - Break-Even Analysis
 - Projected Profit and Loss
 - Cash Flow Model
 - Projected Balance Sheet
 - Business Ratios
 - Operational Management Plan
 - Organizational Structure
 - Management Team
 - Human Resources
 - Facilities Plan
 - Customer Service and Technical Support Plan
 - Product Development
 - Finance Strategy

5 TECHNICAL REQUIREMENTS (15 points)

5.1 Introduction

The technical specification defines the architecture of the OneBroward network and the services to be provided on the network. The OneBroward network core will be comprised of redundant Network Operations Centers and a gigabit fiber backbone. Fiber and fixed wireless links will be used for backhaul and broadband service connecting Consortium members. Last mile service to members and the community will be provided by a combination of fiber, wired assets, fixed wireless and mobile wireless service.

Solutions that include both wired and wireless solutions should be discussed. Inclusion of fixed broadband and mobile wireless service is expected. Respondents may choose to propose a Consortium-owned mobile wireless network, or as an alternative, partner with an existing wireless provider which offers mobile broadband wireless service capable of supporting the applications listed in Appendix C. Fixed and mobile wireless networks may utilize licensed or unlicensed spectrum or both.

Should a Respondent propose to partner with a mobile service provider, and utilize an existing or future wireless network and technology, details of the proposed provider, network, technology and service agreements must be provided. Technical specifications of the wireless network should meet or exceed those contained herein. The proposed wireless network must be capable of providing 1 Mbps upstream and downstream service throughout the populated areas of Broward County, illustrated in Figure One below. The network must combine the necessity of high-speed data services with mobility. The network must be able to hand off traffic to the OneBroward Network directly, be compatible with the proposed OneBroward Network, and allow direct connectivity to OneBroward databases, servers, applications and services. It must support video, voice and data applications and meet the minimum reliability and security standards set forth herein.

Finite site-specific engineering does not exist for this project. The project will be considered a design-build deployment model. For the purposes of evaluating the responses, a representative model has been assembled. The model represents the terrain and assets available in Broward County.

In the *first* pricing section, prices are requested per project. For instance, one price per core router, or one price for the servers required to manage the system. In the *second* pricing section, detail of all the units included in any given project piece will be required. In other words, in the first pricing section, a core router will have one price; in the second pricing section, a breakdown of the part numbers with associated quantities and a description of the parts are required.

The model consists of the following:

Seven grids, each grid contains:

- o 70 sq miles of desired coverage
- o Mixed residential and high rise buildings
- o No prominent high geographic high points
- o 27 locations with a tower standing a minimum of 20' above the vegetation line
- o One location with appropriate 24x7 access and centrally located, with a tower, capable of seeing at least 3 other towers in the 70 sq mile grid. The central location is assumed to have adequate heat/cooling/power.

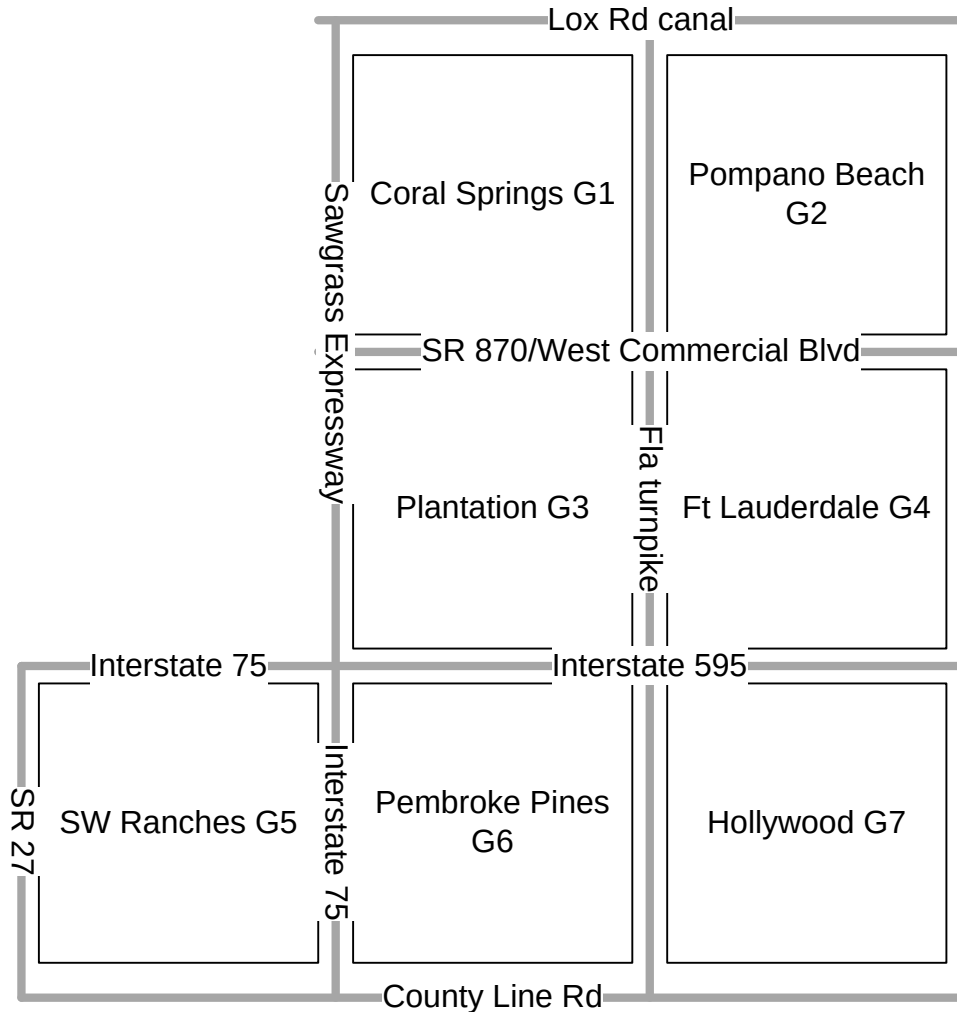


Figure 1, OneBroward Grid

Network Head End(s)

- o The network head ends are to be located in Nova Southeastern in Davie and Florida Atlantic University in Ft. Lauderdale.
- o The head ends will contain the core routing engines and carrier class switching equipment. Any common control and management equipment will also be located in the network head ends.
- o Either network head end will be capable of completely taking over in case the primary head end is not available. No manual intervention must be needed for the secondary head to take over network operations.

Network Distribution Layer

- o One location per grid.
- o Each distribution layer location is connected to both head ends.

-
- o Each distribution point can see at least 3 other towers, or has a wired/wireless ability to connect to at least 3 other node locations within that specific grid.

Network Access Layer

- o The network access layer is defined as individual node locations that can be used as the final broadcast or access point before signal touches the CPE (Customer Premise Equipment) device. This can be considered a tower location or central office.
- o The node or access layer location will not have a routing engine but will have switching capability.

5.2 General

The network will be an Ethernet/IP based network. The network is defined as a layer 2/layer 3 entity, with the ability to operate above these layers to deliver defined quality of service to select subscribers based on:

- o Destination IP per VLAN
- o Diffserv tagging operating as a region and across diffserv domains
- o MPLS at each grid head end.

The network will not differentiate from direct fiber connectivity, licensed radio or unlicensed radio on a layer 2 basis. The layer 3 network will be able to discriminate where appropriate by link cost, or link budget and link capacity and be able to route around network congestion.

The network backbone will connect all grid head ends in a ring topology with the exception of M5, which will be considered a stub from M6. The ring can be fiber or radio.

The network head ends, (not grid head ends) will be located at FAU Ft. Lauderdale in grid 4 and Nova Southeastern University in grid 6, as shown in Figure 2. The grid and network head ends will be co-located at NSU and FAU only. All other grid head ends will be physically separate from the network head ends.

Some fiber connectivity is available through existing links from OneBroward members. In addition, OneBroward controls access to over 300 towers spread throughout Broward County of the target area. Each tower is a minimum of 20' above the tree or vegetation line. Because of the overwhelmingly flat terrain, line of sight or near line of sight radio backhauls are expected to be extensively used for inter-node connectivity.

Proposals will be considered and measured against the conceptual model outlined in this section of the RFP. Radio proposals can be either licensed or unlicensed broadband. In addition, radios may be IEEE compliant (IEEE 802.16n), LTE, HSPDA, proprietary, fixed or mobile, or any combination of the above depending on the technical strengths of the technology and the applications that it is able to deliver.

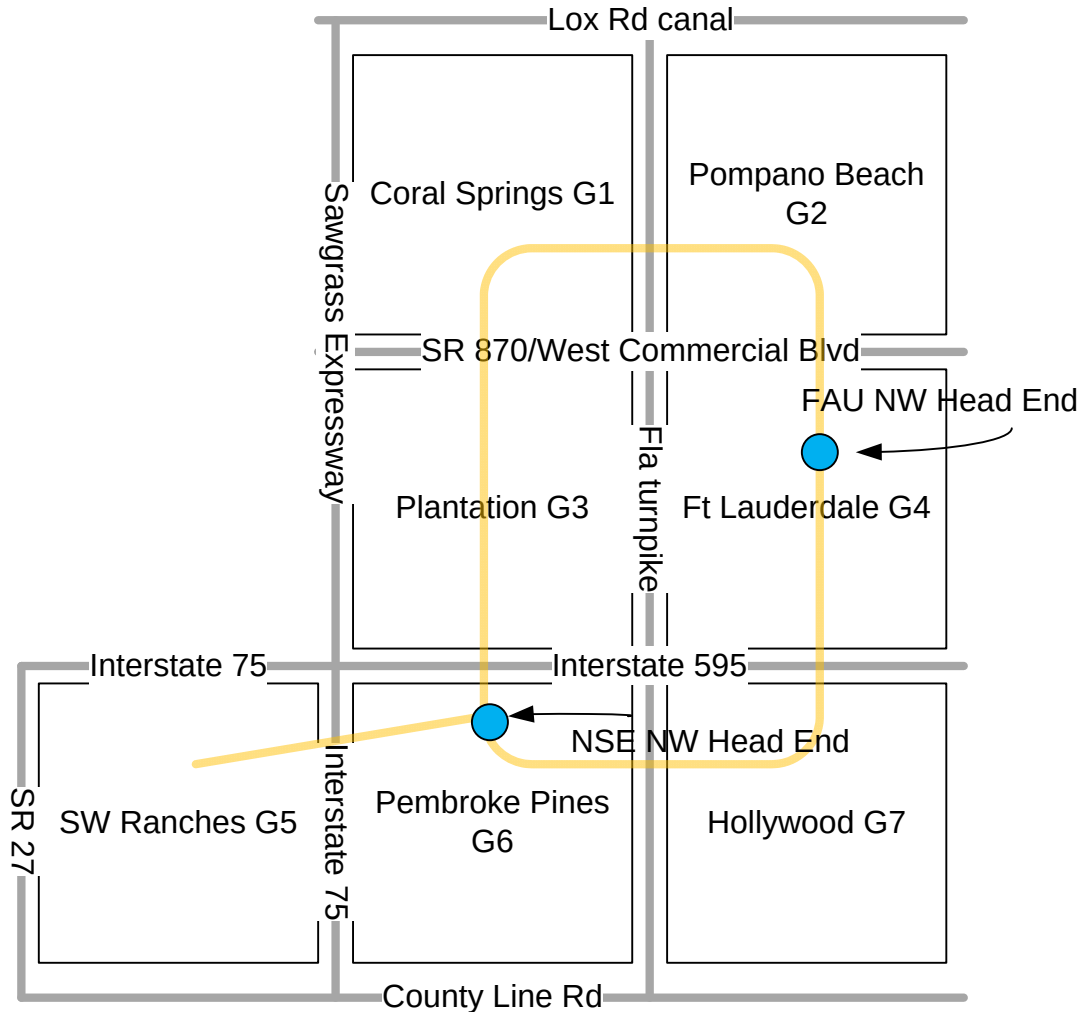


Figure 2

5.3 Network Head End

The network head end core will be capable, from day of installation, of handling 4x10gbps links and 10x1gps links. It will hold a routing engine capable of virtualization and separating client/service provider traffic into virtual spaces for security, testing and to limit the propagation of network errors. It will be a single chassis solution containing a redundant switching fabric and redundant power supplies. The power for the core unit will be DC. A rectifier and batteries will be supplied by the vendor. The batteries will be capable of keeping power to a fully configured operational unit for eight hours.

If redundant CPU's are not available, a spare, cold, standby CPU will be included to be shared by the two network head end locations.

A 96-port switch, each port capable of 10/100/1000 switching will be provided. Its power can be either DC or AC. It too will be expected to run for eight hours on battery. The feeder trunk to the switch will be a 10 GB/s link. The switch will be equipped with two 10 GB/s link. The switch will have built in layer 3 and 4 switching capability, at a minimum capable of running OSPF and RIPv2. The backplane will have a switching fabric capable of at least 500 GB/s. and 300 Mbps.

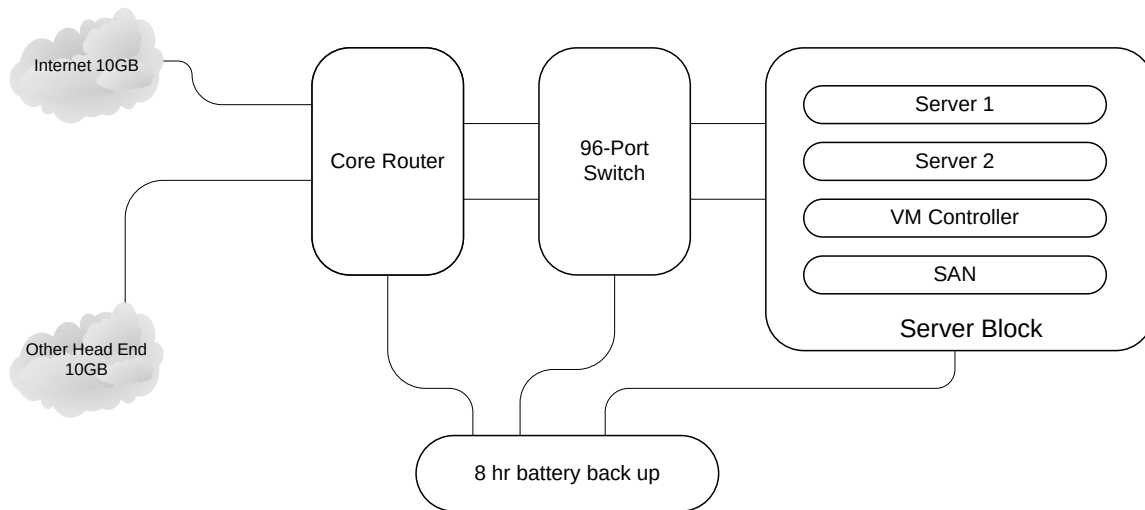


Figure 3, the Network Head End

5.3.1 Network Head End Servers

Each network head end will have a server block. The server block will consist of two servers. Each server will run virtualization at the OS level. Each server will consist of dual quad core CPU's, with a minimum 32 GB of RAM. The servers will be controlled by a 3rd server which maintains the virtual server instances in case of one physical server failure. At any time, either physical server will be capable of running all virtual instances. Each server will provide at least 500 GB of raid 1 redundancy.

The following individual virtual instances will be supplied on the server block:

- o DHCP server
- o Syslog server
- o Network management capable of monitoring up to 2000 devices.
- o Win2k3/8 applications server
- o Wireless system(s) management
- o AAA server

The servers will be attached via Ether channel (8 bonded gigabit links, 4 per server) to the 96-port switch. Each server will have a minimum of 6 operational gigE links. The bonded links will be IEEE 802.1Q enabled.

5.3.2 Network Head End Storage

A 10TB san will also be supplied by the vendor. The SAN will be directly attached to the server block using fiber channel or HBA's. The SAN will be used to store historical records, files and for backups of virtual machines and associated data.

5.3.3 Packet or Traffic Shaper

A packet shaper will be supplied at the egress to the Internet. The traffic shaper will be 802.1q aware and capable of applying separate policies to different networks. Real time

and historical reports shall be available on a per subnet basis, and not be limited to a per interface basis.

5.3.4 Wan Connectivity

Each network head end will be connected to:

- o The Internet
- o Each grid head end
- o The other network head end, and
- o Other connections deemed necessary or compelling enhancements.

The network head end, where necessary, may also be connected to wireless uplinks. Two uplinks should be included in the price of the network head end.

5.3.5 Power Back Up

All electrically-powered devices at the head end can be either AC or DC based, or a mix. All back-up power systems will have an Ethernet stack and be capable of being monitored via SNMP to the network management system.

All devices at the network head end will be capable of running without commercial power or generator for a minimum of eight hours. This includes the core router, core switch, server and storage block and any other devices deemed vital to the successful operation of the network during power outages.

5.3.6 Racks and Cable Management

The vendor will supply four post racks with lockable doors to house all equipment. A diagram will be supplied with the RFP submission showing specific equipment rack space layout housed in the racks and patch cable (including fiber) connectivity within the systems. Internet connectivity should be considered to be a 10 GB/s fiber link. The diagram submittal should include all power (Rectifier/batteries/UPS) server/storage/router and switch blocks. Cable management racks and appropriate fiber and CAT-6 patch panels will be supplied by the vendor, including all necessary patch cables, with a 20% spare fiber and CAT-6 patch cable stock, over and above the required operational patch cable usage.

5.3.7 Warranty and Support

All network head end equipment will be delivered with a three-year support and software update agreement from the manufacturer. The vendor will also include an agreement for onsite support for one to three years. The agreements for all network head end equipment will be made co-terminus by the vendor. The support agreements will start when the network head end has been accepted by the buyer.

5.4 Grid Head End

Each grid head end will contain the following:

5.4.1 Grid Head End Router

A carrier class routing engine equipped with at least 4 x 1gbps interfaces.

- o MPLS Capabilities
- o NAT/Firewall capabilities.
- o BGP
- o Failover CPU
- o Failover Power supplies (Hot standby or Shared)

Connection of the router to the head ends will be via the 48-port switch. This allows the operator the flexibility to connect a single 802.1q trunk from the network head end all the way to an end-user device. In addition, should the grid head end lose connectivity to the two network head ends, it should have redundant connectivity to at least one neighboring grid and the routing engine of the grid head end must be capable of automatically re-routing network traffic through this alternate link.

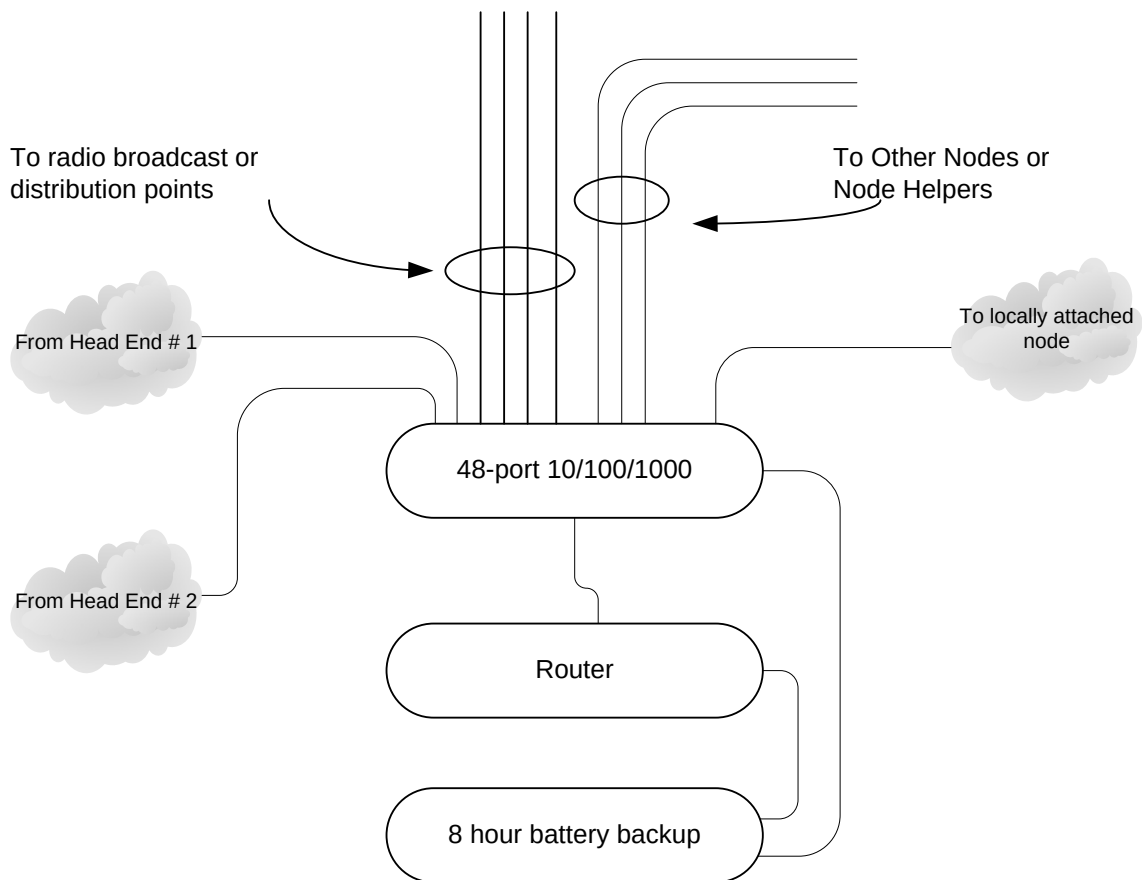


Figure 4, Grid Head End

5.4.2 Grid Head End Switch

The grid head end switch will have a scalable architecture to accept a minimum of two uplinks. The feed trunk (uplink) will be a minimum of 100 Mbps and scalable to a maximum of 10 GB/s. The uplinks go from the grid head end and connect directly to each network head end (each grid head end gets at least two uplinks). The grid head end switch will have a minimum of 48 ports with four dedicated uplink ports (mini gbic). The switch will be managed via SNMP with the highest feature set available from the manufacturer at time of delivery. If the Grid head end is co-located at a OneBroward facility, the vendor must run one Cat6 cable from the switch to the local computer room facility and terminate in a rack mounted patch panel.

5.4.3 Grid Head end Power Back up

Each grid head end will be provisioned by the vendor to run without commercial power for at least eight hours. This includes all routers, switches, media converters and any radio equipment necessary for normal network operation.

5.4.4 Grid Head End Radios

Any required radios will be installed by the vendor on towers provided by OneBroward. The vendor will be responsible for cabling, mounting, provisioning and testing the radio links. In addition to normal lightning protection, any powered unit using power over Ethernet that resides on the tower will have a media converter in the equipment room changing the network signal from electrical to light and back to electrical.

Prior to installation, all radio specifications must be given to the site engineer for wind loading approval.

The vendor should assume the equipment shed for the tower is within 300' of the top of the tower.

5.4.5 Delay Budget

The radios and network electronics must be configured in such a way that there are no more than 4 hops from the subscriber end unit to the network head end. The full delay budget is 15ms from network head end to subscriber unit.

5.4.6 Grid Head End Power Systems

All items in the grid end necessary to normal network operation are to be, at a minimum, on 8 hours of battery backup. Typical lightning protection and surge protection is also assumed.

5.4.7 Racks and Cable Management

The vendor will supply 4 post racks with lockable doors to house all equipment. A diagram will be supplied with the RFP submission showing specific equipment rack space layout housed in the racks and patch cable (including fiber) connectivity within the systems. The diagram submittal should include all power (rectifier/batteries/UPS). Cable management racks and appropriate fiber and Cat6 patch panels will be supplied by the vendor, including all necessary patch cables, with a

20% spare fiber and cat6 patch cable stock, over and above the required operational patch cable usage.

5.4.8 Warranty and Support

All node helper equipment will be delivered with a three year support and software update agreement from the manufacturer. The vendor will also include an agreement for onsite support for one to three years. The support agreements will start when the site has been accepted by OneBroward.

5.5 Node Helper

The node helper is a normal node residing in a grid, but it has a backhaul passing through it, helping the grid head end reach more distant nodes.

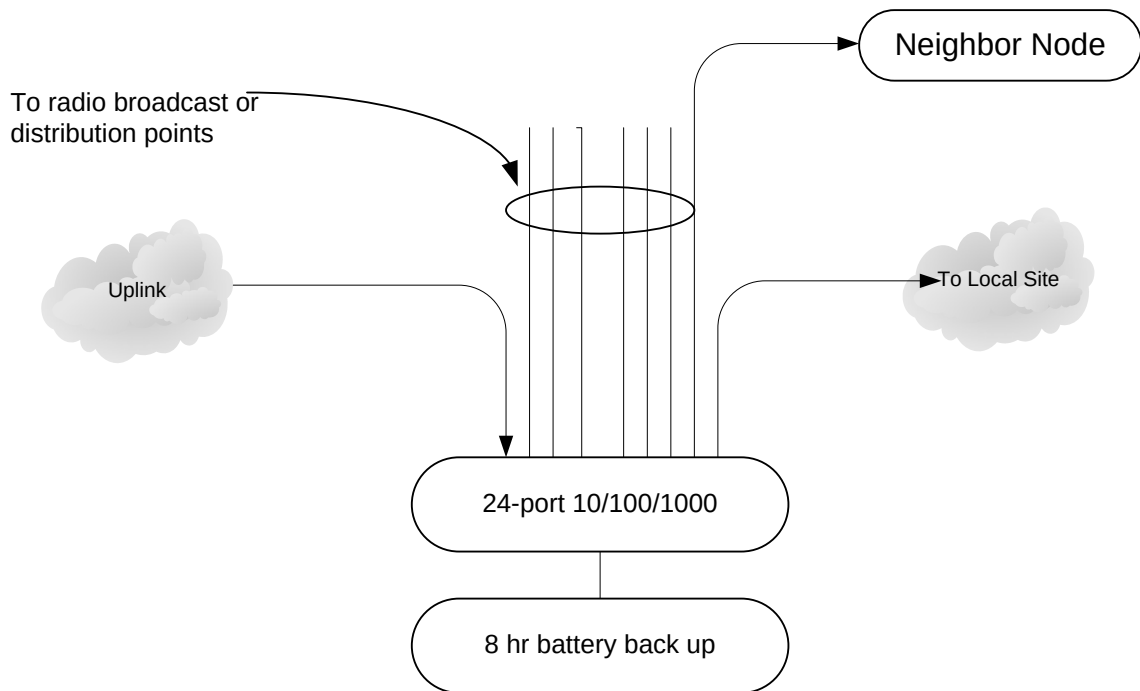


Figure 5, Network Node Helper

5.5.1 Node Helper Router

The node helper will not have a standalone router.

5.5.2 Node Helper Switch

The node helper switch will be at least a 24-port 10/100/1000 switch with at least two SFP ports. It will be delivered with a layer three routing engines. The switch will be delivered with the latest, fullest feature load available from the manufacturer at time of delivery.

5.5.3 Node Helper Power Systems

All items in the grid end necessary for normal network operation are to be, at a minimum, on eight hours of battery backup. Typical lightning protection and surge protection is also assumed.

5.5.4 Node Helper Radios

Any required radios will be installed by the vendor on towers provided by OneBroward. The vendor will be responsible for cabling, mounting, provisioning and testing the radio links. In addition to normal lightning protection, any powered unit using power over Ethernet that resides on the tower will have a media converter in the equipment room changing the network signal from electrical to light and back to electrical.

Prior to installation, all radio specifications must be given to the Site Engineer for approval on wind loading. Backhaul sighting, frequency scans and final engineering are the responsibility of the vendor.

5.5.5 Racks and Cable Management

The vendor will supply four post racks with lockable doors to house all equipment. A diagram will be supplied with the RFP submission showing specific equipment rack space layout housed in the racks, and patch cable (including fiber) connectivity within the systems. The diagram submittal should include all power (rectifier/batteries/UPS). Cable management racks and appropriate fiber and CAT-6 patch panels will be supplied by the vendor, including all necessary patch cables, with a 20% spare fiber and cat6 patch cable stock, over and above the required operational patch cable usage.

5.5.6 Warranty and Support

All node helper equipment will be delivered with a three year support and software update agreement from the manufacturer. The vendor will also include an agreement for onsite support for one to three years. The support agreements will start when the site has been accepted by the buyer.

5.6 Network Node

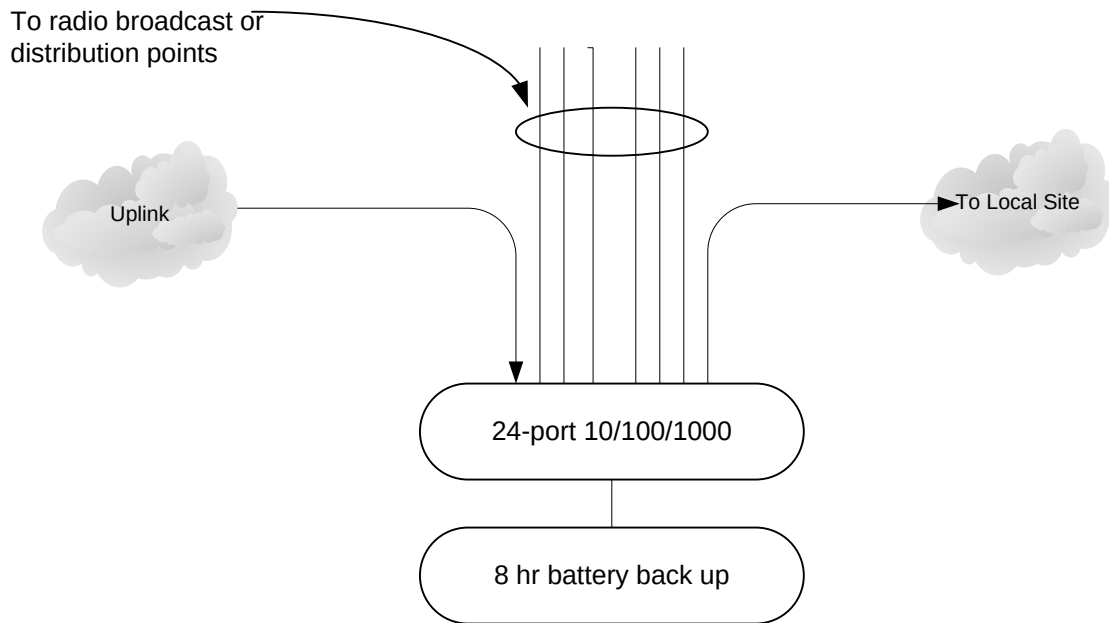


Figure 6, Network Node

5.6.1 Node Router

The network node will not require a node router.

5.6.2 Node Switch

The node helper switch will be at least a 24-port 10/100/1000 switch with at least two SFP ports. The switch will be delivered with the latest most full feature load available from the manufacturer at time of delivery.

5.6.3 Grid Head end Power Backup

Each network node site will be provisioned by the vendor to run without commercial power for at least 8 hours. This includes all switches, media converters and any radio equipment necessary for normal network operation.

5.6.4 Node Radios

Node radios will be the final broadcast points before a signal touches the subscriber CPE. Any required radios will be installed by the vendor on towers provided by OneBroward. The vendor will be responsible for cabling, mounting, provisioning and testing the radio links. In addition to normal lightning protection, any powered unit using power over Ethernet that resides on the tower will have a media converter in the equipment room changing the network signal from electrical to light and back to electrical. A network node site is expected to have only one uplink at the time of installation.

Prior to installation, all radio specifications must be given to the Site Engineer for approval on wind loading. Backhaul sighting, frequency scans and final engineering are the responsibility of the vendor.

5.6.5 Racks and Cable Management

The vendor will supply four post racks with lockable doors to house all equipment. A diagram will be supplied with the RFP submission showing specific equipment rack space layout housed in the racks and patch cable (including fiber) connectivity within the systems. The diagram submittal should include all power (rectifier/batteries/UPS). Cable management racks and appropriate fiber and Cat6 patch panels will be supplied by the vendor, including all necessary patch cables, with a 20% spare fiber and cat6 patch cable stock, over and above the required operational patch cable usage.

5.6.6 Warranty and Support

All node helper equipment will be delivered with a three year support and software update agreement from the manufacturer. The vendor will also include an agreement for onsite support for one to three years. The support agreements will start when the site has been accepted by the buyer.

5.7 Customer Premise Equipment

The CPE is defined as the device which pulls a signal from the air, or in the case of a wired signal, is the device where the client's hand-off occurs.

5.7.1 Fixed Wireless CPE

Wireless CPE should be available from the radio manufacturer to offer speeds of 1mb/s up to 10 Mbps with no more than 4ms delay from CPE to Network Node. Different models from the same manufacture may offer different speeds.

All CPE should have both POE (802.3af) and 110vac available as options. Power, security and network integrity beyond the CPE device is out of the scope of this RFP. Indoor and outdoor options for the fixed wireless CPE devices should be supplied. 50 indoor and 50 outdoor units should be included in the price. All required mounting brackets should be included. Installation for 100 units should be included in the price.

5.7.2 Mobile Wireless CPE

Mobile wireless devices, capable of operating at a speed of up to 1mb/s at 60 mph, should be included. 50 units are required. It is assumed that all mobile units will be placed in vehicles. Any connecting cables and antennas, or wiring harnesses required for operation, should be included in the price along with any other required installation components. Installation for 50 vehicles should be included in the bid price.

In addition, 50 PC Card devices will also be required.

5.7.3 Wired CPE

Where CPE fiber can be delivered, a hand-off point wired must be defined.

Fiber:

A fiber hand-off must terminate a minimum of six fiber strands, either SM or MM as available. Termination must be done on a secure rack mounted ANSI approved LIU. Connecters will be LC type only.

Cat5/Cat6:

Copper connections to the network will not be allowed where any cable exists on the exterior of a building regardless of quantity or quality lightning protection. The copper cable must be terminated on an ANSI approved, rack-mounted patch panel and clearly marked as an egress point to the OneBroward network. The OneBroward side of the connection must always be on a managed, switched port to facilitate remote trouble shooting/monitoring and connection/disconnection of the link.

5.8 Wi-Fi Deployment

OneBroward recognizes that swift deployment of end-user access systems via wireless technologies will be required within the project deployment timeframe of this project, even though no specific targets are currently specified for Wi-Fi deployment. To prepare for this eventuality, OneBroward would like a quote for the equipment only on the following system:

5.8.1 Mesh

1. A Mesh deployment system with 30 AP's
 - a. 15 outdoor mesh units and
 - b. 15 indoor units will be supplied.
2. All AP's capable of 802.11.a/b/g/n
3. All AP's running LWAPP
4. All AP's controlled by a central on premise (network Head End) controller. Hosted solutions will not be entertained.
5. The controller must be equipped and licensed to handle up to 70 AP's and ultimately capable of controlling up to 200 AP's.
6. The system must be capable of classifying the AP's into groups, each group with its profile and classifications separate and distinct from other groups.
7. Different VLANs must be able to be assigned to groups, each group capable of broadcasting multiple SSID's, one VLAN per SSID.

5.8.2 Hardwired Wi-Fi AP's

1. 70 locally powered and backhauled Wi-Fi AP's must be supplied. Each AP must be capable of standalone operation or LWAPP. At the discretion of OneBroward, an LWAPP OS or standalone OS can be loaded at any time.
 - a. 15 outdoor mesh units and
 - b. 15 indoor units will be supplied.
2. All AP's must be capable of 802.11.a/b/g/n
3. The controller must be equipped and licensed to handle up to 70 AP's and ultimately capable of controlling up to 200 AP's.
4. The system must be capable of classifying the AP's into groups, each group with its profile and classifications separate and distinct from other groups.
5. The individual AP's must be 802.1q aware, and able to assign an SSID per VLAN when in standalone mode.
6. Different VLANs must be able to be assigned to groups, each group capable of broadcasting multiple SSID's, one VLAN per SSID when in LWAPP mode.
7. Hard wired Wi-Fi AP's must be capable of local power (110vac) or 802.3af POE.

5.8.3 Additional Back-Hauls

Site-specific radio back-haul solutions may be required. Back-haul engineering typically takes into account such variables as terrain, the distance of the link, security required on the link, licensed or unlicensed spectrum, survivability and bandwidth required on the link.

Pricing for the model must be used to implement the actual project. Representative back-haul pricing, therefore, is required. The type and category of backhauls potentially required are designated in the 'ADDITIONAL' pricing section. When pricing the radio back-haul solutions, please include all engineering and installation costs. The price presented should be turnkey.

5.8.4 Tower Build-Out

Site-specific towers may need to be built during the actual project deployment. This may be in addition to the actual towers and existing aerial assets owned by OneBroward. In the pricing section, you are asked to provide a turnkey tower installation. The tower type will be of monopole construction and will include all required foundation work, engineering, site survey and equipment mounting. Expected wind loads will be for nominal mounting of two back-haul radios and required radios for 360 degree broadcast of fixed PTP broadband and mobile PTP broadband.

It is assumed that towers will be placed close to existing buildings. Therefore, a separate radio shack does not need to be included in the price. Costs for 30' of trellis, from the building to the tower, at a height of 15' should also be included. Costs for mounting the radios should be included in the Node, Node Helper and Grid Head End sections.

5.9 Pricing Methodology

The preceding network design has specifically been created to provide for a baseline product and service package that can be replicated across each of the seven nodes or geographic zones.

Pricing of the above design should be detailed in the following matrix:

Pricing, Section 1

Network Head End

Item	Price	Installation	3 yr warranty	Total
Routing Engine				
Switching				
Network Servers				
Network Storage				
Packet or Traffic Shaper				
2 Wireless Uplinks				
Power Systems, Rectifier, batteries, UPS etc.				
Racks and Cable Management				
Warranty and Support				
Engineering and Design				
Management				
Total, 2 x Network Head Ends				

Grid Head End	Price	Installation	3 yr warranty	Total
Grid Head End router				
Grid Head End Switch				
Grid Head Power Back UP				
Grid Head End radios				
Racks and cable management				
Warranty and support				
Engineering and Design				
Management				
Total, 1 x Grid Head End Solution				
Total for all Grid Head End Solution				

Node Helper	Price	Installation	3 yr warranty	Total
Node Helper router				
Node Helper Switch				
Node Helper Power systems				
Node Helper Radios				
Racks and Cable Management				
Warranty and support				
Engineering and Design				
Management				
Total, 1 x Node Helper Site				
Total for all Node Helper Sites				

OneBroward Node	Price	Installation	3 yr warranty	Total
Node router				
Node Switch				
Node Power Back UP				
Node radios				
Node Power Systems				
Racks and cable management				
Warranty and support				
Total, 1 x Node site				
Total, All node sites				

CPE	Price	Installation	3 yr warranty	Total
Fixed wireless CPE, 50 indoor				
Fixed wireless CPE, 50 outdoor				
Mobile Wireless, 50 units				
6 position 19" LIU for LC connectors				
12 port Cat6e Patch panel, 19"				
Mesh AP system				
Hardwired AP system				
Total, CPE equipment				

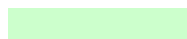
CPE as a service	Price	Installation	Monthly Price	Total
Fixed wireless CPE, 50 indoor				
Fixed wireless CPE, 50 outdoor				
Mobile Wireless, Vehicle Mount, 50 units				
Mobile Wireless, PC Card, 50 units		N/A		

OAM&P Personnel	Each	Quantity		Ttl Per year
NOC personnel		2	n/a	
OAM&P Supervisor		1	n/a	
OAM&P Personnel		3	n/a	

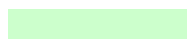
Section 2 – Head End

Core Router	Part Number	Description	Quantity	Unit Price	Total
Core Switch	Part Number	Description	Quantity	Unit Price	Total
Head Servers	Part Number	Description	Quantity	Unit Price	Total
Head End SAN	Part Number	Description	Quantity	Unit Price	Total
Traffic Shaper	Part Number	Description	Quantity	Unit Price	Total
2 wireless Uplinks	Part Number	Description	Quantity	Unit Price	Total
Power Systems	Part Number	Description	Quantity	Unit Price	Total
Racks/Cable Mgmt	Part Number	Description	Quantity	Unit Price	Total
Hardware Warranty	Part Number	Description	Quantity	Unit Price	Total

Total cost of head end



Total cost of two head ends



Section 2 – Grid Head End

Grid HE Router	Part Number	Description	Quantity	Unit Price	Total
Grid HE switch	Part Number	Description	Quantity	Unit Price	Total
Grid HE power system	Part Number	Description	Quantity	Unit Price	Total
Grid HE radios	Part Number	Description	Quantity	Unit Price	Total
Grid Rack/Cable Mgmt	Part Number	Description	Quantity	Unit Price	Total
Grid Warranty	Part Number	Description	Quantity	Unit Price	Total

Total cost per grid head

Number grid head ends proposed

Total cost of grid head end solution

Section 2. Node Helper

Node Helper Router	Part Number	Description	Quantity	Unit Price	Total
Node helper Switch	Part Number	Description	Quantity	Unit Price	Total
Node Helper Power System	Part Number	Description	Quantity	Unit Price	Total
Node Helper Radio	Part Number	Description	Quantity	Unit Price	Total
Rack/Cable Mgmt	Part Number	Description	Quantity	Unit Price	Total
Warranty	Part Number	Description	Quantity	Unit Price	Total

Total cost per Node Helper**Number Node Helpers proposed****Total cost of Node Helper solution**

Section 2 – 1b - Node

Node Switch	Part Number	Description	Quantity	Unit Price	Total
Node Power Systems	Part Number	Description	Quantity	Unit Price	Total
Node Radios	Part Number	Description	Quantity	Unit Price	Total
Node Power systems	Part Number	Description	Quantity	Unit Price	Total
Racks/Cable Mgmt	Part Number	Description	Quantity	Unit Price	Total
Warranty	Part Number	Description	Quantity	Unit Price	Total

Total cost per Node

Number Nodes proposed

Total cost of Node solution

Section 2 - CPE

Fixed Wireless 50 CPE	Part Number	Description	Quantity	Unit Price	Total
Indoor					
Outdoor					
Mobile Wireless, 50 units	Part Number	Description	Quantity	Unit Price	Total
6 pos LIU	Part Number	Description	Quantity	Unit Price	Total
12 port patch panel	Part Number	Description	Quantity	Unit Price	Total
Wi-Fi Mesh AP system	Part Number	Description	Quantity	Unit Price	Total
Wi-Fi wired AP System	Part Number	Description	Quantity	Unit Price	Total

Additional**Back-hauls**

Node Radios	Part Number	Description	Quantity	Unit Price	Total
2mile 10 meg					
2mile 40 meg					
2mile 60 meg					
2mile 100mb/s					
2mile 300mb/s					
5 mile 10mb/s					
5 mile 40mb/s					
5 mile 100mb/s					
5 mile 3000mb/s					
10 mile 10mb/s					
10 mile 40mb/s					
10 mile 100mb/s					
10 mile 3000mb/s					

Tower Build-out

Towers	Part Number	Description	Quantity	Unit Price	Total
100'					
125'					
150'					
175'					
195'					

6 SUPPORT AND SERVICES (15 points)

Support and Services is made up of the following components:

- o 3-year warranty on all equipment
- o 24x7 NOC coverage (outsourced or in-house)
- o OAM & P (operations, administrative, maintenance and provisioning)

Pricing for the warranty portion of all equipment should be included in the equipment pricing section.

24x7 Network Operation Center (NOC)

No unmanaged electronic equipment will be installed by the Vendor. The NOC must be able to monitor all switches, routers and radio equipment up to and including the end user equipment. Monitoring is to be done 24x7 with a 20 second window for ping sweep availability. All network equipment must be SNMP enabled and report to the NOC. The NOC must be located at either the FAU or NSE head end if provisioned in house. Network equipment/devices will report to the NOC the following:

- o CPU occupancy
- o Memory occupancy
- o Storage used and available with threshold warnings set as a variable
- o Presence or absence of critical services on servers or other computing devices/routers/switches and radios.
- o Environmental data of all head ends, grid ends, node helpers and network nodes.
Environmental data will consist of the following:
 - o Temperature
 - o Presence/absence of commercial electricity
 - o Presence/absence of water in the equipment room if the equipment room is not higher than 24 inches above grade or sprinklers exist in the equipment room.
 - o Available run time on the battery in real time.
- o Data link bandwidth consumption. This includes all links connecting a head end to a head end, a head end to grid head end, and a grid head end to node or node helper. In addition, on a case-by-case basis, the NOC operator must be able to select individual subscribers and monitor usage and another data deemed useful for trouble shooting or monitoring SLA's.
- o All data should be archived for a minimum of 13 months.

The NOC should be manned during normal business hours and must have someone on call 24x7. Alert thresholds defining alarms requiring immediate attention will be decided upon by OneBroward. The on-call person, upon receiving notification from the NOC, will immediately attend to the condition requiring service.

If equipment is defective, the NOC will coordinate with maintenance/service personnel and/or the manufacturer to fix the problem. It is the responsibility of the NOC to coordinate and resolve all maintenance issues pertaining to the network. All trouble calls and tickets will be logged into help desk software.

OAM&P

The operation, administrative, maintenance, and provisioning of the network must be a full service operation which must not require daily supervision from OneBroward to function properly and service OneBroward members in a timely and professional manner. Full-time supervisory personnel must be available at all times during normal business hours. The supervisor must have experience with similar sized networks. All engineers/technicians must have the appropriate network certifications for the equipment being proposed. OneBroward reserves the right to interview all OAM&P personnel associated with this project to assess their suitability to work for OneBroward and its members. OneBroward reserves the right to dismiss any member of the vendor staff with no less than 24 hours notice to the vendor supervisory control. It is assumed that engineers/technicians will be at an appropriate staffing level for the first phase of the project.

The broadband IP data network should be supported by a Network Operations Center (NOC) with a 24x7 high-quality communications operations center that will provide services traditionally associated with a NOC, including monitoring, testing, reporting, maintenance, planning and provisioning for new services, problem detection and response. Respondents should describe plans for an NOC and its functionality.

A planned approach to providing a complete system of customer service and technical support, including a twenty-four hour per day, seven days a week (24x7) help desk. Please include information regarding service provisioning, troubleshooting, maintenance and repair, etc.

In the pricing section, the RFP asks for a 3-year warranty on all equipment.

Other than the support and warranties outlined throughout, OneBroward requests that each vendor provide pricing for managing the network. A 24-hour seven days a week sample service level agreement should be included with your submission. If support for the network is to reside with a partner associated with the responding vendor, this documentation is still required.

7 APPLICATION DEPLOYMENT ROADMAP (15 points)

OneBroward believes strongly that the real power of a county-wide broadband IP data network lies in the use of customized applications that make it easier for OneBroward workers to access OneBroward resources, more easily access required information, streamline OneBroward processes and generally improve the productivity of staff, as well as the level of service provided to residents.

Several of the applications and services OneBroward expects to be enabled by the planned broadband IP data network will require significant application development effort. As an example, OneBroward's members have outlined the application priorities listed in Appendix C. Respondent must describe their internal or partner-based expertise in providing application development and integration capabilities to assist OneBroward in deploying the applications.

Please include also your creative ideas for recommended applications that would improve OneBroward's service levels to citizens, provide amenities and training opportunities to residents and visitors, help close the digital divide, reduce language barriers, etc. Provide this in a roadmap with critical process and implementation dates.

8 QUALIFICATION AND EXPERIENCE (15 points)

8.1 Respondent Information and Financial Overview

8.1.1 Background and Experience

Respondent must provide a detailed history of its company and its experience in designing, installing and maintaining county-wide fiber and wireless broadband IP data networks. The Respondent must include complete information on those company principals and their experience in these technologies that will be part of the company's recommended deployment team.

Respondent's response must define whether any member of the proponent team has ever had a contract terminated due to the quality of its work. If yes, please explain the circumstances.

Respondent must also provide operating budgets and audited financial statements for the past three (3) years, as well as two (2) bank references with correspondent contact names, addresses, phone numbers and E-mail addresses. If the Respondent has not been in business for the past three years, please indicate it and provide audited financial statements for the years it has been in operation.

8.1.2 References

Respondent must provide references on projects and existing contracts wherein the equipment being proposed has been deployed and is successfully operating in a broadband IP data network for municipal or other government clients. For each referenced organization, Respondent shall provide one or more contact names, including title or role, organization, address, E-mail address and phone number.

In the references provided, please comment on:

- o Network design
- o Network construction
- o Network operation
- o Network maintenance
- o Staffing
- o Support services
- o Safety and security

8.1.3 Operational Strengths

Respondent must provide a detailed description defining their capabilities to manage an operation of the magnitude defined within this RFP. The response should include information on all aspects of the proposed network – from financing through design, deployment, service and support, billing, etc.

8.1.4 Technical Strength

The selected Contractor will be expected to provide an exemplary level of customer service. In addition, the Contractor must ensure that the deployed network provides the highest level of technical functionality possible. The OneBroward expectations include:

-
- o Fast and professional installation where required
 - o Reliable and dependable quality of service (QoS)
 - o Highly secure connections
 - o Always-on access

What are your inherent technical strengths to design, deploy and manage a county-wide broadband IP data network? Please include information regarding your technical implementation planning and your capabilities and methodologies for ongoing technical management of the services to be provided.

8.1.5 Respondent Partnerships

The successful design, installation and ongoing network and operations management of a county-wide broadband IP data access network may require that the selected Contractor assemble a team of highly-qualified partners each contributing their own products and specific expertise.

If the Contractor assembles a team of partners, Respondent must provide information regarding the depth and tenure of their current partnerships and explain which products and services will be provided by and, potentially supported by, specific entities. As part of the response, Respondent should provide evidence of their contractual relationship and good standing with specific Respondent partners. Respondent should also clearly define the vendor/product certifications they currently possess on specific products and services. Respondent's response must include information regarding the financial and market share strengths of their selected partners.

Respondent's response to the above requirements must include an identification of the partner entities that will be involved, a description of the roles they will play, the contractual relationships within the team, the financial responsibilities and percentage of ownership (if applicable) of each team entity, a description and evidence of the nature of each entity's commitment to the project, and a summary of the team's past experience in working together. A description of each of the entities' experience in similar projects and roles must be included, including location, type of project, beginning and ending dates of involvement and information about any continued financial or operating interest in each. Include specific previous relevant experience with public entities, including reference contact information.

8.1.6 Proposed Service and Network Management Approach

It is critical that the proposed broadband IP data network be properly managed to ensure effective service provisioning, service management and quality/class of service management, performance management, configuration management and appropriate billing. It is expected that the selected Contractor will provide a tightly integrated platform that will enable plug-n-play provisioning of edge devices, real-time authentication, subscriber management and billing, customer care, roaming settlement and network management.

Respondent must describe the platform they will utilize to provide the necessary management services referred to in this section.

Respondent's proposal must include a description of its capabilities to accommodate the following:

- o Support **global interconnection standards for service-level support for either time-based or bandwidth-based service levels, as these standards are adopted.**

-
- o Support **interconnection protocols that cover service options needed for all security and standard Internet applications listed herein.**
 - o Describe **options for electronic payment.**
 - o Support **for RFC 1305 for accurate time-of-day billing synchronization between roaming carriers.**

8.1.7 Organizational Model

Respondent must fully describe the organizational model they propose for OneBroward's consideration.

9 CONTRACT REQUIREMENTS, TERMS AND CONDITIONS

One Broward, as a 503(c) corporation, is not subject to the contractual stipulations of the state and county statutes and ordinances. Each organization within the Consortium will comply with their legal requirements separately to assure their assets and financial commitments are offered without restraint.

Respondents are contracting with OneBroward and, as such, should present their contract requirements, terms and conditions for review by OneBroward's counsel.

10 APPENDICES

- A. Summary of Existing Technical Assets
- B. Maps Showing Physical Locations of OneBroward Consortium Assets
- C. Application Priorities

APPENDIX A: SUMMARY OF EXISTING TECHNICAL ASSETS

Table 1 - Assets by Institution

Member	Mounting			
	Wireless	Assets	Lamda Rail	Other
FAU	Yes	building	Yes 10 gig	Access to EBS Channels
N. Broward Hospitals	Yes	Roof	---	---
NOVA	Yes	---	YES	---
BCC	Some	buildings	---	Broward Information Network (BIN)
Sherriff's Office	Wi-Fi Hotspots	5 Radio Towers	---	---
County	Yes	100 locations	---	1000+ traffic poles
Memorial Hospital	Yes	5 100 ft buildings	---	Major FLR node in Tampa
Broward Schools	Yes	240 Towers	---	Access to EBS Channels Bucket truck

Wired Assets

- Broward County Schools (SBBC) have:
 - a. comprehensive tower mount assets that represent a diverse geographical footprint;
- Broward County possesses:
 - a. mounting assets such as buildings and utility poles; and
 - b. fiber that will connect 15 of their physical locations. Details of these assets can be provided upon request.
- Florida Atlantic University (4 campuses) has access to Florida and National Lambda Rail Gateway.
- NOVA Southeastern University has Florida and National Lambda Rail Gateway.
- Extensive inter and intra campus fiber plants exist at:
 - a. Florida Atlantic University
 - b. North Broward Hospital District
 - c. Broward County
 - d. Broward Community College

Wireless Assets

- SBBC /BECON owns:
 - o WKPX, 88.5 FM
 - o WPPB TV Channel 63, 700 MHz one way broadcasting, DTV Channel 40
 - o Educational Broadcast Spectrum 2.5 GHz (EBS)
 - Wimax, 802.16e spectrum
- FAU:
 - o Access to Educational Broadcast Spectrum (EBS) channels.
- Broward County Broward County Sheriff's office:
 - o Wireless licenses.
- Other Education Broadcast Spectrum (EBS) licenses can be pooled into the Consortium if desired and the FCC databases list these licenses.

Physical Assets

- SBBC:
 - o 240- schools with an 80' – 120' radio tower
- Memorial Hospital District:
 - o roof top of 5, 100 foot buildings
- Broward County:
 - o 100 county locations are under investigation for fiber deployment and the county has conduit for right of way fiber runs
- Sheriff's Office:
 - o Twenty radio towers

Human Capital

While some partners have physical assets, human capital plays an important role in providing technical knowledge and expertise.

- Technical Staff
 - o Florida Atlantic has 30 IT professionals
 - o North Broward Hospital has 150 IT professionals
 - o Broward Community College:
 - 3 IT Network professionals
 - o NOVA Southeastern – web design services – 2 resources

APPENDIX B: MAPS SHOWING PHYSICAL LOCATIONS OF ONEBROWARD CONSORITUM ASSETS

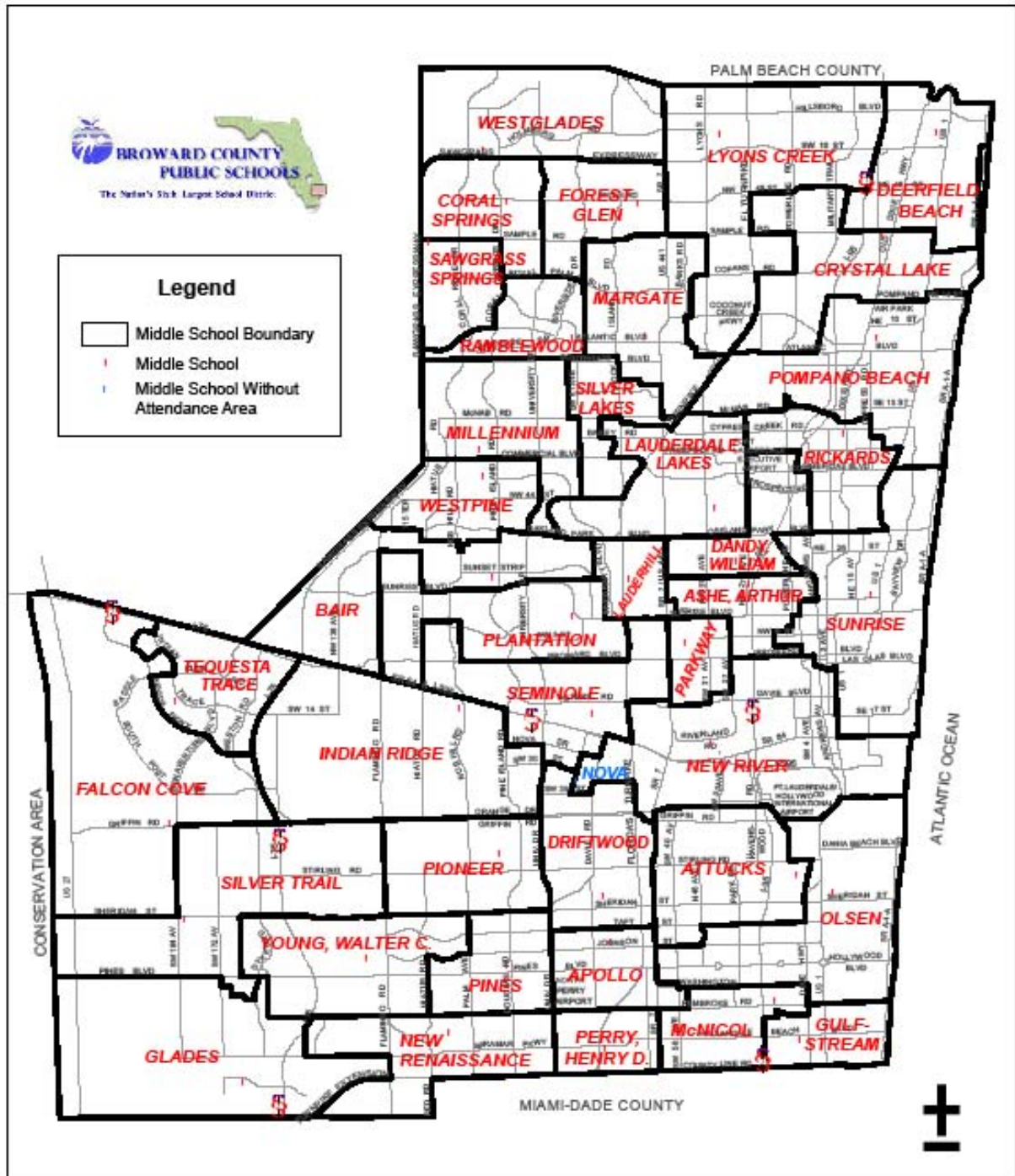
Separate Files Named:

OneBroward.kmz*
Middle-school.pdf
Element-map.pdf

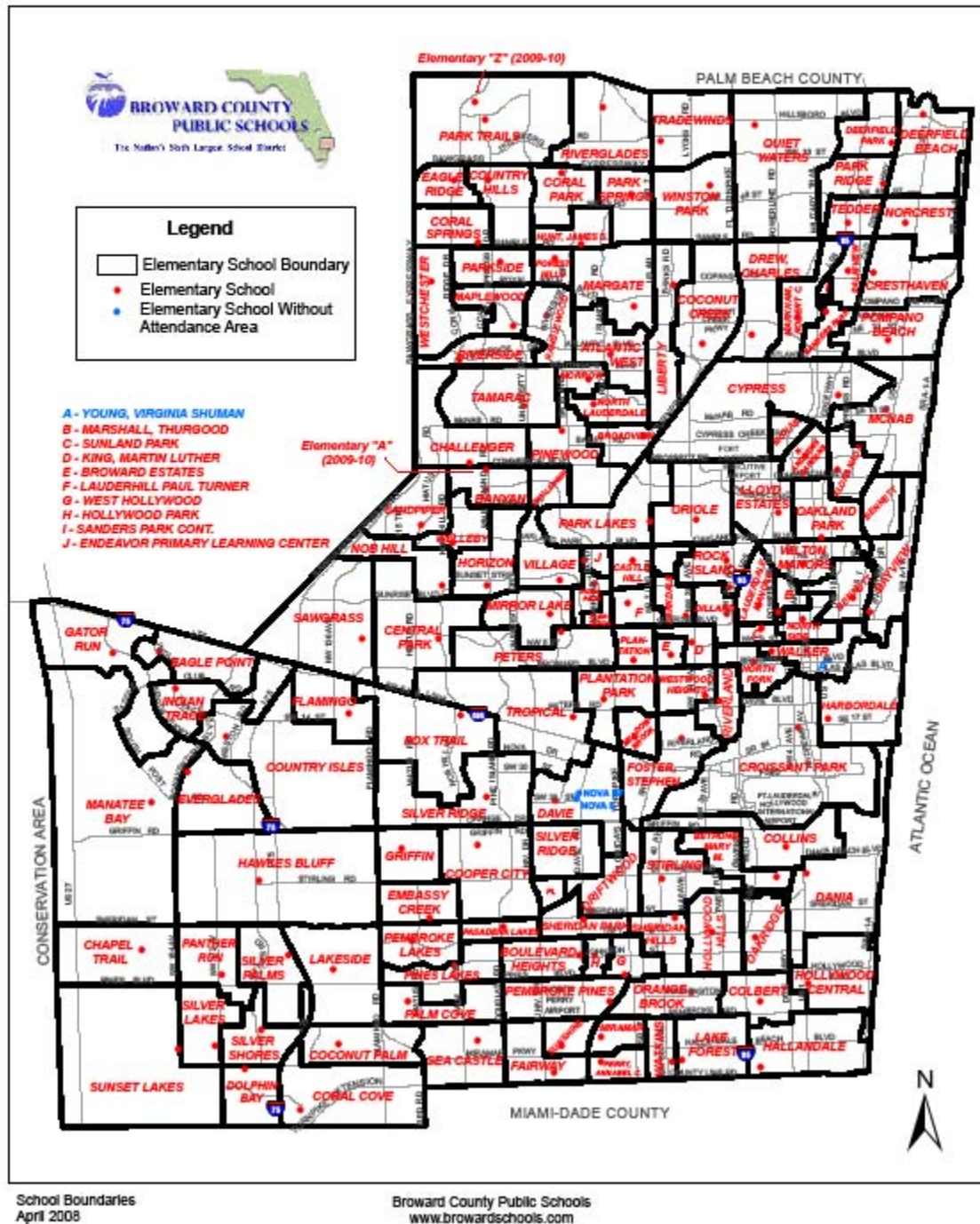
* The Google Earth KMZ file showing asset location of high school towers, hospitals and universities may be found at the following FTP site, <ftp://ftp.betatechpark.com>, username "onebroward," Password "betastrategygroup"

This file will be available on this site up to August 8, 2008, at which time the user account will be disabled. If you have any questions please email jherraghty@betagroup.us for a copy of the file."

2008-2009 MIDDLE SCHOOL BOUNDARIES



2008-2009 ELEMENTARY SCHOOL BOUNDARIES



APPENDIX C: APPLICATION PRIORITIES

K-12

Early Wins	Application Name	Application Scope	Identification & Status of Current Assets
	Video on Demand (VOD)	- Extending the learning day - Allow for remote access from off campus locations to educational resources 24/7 Access	- Have, but enhance and disseminate - Have 450+ video conferencing units
	Online Portal Applications		
	e-Learning Distribution	Online core curriculum – math science, biology, etc.	Need to enhance and disseminate
	Virtual Counselor	Attendance, grades, data warehousing	Available but interaction with parents limited
	Regional Teacher Training Portal	Have 7000 juried lessons available Teacher training within higher education	Available but interaction with teachers limited

Top Priorities	Application Name	Application Scope	Identification & Status of Current Assets
	Security Monitoring of Buildings and Buses	- This is also a public safety and county priority - Enabling live video monitoring in schools and on buses	- Collaboration with public safety - Live video feed - May include vehicle locator services - Already have cameras recording to a box, not a live feed
	Parental Communication	Attendance, grades, data warehousing	Need to enhance and disseminate
	Extended Learning Day	Resources available to students from remote locations with 24/7 access	Need to enhance and disseminate
	e-Learning Distribution **	Workforce training on next generation technologies and continuing education	
	VOIP	Voice Over IP	

Higher Education

	Application Name	Application Scope	Identification & Status of Current Assets
Early Wins	Electronic Library	- Complete library of journals, e-Books, virtual library in general - Pre-K-12 can access FAU resources and BCC resources – through Florida Lambda Rail	- Have, but wish to enhance and disseminate
	Interactive TV and VOD Content	- Online core curriculum - Pre-K-12 can access FAU resources and PBCC resources	- Have, but enhance and disseminate - Problem with scaling to allow for remediation support
	Blackboard - Web CT and Applications for New Forms of Scholarship	Exist for social networking at the private schools	Have, but enhance and disseminate
	ERP	SunGard Solutions: Software and services to help build a unified digital campus	- Have, but enhance and disseminate - Proprietary license
	Application Name	Application Scope	Identification & Status of Current Assets
Top Priorities	Security Monitoring Buildings and Campuses and Safety Vehicles (very high priority)	This is also a public safety and county priority	- Collaboration with schools - Already monitor cameras via the internet with law enforcement
	New Scholarship and Forms of Publication (for both community and private)**	Second Life and new interactive forms of social networking for collaborative learning	- Have, but enhance and disseminate - Audible, NOVA access to electronic journals, online text books / CD's instead of books
	College Readiness Portals	- Online college prep for gate-keeping courses - Creating portal services that engage at new and creative levels –social networking - GED, English language, basic computing	85% not college ready
	Video Conferencing Collaborative Research	- A shared priority - K-20 agenda	Healthcare etc.

Public Safety

	Public Safety		
	Application Name	Application Scope	Identification & Status of Current Assets
Early Wins	Automatic Vehicle Location	On-board system to locate mobile assets	Top Priority – already doing and could achieve a cost savings over the network. Backbone is in place but it is outsourced
	Computer Aided Dispatch	System for monitoring and communicating police and fire incidents	See above
	Advanced Tactical Mapping	- GPS and mobile technology to assess threats and safety - CrimeView is an advanced interface to existing CAD and RMS databases - FireView integrates Fire and EMS data with GIS allowing agencies to easily map and analyze data	See above
	Remote Security Monitoring of Buildings and Schools	Content receipt from existing building monitoring by department and with colleges and schools is important	See above
	Converged Voice and Video Network	Data communications to enable law, fire, EMS and other emergency response, using standards based IP network topology	- QOS and priority access and governance are the concerns - Using commercial vendor. Would like to connect to the private network
	Public Safety		
	Application Name	Application Scope	Identification & Status of Current Assets
Top Priorities	Judicial Information Repository	- Repository for case management, public information access and homeland security - Online system linking state-level law enforcement, corrections, prosecution and courts, enabling these agencies to track offenders	- Assessment of existing assets required (separate RFP)
	Forensics	Forensic Science LIMS and Forensic Science Case Management Software to provide an 'end-to-end' management solution for Forensic Science laboratories	Assessment of existing assets required (separate RFP)

Economic Development

	Application Name	Application Scope	Identification & Status of Current Assets
Early Wins	Field Applications	- Permits - Inspections - building - Disaster response	Assessment of existing assets required
	Retail WiFi	Strategic WiFi hot spots to bolster retail and educational based use, as well as business attraction	First cluster is along Solstice Blvd., around the main college campuses and the library and west of the governmental center – three clusters
	Tax Services	Automated online tax collection	Already have, but might be improved
	Library Integration	- Nodal points in the network - Interconnectivity between each branch for education	

	Application Name	Application Scope	Identification & Status of Current Assets
Top Priorities	e-Enablement of businesses and incentives	- Enabling service industries through telecommuting, call centers, financial services, etc. - Job boards and employment	Information on demand – in designing phase to roll this out
	Public Health Initiatives	- Interactive TV and VOD content - E-Learning distribution	
	Citizen Polling, Blogging Portal – Neighborhood Block Watch enablement	Internet voting platform for the public sector (municipalities, regional, state and federal governments, etc.). Allow the organization of all types of electoral processes (e.g., elections, consultations, surveys, referendums, etc.) through multiple channels, including Internet and mobile phones.	
	E-Voting – CITIZEN OPINION		

Healthcare

	Application Name	Application Scope	Identification & Status of Current Assets
Early Wins	Telemedicine / Biomedical Image Transfer	• Telemedicine between a general practitioner and a specialist available at a remote location. • Remedy reconciliation • Store-and-forward telemedicine acquiring medical data (like medical images, bio-signals etc) and then transmitting this data to a doctor or medical specialist at a convenient time for assessment offline. Dermatology, radiology, and pathology are common specialties that are conducive to asynchronous telemedicine • Integration of communications for in-network referrals	• Access provided for remote review
	RHIO: e-Finance, EHR	• Online billing portal for patients to access their bills • HIE: health information exchange to enable this item • Interoperability with clinics and doctors around patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data and radiology reports	
	Application Name	Application Scope	Identification & Status of Current Assets
Top Priorities	Mobile Telemetry	• Integration of patient and county EMTS and hospital	• Some is already in place
	CME – e-Learning Distribution	• Ability to educate practitioners	• Two separate approaches one is internal the other has it outsourced
	Patient Access	• Personalized portals – monitoring care protocols • Remedy Reconciliation/e-Prescribing	