

REQUEST FOR PROPOSAL #2010-SR1

DESIGN AND INSTALLATION OF REGIONAL MICROWAVE SYSTEM

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1 Purpose

The purpose of this Request for Proposal (RFP) is for Nelson County, Virginia to enter into a contract with a qualified Offeror to acquire a new public safety microwave backbone network. This system will be referred to as the Blue Ridge Interoperable Network (BRIN). Nelson County (henceforth “the County”) is the beneficiary of the grant that is funding this acquisition and is acting as the fiscal agent and administrator for this project on behalf of the area jurisdictions listed below pursuant to established agreements with each jurisdiction. Nelson County will purchase the goods and services as defined in this RFP and will subsequently transfer ownership of systems located in the other jurisdictions to the respective jurisdictions that shall then be responsible for maintaining said systems. It is desired to establish a regional microwave network that will support the radio systems and data services needs for the following political subdivisions:

1. Nelson County
2. Albemarle County
3. City of Charlottesville
4. Virginia State Police
5. Virginia Department of Emergency Management (VDEM) State EOC
6. City of Waynesboro
7. City of Staunton

This RFP will target a configuration that will establish a microwave network with ring topology and spur extended connections to the respective jurisdictions Emergency Communications 9-1-1 Centers. This microwave network configuration will provide an interoperable communications foundation for regional partners and must be designed to support current and future radio and data systems applications as defined in this RFP.

2 Background

The National Telecommunications and Information Administration (NTIA) was directed to implement a \$1B grant program to assist public safety agencies in acquiring interoperable communications systems. Under the Public Safety Interoperable Communications (PSIC) Grant Program, Nelson County, Virginia, was awarded a grant to establish a microwave network that will connect the Emergency Communications Centers (ECC), as well as the State EOC operated by the Virginia Department of Emergency Management (VDEM), to participating member jurisdictions of Regional Preparedness Advisory Committee for Interoperability (RPAC-I) Region-3. For the purposes of this RFP, these participants include Albemarle County, City of Charlottesville, Virginia State Police and Nelson County. This system will be referred to as the Blue Ridge Interoperable Network (BRIN). The Virginia State Police has constructed a new tower on High Top Mountain in Nelson County at which point the VSP STARS COMLINC connection will be connected and distributed through the BRIN system to the communications centers of the participating jurisdictions. This will establish a secure and highly reliable Public Safety Grade communications link for the Virginia COMLINC system which is currently operating over the public Internet. It will also eliminate any future need for high cost leased line circuits in order to improve system reliability or security. The network will also allow for future implementation and utilization of applications such as video teleconferencing, secure closed network VoIP telephone, data collaboration, instant messaging, and the ability to receive and distribute live video. The desired system shall be a TCP/IP and MPLS solution provided that it can support the necessary T1 and Ethernet circuits for land mobile radio and other uses including the required STARS COMLINC circuits.

3 Network Overview

The network will consist of a loop or ring network topology with two Spur Sites. The ring microwave network participant sites are to consist of the following political subdivisions and their associated site locations. ***(All site data is tabulated in Attachment E)***

3.1 Ring Sites:

- High Top Tower, Nelson County:

The High Top tower is located on High Top Mountain at 2045 Fortunes Cove Lane, Lovingston, VA. The structure is a 160 foot lattice tower structure owned and managed by Virginia State Police (VSP). This site is the central point of connection to the VSP COMLINC system. The tower structure has been designed with the Nelson County requirements included for both microwave and LMR antenna loading. The County will share the VSP tower and shelter facilities. The Successful Offeror shall be required to secure all necessary permits and applications as required by Nelson County.

- Devil's Knob Tower, Nelson County:

The Devil's Knob Tower is located on Devil's Knob Mountain at 21 Fern Circle, Roseland, VA. This site is still in the planning and development stage and construction will begin in the very near future. The structure will be an 80 foot monopole with the Nelson County microwave antenna design loading included in the design. The tower will be owned and managed by AT&T, however it is anticipated that Nelson County will have their own shelter facility. The Successful Offeror shall be required to secure all necessary permits and applications as required by Nelson County.

- Buck's Elbow Tower, Albemarle County:

The Buck's Elbow tower is located at 7045 Bucks Elbow MTN Road, Crozet, VA. The structure is a 120 foot guyed tower supporting the Albemarle/Charlottesville communications network. The Successful Offeror will also be required to secure a structural analysis to ensure that the tower can accommodate the loading of the microwave antennas and the Mutual-Aid antennas

that will be applied to this structure. The Successful Offeror shall be required to secure all necessary permits and applications as required by Albemarle County.

- Sugar Loaf Tower, Nelson County

The Sugar Loaf tower is located at 4909 Wheelers Cove Road, Shipman, VA on top of Sugar Loaf Mountain. The structure is a 150 foot four leg lattice tower. Verizon is the owner of both the tower and shelter facilities which they share with the County. The County is in the process of modifying the existing lease contract to accommodate the additional tower space required for the new system. The Successful Offeror will be required to secure a structural analysis to ensure that the tower can accommodate the loading of the microwave antennas and the Mutual-Aid antennas that will be applied to this structure. The Successful Offeror shall be required to secure all necessary permits and applications as required by Nelson County.

3.2 Spur Sites:

The Spur sites are to consist of the following political subdivisions and their associated site locations. **(All site data is listed in Attachment E at the end of this RFP)**

- Nelson County E911 Center:

The Nelson County E911 Center tower is located at 83 Courthouse Square, Lovingson, VA. This facility will have a new 120 foot monopole and a shelter located at the base of the monopole which will be located behind the parking lot of the newly constructed judicial building. The County will be the owner of both the tower and shelter facilities. The Successful Offeror shall be required to secure all necessary permits and applications as required by Nelson County.

- Albemarle County E911 Center:

The Albemarle County E911 Center is located at 2306 Ivy Road, Charlottesville, VA. The facility has an existing 110 foot monopole. No shelter facilities are available at the base of the monopole. All equipment must be installed in the ECC communications equipment room. Access to the monopole is available through underground conduits approximately 200 feet from the ECC equipment room. The Successful Offeror shall be required to secure all necessary permits and applications as required by Albemarle County.

3.3 Additional Spur Network Connections – Optional Pricing

In addition, as part of and quoted separately from the core microwave network, the successful Offeror is invited to provide proposals for a method by which a single DS1 (or equivalent bandwidth) may be established as an extension of the core network to the Emergency Communications Centers (ECC) for the following political subdivisions:

- City of Waynesboro

The City of Waynesboro primary transmitter site is located in the old landfill near the city limits off of Landfill Road. Coordinates for this tower are 38-03-59.9N/78-52-03.9W. The City also maintains a small roof top tower at the E911 Center located on top of the Thomas L. Gorsuch Municipal Building at 250 S. Wayne Avenue in Waynesboro. The Successful Offeror shall be required to secure all necessary permits and applications as required by the City of Waynesboro.

- City of Staunton

The City of Staunton primary transmitter site is located at the Reservoir Hill tower site near the intersection of N. Jefferson and N. Madison St. Coordinates for this tower location are 38-09-13.7N/79-04-42.6W. The City E911 Center is located the downtown Staunton Police Department building located at 116 West Beverley Street in the City Hall Building. Coordinates for this location are 38-08-56.7N/79-04-26.8W. The building structure does not have any antenna tower or support structures but does have a building parapet that may be suitable for antenna mounting. The Successful Offeror shall be required to secure all necessary permits and applications as required by the City of Staunton.

4 Scope of Services

The Successful Offeror shall supply all goods and services described herein as a “turnkey” project and shall assume complete responsibility for all engineering, design, integration, installation, testing, commissioning, and delivery of a completely operational microwave system and associated applications as specified by this RFP and any resulting contract or agreement. The Successful Offeror shall furnish all materials, equipment, tools, skill, engineering, and labor necessary to fully complete in a timely manner the requirements of this RFP and any resulting contract or agreement according to the specifications, terms, and conditions contained in this RFP.

The Successful Offeror shall be responsible for System performance, including a guarantee of microwave connectivity; installation of all equipment at sites (with the exception of those items specifically stated), optimization of the microwave backbone; and the training of system users and maintenance personnel.

4.1 Work to be Performed

This section defines the baseline set of tasks to be performed by the Successful Offeror in support of the design, integration, installation, test, and delivery of the subject microwave system. This is considered to be a minimum set of tasks and the Offeror may propose additional tasks if such tasks are deemed necessary to support the Offeror's proposed methodology to complete the project.

4.1.1 Physical Site and Path Surveys

The Successful Offeror shall be responsible for the complete design of all microwave paths. The Successful Offeror will be responsible for performing physical path surveys as required to locate existing or planned obstructions on the paths and ensure proper path clearances are maintained. The Successful Offeror shall guarantee the paths are clear of any and all obstructions.

The Successful Offeror shall be responsible for providing all personnel, maps, proper instrumentation and any other equipment or material necessary to perform the physical path surveys. In executing the path surveys, the Successful Offeror shall search for existing construction plans, permits, etc. for proposed structures along the projected path. If a particular location along the path is already developed with existing structures not likely to be re-built or extended/expanded, the Successful Offeror shall state the pre-existence of these objects. If the new structure(s) are proposed, the Successful Offeror shall take the new construction into account in the microwave path calculations.

The Successful Offeror shall be required to provide results of the physical path surveys on every path. These submittals are to provide, as a minimum, the following information and material:

- Verified site geodetic coordinates in NAD27 and NAD83 formats
- Verified site elevations
- Microwave system schematic drawings
- Sites plotted on USGS 7.5 min maps, location map, and plot plan

- Verified ground elevations along paths
- Obstruction heights along microwave paths
- Path profile characteristics, path clearances at critical points along the path, potential reflection points and natural/manmade shielding along the paths are identified /noted and discussed in detail
- General site characteristics: access, nearest utility power location, soil conditions, surrounding land features, and optimum positioning for new towers.
- Recommended and required improvements to site facilities to accommodate proposed design, e.g., AC power capacity or circuits, HVAC systems, backup power systems, etc.

Prior to the completion of the detailed design phase, the Successful Offeror shall have completed a site inspection by qualified personnel of each existing and proposed site comprising the system, and shall agree that the present condition of such sites and any existing facilities are acceptable to the Successful Offeror and that the system can be installed in a workable condition at each site.

Prior to installation of the system at each site, the Successful Offeror shall re-inspect each site including structures located thereon and shall identify, in writing, to the County any changes in sites and facilities since the initial inspection that may affect the system. If the Successful Offeror fails to re-inspect the sites prior to installation of components of the system, it shall thereafter be liable for any failure of the system to perform in conformance with this RFP and any resulting agreement caused, in whole or in part, by changes at any site.

4.1.2 System Design

The Successful Offeror shall be solely responsible for the overall design of all systems and subsystems to be provided. The Successful Offeror shall provide a Design Specification allowing for traceability between the applicable system and subsystem specifications herein and the Successful Offeror's detailed design. System or subsystem acceptance shall be based upon verification against the approved Design Specification document in accordance with acceptance criteria in the relevant sections of the Technical Specifications and Requirements regarding factory and site acceptance testing. Any and all changes in the system required due to the system's inability to meet the system performance criteria shall be provided by the Successful Offeror at the Successful Offeror's sole expense.

4.1.2.1 Microwave Network Design and Path Analysis

The Successful Offeror shall perform detailed design of the overall microwave network based on site and path surveys and information provided by the County and/or the other participating jurisdictions.

The Successful Offeror shall agree to engineer, design, and implement microwave paths with reliability specified in the relevant sections of the Technical Specifications and Requirements as part of the network design, and shall coordinate and obtain FCC licenses for all microwave frequencies required to implement the network in accordance with the requirements of this RFP and any resulting agreement.

Any additional sites or changes in antennas not contemplated by the Successful Offeror's response to this RFP or the resulting agreement that may be required to correct deficiencies because the Successful Offeror has failed to satisfy the coverage requirements of this RFP and any resulting agreement shall be provided by the Successful Offeror at the Successful Offeror's sole expense.

4.1.2.2 Microwave Radio System Design

The Successful Offeror shall engineer, design, and implement a microwave radio system to support the microwave network design goal of a public-safety level availability of 99.999%. The microwave radio design shall also meet the technical requirements given in the specification section of this document. The design for the network will consist of a loop protected ring using non-monitored hot-standby (NMHSB) radios with two monitored hot-standby (MHSB) spur links.

4.1.2.3 Special Considerations

- Nelson E911 Center

The Successful Offeror shall provide the design and implementation of a new Spur path from the High Top tower to the new Nelson County ECC monopole. The Successful Offeror shall also be responsible for examining and providing the appropriate interface to connect radio infrastructure, COMLINC and alarm monitoring to the appropriate equipment in the equipment room (Rm. 118) and the dispatch center (Rm. 114). The distance from the shelter to the E911 Center equipment room (Rm. 118) is estimated to be approximately 200 feet and two 6" conduits will be provided by the County connecting the tower shelter to room 118. The Successful Offeror shall be required to secure all necessary permits and applications as required by Nelson County.

- Albemarle E911 Center

The Successful Offeror shall provide the design and implementation of a new Spur path and must provide a method by which the new Spur path can operate in parallel with the existing Albemarle County 6 GHz microwave system. Or, as an alternative, may also propose a method by which the existing hop can be upgraded to match the bandwidth requirements of the BRIN system. The existing County microwave path from the Buck's Elbow Site to the Albemarle ECC is part of a ring topology for Albemarle County supporting the countywide 800 MHz Simulcast Trunking system. The Successful Offeror shall provide an installation/cut-over methodology which shall be examined and approved to be acceptable by Albemarle County. The Successful Offeror will be required to obtain structural analysis for both of the support structures at each end of the existing path in order to ensure that the tower and monopole meet industry standards for wind and ice loading and perform structural modifications if required. The structural analysis shall include the loading requirements for microwave system antennas, ice bridges, and other hardware to be assigned to this site. The Successful Offeror shall provide drawings to illustrate the method by which the RF and any other signaling cables will be routed from the monopole to the ECC equipment room including the placement of the microwave rack, battery rack, grounding method, and any other installation related detail. Albemarle radio systems drawings and/or ECC facilities systems details can be obtained by contacting the Nelson County Project Manager as described in section 4.1.5.1. The Successful Offeror shall be required to secure all necessary permits and applications as required by Albemarle County.

4.1.3 Testing

At a minimum, the Successful Offeror shall perform all Factory Testing, Site Acceptance Testing, and Thirty Day Performance Testing described in this RFP and any resulting contract or agreement. The Successful Offeror may perform additional testing beyond and in addition to what is called for herein and shall provide documentation of such testing to the County in a timely manner.

4.1.4 System Installation

The Successful Offeror shall ship all components to the appropriate destinations, stage the equipment, and perform all work associated with installing all components of each sub-system per agreed on floor plans developed during design and design reviews. The Successful Offeror

shall be responsible for all storage of all systems up until the time of physical installation at each site. Offerors may inquire of the individual jurisdictions as to the availability of storage space, however, neither the County nor the participating jurisdictions will be responsible for or obligated to providing storage space prior to system installation.

The Sugar Loaf and Buck's Elbow towers will require stress analysis studies to be performed in order to accommodate all new equipment required for the system. All other sites are pre-designed for antenna and transmission line loading.

Prior to installing any components of the system at any site, the Successful Offeror shall determine and ensure that the construction and alterations required for the system to be properly installed, including the following, are present, sufficient, and appropriate at each site:

- Wiring
- Grounding
- Towers
- Floor and rack space.

The Successful Offeror shall inform the County of any necessary site improvements regarding electrical power, backup power, HVAC, etc., and the County and Offeror shall negotiate to provide necessary improvements that are required to accommodate installation and operation of the approved system design.

All of the Successful Offeror's work shall comply with all applicable federal, County, and local codes and ordinances.

4.1.4.1 Microwave Antenna Systems

The Successful Offeror shall install all newly required microwave antennas and associated waveguides, antenna supports, ice shields, cable trays, etc. to support the microwave antenna system required at each site.

4.1.4.2 Microwave Radio Systems

The Successful Offeror shall install all required microwave radio equipment and associated waveguide transitions, equipment racks, cable and wiring, cable trays, etc. to support the microwave radio system required at each site.

4.1.4.3 COMLINC Connection

The Successful Offeror shall provide and install appropriate router equipment required to provide the proper connection to the Virginia State Police (VSP) COMLINC network. The connection to the COMLINC network must extend from the High Top tower location to both the Nelson ECC tower and the Albemarle ECC equipment room. The Successful Offeror shall be responsible for engineering and providing any routers, router programming and configuration and end-to-end testing to ensure that the path meets the equivalent bandwidth specification of a DS1 connection.

In the event that the Successful Offeror can engineer an acceptable connection to the other identified surrounding jurisdictions, the COMLINC connection will be required to connect to those other jurisdiction's ECC COMLINC equipment. Those jurisdictions are described in section 3.3 of this RFP and include:

1. City of Waynesboro
2. City of Staunton

4.1.5 Program Management

This section defines the specific services to be performed by the Successful Offeror in the management of the project, the interfaces between the Successful Offeror and the County, and the management information to be provided by the Successful Offeror to permit the County's evaluation of project progress including milestone payment status, schedule, and performance.

The Successful Offeror shall ensure that the personnel, material, equipment, services and facilities required to satisfy the requirements of this project are made available in a timely manner. In addition, the Successful Offeror shall have a project evaluation and control system that provides all information needed to manage the project satisfactorily, including as a minimum the milestone status, schedule, planning, and technical data.

Documents described herein are subject to the requirements of Section 5 Technical Specifications and Requirements.

4.1.5.1 Personnel, Organization and Contacts

The Nelson County Project Manager will be the primary point of contact between the Successful Offeror and the County for all technical and programmatic matters. The Nelson County Project Manager is:

Mrs. Susan Rorrer
Information Systems Director
Nelson County
P.O. Box 336
84 Courthouse Square
Lovington, VA 22949
434-263-7120
SRorrer@nelsoncounty.org

The Successful Offeror shall assign a dedicated, full-time Project Manager who is authorized to exercise technical and programmatic direction for the entire project and who shall be responsible for execution of the work defined in the RFP and any resulting contract or agreement. The Project Manager shall not manage this project 100% remotely. Offerors shall identify a percentage of time and/or a list of project tasks for which the Project Manager will be on-site at County and other jurisdictional facilities and shall define the Project Manager's roles and responsibilities both on-site and off-site. The Successful Offeror's Project Manager is subject to approval by the County, which approval shall not be unreasonably withheld.

In addition to formal contact and communications between the respective Project Managers, there shall be cooperative, free and unimpeded informal contact and communication between the County's personnel and representatives and their counterparts in the Successful Offeror's organization to facilitate satisfactory completion of the work. Such contact should be coordinated through the respective Project Managers at least to the level of informing the respective Project Managers of such coordination, either informally or formally through status reports or memos in the case where design, implementation, or testing decisions are affected.

The Successful Offeror shall have full and singular responsibility for fulfilling the terms of the contract. This includes all responsibility for goods and services provided by any subcontractors or third party manufacturers.

The Successful Offeror shall identify positions and personnel proposed that comprise the Successful Offeror's team that will accomplish the project. A list of proposed personnel and an organizational chart shall be a part of the Offeror's proposal. Personnel comprising the Successful Offeror's team are subject to approval by the County, which approval shall not be unreasonably withheld.

4.1.5.2 Project Plan and Schedule

As part of the proposal, the Offeror shall submit a draft Project Plan. The project plan shall describe the systems and procedures to be employed by the Successful Offeror to manage, plan and control the project, the proposed detailed project schedule, and the proposed installation plan. Organization charts showing the positions of critical personnel and their management interfaces for the Successful Offeror and key Subcontractors shall be included in the project plan. The project plan shall contain sub-plans, sections, and/or databases dealing with all topics involved in performing the work defined herein, including, for example:

- Project management approach
- Identification of Project Manager
- Organization and responsibilities
- Overall program schedule
- Documentation delivery schedule
- Subcontractor management (if applicable)
- System integration plan/overview
- System installation and cutover plan
- Procurement plan and deadlines for purchased hardware, software, and services
- Schedule evaluation and control
- Risk identification and mitigation
- Project assumptions
- Milestone payment monitoring and forecasts
- Specification and drawing tree

These plans shall include GANTT charts that indicate the primary sequence of events, targeted delivery dates, major milestones and resources. The Project Plan shall be reviewed in conjunction with the design review, and shall be updated as required, primarily in the form of updates to the system installation and cutover plan project schedule.

As part of the Project Plan, the Successful Offeror shall prepare and provide detailed schedules for system integration, covering all project phases (e.g. detailed system design, staging, Factory Acceptance Testing, delivery, installation, site integration, system cutovers, and Site Acceptance Testing, as a minimum).

4.1.6 Meetings and Design Reviews

4.1.6.1 Kickoff Meeting

An initial project kickoff meeting, to be attended by all key personnel, shall be held at a facility in Nelson County in an area to be agreed upon within ten (10) working days after Effective Date of Contract (EDC). The Successful Offeror shall provide an agenda five (5) working days prior to the meeting.

The purpose of the meeting is to acquaint the County's project team with the Successful Offeror's project team and facilities. It also shall provide an opportunity for the County to review the project requirements as understood by the Successful Offeror and provide feedback to support development of the BRIN system design.

4.1.6.2 Detailed Design Review

The County requires the Successful Offeror to perform a comprehensive detailed design prior to project commencement. The County shall actively participate in the detailed design of the entire system with the Successful Offeror. Offerors shall note, however, that County participation in the detailed design and detailed design review shall in no way relieve the Successful Offeror from full responsibility for system performance. Completion of the detailed design process shall take place upon mutual agreement between the Successful Offeror and the County. Upon completion of the detailed design, the Successful Offeror shall host a Detailed Design Review to present all aspects of the design to the County for approval.

If during the Detailed Design Review process it is discovered that the minimum functional requirements necessary to meet the PSIC grant commitments cannot be feasibly met within the grant budget, the County reserves the right to terminate the agreement and/or contract. If such termination is exercised, the County will be obligated to compensate the Successful Offeror for work completed to date up until and including the Detailed Design Review. The County will take possession of all design documentation at that time and reserves the right to reuse this documentation at its discretion including future release of said documentation to other agencies and/or companies with the exception of material explicitly identified as trade secret or proprietary in accordance with requirements in Section 9 Proposal Submission Requirements.

Detailed design documents shall be supplied to the County thirty (30) calendar days prior to the Detailed Design Review in both electronic (original file format) and paper format. The Successful Offeror shall supply six (6) copies of the detailed design document in both electronic (CD-ROM) format and paper format. The detailed design shall include, at a minimum, the following items for all system elements:

- Site acquisition risk analyses, if required
- Microwave path certifications
- Revised detailed Statement of work
- Revised detailed implementation plan
- Revised project schedule
- FCC regulatory review and frequency acquisition risk analyses
- Network and Subsystem Block Drawings
- Line Item Equipment Lists
- Database Parameters/Design
- Transport Requirements / Channelization/QoS
- Racking/Floor plan Drawings
- Physical Site Requirements
- Power and HVAC Requirements
- Network Timing Requirements/Design
- Antenna Subsystems
- User Applications Software and Displays
- Applications Processing Equipment
- User Consoles Interconnect Design and Installation
- System Administration and Maintenance Tools, Utilities, and Software
- Local and Remote System Monitoring

- Network Management System Design and Interfaces
- IP addressing schema
- Firewall and security settings
- Failure Mode Analysis
- Network Security Design for Data Distribution
- Change Orders
- Preliminary Factory Acceptance Test Plan
- Preliminary Site Acceptance Test Plan (if available)
- Training Materials
- Spares

The Successful Offeror shall submit a Design Review Report within five (5) working days of the Design Review. The report will include an account of proceedings of the Design Review including open issues and action items. The design review shall be considered completed upon County approval of the Design Review Report and acceptable closure, or an agreed action plan for closure, of all Successful Offeror action items critical to the design. Completion of the design review will permit the implementation phase to proceed. The Successful Offeror will develop a list of design review action items and report on item completion in subsequent status reports.

4.1.6.3 Other Meetings

The County and the Successful Offeror shall have the right to request other project meetings at mutually agreed to locations for purposes of assessment of problems, project status, or as otherwise reasonably needed.

4.1.7 Status Reporting

The Successful Offeror shall submit monthly status reports no later than five working days after the end of the month that shall include as a minimum:

- Updates to Project Plan/Schedule
- Major milestone schedule, updated with explanations of changes
- Summary of work accomplished and status of objectives established for that period
- Problems encountered or anticipated and impact on performance/schedule
- Plan of action to resolve problems
- Objectives targeted for accomplishment during the next period
- Notification of conflict with SOW or specifications, and identification of any request for waiver or deviation
- Summary of action item status
- Status of change orders and change order proposals

4.2 Testing and Acceptance

The Successful Offeror shall demonstrate to the County compliance with all technical requirements listed in the specification section of the RFP and any resulting contract or agreement. This shall include as a minimum the testing specifically called out in the Factory Acceptance Test (FAT) and the Site Acceptance Test (SAT) sections of the specification. The Successful Offeror shall also propose

any further testing required or recommended and include such testing in all appropriate documentation.

4.2.1 Test Plans and Procedures

The Successful Offeror shall provide a preliminary Factory Acceptance Test Plan (ATP) to the County for review and comment at least ten (10) working days prior to the Design Review. The Offeror shall include sample staging documentation and a Factory ATP, or equivalent, as part of its proposal.

The Successful Offeror shall provide a Site ATP to the County for review, comment, and approval at least thirty (30) working days prior to the start of SAT. The Offeror shall include a sample Site ATP, or equivalent, as part of its proposal.

The ATPs shall be developed in accordance with requirements of the documentation and specification sections herein. The ATPs shall describe the overall testing philosophy and methodology and shall define the tests to be performed to demonstrate compliance with all requirements for FAT and SAT respectively. The ATPs shall also show traceability of all specification requirements to specific acceptance tests. This may be done in the form of a requirements traceability matrix that may list the requirements and the method of demonstrating compliance such as test, demonstration, analysis, or inspection, said methods to be defined in the ATP and agreed to by the County. The ATPs shall include proposed schedules for FAT and SAT to be coordinated with and approved by the County.

The Successful Offeror shall prepare detailed Test Procedures for each test called out in the ATPs. Test Procedures shall be submitted to the County for review, comment, and approval at least twenty (20) working days prior to the start of the associated test. The County will complete its review and forward the results to the Successful Offeror within fifteen (15) working days of receipt. No acceptance testing shall be conducted until the County has approved the test procedures in writing. Test Procedures shall include, but not be limited to, method of test, test setup, diagrams of test configurations, description of required test equipment, parameter values for test conditions, specific steps to be followed, and accept/fail criteria.

4.2.2 Site Acceptance Testing

Once all system components have been installed, the Successful Offeror shall conduct a formal Site Acceptance Test (SAT). At a minimum, SAT will include the testing called out in the specification section of this RFP and any resulting contract or agreement. The County's Project Manager and other representatives shall witness SAT and the Successful Offeror shall coordinate closely with the County and the other BRIN jurisdictions to schedule testing and provide appropriate notification of each test event.

4.2.3 Monitor and control system tests

The Successful Offeror shall demonstrate that the monitor and control systems and associated Network Management System is fully operational in accordance with specifications and that all delivered functionality can be executed. This shall include fault insertion/failure simulation, BER erroring, fade margin alarms, system configuration, circuit provisioning, etc. Certain functionality may be tested in conjunction with other areas of acceptance testing, such as validation of appropriate fade alarms during the fade test.

4.2.4 Thirty Day Performance Test

Upon satisfactory completion and County approval of Site Acceptance Testing, the Successful Offeror and the County shall execute a Performance Test of the entire system that shall consist of thirty (30) consecutive days of uninterrupted operation. During this test period, the Successful Offeror shall keep detailed records of any failures or adjustments of the system and

shall provide the County with full electronic test results. The Successful Offeror shall provide an Acceptance Test Plan (ATP) including test methodology, test set up, test equipment, and general test procedures for the Performance Test at least twenty (20) working days prior to the scheduled start of the test.

4.2.5 Test Data and Reports

The Successful Offeror shall provide test data and reports after successful completion of each phase of testing that document all tests performed and the results of each. Test reports shall include a listing of all anomalies, discrepancies, test failures, etc., encountered during testing and a description of the remedy for each, a listing of regression test procedures performed, and the results of regression testing. Testing shall be deemed complete upon successful resolution of all outstanding issues, completed and documented regression testing, and approval by the County of the final test data and reports.

4.2.6 System Acceptance

The County shall offer official acceptance of the system once all work and testing has been completed and all deliverables have been approved. The system will not be accepted until the following, as a minimum, have been completed:

System Acceptance shall take place in the following sequence:

- Notification by the Successful Offeror that the system installation is complete
- Completion of inspections by County Project Manager
- Notification by Successful Offeror that final punch list is resolved and Acceptance Tests can commence
- Site Acceptance Test
- Successful Offeror provides draft SAT report
- 30 day Performance Test
- Site Acceptance Test results and report approved by the County
- All deliverables received and approved by the County
- Final System Acceptance Executed

4.3 Packing and Shipping

The Successful Offeror shall be responsible for shipping, safe transportation, delivery and unloading of all material provided within this specification from the place of origin to designated locations within the designated BRIN jurisdictions. No equipment shipments shall be made without the approval of the County. The Successful Offeror shall be responsible for all storage of all systems up until the time of physical installation at each site. Offerors may inquire of the individual jurisdictions as to the availability of storage space, however, neither the County nor the participating jurisdictions will be responsible for or obligated to providing storage space prior to system installation.

All packaging of material shall conform to good packing practices to protect against any possible shipping damages.

Delivery shall be made to ensure that the system is installed to meet the County's critical dates as defined in the final implementation schedule.

The Successful Offeror shall indicate how equipment or systems shall be delivered, i.e. identifying the carrier, and shall notify the County's Project Manager of shipping dates. The County's Project Manager shall be informed of any changes in shipping dates.

Title to and ownership of the equipment shall remain with the Successful Offeror until the entire system has been formally accepted by the County at the successful conclusion of the thirty day performance test. The Successful Offeror shall retain risk of loss for all system components that it is working on, controlling, or is in contact with. Risk of loss to system equipment shall pass to the County upon completion and approval of the thirty day performance test. Should the system not pass all acceptance tests required by this RFP and any resulting contract or agreement, title shall remain with the Successful Offeror, and the County shall retain all rights and remedies available under any resulting agreement, including, but not limited to, termination. The Successful Offeror warrants that, at the time title passes, it shall pass free and clear of all liens, charges, security interests, and encumbrances.

Charges for freight express, cartage, or packing shall not be allowed or paid by the County unless otherwise expressly stated by the County.

Every package, bill of lading, shipping memorandum, and invoice shall be marked with a purchase order number of the purchaser.

An itemized delivery ticket, bearing the County's purchase order number shall be left with the goods to insure their receipt. If a carrier makes delivery, an itemized delivery ticket shall be attached to the outside of the package.

4.4 Warranties and Maintenance Support

The Successful Offeror shall guarantee that all equipment supplied pursuant to this RFP shall be new and of first quality throughout. Warranty shall commence upon formal system acceptance by the County.

All items (material and labor) shall be warranted for a minimum of one (1) year after date of final system acceptance, unless otherwise specified. This warranty shall include repair or replacement of any defective equipment, system, subsystem, hardware and/or software which becomes defective through normal wear and usage. This basic warranty shall include telephone and on-site support as required for both hardware and software related failures and defects as well as technical support beyond such failures to include system operation and configuration assistance. For issues beyond basic failure / defect warranty coverage, the County shall request such technical assistance within reason and after having attempted to resolve said issues to the best ability of operational, administrative, and maintenance personnel trained on the systems in accordance with training requirements herein.

4.4.1 Hardware and Software Warranty

The Successful Offeror shall warrant that the entire BRIN system and each component of the system shall perform in strict accordance with the requirements of this RFP and any resulting contract or agreement and shall be free of defects, including latent defects, for a minimum of one (1) year after final acceptance and transfer of ownership of the system. Unless otherwise provided herein, all Successful Offeror furnished equipment is warranted for a minimum period of one (1) year after final acceptance of the system. The warranty period for third party equipment is as specified by its manufacturer, but not less than one (1) year. If the Successful Offeror offers standard warranties in excess of one (1) year on any of the subject hardware and software systems, these terms shall be described in the proposal.

The proposed system release/platform being offered shall not be the last of its type with regard to future software and hardware compatibility. The next software release compatible with the system shall not require new hardware to support the existing functions of the system within the new release. In the event parallel system software development has been undertaken by the Successful Offeror, and the software release in the County's system is abandoned (no further development or support), the Successful Offeror shall upgrade the County's system to the surviving software release at no cost to the County.

The Successful Offeror shall provide and install, at no additional cost, hardware, firmware, software releases or patches that are required to correct any latent functionality or software defect that may exist in the proposed system (including system failures resulting from software problems, functionality fixes, and software upgrades to the County's system), for the effective life of each subsystem.

In the event a defect is found in another customer's system that utilizes the same or similar release as the County's system, the Successful Offeror shall notify and advise the County of the defect and when a new hardware, firmware, software release or patch shall be available to correct the problem. At that time, the County shall decide whether they shall require an upgrade prior to observing the defect. Notification shall occur regardless of whether the County is currently affected by this defect.

The software release in the County's system at the time of final system acceptance shall be the latest version available at the time of shipment from the Successful Offeror's development and manufacturing facility.

Under all warranties provided, all parts shall be replaced free of charge including labor. The Successful Offeror may replace equipment, software or components rather than repair them at the Successful Offeror's option.

Where defective work (and damage to other work resulting there from) has been corrected, removed, or replaced under warranty, the warranty period with respect to such work shall be extended for an additional period of one (1) year after such correction or removal and replacement has been satisfactorily completed.

4.4.2 Equipment Support

The Successful Offeror shall warrant support in the form of replacement parts for the County equipment for ten (10) years from the last date of manufacture of the product, and for ten (10) years on the Successful Offeror supplied fixed infrastructure equipment from the last date of manufacture on all parts manufactured by the Successful Offeror and supplied under this RFP and any resulting contract and agreement.

The Successful Offeror shall warrant support in the form of replacement parts for the County equipment for five (5) years from the last date of manufacture on all parts not manufactured by the Successful Offeror and supplied under this RFP and any resulting contract and agreement.

The Successful Offeror shall use commercially reasonable efforts to identify and to obtain replacement parts for the County's specific requirements.

4.4.3 Extended Maintenance Support

The Successful Offeror shall offer options for full maintenance support on hardware and software in the form of a recurring annual extended maintenance support program. Due to restrictions of the subject PSIC grant, the extended maintenance support program shall be offered in a manner that the County can purchase one or more years of support using a contract vehicle outside the PSIC grant that is the subject of this RFP. Extended maintenance support shall be offered on this annual basis for a period up to nine (9) years beyond the included one (1) year warranty and support period.

This option shall be a separately priced option and is desired to be broken out to cover different subsystems and / or hardware versus software systems and varying levels of support and response times. The pricing breakout is also desired to provide the ability for individual jurisdictions to separately purchase maintenance contracts for just the systems and equipment that directly support their jurisdiction, as final ownership of systems within each jurisdiction will be transferred from the County of Nelson to the respective jurisdiction.

Annual increases in pricing for extended maintenance shall not exceed three (3) percent per year. In the event that the County or an individual jurisdiction decides to renew a maintenance agreement, the agreement shall be able to be renewed at a different level of support and may cover more or less subsystems as originally offered and at the originally quoted pricing, i.e., their shall be no pricing penalty for changing to different extended maintenance offerings.

4.5 Training Requirements

The Successful Offeror shall conduct comprehensive training courses to instruct personnel from the BRIN jurisdictions in the proper operation, use, and maintenance of the system as the County may require and to instruct personnel from the BRIN jurisdictions how to train other personnel in such subjects. The Successful Offeror shall comply with all training requirements contained in this RFP and any resulting contract or agreement.

Offerors shall include in their proposal a complete Training Plan that fully describes their training courses. This shall include, as a minimum, class room style instruction, extensive hands-on training with actual equipment in realistic configurations, operational style classes, description of available training material, resumes of potential course instructors and a customer reference list of trained personnel (to include: names, telephone numbers, company, and system description).

The Successful Offeror shall train County and BRIN jurisdiction employees and other designated personnel such as contractors working for various jurisdictions. The Successful Offeror shall permit video recording of training sessions for use within the BRIN jurisdictions for re-fresher training. All written and presentation training materials shall become property of the County.

Offerors shall provide a list of courses required along with the duration (hours, days, weeks, etc.), cost and location for each course required. Whenever possible, the training shall be conducted with substantial hands on involvement using the BRIN system and equipment in a manner that also supports exercising the system to allow personnel not located at the primary training sites to attend training through the video conferencing and collaboration capabilities of the BRIN system itself.

For all training classes, the Successful Offeror shall provide one (1) set of printed training materials and a full set of electronic manuals on CD-ROM for each student appropriate to the particular course as approved by the County. The Successful Offeror shall also supply four (4) additional printed and electronic copies of training materials to the County.

Training and associated training materials shall be customized as required to account for the specific configuration and installation of the BRIN system and are subject to review and approval by the County prior to training.

4.5.1 Microwave System Maintenance and Operational Training

The Successful Offeror shall provide microwave system maintenance training for up to five (5) people as identified by Nelson County. The training shall take place at a location to be specified by Nelson County. Training shall include system orientation, management, operation, and maintenance of all system infrastructure and associated system equipment provided by the Successful Offeror. The training shall include education on the theory of operation and practical maintenance procedures for the entire microwave system infrastructure and all systems contained therein.

The course content shall include the following, as a minimum:

- Use of Microwave Terminals
- Use of Diagnostic Tools
- Use of Alarm Monitoring Equipment and Network Management System (NMS)
- Provide an Overview of the Microwave Network
- Documentation structure, numbering system, and configuration control system

- Principles of digital transmission
- Block diagram and circuit description - all units
- Installation and turn-on procedure
- Alignment and testing procedure
- Trouble diagnosis to unit and board level
- Unit replacement procedure
- Operating procedures and safety

The Offeror shall provide a list of courses required along with the duration (hours, days, weeks, etc.), cost and proposed location for each course required. Whenever possible, the training shall be conducted with substantial hands on involvement using the County's system/equipment.

5 Technical Specifications and Requirements

This section of the RFP defines the technical specifications and requirements of the new digital microwave communications network and associated applications systems and subsystems to be provided by the Successful Offeror and shall form a part of any resulting agreement or contract. The Successful Offeror will use these specifications and requirements as the basis for design, integration, installation, and test of the BRIN network and all associated components provided to the County. The technical specifications and requirements herein as incorporated into the resulting agreement or contract constitute the set of minimum requirements and the provided systems and subsystems must meet or exceed these specifications and requirements. These specifications and requirements are to be implemented in accordance with the Scope of Services, which defines the work to be performed.

5.1 General Specifications

Unless otherwise modified herein, materials, design, and construction procedures shall be in accordance with the standards, regulations, and codes listed below as well as all Federal, State and Local building codes applicable to each site.

Installation of all electrical equipment, power distribution, lighting and outlet assemblies, alarm and grounding systems, including associated wire ways and wiring, shall comply with the most recent edition of the National Electrical Code (NEC), National Fire Protection Association (NFPA), and Occupational Safety and Health Administration (OSHA) standards and requirements.

All electrical equipment and devices shall be listed, approved, or certified by Underwriters Laboratories (UL).

All microwave radio equipment and microwave path design and construction shall comply with the latest editions of the following rules, regulations, and specifications:

5.1.1 Standards, Regulations, and Codes

- a) Federal Communications Commission (FCC)
 - 47 CFR, Part 2
 - 47 CFR, Part 15, Subpart B for Class A devices
 - 47 CFR, Part 101, Fixed Microwave Services
- b) Internet Engineering Task Force (IETF)
 - RFC 2702 - Requirements for Traffic Engineering Over MPLS

- RFC 3031 - Multiprotocol Label Switching Architecture
 - RFC 3032 - MPLS Label Stack Encoding
- c) Bellcore
- GR-1089-CORE – Electromagnetic Compatibility and Electrical Safety General Criteria for Network Telecommunications Equipment
 - TR-NWT-000063 – NEBS Generic Equipment Requirements
 - TR-TSY-000332 – Reliability Prediction Procedures for Electronic Equipment
 - TR-TSY-000499 – Transport Systems Generic Requirements (TSGR) Common Requirements, Issue 2
 - TA-TSY-000752 – Microwave Digital Systems Criteria
 - TR-TSY-000009 – Asynchronous Digital Multiplexer Requirements and Objectives
- d) American National Standards Institute (ANSI) Standards
- T1.105 – Digital Hierarchy Optical Interface Rates and Formats Specifications
 - T1.106 – Digital Hierarchy Optical Interface Specifications (single mode)
 - T1.102 – North American Digital Hierarchy – Electrical Interfaces
 - T1.403 – Extended Superframe Format Interface Specification
 - C37.90.1 – Surge Withstand Capability Tests
 - C37.90.2 – Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers
 - TIA/EIA-222-G – Structural Standards for Steel Antenna Towers and Antenna Supporting Structures
 - RS-252-A – Standard Microwave Transmissions Systems
 - TSB-10-F – Interference Criteria for Microwave systems
 - EIA-195 (revision C) – Electrical and Mechanical Characteristics for Terrestrial Microwave Relay System Antennas and Passive Reflectors
 - EIA- 210 – Terminating and Signaling Equipment for Microwave Communications Systems
 - EIA-310 – Racks, Panels, and Associated Equipment
- e) Motorola R56 - Standards and Guidelines for Communication Sites (68P81089E50-A)
- f) National Electrical Code (NEC)
- g) Local, State, and National Building Codes

5.2 Microwave Network

As part of the overall communications network, the Successful Offeror shall provide an interconnecting microwave transmission network to connect all identified sites, site equipment and emergency communications centers into an integrated network. Such a system shall make use of any existing microwave and fiber optic facilities, additional fiber optic or digital microwave systems, or a combination thereof, to the extent practicable. The Successful Offeror shall provide the most cost-effective solution to the County, providing that such a solution meets or exceeds the reliability and availability criteria of a public safety communications system as set forth in Attachment E Preliminary Network Design.

The transmission network shall be designed with the maximum redundant path capability, such as path diversity, ring switching, etc., to insure the highest levels of availability.

The transmission network shall employ next generation packet radio. The Successful Offeror shall provide interface equipment to connect with the transmission network. This interface equipment shall include all required multiplexing equipment.

5.2.1 Network Topology

The final network topology shall be approved by the County and based upon all available information including, but not limited to, the preliminary design presented in Attachment E, data gathered during site surveys by the Successful Offeror, and any information provided by the County, other BRIN jurisdictions, VDEM or other State agencies.

The network topology shall be that of a four (4) site ring design with two (2) spur paths. This is presented in F.

5.2.2 Frequencies

The RF paths determined for the digital microwave network shall utilize Federal Communications Commission (FCC) 47 CFR Part 101 frequencies assigned for full-period service in the 6, 10 or 11 GHz band for connectivity to ring sites and spur sites. Additional higher frequencies listed in Part 101 may be utilized for connectivity to extension sites.

To the greatest extent possible, consideration shall be given to minimizing differences in product lines and types. All frequencies shall be licensed.

For certain extension sites with shorter distances that may not require the full network capacity, the Successful Offeror may consider using the 4.9 GHz or other public safety band.

The Successful Offeror shall perform all required frequency coordination and prepare the associated path data sheets, prior coordination notices, and other required showings to support FCC licensing of the microwave sites. The Successful Offeror shall prepare individual FCC licensing applications and license modifications as required for each microwave radio path. The Successful Offeror is encouraged to make use of the FCC online ULS system and shall keep the County informed as to each submission and subsequent status. The County will provide the appropriate administrative information for each license. Each FCC license shall be assigned to the jurisdiction in which the transmit/receive station is located. The results of the required frequency engineering analysis and the draft applications for FCC authorization shall be submitted to the County for review and execution prior to attaching this data to the appropriate FCC license applications. The Successful Offeror shall be responsible for the cost of microwave frequency coordination. All FCC licensing shall be assumed to be fee exempt due to the fact that the radio links will be owned and operated by county governments. The County shall be responsible for any deviation from this assumption.

5.2.3 Microwave Network Performance Requirements

The final microwave network design shall support the following performance requirements

- Ring Reliability: 99.999%
- Individual Path Reliability: 99.999%
- The six (6) main radio paths shall have a 50 Mb/sec payload capacity
- The 4-site ring shall use automatic, alternate ring routing around an equipment failure and/or unavailable path(s) in 50 msec or less using the Fast Reroute (FRR) feature of OSI Layer 2.

- All main radios (excluding optional spur radios) shall be capable of user-variable, partitioning of capacity between MPLS/IP (Ethernet) and TDM via software configuration and programming or support industry standard TDM-over packet technologies.

If any of the microwave links cannot be practically and cost-effectively engineered to meet the performance requirements, the Successful Offeror shall provide detailed technical data to support a decision by the County to relieve the Successful Offeror of these requirements on a link by link basis.

Path Performance

Path performance is described by two parameters: path outage and path quality. Path outage is a statistical reliability calculation of the percentage of time the path is unavailable during the period of time of one year. Path quality is the long-term BER experienced on an unfaded path.

Path Outage

All paths in the system will be designed for a minimum two-way path reliability of 99.999% EFS (error free seconds) per year. This is equivalent to 315 SES (severely errored seconds) per year, two-way path outage. The 10⁻⁶ BER threshold shall be used as the outage point.

Path Quality

All paths in the system shall have a required RBER (residual bit error rate) of 10⁻¹³ without fade.

5.2.4 Traffic Requirements

The following table defines the payload distribution requirements for the main BRIN microwave system. Levels of priority or QoS are defined for the several traffic types with QoS #1 being the highest

BRIN TRAFFIC TABLE - Ethernet Configuration									
Description/Purpose	QoS	Interface (per site)		Microwave Sites					
		Type	Quantity	Spur	Ring				Spur
				Nelson ECC	High Top	Sugar Loaf	Devil's Knob	Buck's Elbow	Albemarle ECC
COMLINC (VSP-BRINC)	3	RJ-45	1	EN---	---T1---	---EN---	---EN---	---EN---	----EN
LMR Base Stations (Nelson)	2	4-wire, 110 block	6	EN---	----EN				
LMR Base Stations (Nelson)	2	4-wire, 110 block	6	EN---	-----EN				
LMR Base Stations (Nelson)	2	4-wire, 110 block	6	EN---	-----EN				
LMR Base Stations (Nelson)	2	4-wire, 110 block	6	EN---	-----EN				
LMR Base Stations (Albemarle)	2	4-wire, 110 block	6		EN---	-----EN			
LMR Base Stations (Albemarle)	2	4-wire, 110 block	6			EN---	-----EN		
LMR Base Stations (Albemarle)	2	4-wire, 110 block	6				EN---	-----EN	
LMR Base Stations (Albemarle)	2	4-wire, 110 block	6					EN---	-----EN
Nelson/Albemarle Radio Consoles	1	4-wire, 110 block	24	EN---	---EN---	---EN---	---EN---	---EN---	----EN
Nelson/Albemarle E911 Switch	1	RJ-45	1	EN---	---EN---	---EN---	---EN---	---EN---	----EN
Nelson/Albemarle E911 Switch BU	1	RJ-45	1	EN---	---EN---	---EN---	---EN---	---EN---	----EN
Ring Connectivity	1	RJ-45	1	EN---	---EN---	---EN---	---EN---	---EN---	----EN
Ring Connectivity	1	RJ-45	1	EN---	---EN---	---EN---	---EN---	---EN---	----EN
Ring Connectivity	1	RJ-45	1	EN---	---EN---	---EN---	---EN---	---EN---	----EN
Ring Connectivity	1	RJ-45	1	EN---	---EN---	---EN---	---EN---	---EN---	----EN

Table 5.1 – BRIN Traffic Table

Specific payload requirements are different for each category of traffic, as enumerated in the Traffic Table and defined as follow:

1. **Comlinc:** This Virginia state-controlled system consists of an Ethernet WAN connecting county ECCs and the state emergency centers. The existing ECC terminal equipment consists of a Sytech RIOS already connected to public Internet facilities via Ethernet. At

the High Top site, a single DS-1 equivalent connection with RJ-45 interface will be made between the collocated VSP microwave system and the proposed BRIN ring. This Ethernet traffic will be transported by this proposed BRIN system to each of the ECCs involved in this project including the optional/future ECCs via the ring site indicated for them, as appropriate.

2. **LMR base stations:** each of these links will be for a conventional, Motorola, LMR, tone control, base station, of various model numbers, but all with exactly the same interfaces and functionality. Equipment provided by Successful Offeror must successfully provide this functionality per the standard described below.

Each T-1 line labeled for LMR base station use indicates the potential for up to 6 individual, independent base station control channels with the same two end sites. Therefore, each such T-1 line should be understood to require up to 6 individual control channels with independent connections. Each control channel basically consists of a DS0 with a 4-wire, transmission-only type interface (2 pairs), that will carry both voice grade audio and various, standard, voice-band, control tones for keying each transmitter per the Motorola standard tone control scheme as defined in the EIA standard for LMR Base Station Sequential Tone Remote Control using sequential tones including the 2175 Hz High Level Guard Tone, all function tones and the 2175 Hz Hold Tone.

At the base station (mountain-top) end, each link will connect to a Motorola "tone remote control interface card". At the ECC ends, each link will interface to either a Motorola tone control remote, or a tone control interface module of a Motorola radio control console.

3. **Radio Control Consoles:**

The Radio Control Consoles will be located in the Nelson County E911 Center. The radio console equipment interface will require multiples of the same EIA Tone Remote Control standard as referenced above for LMR base stations. The assumed quantity of channel interfaces will be 24 for each end.

4. **E911 Switch:** This is a future anticipated requirement, assumed to consist of one or more DS1 links, or their equivalent. Two RJ-45 connections on each end are all that is required at this time.
5. **Ring Connectivity:** This represents only future connectivity requirements and therefore requires only the provisioning at each site of RJ-45 ports for future Ethernet connections and configuring.

5.2.5 Interface Requirements

- Connections for LMR stations and legacy analog components and T1 demarcation points shall use standard Type 66 punch blocks mounted at a location as specified by the County and in accordance with NEC and TIA/EIA Building Telecommunications Wiring Standards and R56 Grounding.
- Ethernet connections shall be made available via RJ-45 connections in accordance with the traffic plan.
- At the Nelson ECC site, approximately 150 feet of underground conduit separates the microwave shelter (which will contain the MW radio and router) from the indoor equipment room which will contain the Motorola and Comlinc interfaces. Nelson County will separately provide fiber optic cable and media converters to connect together these two installations to meet the specific total requirements as defined by the Successful Offeror in the proposal and negotiated with Nelson County.

- A complete description and data sheets of all equipment proposed to connect to the microwave network shall be provided as part of the Successful Offeror's proposal. Multiplexers, synchronization, routers, data and bit error rate requirements, etc., are required as part of the provided information. The Successful Offeror's equipment list shall contain this interface equipment and be indicated as required for interfacing to the microwave system.
- Any electrical interfacing between channel bank and multiplexing equipment shall conform to Bellcore TR-TSY-000496, TR-TSY-000499, ANSI T1-102, and any other relevant specifications.

5.2.6 Transport Protocols

The Offeror shall include with its proposal a description of the proposed MPLS, TCP/IP, and any other proposed communications protocols to be used in the supplied microwave backbone system and all supplied applications subsystems. The protocols should be referenced to the appropriate Open Systems Interconnection (OSI) layer and shall support flexible segregation of traffic by type, application, priority, routing, etc.

5.3 Radio Equipment Subsystems

This section contains the technical requirements for the major equipment items comprising the digital microwave radio system. Minor equipment and hardware including wiring, connectors, cabling, fuses, circuit breakers, brackets, fasteners, power supplies, converters or conditioners, grounding systems, and other items which are necessary to provide a complete and fully functioning system shall also be described and furnished by the Successful Offeror.

All equipment furnished by the Successful Offeror shall be new, meet the requirements of this specification and the manufacturers' published specifications, comply with all Federal, State, and County laws, rules, regulations, and ordinances, be in operable condition at the time of delivery, be finished (painted or surface treated in accordance with manufacturers' standard practices), reflect high quality workmanship throughout, and be suitable for the intended purpose.

The equipment shall be designed and manufactured for continuous duty operation in a fixed station application, be of all solid state design, and have an expected operational service life of at least 15 years with proper maintenance and service.

5.3.1 Radio Features

The radio system shall utilize current state of the a automatic transmitter power control (ATPC) features including forward error correction (FEC), automatic time domain equalization (ATDE), and reverse path protection.

5.3.2 Orderwire Services

Service channel facilities shall be provided in each microwave terminal. The service channel shall be the means for transmitting voice (orderwire), protection switching, and maintenance (monitoring alarm and control) information between terminals of a microwave path. The service channel shall be digital and provide for a minimum of two (2) Voice Frequency (VF) circuits and two (2) RS-232C data circuits. The service channel shall be implemented without external interface equipment and shall be protected in such a way as to prevent its loss due to the failure of just one specific radio channel.

Orderwire facilities shall be provided in each microwave terminal. The service channel shall transport the orderwire. The orderwire shall provide party line communications between all stations of the microwave network.

The orderwire shall include DTMF signaling, and a handset. The orderwire shall be capable of inter-station signaling with an audible output separate from the voice signal, with broadcast and selective signaling capability from each station to any other station.

5.3.3 DC Power

At all main BRIN sites (excluding optional Spur sites) the microwave station equipment shall be powered by a 48-volt battery powered supply furnished by the Successful Offeror with the exception of any sites identified by the individual jurisdictions as having sufficient pre-existing DC power plants that the jurisdiction desires the Successful Offeror to use in lieu of installing a new system. New DC systems provided by the Successful Offeror shall include batteries, battery mounting or racking facilities, float-type battery chargers, low voltage disconnect, and DC load center.

When sizing the DC system, the Successful Offeror shall consider the load of the equipment specified in this project, plus a growth factor equivalent to a 50 percent station load expansion. Loading on DC systems provided by individual jurisdictions shall be coordinated between the Successful Offeror and those jurisdictions on a site-by-site basis.

At the optional Spur sites referenced under section 3.3, the Successful Offeror may propose alternative backup power systems appropriate to the systems proposed.

5.3.3.1 Batteries

Modular stationary batteries shall be the sealed maintenance-free type with sufficient ampere-hour capacity to provide a minimum eight-hour operating period for the Successful Offeror's furnished microwave station equipment (plus a 50-percent station load expansion) following the loss of primary station power. The ampere-hour rating of the batteries shall be based on an eight-hour discharge rate. Battery life expectancy shall be at least 20 years in normal float-type service. No venting facilities or special battery rooms shall be required for normal operating conditions. Secure mounting facilities shall be incorporated in the design of the battery bank including protection from ruptured battery cells.

5.3.3.2 Battery Chargers

Battery chargers shall provide sufficient current output to supply station load requirements (plus a 50-percent station load expansion) and simultaneous charging of a discharged battery bank to full capacity in 24 hours. Battery chargers shall be capable of battery eliminator operation. The chargers' rectifier modules shall be provided on a redundant N+1 basis. The charger shall operate in ambient temperatures of 0 C to +50 C without degradation in performance.

Rectifier modules shall operate from 208 or 240 VAC, as appropriate to the site of installation.

The battery chargers shall be rack-mounted in an EIA 19-inch rack.

The charger shall have the following minimum alarm points:

- Battery charger low voltage
- Battery charger high voltage
- Battery charger no charge

5.4 Network Management

The microwave network shall be provided with a Network Management System (NMS) capable of configuring, controlling, and managing the network as a whole. The NMS, or an equivalent set of functionalities, shall reside on a terminal console located at the Master Control Site at the Nelson County ECC with a redundant console located at the Backup Master Control Site at the Albemarle County ECC.

The NMS shall have access to all remote monitoring and control functions available in the system and shall have access to all current and archived log information.

The NMS shall also be the control point for network and circuit provisioning and routing across the network and shall support SNMP standard communications and traps.

Access to the NMS shall be through username and password protection controlled at the administrator level. System administrators shall be able to assign different users varying levels of access, such as read-only and read-write. The NMS shall be capable of supporting Virtual Private Network (VPN) based access from an external connection through the Firewall provided by the respective Counties.

The NMS shall support remote notification via email, text messaging, and paging. Remote notification shall be configurable for various levels of alarms and be selectable on a specific alarm basis.

5.5 Monitoring and Control

5.5.1 Local Monitoring and Control

Local control and monitoring capability of the microwave radios through connection of a laptop/PC shall be part of the system. In addition, performance monitoring of radio errors, errored seconds, severely errored seconds, BER, transmit/receive power levels, etc., shall be captured locally and be sent to the NMS where it will be made available through a graphical user interface (GUI). The Offeror shall describe their offering and provide detailed information on these features. All alarms, performance monitoring, status and controls, and module information shall be accessible through the local GUI display. The radio shall also provide at minimum a visual front panel display and control capability using integral LEDs independent of the PC or terminal interface.

5.5.2 Remote Monitoring and Control

Offerors shall provide capability for full monitor, alarm, control, and performance monitoring of any radio terminal in the contiguously linked system using an embedded operations channel. This access shall be via a laptop or other PC running either Window XP, Vista or Windows 7 operating systems. The user shall have access to the far end radio as well as each of the radios in the selected chain. This feature shall be totally independent of other network management and alarm systems and shall operate even if the network management system is disabled. The Offeror shall describe their offering and provide detailed information on remote monitoring functions, remote control functions software, laptop/desktop PC requirements, and method/medium of accessing this information.

5.6 System Redundancy and Backup

Critical components and subsystems of the microwave network infrastructure shall be designed with redundancy in order to provide high system availability. Switching from main to standby operation shall be fully automatic, with audible and visual indication of the switchover provided locally and remotely to the network management system console.

The Offeror shall clearly describe the proposed redundancy design and systems and subsystems included to meet the reliability requirements herein. Critical components of the system shall be designed with redundancy in order to provide high system availability (e.g. 99.999% availability over 1 year).

5.7 Antenna Subsystems

The Offeror shall propose all new antennas, transmission lines, mounting apparatus, and installation hardware for each node of the digital microwave system. Solid parabolic dish

antennas and jacketed copper elliptical waveguides shall be used. Section 3.3 Additional Spur Network Connections, may use other appropriate antenna designs as required.

5.7.1 Antennas

Microwave antennas shall be selected by the Successful Offeror to meet the system reliability requirements defined within this specification. All antennas shall be single polarized, low VSWR, standard type antennas, unless path designs dictate otherwise.

All microwave dishes shall meet Category "A" Regulatory Compliance requirements in accordance with FCC Rules, Part 101, Fixed Microwave Services.

All microwave dishes, including standard, high performance, and maximum or ultra high performance types, shall be provided with protective radomes.

All microwave dishes, regardless of size and frequency band, shall be provided with stiff arms for mounting.

Stiff-arm bracing shall be attached to the tower in accordance with the requirements of the tower and microwave antenna manufacturers.

5.7.2 Ice Shields

The Successful Offeror shall determine on a case by case basis the necessity for ice shields for each tower and antenna combination. The Successful Offeror shall provide steel mesh ice shields for each antenna deemed necessary by both the Successful Offeror and the County. These ice shields are to be installed above each of the microwave antennas to protect them from falling ice. Ice shields shall cover the width and length of the microwave antennas they are intended to protect.

Ice shields and mounts shall be attached to the tower in accordance with the requirements of the tower and microwave antenna manufacturers.

5.7.3 Waveguide Systems

All elliptical waveguide provided shall be of premium quality, using pre-tuned connectors, low VSWR, rigid and flexible waveguide sections that allow a measurable return loss equal to or greater than 23 dB, with the return loss being the numerical ratio of the reflected voltage to the incident voltage. Each waveguide shall include connectors, hangers, ground kits, flexible jumpers, waveguide entrance boots, mounting and miscellaneous installation hardware.

Jacketed copper elliptical waveguide shall be employed in continuous lengths for all transmission line runs and shall be installed in accordance with manufacturers' specifications.

Splicing is not permitted.

Flex waveguide shall not be used outdoors.

Waveguide shall be Andrew Corporation EW Series or equivalent.

5.7.4 Waveguide Pressurization/Dehydrator Equipment

Dynamic waveguide pressurization equipment, consisting of an automatic dehydrator, line monitor, and accessory equipment, shall be provided for every microwave terminal with the exception of any sites identified by the individual jurisdictions as having sufficient capacity and ports, as confirmed by the Successful Offeror, on pre-existing systems that the jurisdiction desires the Successful Offeror to use in lieu of installing a new system.

The dehydrator shall be selected that provides the necessary volume for the waveguide(s) and feed horn(s) plus an anticipated leak rate of 1%, and provide sufficient capacity to maintain a pressure during a 19°C (35°F) temperature drop in 60 minutes.

The pressure inside a waveguide system shall be maintained at a positive pressure level and below the maximum pressure ratings of the components in the system. All dehydrators shall completely mechanical and not require the use of any chemical desiccant.

Separate pressure metering shall be provided for each waveguide pressurized.

All provided dehydrators shall have the following alarm capabilities:

- Low Pressure
- Excessive Run
- High Humidity

5.8 Installation Requirements

5.8.1 General

The Successful Offeror shall engineer, furnish, and install complete and fully operational microwave radio sites necessary for the proposed radio system. It is the Successful Offeror's responsibility to evaluate the adequacy of the supplied County shelters.

The Successful Offeror shall be responsible for a complete and fully operable installation in accordance with the latest version of the National Electrical Code, local building codes, environmental laws, zoning and planning regulations or ordinances, land use restrictions, Federal Aviation Administration and Federal Communications Commission rules and regulations, Virginia Department of Transportation regulations governing road access and entry, and all other applicable local, State, or Federal codes, regulations, laws and/or ordinances. In all cases, in the event of conflict, the most stringent requirement shall apply unless otherwise approved by the County in writing.

Materials furnished by the Successful Offeror shall be new and of first quality as defined in industry standards. The Successful Offeror shall not make substitutes unless prior approval has been obtained from the County Project Manager.

The Successful Offeror assumes full responsibility for materials and equipment employed in construction of the project and agrees to make no claims against the County for damages to such materials and equipment except for that which is caused by the County, its employees or agents. The Successful Offeror shall be responsible for storage of all materials purchased by the County until such time as the equipment is installed at each site.

The Successful Offeror shall clean up and remove from the work site on a daily basis (or sooner if directed by the County Project Manager) all rubbish and construction debris, resulting from the Successful Offeror's own work. The Successful Offeror shall supply a dumpster or similar trash storage/removal device wherever a substantial amount of construction debris is generated. Upon completion of work, the entire job site areas shall be left clean and free of trash, debris, mud, dirt, dust, and scrap or excess materials. Radio equipment shelters and rooms shall be thoroughly cleaned (including walls and floors) to the satisfaction of the County Project Manager upon completion of installation and construction work.

The Successful Offeror shall coordinate the work of all the trades under the Successful Offeror's responsibility to ensure that interference between electrical conduits, cable support trays, grounding wire, structural, and the radio system components shall be avoided.

The Successful Offeror shall keep up-to-date marked-up prints of the Project Drawings. Markings indicating changes to the drawings shall be red or green and clearly visible. Project Drawings shall also be supplied electronically in Visio format and PDF format readable by Adobe Acrobat Reader software.

The Successful Offeror is responsible for obtaining frequency coordination, FCC construction permits or licenses, FAA approvals, local planning or zoning approvals, building permits,

environmental approvals or other governmental authorization to proceed with implementation of the system.

5.8.2 Antenna Subsystems

All microwave antennas shall be specified by the Successful Offeror to support the reliability and availability requirements in this specification, as well as conforming to CFR 47 Part 101 and requirements for frequency selection and coordination. All antennas shall be fitted with radomes. When required to meet FCC licensing requirements, antennas shall be upgraded to high-performance antennas utilizing shrouds.

All new antennas shall be installed to manufacturer specifications and requirements.

5.8.3 Radio Subsystems

Radio subsystems to be installed in either existing equipment shelters or equipment rooms shall be installed in standard 19 inch EIA racks or enclosed cabinets. Racks shall be affixed to the flooring at each site in accordance with best industry standards for anchoring to concrete flooring and concrete subflooring below raised computer flooring. Racks housing radio subsystems shall be located so as to provide standard required clearances for servicing the installed rack, as well as any pre-existing racks. As best as possible, racks housing radio subsystems shall be located in order to minimize waveguide runs.

5.8.4 Cabling Requirements

The Successful Offeror shall determine cable lengths between all interconnected equipment. All cabling shall be plenum rated, where required by code.

Circuit identification shall be provided on the modular panels and the cabling.

The use of any conventional type punch blocks is acceptable. All cabling shall be terminated with appropriate connectors for ease of field installation and shall be terminated to the nearest 1-foot length. All cabling used for system interconnects shall be tested during factory staging of the system prior to shipment to the field.

All cables shall be clearly labeled with pre-printed (not hand-written) adhesive labels with "To-From" information to clarify interconnection for field installation and maintenance. Cable label information shall directly correlate to system documentation/drawings that define or depict the interconnecting cables (i.e. cable label text shall match drawing text). A spare set of cable labels shall be provided with the site documentation package.

A description and detailed wiring diagram of each modular panel utilized shall be provided.

5.8.5 Grounding Systems and Lightning and Surge Protection

Where the Successful Offeror is installing newly established grounding systems, surge protection, and/or surge protection for towers, equipment shelters, outdoor equipment enclosures, RF transmission lines, electronic equipment and racks, cable trays and conduits, etc., such installations shall conform to best industry practices, standards, regulations and codes for each type of installation. The Successful Offeror shall demonstrate at the Detailed Design Review that all such new installations conform to the required standards and codes. In addition to applicable State and local codes and regulations, all supplied grounding systems and lighting and surge protection systems shall be installed in accordance with the following:

- NFPA 70 - National Electrical Code
- NFPA 780 - Standard for the Installation of Lightning Protection Systems

- ANSI/EIA/TIA-222-G - Structural Standards for Steel Antenna Towers and Antenna Supporting Structures
- Motorola R56 - Standards and Guidelines for Communication Sites

5.8.6 Existing Tower Considerations

On existing towers, the Successful Offeror shall install any and all new antennas, waveguide and waveguide support hardware.

Successful Offeror shall also be responsible for performing structural analyses in individual cases where the approved detailed design differs from the assumptions in the preliminary design that will be used by the County to get preliminary structural analyses.

All equipment shall be installed in accordance with manufacturers' instructions and specifications as well as all applicable standards.

6 Testing

6.1 Site Acceptance Test Criteria

The following tests, in addition to other standard manufacturer's test procedures, shall be performed on the fielded microwave system. Complete documentation of site Acceptance Testing (SAT) shall be delivered to County upon completion of testing.

Where specifications for these parameters are not included herein, the Successful Offeror shall provide these specifications in the form of a Design Specification document, delivered to the County prior to the Detailed Design Review.

6.1.1 Installation Inspection

Inspection of the completed microwave network equipment installation shall be performed to ensure compliance with standards set forth in final contract and the Design Specifications and as agreed to by the Successful Offeror and the County.

6.1.2 Path alignment

- The Successful Offeror shall be responsible to perform microwave dish alignments for all microwave paths
- Dishes shall be aligned for maximum AGC level
- The Successful Offeror shall provide all material, equipment, and personnel required to perform path alignments

6.1.3 Waveguide sweeps

- Antenna waveguide shall be swept and plotted in accordance with manufacturer's specifications. Sweeps shall be performed both with an appropriately matched load attached at the upper portion of the waveguide and then with the antenna attached.
- Measured return loss shall be a minimum of 23 dB

6.1.4 Waveguide pressurization

- Antenna waveguide shall be pressurized in accordance with manufacturer's specifications
- Waveguide leak down tests shall be performed to ensure leak rate does not exceed manufacturer's specifications

6.1.5 Power plants

- Measure and record individual cell and power plant total output voltages
- Measure specific gravity of wet cell systems
- Set float and equalize voltages on charger
- Set and verify alarm thresholds on charger in accordance with manufacturer's specifications

6.1.6 DC Power Supply Voltage Checks

Verify all DC power supply voltages in accordance with published specifications.

6.1.7 Transmitter Tests

- Measure and record Transmit Power
- Verify compliance with FCC regulations (output power levels)
- Measure and record Transmit Frequency
- Verify compliance with FCC regulations (frequency)
- Verify operation of APC
- Compare measured values to Factory Test Records

6.1.8 Receiver Tests

- Measure and record RF receiver local oscillator frequency
- Measure and record IF frequency
- Verify error-less receiver switching
- Verify space diversity receiver switching as applicable
- Compare measured values to Factory Test Records

6.1.9 Protection switching tests

- Verify protective switching operation, as applicable, for associated module failure
- Verify operation of reverse path protection, as applicable
- Measure reframe time and frame-lost seconds

6.1.10 Alarm checks

- Verify individual alarm reporting for module faults, as applicable

6.1.11 Radio Loop Back Checks

- Verify radio loopback capabilities, as applicable (local and remote IF, local and remote RF, etc.)
- Loopbacks shall be performed with a BER test set for 15 minutes and results recorded

6.1.12 Fade Test

- Simulate path fade by use of a variable attenuator and BER test set
- Measure and record AGC voltages and RSL at BER thresholds of 10^{-6} and 10^{-3}
- Compare measured values to Factory Test Records and Path Calculation sheets
- Measure and record T/I ratios in both directions on each path

6.1.13 Bite Error Rate Tests

- BER test shall be performed for 24 hours on each microwave hop
- Test to be performed 12 hours on A side and 12 hours on B side, if applicable
- Unfaded RBER shall be $<10^{-13}$
- Record results

6.1.14 Synchronization

- Verify operation of synchronization network in normal and backup operating modes

6.1.15 Alternate Route Tests

- Verify automatic alternate route switching, as applicable

6.2 Thirty Day Performance Test Criteria

Upon satisfactory completion and County approval of Site Acceptance Testing, the Successful Offeror and the County shall execute a Performance Test of the entire system that shall consist of thirty (30) consecutive days of uninterrupted operation. This shall include long term BER monitoring of the microwave paths using approved industry standards and test sets, logging of outages and severely errored seconds, end user application operations, network management system operation, local and remote monitoring, radio gateway operations, and security.

Final system acceptance shall be contingent upon the performance test bearing out that the system is meeting the technical performance criteria of the specification. The test shall be considered a failure if any of the following events occurs:

- The System experiences a catastrophic failure that results in:
 - Failure of any contracted features, functions or capabilities
 - Failure of the network management system and / or equipment
 - Failure of local or remote site control equipment
 - Failure of operations at all console positions
- The same device fails twice during the performance test
- A non-critical failure is not restored according to the contracted response time

A failure of any system resource or need for any system adjustments or corrections shall, at a minimum, result in a suspension of the thirty-day performance period until corrective actions have been successfully completed. Any resulting test suspension shall be from the point of failure. Once the failure has been corrected, at the County's discretion the 30-day performance test shall either be resumed for the remaining test days from the point of failure or restarted for another thirty days. The nature of failures and adjustments and/or corrections requiring the test to be restarted shall be defined in the Thirty Day Performance Test Plan as agreed to by the Successful Offeror and the County.

6.2.1 Failure Reporting

The Successful Offeror will issue to the County written reports on all system failures. The Successful Offeror will record failures in a System Reliability Failure Log. Information provided in the Failure Log will include a description of the failure, the date and time of the failure, the date and time of resolution of the failure, the amount of time that the subsystem or component operated in a failed condition, and corrective measures taken to resolve the failure. The Successful Offeror will provide to the County supporting reports from the Network Management System (NMS) as applicable.

The Successful Offeror shall determine subsystem unavailability time, using data from the NMS. The Successful Offeror will notify the County that the failure condition has occurred and has been corrected.

The Successful Offeror shall notify the County of the failure event within eight hours of occurrence of any failure condition. The Successful Offeror shall notify the County when the failure has been corrected and the system has been restored to normal operation. Within 48 hours after the restoration of any failure condition, the Successful Offeror will meet with the County to explain the failure, corrective actions, steps taken to prevent similar failures in the future, and to make a determination as to whether the thirty day performance test shall be resumed from the point of failure or be restarted.

6.2.2 Failure Exclusions

Failures caused wholly, or in part, by the following conditions shall not adversely impact system/subsystem acceptance associated with the 30-Day Performance Test:

- Acts of God, such as lightning, flood, fire, or earthquake;
- Willful abuse or damage caused by any person or group of persons (excluding the Successful Offeror);
- Loss of adequate AC power for a period longer than provided for by battery, UPS, and generator backup power;
- Any intentional or unintentional service disruptions caused by operator intervention (excluding Successful Offeror)

6.2.3 Final Report

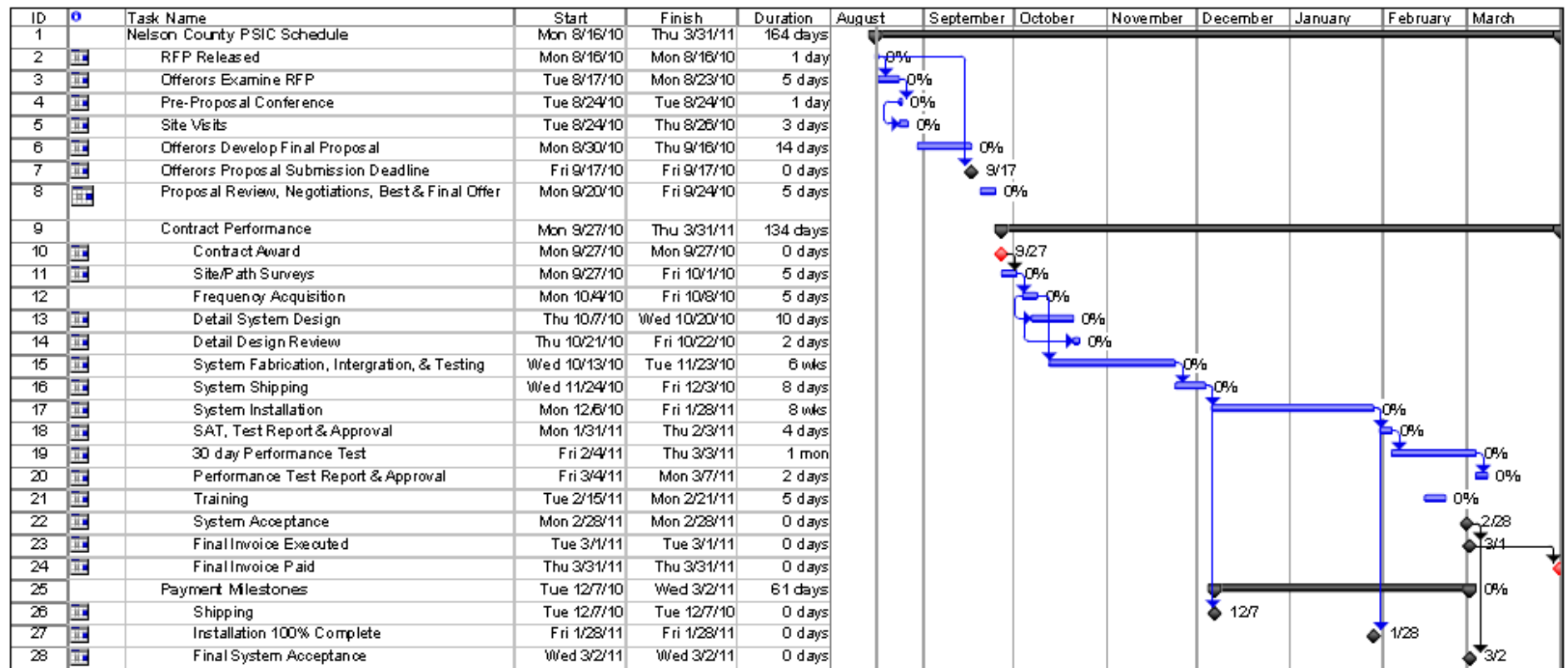
Failures detected during the 30-Day Performance Test will be reported to the County in a final report at the conclusion of the thirty-day performance test period. These written reports will include, as a minimum:

- Model and Serial Number of the equipment affected (Asset number if applicable)
- Original Complaint
- Repairs Made and Parts Used
- Technician Name or Control Number
- Any recommended improvements to the system/subsystem

7 Schedule, Milestones, and Deliverables

7.1.1 Project Schedule

The following page shows a high level project schedule. The Offeror shall provide as part of their proposal a detailed schedule that conforms to the general dates in the below schedule including milestones and major task categories. It is imperative that the proposed schedule adhere to the project acceptance date due to the fact that this is a PSIC grant funded project and all funds must be paid by the County no later than March 31, 2011 and the final milestone payment will not be made without the County's final acceptance of the system. The final schedule and delivery milestones shall be agreed upon by the County and the Successful Offeror at the time of contract award.



7.1.2 Procurement Schedule:

RFP Released:	August 16, 2010
Pre-proposal Conference:	August 24, 2010
Site Visits:	August 24 – 26, 2010
Deadline for Questions:	September 3, 2010
Deadline for Addenda to be issued:	September 10, 2010
Proposal Submission Deadline:	September 17, 2010
Contract Award:	September 27, 2010

7.1.3 Milestones

The following table lists the anticipated project milestones with the estimated completion date from the schedule above and the payment associated with each milestone in the form of the percentage of the overall contract total award value. The final agreed to milestones may vary somewhat from this table, particularly as to individual site installation completion and test.

Milestone	Estimated Completion Date	% of Total Contract
Shipping	12/07/2010	50%
Installation 100% Complete	01/28/2011	25%
Final System Acceptance	03/02/2011	25%
		100%

7.1.4 BRIN System Deliverables

The Offeror shall provide as part of their proposal a complete listing of all proposed deliverables to support all the requirements of this RFP and any resulting contract or agreement. Deliverables listed shall include each major subsystem hardware and software by site, documentation, training courses, testing, FCC licenses, etc. The deliverables list shall be a general summary of the itemized pricing list and is intended to be tied to an agreed upon delivery schedule that supports the milestone schedule. The Successful Offeror may list out deliverables such as radio and antenna systems by specific installation site in order to track the planned installation schedule.

7.1.5 Documentation Deliverables

The Successful Offeror shall furnish comprehensive documentation to an extent that ensures that all delivered systems, sub-systems, hardware, and software can be properly operated, managed, tested, and maintained by the County and the participating jurisdictions.

All documentation shall generally conform to the best commercial standards in technical language, formatting, and reproduction. The writing shall be such as to ensure ready comprehension by technical personnel of average academic background. All symbols and abbreviations used shall be clearly explained. Documentation shall be bound in a manner suiting the size and purpose of each document and all documentation shall be submitted in electronic format as well as hard copy. Electronic submittals may consist of PDF or other easily accessible formats, however, concurrent electronic submissions of BRIN specific documents are required in native formats for items originating in such formats as MS Word, Excel, Visio, etc. so

that the County may make future modifications maintain and update these documents as required by subsequent projects that involve the BRIN network. Native electronic formats are not required for commercial off-the-shelf (COTS) manuals.

7.1.5.1 Project Plan

The Offeror shall provide a draft Project Plan and schedule as part of the proposal in accordance with the Project Plan and Schedule section of the Scope of Services. The Successful Offeror shall provide a final draft of the plan as agreed to by the County at the time of contract signing. The Successful Offeror shall update and maintain each element of the Project Plan as required throughout the term of the project, particularly the system installation and cutover plan and the detailed project schedule.

7.1.5.2 Design Specification

The Successful Offeror shall provide a thorough and complete Design Specification that fully describes the overall system design and the design of each subsystem including site specific design considerations such as the requirements for documenting the microwave paths. The Design Specification shall encompass all information required to demonstrate compliance with the system requirements and all requirements for documentation under the Detailed Design Review and shall become a part of the As-Built Documentation. A draft of the Design Specification shall be submitted as the core technical documentation of the Offeror's proposal and shall be in final form for the Detailed Design Review with updates to be issued as required.

7.1.5.3 Acceptance Test Plans

The Successful Offeror shall provide complete Acceptance Test Plans (ATP) for each of the following tests in accordance with the Testing and Acceptance section of the Scope of Services:

- Factory Acceptance Test
- Site Acceptance Test
- 30 Day Performance Test

7.1.5.4 Maintenance and User Manuals

The Successful Offeror shall provide comprehensive maintenance and user manuals on compact disk (CD) or hardcopy as appropriate for each piece of equipment of the system. Each manual shall fully describe the structure, use, and configuration of each subsystem of the microwave network and all end user applications.

7.1.5.5 As-Built Documentation

The Successful Offeror's project manager shall prepare a comprehensive "System As-Built Manual" for the entire System, including the updating of all existing system as-built documents made available to the Successful Offeror by the County. A full set of As-Built Documentation for the entire system shall be provided to the County of Nelson as the purchasing agent, and applicable subsets shall be provided to each of the BRIN jurisdictions for each installation site in each respective jurisdiction.

8 County Responsibilities

The County shall be responsible for providing to the Successful Offeror as much of the following information as it is available:

- Administrative and technical points of contact per jurisdiction
- Administrative information for FCC licensing

- Access to sites
- AC Power and HVAC
- Drawings and floor plans
- Latest tower structural analyses that shall take into account antennas and waveguide installations per the preliminary design
- A listing of existing microwave radio, waveguide, and antenna components by site for sites at which the Successful Offeror will be interfacing, removing or replacing, or upgrading any components
- Any required tower reinforcement to accommodate the final approved design
- Any required site improvements related to AC power and HVAC
- Network cabling within ECC facilities to connect the end user application equipment back to the firewall, multiplexer, etc., demarcation point
- Final installation of end user application equipment

9 General Contract Terms and Conditions

A. Annual Appropriations:

It is understood and agreed that this contract shall be subject to annual appropriations by the County of Nelson, Board of Supervisors. Should the Board fail to appropriate funds for this contract, the contract shall be terminated when existing funds are exhausted. There shall be no penalty should the Board fail to make annual appropriations for this contract.

B. Award of the Contract:

1. The County reserves the right to reject any or all proposals and to waive any informality.
2. The Successful Offeror shall, within fifteen (15) calendar days after prescribed documents are presented for signature, execute and deliver to the Purchasing Office the contract forms and any other forms or bonds required by the RFP.
3. Any contract resulting from this RFP is not assignable.
4. Upon making an award, or giving notice of intent to award, the County will place appropriate notice on the public bulletin board located at:

Nelson County Purchasing Department
84 Courthouse Square
Lovingston, VA

C. Collusion:

By submitting a proposal in response to this Request for Proposal, the Offeror represents that in the preparation and submission of this proposal, said Offeror did not, either directly or indirectly, enter into any combination or arrangement with any person, Offeror or corporation or enter into any agreement, participate in any collusion, or otherwise take any action in the restraint of free, competitive bidding in violation of the

Sherman Act (15 U.S.C. Section 1) or Section 59.1-9.1 through 59.1-9.17 or Sections 59.1-68.6 through 59.1-68.8 of the Code of Virginia.

D. Compensation:

The Offeror shall be required to submit a complete itemized invoice on each delivery or service, which he may perform under the contract. Payment shall be rendered to the Successful Offeror for satisfactory compliance with the contract within forty-five (45) days after the receipt of the proper invoice.

E. Controlling Law; Venue:

This contract is made, entered into, and shall be performed in the County of Nelson, Virginia, and shall be governed by the applicable laws of the Commonwealth of Virginia. Any dispute arising out of the contract resulting from this RFP, its interpretations, or its performance shall be litigated only in the Nelson County General District Court or the Circuit Court of the County of Nelson, Virginia.

Pursuant to 2.2-2.2-4363 of the Code of Virginia:

1. Contractual claims, whether for money or other relief, shall be submitted in writing no later than 60 days after receipt of final payment; however, written notice of the contractor's intention to file a claim shall be given at the time of the occurrence or at the beginning of the work upon which the claim is based.
2. No written decision denying a claim or addressing issues related to the claim shall be considered a denial of the claim unless the written decision is signed by the public body's chief administrative officer or his designee. The contractor may not institute legal action prior to receipt of the final written decision on the claim unless the public body fails to render a decision within 90 days of submission of the claim. Failure of the public body to render a decision within 90 days shall not result in the contractor being awarded the relief claimed or in any other relief or penalty. The sole remedy for the public body's failure to render a decision within 90 days shall be the contractor's right to institute immediate legal action.

F. Default:

1. If the Successful Offeror is wholly responsible for failure to make delivery or complete implementation, or if the system fails in any way to perform as specified herein, the County may consider the Successful Offeror to be in default. In the event of default, the County will provide the Successful Offeror with written notice of default, and the Successful Offeror will be provided twenty (20) calendar days to provide a plan to correct said default.
2. If the Successful Offeror fails to cure said default within twenty days, the County, among other actions, may complete the system through a third party, and the Successful Offeror shall be responsible for any amount in excess of the agreement price incurred by the County in completing the system to a capability equal to that specified in the contract.

G. Discussion of Exceptions to the RFP:

The RFP, including its venue, termination, and payment schedule provisions, shall be incorporated by reference into the contract documents as if its provisions were stated verbatim therein. Therefore, any exception to any provisions of the RFP shall be explicitly identified in a separate “Exceptions to RFP” section of the proposal for resolution before execution of the contract. In case of any conflict between the RFP and any other contract documents, the RFP shall control unless the contract documents explicitly provide otherwise.

Please identify with proposal submission any “Exceptions to RFP”.

H. Drug-Free Workplace to be Maintained by the Successful Offeror

(Code of Virginia, Section 2.2-4312):

3. During the performance of this contract, the Successful Offeror agrees to (i) provide a drug-free workplace for the Successful Offeror’s employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Successful Offeror’s workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Successful Offeror that the Successful Offeror maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.
4. For the purposes of this section, “drug-free workplace” means a site for the performance of work done in connection with a specific contract awarded to a Successful Offeror in accordance with the Virginia Public Procurement Act, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

I. Employment Discrimination by Successful Offeror Prohibited:

1. During the performance of this contract, the Successful Offeror agrees as follows (Code of Virginia, Section 2.2-4311):
 - a. The Successful Offeror will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Successful Offeror.

The Successful Offeror agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

- b. The Successful Offeror, in all solicitations or advertisements for employees placed by or on behalf of the Successful Offeror, will state that such Successful Offeror is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
2. The Successful Offeror will include the provisions of the foregoing paragraphs a, b and c in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

J. Indemnification:

The successful Offeror agrees to indemnify, defend and hold harmless the County of Nelson including Nelson Public County Schools, its officers, agents and employees from any claims, damages, suits, actions, liabilities and costs of any kind or nature, including attorneys' fees, arising from or caused by the provision of any services, the failure to provide any services or the use of any services or materials furnished (or made available) by the successful Offeror, provided that such liability is not attributable to the County's sole negligence.

K. Insurance Requirements:

The Successful Offeror shall maintain insurance to protect itself and the County of Nelson from claims under the Workers' Compensation Act, and from any other claim for damages for personal injury, including death, and for damages to property which may arise from operations under this contract, whether such operations be by itself or by any subcontractor or anyone directly employed by either of them. Such insurance shall conform to the Insurance Specifications. **(Attachment A)**

L. Small, Minority and Women-Owned (SWAM) Businesses:

The County welcomes and encourages the participation of small businesses and businesses owned by women and minorities in procurement transactions made by the County. The County of Nelson actively solicits both small business, women-owned and minority (SWAM) businesses to respond to all Invitations for Bids and Requests for Proposals. All solicitations are posted on the County's Internet site at <http://nelsoncounty.com/financeandhr/rfp/>.

M. No Discrimination against Faith-Based Organizations:

Nelson County does not discriminate against faith-based organizations as that term is defined in Virginia Code Section 2.2. -4343.1.

N. Offeror's Performance:

1. The Offeror agrees and covenants that its agents and employees shall comply with all County, State and Federal laws, rules and regulations applicable to the business to be conducted under the contract.

2. The Offeror shall ensure that its employees shall observe and exercise all necessary caution and discretion so as to avoid injury to person or damage to property of any and all kinds.
3. The Offeror shall cooperate with County officials in performing the contract work so that interference with normal program will be held to a minimum.
4. The Offeror shall be an independent contractor and shall not be an employee of the County or the Personnel Department.

O. Ownership of Deliverable and Related Products:

1. The County of Nelson, Virginia shall have all rights, title, and interest in or to all specified or unspecified interim and final products, work plans, project reports and/or presentations, data, documentation, computer programs and/or applications, and documentation developed or generated during the completion of this project, including, without limitation, unlimited rights to use, duplicate, modify, or disclose any part thereof, in any manner and for any purpose, and the right to permit or prohibit any other person, including the Successful Offeror, from doing so. To the extent that the Successful Offeror may be deemed at any time to have any of the foregoing rights, the Successful Offeror agrees to irrevocably assign and does hereby irrevocably assign such rights to the County of Nelson, Virginia.
2. The selected Offeror shall be expressly prohibited by the terms of any contract resulting from this procurement from receiving additional payments or profit from the items referred to in this paragraph, other than, that which is provided for in the general terms and conditions of said contract.
3. This shall not preclude Offerors from submitting proposals, which may include innovative ownership approaches in the best interest of the County.

P. Record Retention/ Audits:

1. The Successful Offeror shall retain, during the performance of the contract and for a period of three years from the completion of the contract, all records pertaining to the Successful Offeror's proposal and any contract awarded pursuant to this Request for Proposal. Such records shall include but not be limited to all paid vouchers including those for out-of-pocket expenses; other reimbursement supported by invoices, including Offeror copies of periodic estimates for partial payment; ledgers, cancelled checks; deposit slips; bank statements; journals; contract amendments and change orders; insurance documents; payroll documents; timesheets; memoranda; and correspondence. Such records shall be available to the County on demand and without advance notice during the Successful Offeror's normal working hours.
2. County personnel may perform in-progress and post-audits of Offerors records as a result of a contract awarded pursuant to this Request for Proposals. Files would be available on demand and without notice during normal working hours.

Q. Severability

Any written contract resulting from this RFP shall contain a severability clause, which provides that each paragraph and provision of the contract will be severable from the entire agreement and if any provision is declared invalid the remaining provisions shall nevertheless remain in effect.

R. Subcontracts:

1. No portion of the work shall be subcontracted without prior written consent of the County of Nelson, Virginia. In the event that the Successful Offeror desires to subcontract some part of the work specified in the contract, the Successful Offeror shall furnish the County the names, qualifications, and experience of the proposed subcontractors. The Successful Offeror shall, however, remain fully liable and responsible for the work to be done by his/her subcontractor(s) and shall assure compliance with all the requirements of the contract.

2. Pursuant to .2.2-4354 of the Code of Virginia, Contractors must take one of the two following actions within seven days after receipt of amounts paid to the contractor for work performed by the subcontractor under this contract:
 - a. Pay the subcontractor for the proportionate share of the total payment received from the County attributable to the work performed by the subcontractor under that contract; or
 - b. Notify the County and subcontractor, in writing, of his intention to withhold all or a part of the subcontractor's payment with the reason for nonpayment.
 - (i) individual contractors are to provide their social security numbers and
 - (ii) proprietorships, partnerships, and corporations are to provide their federal employer identification numbers.

3. The contractor is to pay interest to the subcontractor on all amounts owed by the contractor that remain unpaid after seven days following receipt by the contractor of payment for work performed by the subcontractor under that contract, except for amounts withheld as allowed in subdivision 1 of 2.2-4330 et Seq of the Code of Virginia. Unless otherwise provided under the terms of this contract, interest shall accrue at the rate of one percent per month.

4. The contractor is further required to include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor.

5. The County encourages the Successful Offeror to utilize small, women-owned, and minority-owned business enterprises. For assistance in finding sub-contractors, contact the Supplier Relations Coordinator (804) 501-5689 or the Virginia Department of Minority Business Enterprise <http://www.dmb.e.state.va.us/>.

S. Taxes:

1. The Offeror shall pay all county, city, state and federal taxes required by law enacted at the time proposals are received and resulting from the work or traceable thereto, under whatever name levied. Said taxes shall not be in addition to the contract price between the County and the Offeror, as the taxes shall be an obligation of the

Offeror and not of the County, and the County shall be held harmless for same by the Offeror.

2. The County of Nelson is exempt from the payment of federal excise taxes and the payment of State Sales and Use Tax on all tangible, personal property for its use or consumption. Tax exemption certificates will be furnished upon request.

T. Termination of Contract:

1. The County of Nelson reserves the right to terminate the contract/purchase order immediately in the event that the Successful Offeror discontinues or abandons operations; if adjudged bankrupt, or is reorganized under any bankruptcy law; or fails to keep in force any required insurance policies or bonds.
2. Failure of the Successful Offeror to comply with any section or part of this contract/purchase order will be considered grounds for immediate termination of the contract/purchase order by the County of Nelson.
3. Notwithstanding anything to the contrary contained in the contract/purchase order between the County and the Successful Offeror, the County may, without prejudice to any other rights it may have, terminate the contract/purchase order for convenience and without cause, by giving 30 days written notice to the Offeror.
4. If the termination clause is used by the County, the Offeror will be paid by the County for all scheduled work completed satisfactorily by the Successful Offeror up to the termination date set in the written termination notice.

U. Form of Agreement:

The form of agreement to be used for the project shall be the Nelson County Agreement and General Conditions included in this request for proposals as attachments G and H.

V. Software Escrow, if applicable

1. The County will require the Successful Offeror to establish an escrow procedure, or other similar safeguard, for all licensed products provided by the Offeror. The purpose of the escrow would be to provide a remedy for the County in the event of the Offeror's cessation of business activity or failure to support its products. Any such remedy must provide the County with full and unimpaired access to all source code, documentation, design documents and database definitions. Any cost to set up this escrow account is to be included in the proposal.
2. The Successful Offeror must provide evidence of the County of Nelson being named as beneficiary no later than 10 days after execution of the contract documents.

W. Employment of Unauthorized Aliens Prohibited:

Any contract that results from this Request for Proposal shall include the following language: "As required by Virginia Code §2.2-4311.1, the contractor does not, and shall not during the performance of this agreement, in the Commonwealth of Virginia knowingly employ an unauthorized alien as defined in the federal Immigration Reform Act of 1986."

X. Compliance with State Law; Foreign and Domestic Businesses Authorized to Transact Business in the Commonwealth:

Pursuant to § 2.2-4311.2 of Virginia Code, A contractor organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership shall be authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 or as otherwise required by law.

The County reserves the right to void the contract if the Contracting entity fails to remain in compliance with the provisions of this section.

10 Proposal Submission Requirements

- A. The Purchasing Office will not accept oral proposals, nor proposals received by telephone, or FAX machine. The Offerors' official proposal shall be submitted in hard copy. Offerors shall submit six (6) hard copies of their proposal. Offerors shall also submit two copies (2) of their proposal in electronic format such as PDF. Submitted proposals must be complete at the time of submission and may not include references to information located elsewhere, such as Internet websites or libraries, unless specifically permitted by the County.
- B. All erasures, interpolations, and other changes in the proposal shall be signed or initialed by the Offeror.
- C. The Proposal Signature Sheet (**Attachment B**) must accompany any proposal(s) submitted and be signed by an authorized representative of the Offeror. If the Offeror is a firm or corporation, the Offeror must print the name and title of the individual executing the proposal. All information requested should be submitted. Failure to submit all information requested may result in the Purchasing Office requiring prompt submission of missing information and/or giving a lowered evaluation of the proposal.
- D. The proposal, the proposal security, if any, and any other documents required, shall be enclosed in sealed opaque packaging. The packaging containing the proposal shall be sealed and marked with the number, title, hour, and due date of the proposal.
- E. The time proposals are received shall be determined by the time clock stamp in the Purchasing Office. Offerors are responsible for insuring that their proposals are stamped by Purchasing Office personnel by the deadline indicated.
- F. By submitting a proposal in response to this Request for Proposal, the Offeror represents they have read and understand the Scope of Services and have familiarized itself with all

federal, state, and local laws, ordinances, and rules and regulations that in any manner may affect the cost, progress, or performance of the contract work.

- G. The failure or omission of any Offeror to receive or examine any form, instrument, addendum, or other documents or to acquaint itself with conditions existing at the site, shall in no way relieve any Offeror from any obligations with respect to its proposal or to the contract.

- H. **Trade secrets or proprietary information submitted by an Offeror in response to this Request for Proposal shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the Offeror must invoke the protection of this section prior to or upon submission of data or materials, and must identify the data or other materials to be protected and state the reasons why protection is necessary (Section 2.2-4342F of the Code of Virginia). See Attachment D.**

- I. A proposal may be modified or withdrawn by the Offeror anytime prior to the time and date set for the receipt of proposals. The Offeror shall notify the Purchasing Office in writing of its intentions.
 - 1. If a change in the proposal is requested, the modification must be so worded by the Offeror as to not reveal the original amount of the proposal.
 - 2. Modified and withdrawn proposals may be resubmitted to the Purchasing Office up to the time and date set for the receipt of proposals.
 - 3. No proposal can be withdrawn after the time set for the receipt of proposals and for one hundred and twenty (120) days thereafter.

- J. Offerors are encouraged to ask questions and request clarifications of the Scope of Services, Technical Specifications and Requirements, and other sections of this RFP. Offerors requesting clarification or interpretation of or improvements to the proposal general terms, conditions, and proposal response requirements or asking questions regarding the Scope of Services and/or Technical Specifications and Requirements and/or Attachments shall make a written request which shall reach the Purchasing Office no later than September 3, 2010. Answers to questions, clarifications, and/or any changes to the proposal shall be in the form of a written addendum from the Purchasing Office and it shall be signed by the Director or a duly authorized representative and will be issued by September 10, 2010. **Each Offeror shall be responsible for determining that all addenda issued by the Purchasing Office have been received before submitting a proposal.**

- K. All proposals received in the Purchasing Office on time shall be accepted. All late proposals received by the Purchasing Office shall be returned to the Offeror unopened. Proposals shall be open to public inspection only after award of the contract.

- L. Exclusive alliances, partnerships, relationships or agreements between the Offeror and subcontractors or vendors are NOT allowed. The County encourages subcontractor and vendor alliances in order to provide an economical turn-key solution that best meets the requirements of this RFP, however, arrangements that prohibit subcontractors or vendors

from participating in multiple turn-key or independent proposals submitted for this RFP are strictly prohibited. Subcontractors and vendors are encouraged to work with multiple proposal teams and be included in as many proposals as possible. The County is only precluding exclusivity and not alliances in general.

- M. As part of the proposal preparation process, all Offerors are required to participate in the **MANDATORY** Pre-Proposal Conference to be held in the County of Nelson administrative offices. The pre-proposal conference will be held from 9:00 a.m. to 11:00 a.m. on August 24th 2010. The pre-proposal conference will consist of an introductory meeting in which the County will provide a technical overview of the BRIN system and an administrative overview of the proposal response process. After the overviews are given, the Offerors will be given a chance to ask questions. **Offerors that are not present at the Mandatory Pre-Proposal Conference will not be considered for contract award.**

- N. In order to accurately determine the scope of work, site visits will be conducted from August 24, 2010 to August 26, 2010 as indicated in Table F 1-1 of Attachment F. The anticipated schedule for the site visits is presented in Attachment F. These site visits are planned to take two and a half days. Each proposer is responsible for their own transportation with four wheel drive vehicles recommended. The purpose of these visits is for each potential Offeror to gather information on conditions that will assist in the accurate preparation of costs for installation labor and services, equipment, materials and site improvements. Site visits are also intended to allow potential Offerors to fully understand the installation requirements of this RFP, and to allow additional questions to be formulated.

- O. After initial review of the Offerors' proposals, the County reserves the right to request a best and final offer (BAFO) from selected Offerors. The BAFO request will be based on the mandatory baseline system plus all or some of the offered optional items and services in the original proposal as selected by the County.

11 Proposal Evaluation / Selection Process

- A. Offerors are to make written proposals with accompanying electronic submittals, which present the Offeror's qualifications and understanding of the hardware and software systems to be provided and the work to be performed. Offerors are required to address each evaluation criteria and to be specific in presenting their qualifications. Proposals should be as thorough and detailed as possible so that the County may properly evaluate the Offeror's capabilities to provide the required goods/services. The following general criteria will be used in the evaluation of qualifications for selecting those Offerors to be considered for negotiations. Individual criteria may be assigned varying weights at the County's discretion to reflect relative importance.

- B. Selection of the Successful Offeror will be based upon submission of proposals meeting the selection criteria. The basic selection criteria will include:

	EVALUATION CRITERIA	WEIGHT
1.	Technical Specifications and Requirements <ul style="list-style-type: none"> • Extent to which the proposed microwave network design and supporting hardware and software systems to meet the RFP's technical specifications and requirements • Compliance with the RFP's functional requirements regarding applications that will run over the network 	20
2	Implementation Services <ul style="list-style-type: none"> • Project Approach • Project Plan and Schedule • Project Management • Project Team • Factory Staging and Testing • Integration and Installation • Microwave network components • Monopoles / towers and associated equipment enclosures and civil work • End user applications hardware and software systems • Training • Site Acceptance Testing • Current Workload & ability to complete required work within the County's schedule • Inventory control 	30
3	Experience and Qualifications of Firm <ul style="list-style-type: none"> • Prior Experience with Similar or Larger Installations • Financial Stability of Firm • References 	15
4	Experience and Qualifications of Proposed Staff Resumes of proposed staff Team organization and amount of experience as a team	10
5	Baseline Price Base Mandatory Hardware and Software Costs Optional Items and Services Costs	20
6	Quality and completeness of proposal submission/oral presentations	5
	TOTAL	100

C. Selection will be made of two or more Offerors deemed to be fully qualified and best suited among those submitting proposals. Negotiations shall then be conducted with each of the Offerors so selected. Price shall be considered, but need not be the sole determining factor. During negotiations, the County reserves the right to request a Best and Final Offer (BAFO) from one or more Offerors. After negotiations have been conducted with each Offeror so selected and review of any BAFOs have been completed, the County shall select

the Offeror that, in its opinion, has made the best proposal, and shall award the contract to that Offeror. Should the County determine in writing and in its sole discretion that only one Offeror is fully qualified or that one Offeror is clearly more highly qualified than the others under consideration, a contract may be negotiated and awarded to that Offeror without negotiations with other Offerors. The award document will be a contract incorporating by reference all the requirements, terms and conditions of the solicitation and the Offeror's proposal as negotiated.

12 Proposal Response Format

- A. Offerors are to make written proposals which present the Offeror's qualifications and understanding of the hardware and software systems to be provided and the work to be performed. Offerors are asked to address each RFP requirement and evaluation criteria and to be specific in presenting their qualifications. Proposals should be as thorough and detailed as possible so that the County may properly evaluate the Offeror's capabilities to provide the required goods and services.

- B. The Offeror should include in their proposal as a minimum the following:
 - 1. Table of Contents – NUMBER ALL PAGES OF RESPONSE. It is desired for the Offeror to provide a detailed INDEX of the proposal document for easy referencing

 - 2. Introduction - include the following items in this section of the response:
 - a. Cover letter on company letterhead, signed by a person with the corporate authority to enter into contracts in the amount of the proposal.
 - b. Executive Summary – Narrative that summarizes the Offeror's proposal regarding topics such as general approach to the project, technical solution proposed, pricing structure, program management, and Offeror's qualifications.,
 - c. Proposal Signature Sheet – Attachment B
 - d. Proprietary/Confidential Information Identification - see Attachment D

 - 3. Response to Scope of Services –The Offeror shall address each section of the Scope of Services section of this document indicating compliance with or acceptance of the requirement and any additional explanation of their response. The Offeror shall identify any exceptions, referenced to the paragraph number, in a sub section titled "Exceptions to Scope of Services".

 - 4. Response to Technical Specifications and Requirements – The Offeror shall address each section of the Technical Specifications and Requirements section of this document indicating compliance with or acceptance of the requirement and any additional explanation of their response. The Offeror shall identify any exceptions, referenced to the paragraph number, in a sub section titled "Exceptions to Technical Specifications and Requirements". The response to the Technical Specifications and Requirements shall include a preliminary Design Specification describing the overall system design, individual proposed microwave paths and relay sites, end user applications and sub-systems all as called out in the RFP.

5. Project Plan and Schedule – Provide a plan and projected schedule for providing all systems and performing all work described herein.
6. Company Profile - Offerors are to present a Company profile that shows the ability, capacity and experience of the Offeror, their staff, and their employees to provide the complete technical solution required within the specified time.
7. References - provide a minimum of three (3) references in accordance with Attachment C, who could attest to the Offeror's past performance to provide services similar to those required for the contract. The list should include contact persons and telephone numbers. Offerors may not use Nelson County as one of their references.
8. Provide copies of any services contracts to be executed in final agreement. Provide copies of all lease/purchase documents in this section.
9. Provide copies of warranty agreements.
10. Identify any software licensing required by the County and provide samples of software licensing agreements.
11. Provide a draft Factory Acceptance Test Plan and Site Acceptance Test Plan describing the anticipated test procedures and acceptance criteria based on the system being proposed and the technical requirements of the RFP.
12. State that the firm, if selected, will be available for oral presentations and negotiations in September 2010.
13. Provide a statement regarding the firm's independence with respect to the County of Nelson and the firm's approach to and conduct during this project.
14. Provide detailed information on training courses including draft training plan, schedules, course outlines, and resumes of instructors who will provide the training.
15. Provide a copy of the Offeror's latest audited financial statements.
16. Pricing – provide complete itemized pricing in a format consistent with Attachment I BRIN RFP Pricing.
17. Appendix – Offerors may submit additional information materials that will clarify their response.

**ATTACHMENT A
RFP 2010-SR1
INSURANCE SPECIFICATIONS**

The Successful Offeror shall carry or cause to be carried the insurance coverages outlined below, and shall deliver Certificates of Insurance from carriers acceptable to the owner specifying such limits. The Certificate shall show the entities shown below (refer Note 4) named as an additional insured for the Commercial General Liability and Automobile Liability, including owned, non-owned and hired car coverage and Umbrella Liability coverage. The coverage shall be provided by a carrier(s) rated "Excellent" by A.M. Bests. In addition, the insurer shall agree to give the County 30 days notice of its decision to cancel coverage. ***The Successful Offeror shall be required to provide certificates from any level of sub-contractor, based on the work of said sub-contractor. All sub-contractor certificates shall include the same additional insured listing, to also include the Successful Offeror.***

Workers' Compensation

Statutory Virginia Limits

Employers' Liability Insurance - \$100,000 for each Accident by employee
\$100,000 for each Disease by employee
\$500,000 policy limit by Disease

Commercial General Liability

Combined Single Limit - \$1,000,000 each occurrence including contractual liability for specified agreement and no exclusion for XCU hazards

\$1,000,000 General Aggregate (other than Products/Completed operations)
\$1,000,000 General Liability-Products/Completed Operations
\$1,000,000 Personal and Advertising Injury
\$ 100,000 Fire Damage Legal Liability

Comprehensive Automobile Liability

Combined Single Limit - \$1,000,000 each accident including owned, non-owned and hired car coverage

Umbrella Liability

\$1,000,000 each occurrence/aggregate

Builders Risk Coverage for the protection of The Owner and the Offeror. Limit shall be in the amount of 100% of any construction costs excluding and architect and engineering fees, or other non-recurring expenses.

Professional Liability

\$1,000,000 per occurrence - Coverage is required for any contractor or any level of sub-contractor whose services include any consultation, design or engineering services in conjunction with this RFP.

Installation Floater Limit of \$250,000 any one event.

NOTE 1: The general liability insurance shall include contractual liability. The contract includes the following indemnification agreement: "The Successful Offeror agrees to indemnify, defend and hold harmless the County of Nelson including all participating BRIN jurisdictions, and any other additional insured, their officers, agents and employees from any claims, damages, suits, actions, liabilities and costs of any kind or nature, including attorneys' fees, arising from or caused by the provision of any services, the failure to provide any services or the use of any services or materials furnished (or made available) by the successful Offeror, provided that such liability is not attributable to an additional insured's sole negligence."

The County makes no representation or warranty as to how the Offeror's insurance coverage responds or does not respond. Insurance coverages that are unresponsive to the above indemnification provisions do not limit the Offeror's responsibilities outlined herein.

NOTE 2: The classification code numbers appearing on the Commercial General Liability coverage parts shall not exclude the symbols "X-C-U".

NOTE 3: The intent of this insurance specification is to provide the coverage required and the limits expected for each type of coverage. With regard to the Business Automobile Liability and Commercial General Liability, the total amount of coverage can be accomplished through any combination of primary and excess/umbrella insurance. However, the total insurance protection provided for Commercial General Liability or for Business Automobile Liability, either individually or in combination with the Excess/Umbrella Liability, must total \$1,000,000 per occurrence. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded the County of Nelson and Nelson County Public Schools., or any of the entities shown on the schedule to be additionally insured. This policy shall be endorsed to be primary with respect to any additional insured.

NOTE 4: The following are to be considered additionally insured:

Schedule of Additional Insured's

1. Albemarle County

2. City of Charlottesville
3. Nelson County
4. Virginia Department of Emergency Management (VDEM) State EOC
5. Virginia State Police
6. City of Waynesboro
7. City of Staunton
8. Verizon
9. AT&T

**ATTACHMENT B
RFP 2010-SR1
PROPOSAL SIGNATURE SHEET**

My signature certifies that the proposal as submitted complies with all Terms and Conditions as set forth in **RFP 2010-SR1**. My signature also certifies that by submitting a proposal in response to this Request for Proposal, the Offeror represents that in the preparation and submission of this proposal, said Offeror did not, either directly or indirectly, enter into any combination or arrangement with any person, firm or corporation or enter into any agreement, participate in any collusion, or otherwise take any action in the restraint of free, competitive bidding in violation of the Sherman Act (15 U.S.C. Section 1 et seq.) or Sections 59.1-9.1 through 59.1-9.17 or Sections 59.1-68.6 through 59.1-68.8 of the Code of Virginia.

I hereby certify that I am authorized to sign as a Representative for the Firm:

NAME OF OFFEROR: _____

ADDRESS: _____

FED ID NO: _____

SCC ID NO: *(required per VA Code)* _____

SIGNATURE: _____

NAME (print): _____

TITLE: _____

TELEPHONE: _____

E-MAIL: _____

FAX: _____

DATE: _____

SUPPLIER TYPE (Check One)

- CORPORATION - DOMESTIC
- INDIVIDUAL/SOLE PROPRIETOR - DOMESTIC
- PARTNERSHIP - DOMESTIC
- GOVERNMENT – DOMESTIC
- NON-PROFIT
- CORPORATION - FOREIGN
- INDIVIDUAL/SOLE PROPRIETOR - FOREIGN
- PARTNERSHIP - FOREIGN
- GOVERNMENT – FOREIGN

BUSINESS CATEGORY (Check all that apply)

- SMALL BUSINESS
- WOMAN OWNED AND CONTROLLED
- MINORITY OWNED AND CONTROLLED
(Asian, Hispanic, Native Americans, African Americans)
- NONE OF THE ABOVE

SUBMIT THIS FORM WITH PROPOSAL

**ATTACHMENT C
RFP 2010-SR1
VENDOR REFERENCE SHEET**

Offerors shall provide a minimum of three (3) references that will be contacted by the County. References shall be of customers for whom you have provided similar services within the last three years. For each customer listed, provide the customer name and address, contact name, title and telephone number and a brief description of the services your company provided. References from school systems are preferred.

1. Purchasing Entity Name: _____
Address: _____
City, State, Zip: _____
Contact Person/Title: _____
Telephone Number: _____
Description of services provided: _____

2. Purchasing Entity Name: _____
Address: _____
City, State, Zip: _____
Contact Person/Title: _____
Telephone Number: _____
Description of services provided: _____

**ATTACHMENT C
RFP 2010-SR1
VENDOR REFERENCE SHEET**

3. Purchasing Entity Name: _____

Address: _____

City, State, Zip: _____

Contact Person/Title: _____

Telephone Number: _____

Description of services provided: _____

4. Purchasing Entity Name: _____

Address: _____

City, State, Zip: _____

Contact Person/Title: _____

Telephone Number: _____

Description of services provided: _____

Attachment E
RFP 2010-SR1
Preliminary Network Design

This section contains a description of sites to be interconnected and a preliminary microwave network design based on initial engineering studies performed by the County and its representatives. The purpose is to present to the Offeror a listing of the sites, towers, and possible microwave paths that the County feels are the strongest candidates to support the required network. However, as stated in the RFP, the Successful Offeror is solely and completely responsible for the final network engineering and design to meet all requirements.

Preliminary Network Topology Overview

The microwave network consists of a ring layout with two spur paths connecting two political subdivisions. As noted this is a connectional design which has been provided based upon known tower information. Alternate proposed layout designs can be provided.

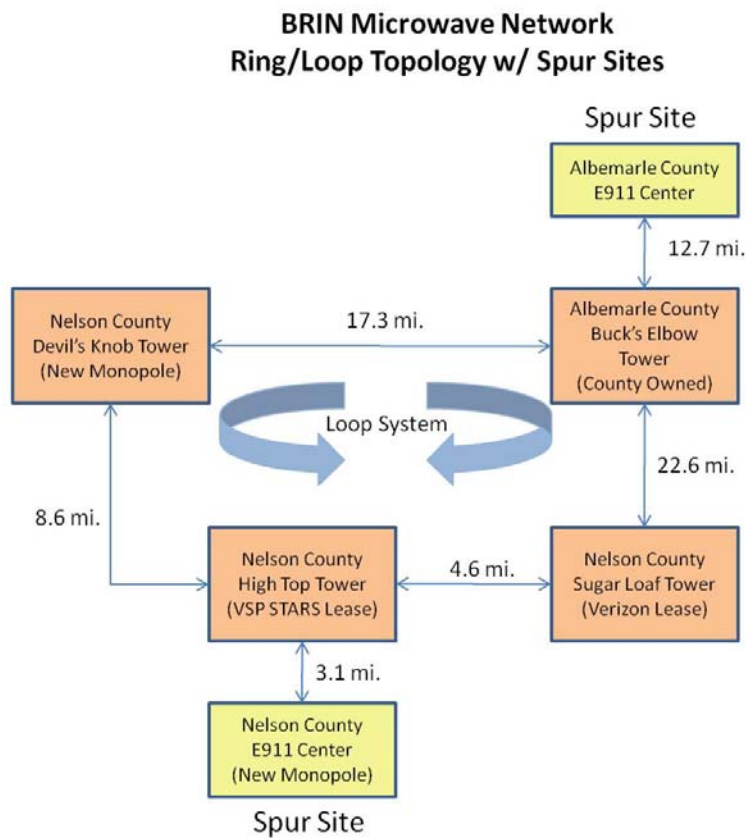


Figure E-1

BRIN MICROWAVE SITES

Site Name	County	Latitude	Longitude	AMSL (ft.)	ASR #	Twr Hgt. (ft.)	Tower Owner
Albemarle ECC	Albemarle	38:02:47.7	78:31:24.2	547	n/a	110	Albemarle County
Bucks Elbow	Albemarle	38:06:16.5	78:44:41.1	3150	n/a	120	Albemarle County
Devil's Knob	Nelson	37:54:59.1	78:57:17.6	3848	n/a	TBD	AT&T
High Top	Nelson	37:47:53.3	78:54:10.7	2223	1270425	160	VSP
Nelson County E911 Cntr	Nelson	37:45:36.6	78:52:04.8	773	n/a	120	Nelson County
Sugar Loaf	Nelson	37:46:57.5	78:49:15.1	2245	1017594	150	Verizon

Table E-1

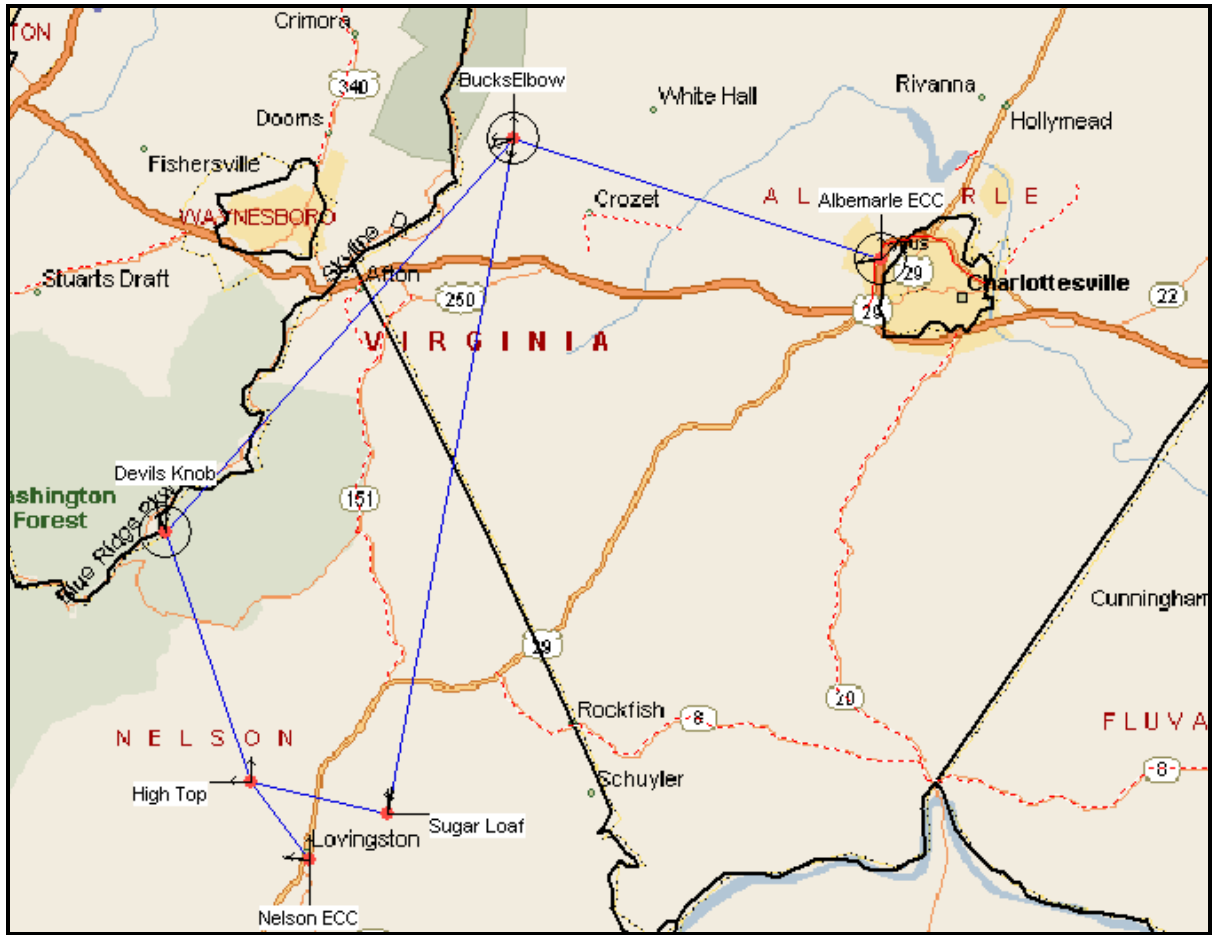
BRIN Microwave Link Summary

Path #	Site-1	Site-2	Freq Band (GHz)	Distance (miles)	Site-1 Antenna Size (ft)	Site-1 Antenna Hgt (ft)	Site-2 Antenna Size (ft)	Site-2 Antenna Hgt (ft)	Link Status
1	Nelson ECC	High Top	11	3.1	4	80	4	90	New
2	High Top	Devil's Knob	6	8.6	6	120	6	TBD	New
3	Devil's Knob	Buck's Elbow	6	17.3	8	60	8	TBD	New
4	Buck's Elbow	Albemarle ECC	6	12.7	8	80	8	90	New or Upgrade Existing Path
5	Buck's Elbow	Sugar Loaf	6	22.6	8	TBD	8	70	New
6	Sugar Loaf	High Top	6	4.6	6	65	6	80	New

Table E-2

BRIN Microwave System Map

The map below shows a preliminary conceptual design for the BRIN microwave network.



Map E-1 Conceptual Preliminary Design for the BRIN Microwave Network

**ATTACHMENT F
RFP 2010-SR1
PRE-PROPOSAL CONFERENCE AND SITE VISITS**

PRE-PROPOSAL CONFERENCE & SITE VISITS								
Date	Item				Location	Start	End	
8/24/2010	Pre-proposal Conference Nelson County				Bd. of Supervisors Meeting Rm.	9:00 AM	11:00 PM	
SITE VISITS								
Date	From	To (Visiting Site)	Leave Time	Miles	Travel Time (min)	Arrival Time (min)	Time on site (min)	Leave Time
Day 1								
8/24/2010	Nelson ECC	Nelson ECC Tower	12:00	0	5	12:00	75	1:15
8/24/2010	Nelson ECC	Sugar Loaf Tower	1:15	12	45	2:00	60	3:00
Day 2								
8/25/2010	Nelson ECC	High Top Tower	9:00	7	30	9:30	60	10:30
8/25/2010	High Top Tower	(Nelson Cafe)	10:30	7	30	11:00	60	12:00
8/25/2010	(Nelson Cafe)	Devil's Knob Tower	12:00	24	60	1:00	60	2:00
8/25/2010	Devil's Knob	Buck's Elbow	2:00	30	60	3:00	60	4:00
Day 3								
8/26/2010		Albemarle ECC	-	-	-	9:00	60	10:00
8/26/2010	Albemarle ECC	Waynesboro ECC	10:00	25	30	11:00	60	12:00
8/26/2010	Waynesboro ECC	Waynesboro Tower	1:00	2	10	1:10	50	2:00
8/26/2010	Waynesboro Tower	Staunton PDHQ	1:00	2	10	1:10	60	2:10
8/26/2010	Staunton PDHQ	Reservoir Hill Tower	2:10	14	25	2:35	45	3:20

Table F-1

**Attachment G
RFP 2010-SR1
NELSON COUNTY AGREEMENT**

At the time of contract award, the Successful Offeror shall be required to sign the Nelson County Agreement.

AGREEMENT

THIS AGREEMENT, made and entered this ____ day of _____, 20____, by and between the County of Nelson, Virginia (the "County") and _____ (the "Contractor") provides:

A. Undertaking. The Contractor will furnish materials and perform the work for _____

(the "Work") in accordance with this Agreement, the General Conditions, and the specifications listed in _____, marked as Exhibit 1, _____, marked as Exhibit 2, and _____, all of which are attached hereto and made a part hereof (collectively, the "Contract Documents").

B. Contract Price. The County will pay in consideration of the Work _____ Dollars (\$ _____) as follows:

- 1. ONE LUMP SUM will be made for the whole contract, upon acceptance by the County, of all Work required hereunder and compliance by the Contractor will all the terms and conditions of this Agreement.
- 2. PARTIAL PAYMENTS IN THE AMOUNT OF 95 PERCENT of the value of the work in place and of the value of the materials suitably stored at the site (less the aggregate of previous payments) will be made at intervals of _____. The value of the work and materials in place or on site shall be as estimated by the Contractor and approved by the County. Upon acceptance by the County of all Work required hereunder, and compliance by the Contractor with all terms and conditions of this Agreement, the amount due the Contractor will be paid.
- 3. _____.

C. Term. The Contractor will begin the Work by _____ and complete the Work by _____.

D. Notices. All notices required or permitted under this Agreement shall be in writing and shall be deemed delivered in person or deposited in the United

May 4, 2010

**Attachment G
RFP 2010-SR1
NELSON COUNTY AGREEMENT**

States mail, postage prepaid addressed as follows. Either party may change such address from time to time by providing written notice to the other in the manner set forth above.

If to the County:

Stephen A. Carter
County Administrator
Post Office Box 336
Lovingston, Virginia 22949

If to the Contractor:

E. Guarantee. The period of warranty pursuant to Paragraph 6 of the General Conditions is _____.

F. Liquidated Damages. Liquidated damages pursuant to Paragraph 10 of the General Conditions shall be \$ _____ per day.

G. Special Provisions. _____

_____.

IN WITNESS WHEREOF, the parties hereby have executed this Agreement as of the date first above written.

COUNTY OF NELSON

By: _____

Its _____

By: _____

Its _____

Approved as to form:

County Attorney

Attachment H

GENERAL CONDITIONS

The following provisions are made a part of the Agreement:

1. Performance of Work. Contractor shall perform all services hereunder: (i) expeditiously and consistent with the orderly progress of the project; (ii) in accordance with the standard of care and skill existing as of the date such services are provided; (iii) in accordance with all applicable laws, codes and regulations in effect at the time the Work is complete; and (iv) in accordance with current standard technology for completed similar project systems accepted within the industry as of the time the Work is complete.

2. Changes in Work. The County may at any time make changes in the drawings and/or specifications, within the general scope thereof. If such changes cause an increase or decrease in the amount due under this Agreement or in the time required for its performance an equitable adjustment will be made, and this Agreement will be modified accordingly by a "Contract Change Order". No charge for any extra work or material will be allowed unless the same has been ordered on such Contract Change Order by the County, and the price therefor stated in the order.

3. Inspection of Work. All materials and workmanship will be subject to inspection, examination, and testing by the County, or the County's representative, who will have the right either to reject defective material and workmanship or to require its correction.

4. Releases. Prior to final payment, the Contractor, if requested by the County, will submit evidence that all payrolls, material bills, and other indebtedness connected with the Work have been paid as required by the County.

5. Obligation to Discharge Liens. Acceptance by the County or its representative of the completed Work and payment therefor by the County will not relieve the Contractor of obligation to the County to discharge any and all liens for the benefit of subcontractors, laborers, materialmen or any other persons performing labor upon or furnishing material or machinery in connection with the Work which have attached to or may subsequently attach to the property, or interest, of the County.

6. Guarantee. The Contractor warrants and guarantees for the period provided in Paragraph E of the Agreement from the Date of Acceptance that the completed Work is free from all defects due to faulty materials or workmanship and that the Contractor shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the Work resulting from such defects. The County will give notice of observed defects with reasonable

May 6, 2010

promptness. In the event that the Contractor shall fail to make such repairs, adjustments, or other corrective action that may be made necessary by such defects, the County may do so and charge the Contractor the cost thereby incurred. In addition, Contractor shall provide the County with all warranty materials issued by a manufacturer for components of the Work and shall take all steps necessary to

activate, document, and maintain in force such warranties. Nothing herein shall be construed to establish a period of limitation with respect to any other obligation under the Agreement.

7. Late Payment Fee. All invoices issued under this Agreement shall be submitted to the County net 45 days. A 1.5% service charge shall be assessed on all invoices not paid within 45 calendar days from date of invoice.

8. Expense Reimbursement. The Contract Price includes all fees and ordinary expenses including reasonable travel, lodging, meals, telephone expense, office overhead and clerical support. Contractor shall pay all such "out-of-pocket" expenses and shall not be entitled to reimbursement from the County except by mutual prior agreement.

9. Termination. The County upon written notice to the Contractor may terminate this Agreement. The Contractor will be paid for the negotiated and agreed upon cost of the Work performed as of the termination date. If any work or service hereunder is in progress, but not completed as of the date of termination, then the Agreement may be extended upon written approval of the County until the work or services are completed and accepted.

10. Default. If the Contractor should refuse or fail to complete the Work within the time specified in this Agreement, or any extension thereof, then the County may terminate the Contractor's right to proceed and may take over the Work and prosecute the same to completion by contract or otherwise. The Contractor shall be liable for any excess cost occasioned by the County thereby and the County may take possession of and utilize in completing the Work such materials and equipment as may be on the site of the Work and necessary therefor. If, in the event of default, the County does not terminate the right of the Contractor to proceed, the Contractor will continue the Work, in which event, actual damages for delay will be impossible to determine, and in lieu thereof, the Contractor may be required to pay to the County the sum provided in Paragraph F of the Agreement as liquidated damages for each calendar day of delay, and the Contractor will be liable for the amount thereof; *provided however*, that the right of the Contractor to proceed will not be terminated because of delays in the completion of the Work due to unforeseeable causes beyond the Contractor's control and without Contractor's fault or negligence.

11. Relationship of Parties. The Contractor's relationship with the County shall at all time be that of an independent Contractor. The Contract Documents shall not be construed to designate the Contractor, or any of its officers, employees, as employees or agents of the County. The Contractor shall accept full and exclusive responsibility for the payment of any and all contributions or taxes, or both, for any unemployment insurance, medical and old age retirement benefits, pensions, and annuities now or hereinafter imposed under any law of the United States or any State, which are measured by the wages, salaries or other remuneration paid to persons employed by the Contractor on the work to be performed under the contract or in any way connected therewith. The Contractor shall comply with all administrative regulations and rulings there under with respect to any of the matters. The Contractor shall reimburse the County for any of the contributions or taxes, or both, or any part thereof, if by law the County may be required to pay the same or any part thereof.

12. Disclosure. During the term of this Agreement, the Contractor shall not, without the prior written permission of the County, accept from other clients any assignment or tasks which substantially conflict with the objectives of this Agreement. The Contractor shall give written notice to the County with respect to any such assignments or tasks. The notice shall set forth in reasonable detail the services the Contractor would undertake to perform in connection with such assignments or tasks.

The County agrees to grant or deny its consent to the Contractor's acceptance of the assignments or tasks described in the notice within ten days after the notice is given. The County shall be deemed to have granted its consent if no action is taken by the County within said ten-day period.

13. Employees. Contractor's employees and agents, if any, who perform services for the County under this Agreement, shall also be bound by the provisions of this Agreement.

14. Injuries. Contractor waives any rights to recover damages from the County for any injuries that Contractor, its employees, or both, may sustain while performing services under this Agreement and that are a result of the negligence of Contractor or its employees or agents. The Contractor shall take precautions for the safety of, and provide reasonable protection to prevent injury, loss, or damage to, its employees, and other persons who may be affected by the Work and to property at the site of the Work or adjacent thereto.

15. Indemnification. The Contractor shall indemnify and hold harmless the County, its officers, agents and all employees and volunteers, from any and all claims of bodily injury, personal injury or property damage, including the cost of investigation, all expenses of litigation, including reasonable attorney fees, and the cost of appeals arising out of any claims or suits which result from error, omissions, or negligent acts of the Contractor, its sub-contractors and their agents and employees. Contractor shall indemnify and hold harmless the County against and from all liability, claims, damages and costs, including attorney's fees of every kind and nature and attributable to bodily injury, sickness, disease or death or to damage or destruction of property resulting from or in any manner arising out of or in connection with the performance of the Work under this Agreement.

16. Acceptance. Neither payment, final or otherwise, nor partial or entire use, occupancy or acceptance of the Work by the County shall operate as an acceptance of any products or services not in accordance with this Agreement, nor shall same relieve Contractor of any responsibility for negligence, errors or omissions in connection with the Work or operate to release the Contractor from any obligation under the Agreement.

17. Insurance. The Contractor shall, during the performance of the Agreement, keep in force at least the following minimum limits of insurance: Workers compensation insurance shall comply with the requirements of the laws of the Commonwealth of Virginia.

<u>Type of Insurance</u>	<u>Each Person</u>	<u>Each Occurrence</u>	<u>Aggregate</u>
Worker's Compensation Public Liability	Statutory	Statutory	
Property Damage			\$1,000,000
Contractor's Protective Public Liability	\$1,000,000	\$1,000,000	
Contractor's Protective Property Damage			\$1,000,000

Contractual Liability	\$ 500,000	\$1,000,000	
Contractual Property Damage			\$1,000,000
Completed Operations And Products Liability	\$ 500,000	\$1,000,000	\$1,000,000
Vehicle Liability	\$1,000,000	\$1,000,000	\$1,000,000

The Contractor shall furnish an original Certificate of Insurance, naming, with the exception of Worker’s Compensation and Professional Liability, the County of Nelson, Virginia as an additional insured. The Certificate of Insurance must provide that the County shall be given 45 days advance notice of cancellation, non-renewal or material change in coverage.

18. Records Retention and Availability. Contractor agrees that the County, the State Auditor, or any of their duly authorized representatives at any time during normal business hours and as often as they may reasonably deem necessary, shall have access to and the right to examine, audit, excerpt, and transcribe any books, documents, papers, records, etc., which are pertinent to the accounting practices and procedures of Contractor and involve transactions relating to this Agreement. Contractor agrees to maintain these records for a period of three (3) years from the date of termination of this Agreement.

19. Ownership. Contractor shall retain all right, title and interest in all copyrights, patents, service marks, trade secret, and other intellectual property rights in and to all technical or internal designs, methods, ideas, concepts, techniques and templates previously developed by Contractor or developed during the course of the provision of services hereunder. All products created for the County as a result of this Agreement will be the sole property of the County to be used, reused, altered, and distributed in the County’s discretion, provided however, that any reuse by or on behalf of the County without written verification or adoption by Contractor for the specific purpose intended will be at the County’s sole risk and without liability or legal exposure to Contractor. Any such verification or adaption by Contractor will entitle Contractor to further compensation at rates to be agreed upon.

20. Nondiscrimination. During the performance of this Agreement, Contractor agrees as follows (Code of Virginia, Section 2:2-4311):

- a. Contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability or other basis prohibited by state law relating to discrimination in employment except where there is a bona fide occupational qualification, reasonably necessary to the normal operation of the Contractor. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
- b. Contractor in all solicitations or advertisements for

employees placed by or on behalf of Contractor, shall state that such Contractor is an equal opportunity employer.

- c. Notices, advertisements and solicitations placed in accordance with Federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

Contractor shall include the provisions of the foregoing paragraphs of this section in every subcontract or purchase order of over \$10,000.00, so that the provisions will be binding upon each subcontractor or vendor.

21. Drug-Free Workplace to be Maintained by the Contractor. During the performance of this Agreement, Contractor agrees as follows (Code of Virginia, Section 2:2-4312):

- a. Contractor shall provide a drug-free workplace for all of its employees. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession or use of a controlled substance or marijuana is prohibited in the workplace and specify the actions that will be taken against employees for violations of this prohibition.
- b. Contractor, in all solicitations or advertisements for employees placed by or on behalf of Contractor shall state that such Contractor maintains a drug-free workplace.
- c. Notices, advertisements and solicitations placed in accordance with federal law, rule of regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

Contractor shall include the provisions of the foregoing paragraphs of this section in every subcontract or purchase order of over \$10,000.00 so that the provisions will be binding upon each subcontractor or vendor.

22. Faith Based Organizations. The County does not discriminate against faith-based organizations.

23. Immigration Law. Contractor covenants that it does not, and shall not during the performance of this Agreement for goods and services in the Commonwealth, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.

24. Payment. The Contractor agrees to comply with the requirements of Section 2.2-4354 of the Virginia Code regarding payment to other entities and that Contractor will take one of the two actions permitted therein within seven (7) days after receipt of amounts paid to Contractor by the County. The Contractor shall indemnify and hold the County harmless for any lawful claims resulting from failure of the Contractor to make prompt payments to all persons supplying him equipment, labor, tools, or material in prosecution and completion of the Work provided for in the Agreement. In the event of such claims, the County may, after providing written notice to the Contractor, withhold from any progress and/or final payment the unpaid sum of money deemed sufficient to pay all lawful claims and associated costs in connection with the Agreement.

25. Contractual Claims. Contractual claims, whether for money or for other relief, shall be submitted, in writing, no later than sixty (60) days after final payment, written notice of the Contractor's intention to file such claim must be given at the time of the occurrence or beginning of the work upon which the claim is based. Such notice is a condition precedent to the assertion of any such claim by the Contractor. A written decision upon any such claims will be made by the County Administrator or his designee within thirty (30) days after submittal of the claim and any practically available additional supporting evidence required by the County Administrator. The Contractor may not institute legal action prior to receipt of the County's decision on the claim unless the County Administrator fails to render such decision within 120 days from submittal of its claim. The decision of the County Administrator shall be final and conclusive unless the Contractor within six (6) months of the date of the final decision on a claim or from expiration of the 120 day time limit, whichever occurs first, initiates legal action as provided in Section 2.2-4364, of the Virginia Code. Failure of the County to render a decision within said 120 days shall not result in the Contractor being awarded the relief claimed nor shall it result in any other relief or penalty. The sole result of the County's failure to render a decision within said 120 days shall be Contractor's right to immediately institute legal action. No administrative appeals procedure pursuant to Section 2.2-4365, of the Virginia Code, has been established for contractual claims under this Agreement.

26. Assignment. Contractor's obligations under this Agreement may not be assigned or transferred to any other person, firm or corporation without the prior written consent of the County.

27. Entire Agreement. This Agreement contains the entire agreement of the parties and there are no other promises or conditions in any other agreement whether oral or written. This Agreement supersedes any prior written or oral agreements between the parties. In the event of any conflict between provisions contained herein and those appearing in an exhibit, the provisions of the document deemed by the County to be most favorable to the County shall prevail.

28. Amendment. This Agreement may not be modified or amended unless the amendment is made in writing and is signed by both parties.

29. Severability. If any provision of this Agreement shall be held to be invalid or unenforceable for any reason, the remaining provisions shall continue to be valid and enforceable. If a court should find that any provision of this Agreement is invalid or unenforceable, but that by limiting such provision it becomes valid and enforceable, then such provision shall be deemed to be written, construed, and enforced as so limited.

30. Waiver of Contractual Right. The failure of either party to enforce any provision of this Agreement shall not be construed as a waiver or limitation of that party's right to subsequently enforce and compel strict compliance with every provision of this Agreement.

31. Applicable Law. The laws of the Commonwealth of Virginia shall apply in the construction and enforcement of this Agreement. The sole venue for any proceeding between the parties regarding this Agreement shall lie in the Circuit Court of Nelson County, Virginia.

32. Construction Supervision. (Check if applicable.) Contractor shall perform the Work in accordance with the Contract Documents and shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

33. Cooperative Procurement. (Check if applicable.) The procurement of goods and/or services provided for in this Agreement is being conducted pursuant to Virginia Code Section 2.2-4304. Therefore, the Contractor agrees that it will contract with any other public agency or body in the Commonwealth of Virginia who so desires, to permit those public agencies or bodies to purchase such services at contract prices, in accordance with the terms, conditions, and specifications of this procurement. The Contractor shall deal directly with each public agency, public school system or body seeking to obtain any goods and/or services pursuant to this Agreement or from this procurement and in accordance with Virginia Code Section 2.2-4304. The County of Nelson shall not be responsible or liable for any costs, expenses, or any other matters of any type to either the Contractor or the public agency or body seeking to obtain any goods and/or services pursuant to this cooperative procurement provision.

**Attachment I
BRIN RFP PRICING**

BRIN Interoperability Network Equipment Pricing					
Item #	Description	Part Number	Unit Price	Qty	Extended Price
1	MICROWAVE NETWORK EQUIPMENT				
1.1	Microwave Radio Equipment				
1.2	Waveguide Equipment				
1.3	Network Management System				
1.4	DC Power Systems				
1.5	Antenna Equipment				
1.6	Ancillary Equipment				
1.7	Microwave Network New Monopole				
2	MICROWAVE NETWORK SERVICES				
2.1	System Design and Engineering				
2.2	Installation				
2.2.1	Microwave Antenna Equipment				
2.2.2	Radios				
2.2.3	NMS				
2.3	Testing				
2.3.1	Microwave Antenna Equipment				
2.3.2	Radios				
2.3.3	NMS				
2.4	Factory Staging				
	Factory Staging				
2.5	Microwave Network Spares				
2.5.1	Radio Equipment Spares				
2.5.2	Mux equipment Spares				

2.5.3	DC Power System Spares				
2.5.4	NMS Spares				
2.6	BRIN Network Equipment				
2.6.1	Mux Equipment - Ethernet Ring Equipment				
2.6.2	Data Switches				
2.6.3	Fiber Mux Equipment				
2.6.5.4	Cabling				
2.6.6.3	Software				
2.6.7	DS1 Interface Equipment				
2.6.8	COMLINC Radio Equipment Support				
2.6.9	Radio Interoperability Equipment				
2.6.9.1	Chassis				
2.6.9.2	Voice Card				
2.6.9.3	SIP Interface Cards				
3	Training				
4	Project Management				