



Request for Proposals

**Design, Specifications and Quotation of a
800 MHz Digital Mobile Radio Tier III System**

For

GREENVILLE UTILITIES COMMISSION

Of the

City of Greenville, North Carolina

401 South Greene Street

Greenville, North Carolina 27834

Issue Date May 29, 2014

Response Due Date, June 30, 2014 Until 3:00 pm (EDST)

GREENVILLE UTILITIES COMMISSION

REQUEST FOR PROPOSALS

The Electric Department of Greenville Utilities Commission requests proposals for the design, bidding and installation of an 800/900 MHz Digital Mobile Radio Tier III radio system for Greenville Utilities Commission.

PROPOSAL DEADLINE:

Proposals, subject to the conditions made a part hereof, will be received in the Office of the Buyer II, Greenville Utilities Commission, 401 S. Greene Street, Greenville, North Carolina 27834 until 3:00 PM (EDST) on June 30, 2014.

PREPARATION OF PROPOSAL

Proposals must be in sealed envelopes clearly marked on the outside with the name of the proposal and the proposal receipt date and time. Proposals shall be addressed to the Office of the Buyer II, Greenville Utilities Commission, 401 S. Greene Street, Greenville, North Carolina 27834

EVALUATION CRITERIA:

Vendor selection shall be based on evaluation and rating of Vendor's demonstrated competence and qualifications/performance for the type of services/products to be offered. The following guidelines will be used as minimum criteria for rating the Vendor:

The quality of references from past customers of vendor.

Quality of approach and methodology that demonstrates an understanding of the requirements.

Quality, extent and relevance of vendor's staff / experience in conducting service(s).

Vendor's response time for service(s).

Overall cost

GUC reserves the right to reject all proposals or accept such proposals, as appears in its own best interest, and to waive technicalities or irregularities of any kind in the proposal. GUC is not obligated to accept the lowest cost proposal. If a proposal is to be awarded, it will be awarded to the responsible, responsive respondent whose evaluation by GUC indicates that the award will be in GUC's best interests.

EVALUATION AND AWARD:

GUC reserves the right to reject any and all proposals, to waive any and all informalities, and to disregard all nonconforming or conditional proposals or counter proposals. In evaluating proposals, GUC shall consider whether the proposals comply with the prescribed requirements, plus all alternates or options requested. GUC reserves the right to include or exclude any option or alternative(s). If interviews are necessary, interviews with selected respondents will be scheduled and conducted. If a proposal is to be awarded, it will be awarded to the best qualified responsible, responsive respondent whose evaluation by GUC indicates that the award will be in GUC's best interests.

MINORITY BUSINESS PARTICIPATION PROGRAM:

GUC has adopted an Affirmative Action and Minority and Women Business Enterprise Plan (M/WBE) Program. Firms submitting a proposal are attesting that they also have taken affirmative action to ensure equality of opportunity in all aspects of employment, and to utilize M/WBE suppliers of materials and labor when available.

CONFLICT OF INTEREST

Proposer agrees to be familiar with and comply with all applicable federal, state, and local conflict of interest laws.

VENDOR INCURRED COSTS

All costs that may be incurred to prepare proposals, attend meetings, attend site inspections, provide requested follow-up information, make formal and informal presentations, and for the entire contract negotiations process if applicable, shall be the sole responsibility of each vendor. GUC is not responsible under any circumstances for reimbursement of any costs that may be incurred by vendors during the proposal preparation, subsequent selection or negotiation stages.

PROPOSAL WITHDRAWAL

A proposer must notify GUC in writing of its request to withdraw a proposal within seventy-two (72) hours after the proposal receipt date and time, not including Saturdays, Sundays, or holidays. In order to justify withdrawal, the respondent must demonstrate that a substantial error exists and that the proposal was submitted in good faith.

AFFIRMATIVE ACTION

The proposer will take affirmative action in complying with all Federal and State requirements concerning fair employment and employment of the handicapped, and concerning the treatment of all employees, without discrimination by reason of race, color, religion, sex, national origin, or physical handicap.

MEDIATION ARBITRATION

In the event of any dispute between the Parties, the Parties agree to submit any dispute to non-binding mediation before a mutually agreeable Mediator prior to initiating litigation. If the Parties are unable to agree upon a Mediator within thirty (30) days after demand therefore, either Party may petition a Court of competent jurisdiction for the designation of a qualified Mediator for these purposes. Each Party shall bear its own costs and expenses of participating in the mediation (including, without limitation, reasonable attorneys' fees), and each Party shall bear one-half (1/2) of the costs and expenses of the Mediator. Unless otherwise agreed, the Parties will hold the mediation in Greenville, North Carolina. The matters discussed or revealed in the mediation session shall not be disclosed in any subsequent litigation.

In the event the matter is not resolved in mediation, either Party may request arbitration. The parties shall jointly select an Arbitrator, and shall be bound by the decision of the Arbitrator with respect to any dispute between the parties with respect to this Agreement. If the parties are unable to mutually agree upon an Arbitrator, the Parties shall each select an Arbitrator, and the two Arbitrators so selected shall select a third Arbitrator, and the decision of the majority of the Arbitrators shall be conclusive and binding upon the Parties. The Parties at all times agree to equally split the costs of any Arbitrator(s) selected in an effort to resolve the dispute between the Parties. Any party desiring to resolve a dispute under the terms of this Agreement shall notify the other Party in writing, and the Parties shall seek to agree upon a mutually agreed-upon Arbitrator within a period of ten (10) days from the date of such written demand. If the Parties are unable to agree within such ten (10) day period, the Parties shall each select an Arbitrator, and the two (2) Arbitrators so selected shall select a third Arbitrator within fifteen (15) days from the date of the written demand for arbitration, and a decision shall be rendered by the Arbitrator(s) so selected within five (5) days after such Arbitrator(s) is selected.

INDEMNITY PROVISION

Proposer agrees to indemnify and save GREENVILLE UTILITIES COMMISSION of the City of Greenville, Pitt County, North Carolina, and the City of Greenville, North Carolina, its co-owners, joint venturers, agents, employees, and insurance carriers harmless from any and all losses, claims, actions, costs, expenses including reasonable attorney fees, judgments, subrogations, or other damages resulting from injury to any person (including injury resulting in death), or damage (including loss or destruction) to property of whatsoever nature of any person arising out of or incident to the performance of the terms of this Contract by Proposer, including,

but not limited to, Proposer's employees, agents, subcontractors, and others designated by Proposer to perform work or services in, about, or attendant to, the work and services under the terms of this Contract. Proposer shall not be held responsible for any losses, expenses, claims, subrogations, actions, costs, judgments, or other damages, directly, solely, and proximately caused by the negligence of Greenville Utilities Commission of the City of Greenville, Pitt County, North Carolina. Insurance covering this indemnity agreement by the Proposer in favor of Greenville Utilities Commission of the City of Greenville, Pitt County, North Carolina, and the City of Greenville, North Carolina, shall be provided by Proposer.

GOVERNING LAWS

All contracts, transactions, agreements, etc., are made under and shall be governed by and construed in accordance with the laws of the State of North Carolina.

ADMINISTRATIVE CODE

Bids, proposals, and awards are subject to applicable provisions of the North Carolina Administrative Code.

CONFIDENTIAL INFORMATION

Except as provided by statute and rule of law, GUC will keep trade secrets which the Proposer does not wish disclosed confidential. Each page shall be identified in boldface at the top and bottom as "CONFIDENTIAL" by the Proposer. Cost information shall not be deemed confidential. The determination of whether a matter is confidential will be determined by North Carolina law.

GOOD FAITH STATEMENT:

All information provided by GUC in this RFP is offered in good faith. Individual item(s) are subject to change at any time. GUC makes no certification that any item(s) are without error. GUC is not responsible or liable for any use of the information or for any asserted claims.

CONTACT INFORMATION

Questions regarding this Request for Proposal should be directed to Ken Wade, Substation/Control Engineer at (252)-551-1570, wadekr@guc.com, Cleve Haddock, Buyer II at (252) 551-1533, haddocgc@guc.com

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Letter of Compliance to E-Verify for Greenville Utilities Commission

1. I have submitted a proposal for contract or desire to enter into a contract with the Greenville Utilities Commission;
2. As part of my duties and responsibilities pursuant to said proposal and/or contract, I affirm that I am aware of and in compliance with the requirements of E-Verify, Article 2 of Chapter 64 of the North Carolina General Statutes, to include (mark which applies):
3. ____ After hiring an employee to work in the United States I verify the work authorization of said employee through E-Verify and retain the record of the verification of work authorization while the employee is employed and for one year thereafter; or
4. ____ I employ less than twenty-five (25) employees in the State of North Carolina.
5. As part of my duties and responsibilities pursuant to said proposal and/or contract, I affirm that to the best of my knowledge and subcontractors employed as a part of this proposal and/or contract, are in compliance with the requirements of E-Verify, Article 2 of Chapter 64 of the North Carolina General Statutes, to include (mark which applies):
6. ____ After hiring an employee to work in the United States the subcontractor verifies the work authorization of said employee through E-Verify and retains the record of the verification of work authorization while the employee is employed and for one year thereafter; or
7. ____ Employ less than twenty-five (25) employees in the State of North Carolina.

Specify subcontractor: _____

_____ (Company Name)

By: _____ (Typed Name)

_____ (Authorized Signatory)

_____ (Title)

_____ (Date)

1. Project Scope

The project scope consists of the design, bidding and installation of an 800/900 MHz Digital Mobile Radio Tier III radio system for Greenville Utilities Commission. Greenville Utilities Commission is accepting proposals to replace an existing analog two-way radio system to a digital radio system for various departments. This proposal serves to request proposals for the following.

- 1.1. The system shall provide reliable, efficient radio functionality for Greenville Utilities operational groups and shall meet GUC's communications requirements between these operational groups. The Radio System shall provide the features, functions, and capabilities as described herein.
- 1.2. The system shall be based on current 800/900 MHz Digital Mobile Radio Tier III (DMR) standards and products. Specifications and functional requirements are included in the following paragraphs.
- 1.3. A key requirement of the system offering is compatibility with the DMR Tier III standard set, particularly with respect to the capability of supporting user equipment from a multiplicity of vendors/manufacturers. Proposer shall list all manufacturers whose equipment will operate on the offered system, and list any exceptions, deviations or incompatibilities.
- 1.4. Preference will be given to offerings that depend on minimal proprietary hardware or software in order to meet the DMR standards and capabilities. Proposer shall list all items which are considered to be proprietary or confidential in nature.
- 1.5. Preference will be given to offerings that provide the ability to interface the DMR system to additional services and systems. Specifically voice and/or data services on cellular telephone and Automatic Vehicle Location (AVL) information integration with other enterprise software systems such as ESRI GIS and ORACLE Utilities. in addition to the standardized, compatible DMR capabilities.
- 1.6. The system shall provide county wide coverage within Pitt County. The coverage provided shall be to a criteria of DAQ3.4 per TSB88, latest revision. The degree of coverage shall be a minimum of 95 percent Area Reliability, per TSB88, latest revision, within the defined service area.
- 1.7. Proposer shall include a proposed Coverage Acceptance Test with the proposal. The test shall include, at a minimum, automated RF level measurements throughout the service area. The test shall be based upon a grid of intervals not greater than 0.5 miles by 0.5 miles. The Coverage Acceptance Test shall be based on, and in conformance with, TSB88, latest revision. Coverage Acceptance Testing will be performed for both portable and mobile radios.

2. Back Ground Information on Existing Radio System

- 2.1. GUC operates two tower sites and a two position dispatch console. See Appendix 1.
- 2.2. The primary tower site is located at 350 Aqua Lane, Greenville NC. The primary tower site has an eight channel analog two-way radio system at this location. GUC has an existing 18 KVA UPS and 45 KW generator providing backup power.
- 2.3. The secondary site is located at 148 Southwest Greenville Blvd, Greenville NC. The secondary tower site has a three channel analog two-way radio system at this location. The secondary tower site is operated as an emergency backup to the main site. GUC has an existing 20 KW generator providing backup power.
- 2.4. Fiber optic cable is the communication media between the tower sites and the dispatch consoles.

- 2.5. The two console dispatch station is located at 801 Mumford Rd, Greenville NC. GUC has an existing 20 KVA UPS and 35 KW generator providing backup power.
- 2.6. GUC is licensed for eight frequencies. Our call sign is WFPF218.

3. Scope of Work

Proposer shall provide a turn-key communications system, compliant with the requirements and specification as described herein.

3.1. Sites, Towers, Antenna Supports

- 3.1.1. The primary tower site is located at 350 Aqua Lane, Greenville NC.
- 3.1.2. The secondary site is located at 148 Southwest Greenville Blvd, Greenville NC.
- 3.1.3. GUC would like to reuse the existing antennas and coax cables at these two sites. Proposer shall verify existing antennas and coax cables are suitable for proposed system. As an option, Proposer may show the detailed cost to replace the antennas and coax cable at two sites. The existing transmitters, combiners, receiver multi-couplers and TTA are approaching end of life and will need to be replaced. Proposer shall include the cost to replace the equipment. It is the Proposer's responsibility to comply with local construction codes and regulations for all tower work. All tower work shall conform to industry best practices.

3.2. Backup Power

Existing generators and UPS will be utilized at all sites. It is the Proposers responsibility to provide a UPS to support the new radio equipment at the secondary tower site only. The UPS should be able to run the radio equipment for up to 10 minutes at full load.

3.3. Backhaul Network

Backhaul between the sites and the dispatch center will be provided by GUC via fiber optic cable.

3.4. Equipment Installations

Proposer shall develop a schedule and plan of installation for all tower and mobile radio equipment. GUC relies upon the radio system for daily communication. Equipment replacement and installation shall be scheduled and coordinated with GUC as to not interrupt GUC operations. A preliminary plan and schedule shall be included with the proposal. The final plan shall be developed in conjunction with GUC.

3.5. Radio Programming and Deployment

Proposer shall include the development of any required programming, e.g. "personalities" or "profiles" for mobile, portable and fixed radio equipment.

3.6. Functional Testing Prior to Acceptance

- 3.6.1. Proposer shall include a Functional Acceptance Test with the proposal. The test shall confirm that all required functions and capabilities of the system as offered have been supplied.
- 3.6.2. Following satisfactory completion of the functional test, the Coverage Acceptance Test (described above) shall be performed.

3.6.3. Final Acceptance of the system will be deemed to have been accomplished upon successful completion of the functional and coverage tests.

3.7. Training

Successful Proposer will provide the following training:

3.7.1. Dispatcher Training: Four Classes for up to 5 dispatchers in each class. Classes will be held on four consecutive days.

3.7.2. System Administrator: One Class for up to 4 persons.

3.7.3. Radio Equipment: Two Classes of "Train-the-Trainers" for up to 10 Trainers.

4. Warranty & Maintenance

Proposer shall provide the offered Warranty on the proposed system and user terminals.

4.1. Proposed equipment shall be currently supported by the manufacturer, and proposal shall include a statement from the manufacturer that the proposed equipment shall be supported for a minimum of five (5) years following system acceptance by Greenville Utilities Commission.

4.2. Proposer shall provide any offered Extended Warranties for up to 5 years and show the cost as an option.

4.3. Warranty shall include all parts, labor, preventative maintenance, software updates or fixes, and emergency calls out for a minimum of 1 year for all fixed equipment (described below) or the agreed warranty duration.

4.4. Warranty for the user equipment is to include all parts, labor and software updates for a period of no less than 2 years.

4.5. During the warranty period Preventative Maintenance (PM) checks will be required for all fixed equipment on an annual basis. PM's will be scheduled and coordinated with GUC as to not interrupt GUC operations. The costs of the PM will be included for the length of the warranty period including any extended warranty.

4.6. Fixed Equipment subject to annual PM shall include:

4.6.1. Software Updates

4.6.2. Full base station alignments and optimization

4.6.3. Power Amplifier Optimization and Balancing

4.6.4. Transmit Combiner Sweeps and Optimization

4.6.5. Transmit antennas SWR and Frequency response sweeps

4.6.6. Tower Top Amplifier and Multi-coupler Testing.

4.6.7. Receive antenna SWR and Frequency response sweep

4.6.8. Multi-Site Operation and Levels.

4.6.9. Multisite Switch Alignment

4.6.10. Console Alignment and Levels

4.6.11. Document Package upon completion

5. Proposer Requirements

- 5.1. Must be an authorized dealer and service center of all equipment proposed in this RFP.
- 5.2. Must have documented factory trained service technicians install all equipment and software.
- 5.3. Must have documented factory trained technicians respond to all calls for service.
- 5.4. Must have a service center within 100 miles of GUC's service area and respond on site to emergency calls within 2 hours.
- 5.5. Must have a sufficient supply of fixed equipment spares required to meet the specifications of this RFP.
- 5.6. Successful Proposer is responsible for submitting all employees to a background check.
- 5.7. GUC will not be responsible for any additional charges related to installation delays beyond their control.

6. Required Features and Functions

The proposed Radio System and protocol shall support the following features and functions:

- 6.1. The system and/or user equipment must support digital transmissions on a 6.25 equivalent, 12.5 kHz 2 slot TDMA channel. The system user equipment must also support analog transmissions on 25 kHz and 12.5 kHz channels.
- 6.2. The system and/or user equipment must at a minimum meet the requirements and specifications of ETSI DMR Tier III standards based operation.

The relevant references are:

- 6.2.1. 2.1 ETSI TS 102 398 V1.3.1
 - 6.2.2. 2.2 ETSI TS 102 361-1 V2.2.1
 - 6.2.3. 2.3 ETSI TS 102 361-2 V2.1.1
 - 6.2.4. 2.4 ETSI TS 102 361-3 V1.1.7
- 6.3. The repeater/base station equipment must be able to manage two independent time slots on a single 12.5 kHz frequency using TDMA transmissions.
 - 6.4. The system shall use the described non-proprietary, open standard, over the air signaling protocol for communications between the infrastructure and the subscriber radios. Proposer shall explicitly describe any service or functionality defined in the relevant ETSI standards that their proposed equipment does not offer. Proposer shall explicitly describe any service or functionality defined in the relevant ETSI standards that their proposed equipment implements in a non-standard or incompatible manner.
 - 6.5. All user portable radios must incorporate increased digital battery life over analog by operating in a TDMA digital mode.

- 6.6. All user portable radios must include battery technology for maintenance and reconditioning.
- 6.7. All radio equipment must support the use of accessories with automatic gain control and noise suppression.
- 6.8. The system and/or user equipment must include imbedded digital forward error correction technology to increase clarity throughout range.
- 6.9. The system and/or user equipment must include imbedded software based privacy or scrambling to protect user privacy during communications. This imbedded scrambling must support at least 255 16-bit encryption keys. Proposer shall describe the encryption standard employed.
- 6.10. All user radios must include Emergency Declaration capability with a single button activation. The Emergency Declaration shall provide visual and audible status notification to specified radios. Proposer's Proposal shall include a detailed description of the Emergency Declaration features and programming options.
- 6.11. The system and/or user equipment must include imbedded GPS receivers in both the portable and mobile radios. Any additional external receivers or accessories (excluding antennas) shall not be required to receive or send GPS information. GPS shall be supported in a trunked configuration.
- 6.12. The system and/or user equipment must include imbedded text messaging capabilities. Any additional external receivers or accessories shall not be required to receive or send text message information. The user equipment must support unit-to-unit user creatable text messaging capability. The user equipment must support at least 140 scrolling characters. Text messaging shall be supported in a repeater and/or talk around mode.
- 6.13. The system and/or user equipment must include imbedded telemetry capabilities. Any additional external receivers or accessories shall not be required to receive or send telemetry information. Telemetry shall be supported in a repeater and/or talk around mode.
- 6.14. The system and/or user equipment must include intelligent channel steering capabilities to revert GPS traffic to alternate channels to control and manage data traffic on the system.
- 6.15. The Dispatch Console must support Automatic Vehicle Location (AVL) information to include vehicle identification, location, speed and time of transmission. It is the intent of GUC to use the radio system as the enterprise system of collection for Automatic Vehicle Location (AVL). GUC intends to leverage the AVL system, procedures and data programmatically to integrate with other enterprise software systems such as ESRI GIS and ORACLE Utilities. Therefore, the system, procedures and data used to support Automatic Vehicle Location (AVL) should have an Application Programming Interface (API) that allows for inclusion into existing enterprise software. Please find the following requirements for the API
 - 6.15.1. API should be generally accessible to programmatic access based on industry standard protocols such as SOAP, REST, Direct Database queries or similar
 - 6.15.2. API should support retrieval of current location or last known location by radio id or other such unique radio identifier.
 - 6.15.3. API should provide additional information about quality, time and type of location
 - 6.15.4. API should support retrieval of information regarding radio type and status
 - 6.15.5. API should support retrieval of current location or last known location in a latitude and longitude format

- 6.15.6. Vendor should provide adequate documentation and support API within licensing agreement
- 6.15.7. In event that AVL is not currently receiving location information from a unit. The API may support additional functions such as still allowing for a location request or remote wake of GPS unit.
- 6.15.8. API may support additional data features such as speed, bearing, etc.
- 6.15.9. API may support retrieval of historical location information given a date and time range
- 6.15.10. Vendor should submit a week documented API as part of the evaluation process and should be able to demonstrate the successful completion of all AVL API requirements.
- 6.16. Voice shall take priority over data transmissions on radios transmitting both voice and data information.
- 6.17. Proposer shall state whether the user may have the option of applying for licensure to detailed radio interface information. This information would allow the radio user, if capable, to develop custom applications.
- 6.18. The system must support DMR Tier III to Cellular Smart Phone PTT for voice communications. Supported Devices must include Android, iPhone IOS and Windows platforms.

7. Multi-Site Capabilities

- 7.1. System must be a DMR Tier III compliant Trunked multi-site, multi-channel radio network capable of supporting multiple interconnected user groups/fleets. Various entities and work groups must be able to communicate without regard to geographic location.
- 7.2. The system design should allow connection of any site in the network to any site in the network over IP facilities to achieve the required network connectivity between sites. Proposer shall state the facilities requirements in sufficient detail so that the GUC can prepare for those facilities. The network infrastructure shall allow the system operator the flexibility of being able to configure the network in a linear, star or mesh type of network configuration. Third party equipment shall not be required for this connection beyond the IP facilities interface.
- 7.3. System shall be expandable to support additional and/or future sites, radio channels, and users. The network should have the capability of being expanded to at least 15 sites. Proposer shall state any limitations to the numbers of sites, channels, groups and users.
- 7.4. The system design should allow seamless roaming between sites.

8. Trunking Capabilities

- 8.1. The system shall be able to support Multi-site Digital TDMA trunking for voice and data communications
- 8.2. The proposed user (terminal) equipment must be DMR Tier III trunking capable from the factory.

9. User Equipment

General

All user radios proposed (portables, mobiles, and control stations) shall fully support all features and functions available for user radios in the proposed DMR Tier III Trunked Radio system. The pricing for user radios shall detail all options, programming and installation services required for operation. At the appropriate time during the implementation process Proposer will be expected to develop detailed

programming personalities and talk group configurations with input and assistance from GUC. User radio programming shall not be performed until GUC Project Manager has approved the programming personalities and issued a written notice to proceed with radio programming.

All proposed portable, mobile, and control station radios shall conform to the minimum standards specified by TIA/EIA-603, Section 5 "Standards for Portables".

9.1. Portable Radios

9.1.1. Proposer will quote 144 portable radios.

9.1.2. The proposed portable radio units shall conform to applicable Portable Military Standards 810C, 810D, and 810E. The portable transmitters and receivers must further meet or exceed the following specifications. IP67 Dust and Water Intrusion

9.1.3. Proposer shall specify the detailed performance specifications of the portable radio, at a minimum:

9.1.3.1. Static Sensitivity (-117 dbm analog for 12 dB SINAD and 5 percent BER)

9.1.3.2. Power Output 1 to 3 watts Selectable

9.1.3.3. Adjacent Channel Protection Ratio (ACIPR)

9.1.3.4. 800 & 900 MHZ LMR Bandwidth

9.1.3.5. Frequency Stability +/-1.5 PPM

9.1.3.6. Audio Power 0.5 watts

9.1.3.7. Modulation FM and 4-Level FSK

9.1.3.8. Internal GPS Time to First Fix < 1 Minute Cold Start

9.1.3.9. Proposer shall describe any limitations or deviations from the referenced ETSI standards and/or recommendations.

9.1.4. The proposed portable radio should be rugged, reliable, and provide the following minimum features:

9.1.4.1. Emergency button.

9.1.4.2. 12.5 kHz and 25 kHz analog channel bandwidth.

9.1.4.3. 12.5 kHz TDMA (6.25e) digital channel bandwidth.

9.1.4.4. Color alphanumeric display.

9.1.4.5. 1024 Channel Capacity

9.1.4.6. PTT ID

9.1.4.7. Private Call

9.1.4.8. All Call

9.1.4.9. Call Alert

- 9.1.4.10. Escalating Alerts
- 9.1.4.11. Emergency Receive
- 9.1.4.12. Radio Check
- 9.1.4.13. Radio Disable/Enable
- 9.1.4.14. Remote Monitor
- 9.1.4.15. 16-position channel selector.
- 9.1.4.16. Group scan.
- 9.1.4.17. External microphone and speaker connections.
- 9.1.4.18. 2000 mAh Li-ion battery.
- 9.1.4.19. Voice Annunciation
- 9.1.4.20. Integrated GPS
- 9.1.4.21. Remote Monitor
- 9.1.4.22. Auto Site Roaming
- 9.1.4.23. Lone Worker Mode
- 9.1.4.24. Subscriber-to-subscriber text messaging shall be supported in an imbedded application on all subscriber radios. Text messaging shall support using free-form (for radios with display and keypad) or a set of 'canned' messages (all radios). Text messaging shall be supported in both repeated and talkaround modes of operation.

9.2 Mobile Radios

- 9.2.1 Proposer will quote 184 mobile radios.
- 9.2.2 The proposed mobile radio units shall conform to applicable Mobile Military Standards 810C, 810D, and 810E.
- 9.2.3 Proposer shall provide detailed performance specifications of the portable radio, at a minimum:
 - 9.2.3.1 Static Sensitivity (-117 dbm analog for 12 dB SINAD and 5 percent BER)
 - 9.2.3.2 Power Output 35 watts
 - 9.2.3.3 Adjacent Channel Protection Ratio (ACIPR)
 - 9.2.3.4 800 & 900 MHZ LMR Bandwidth
 - 9.2.3.5 Frequency Stability +/-1.5 PPM
 - 9.2.3.6 Audio Power 3 watts
 - 9.2.3.7 Modulation FM and 4-Level FSK
 - 9.2.3.8 Internal GPS Time to First Fix < 1 Minute Cold Start

9.2.3.9 Proposer shall describe any limitations or deviations from the referenced ETSI standards and/or recommendations.

9.2.4 The proposed mobile radio should be rugged, reliable, and provide the following minimum features:

- 9.2.4.1 Emergency button
- 9.2.4.2 12.5 kHz and 25 kHz analog channel bandwidth.
- 9.2.4.3 12.5 kHz TDMA (6.25e) digital channel bandwidth
- 9.2.4.4 Color alphanumeric display.
- 9.2.4.5 1024 Channel Capacity
- 9.2.4.6 PTT ID
- 9.2.4.7 Private Call
- 9.2.4.8 All Call
- 9.2.4.9 Call Alert
- 9.2.4.10 Escalating Alerts
- 9.2.4.11 Emergency Receive
- 9.2.4.12 Radio Check
- 9.2.4.13 Radio Disable/Enable
- 9.2.4.14 Remote Monitor
- 9.2.4.15 16-position channel selector
- 9.2.4.16 Group scan.
- 9.2.4.17 Six Programmable Telemetry I/O Ports
- 9.2.4.18 Four Programmable Soft Keys
- 9.2.4.19 Voice Annunciation
- 9.2.4.20 Integrated GPS
- 9.2.4.21 Auto Site Roaming
- 9.2.4.22 Remote Monitor
- 9.2.4.23 Available Front Mount and Remote Mount

9.3 Desktop Control Station Radios

9.3.1 Proposer will quote 25 desktop control station radios.

9.3.2 Proposed Desktop control stations include radio, power supply, desktop microphone, grounding, building entry port, coaxial surge suppression and yagi antenna with building mount. The minimum radio features should be equal to the proposed mobile radios.

9.3.3 Proposer shall describe any limitations or deviations from the referenced ETSI standards and/or recommendations.

9.4 DMR Tier III to Cellular Smart Phone PTT

9.4.1 Proposer will quote 45 cellular smart phone interface for voice communications. Supported Devices must include Android, iPhone IOS and Windows platforms.

10 Base Station Equipment

10.1 The proposed base station equipment should be rugged, reliable, and provide the following minimum features:

10.1.1 800/900 MHZ LMR Bandwidth

10.1.2 Diversity Receivers

10.1.3 Hot swappable modules

10.1.4 On board database management

10.1.5 Redundant controllers

10.1.6 Control Channel Backup

10.1.7 DMR Intersystem Connections

10.1.8 Late Entry

10.1.9 Call Duration Limiter

10.1.10 Module Status LED Indicators

10.1.11 Remote Monitoring

10.1.12 IP Based Multisite calls

10.1.13 Proposer shall describe any limitations or deviations from the referenced ETSI standards and/or recommendations.

11 Base Station Transmitter

11.1 The base station transmitters shall conform to the minimum standards specified by TIA/EIA-603, Section 4.2, and the Code of Federal Regulations 47, Part 90, Subpart I. The transmitters shall further meet or exceed the following specifications:

- 11.1.1 Power output 30 to 100 Watts adjustable
- 11.1.2 4-Level FSK Modulation
- 11.1.3 Transmission rate 9.6 KPS
- 11.1.4 Frequency range 851 to 870 MHZ & 935 to 941 MHZ

12 Base Station Receiver

12.1 The base station receivers shall conform to the minimum standards specified by TIA/EIA-603, Section 4.2, and the Code of Federal Regulations 47, Part 90, Subpart I. The receivers shall further meet or exceed the following specifications:

- 12.1.1 Static Sensitivity Single Receiver (-119 dbm @ 5% BER)
- 12.1.2 Static Sensitivity Triple Diversity Receivers (-122dbm @ 5% BER)
- 12.1.3 Dynamic Range (115db)
- 12.1.4 Adjacent Channel Selectivity (>60 db)
- 12.1.5 Intermodulation Rejection (>70db)
- 12.1.6 Frequency Bandwidth 806 to 825 MHZ & 896 to 902 MHZ

13 Multisite Switch System

13.1 The Multisite switch should be comprised of standard commercial off the shelf components that include a primary server, IP switch and Router. The Multisite switch should be able to support up to 30 trunked sites, 20 Dispatch Consoles, and Telephone Interconnect. All Multisite Calls must be handled via IP. The Multisite Switch shall support the following features:

- 13.1.1 Radio Registration
- 13.1.2 Individual Call / Group Call
- 13.1.3 Late Entry
- 13.1.4 Random Access
- 13.1.5 Group Management
- 13.1.6 Dynamic Base Station Assignment
- 13.1.7 Handover
- 13.1.8 Multiple Dial Plans
- 13.1.9 PSTN/PABX Gateways

- 13.1.10 ESN Check
- 13.1.11 5 Priority Levels
- 13.1.12 Queue and Call Back
- 13.1.13 Broadcast Call
- 13.1.14 Status Message
- 13.1.15 Emergency call
- 13.1.16 Forced Disconnect
- 13.1.17 Call Eaves Drop Monitor
- 13.1.18 GPS / AVL Polling
- 13.1.19 Analog Conventional Gateway
- 13.1.20 Call Break In

14 Network Management System

14.1 The Network Management System (NMS) should be Windows 7 PC based and be able to be located anywhere on the system IP Network. Optional Network Management terminal software applications should be available to run on Windows PC's workstations. The Network Management System shall support the following Features:

- 14.2 System Configuration Management
- 14.3 Subscriber Unit Management
- 14.4 System Device Monitor
- 14.5 System Security Management
- 14.6 Remote Maintenance
- 14.7 System Alarm Monitoring

15 Dispatcher Work Station

15.1 Proposer will quote two Dispatcher Work Stations.

15.2 The Dispatcher Work Station (DWS) shall be Windows 7 PC based and be able to be located anywhere on the system IP Network. The Dispatch Work Station must be fully IP based. Audio or serial based dispatcher work stations are not acceptable. An optional Dispatcher Work Station shall be available as a software only application that can be loaded on any Windows PC that is compatible with the DMR Tier III radio system.

15.3 The Dispatcher Work Station shall provide telephone user interface. A user selectable common headset shall be utilized for radio and telephone communications. GUC's telephone system is a Mitel 3300 with Mitel Communications Director (MCD) Core Software at Release 6.0, SP1. The dispatcher handsets are Mitel model 5340E IP Phone with a Mitel 5610 Cordless Telephone Kit and Cordless Headset Bundle.

15.4 The Dispatcher Work Station shall support the following features:

15.4.1 Individual Calls

15.4.2 Group Calls

15.4.3 Broadcast Calls

15.4.4 Emergency Calls Group and Individual

15.4.5 Emergency Clear

15.4.6 Forced Call Break in

15.4.7 Forced Disconnect

15.4.8 Status Message / Predefined Message

15.4.9 Text Message

15.4.10 Message Template

15.4.11 Contact List

15.4.12 Dispatcher Password Log in

15.4.13 AVL/GPS Positioning

15.4.14 AVL Real Time Track

15.4.15 AVL Track Play Back

15.4.16 AVL Geo Fencing By Unit

15.4.17 AVL Distance Measurement

15.4.18 AVL Area Measurement

15.4.19 AVL Map Tool Bar

15.4.20 AVL Maps must Support – Google Maps – PGIS Maps – Map Info

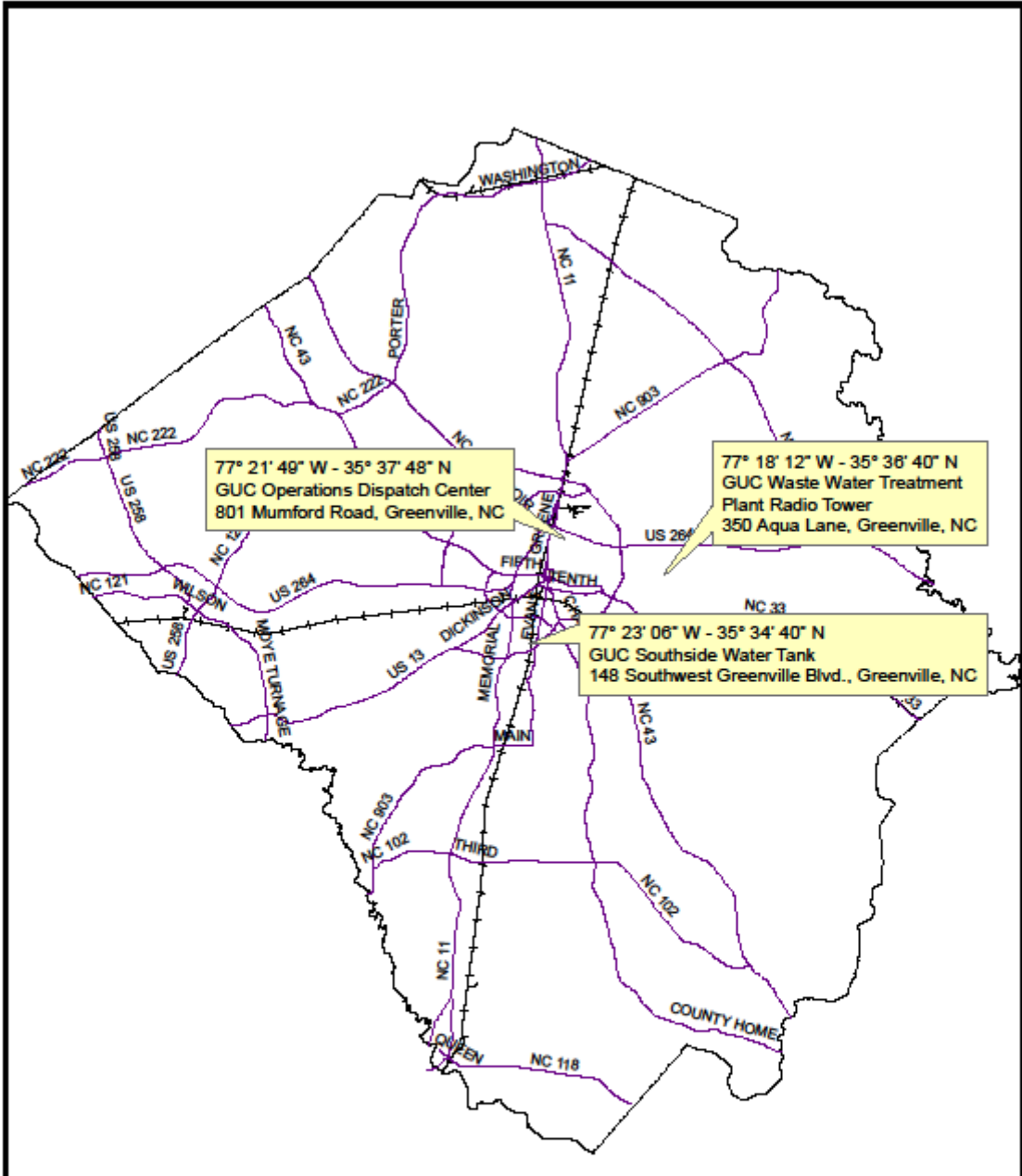
15.4.21 Save View

15.4.22 Tree View

15.4.23 Instant Voice Recall

15.4.24 Log View Call History

15.4.25 Call Monitor / Call Eaves Drop



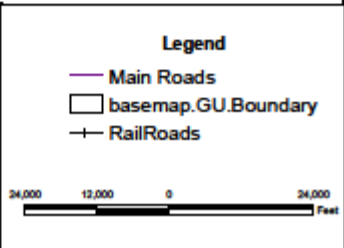
GUC DISCLAIMS
 South, Water, Power and Gas facilities depicted on this map are for illustrative purposes only and may not be related to any actual facilities. Possession of a Geographic Information System (GIS) map in any format does not constitute an approval of accuracy, nor does it imply approval to be shared with any third party. This map is not a certified survey. The source data is referenced from: NC County Planning Department, the City of Greenville and GUC.



GUC RADIO RFP
APPENDIX 1
 PITT COUNTY NC

801 Mumford Road
 PO Box 1847
 Greenville, NC 27858





It is certified that this proposal is made in good faith and without collusion or connection with any other person responding on the same above listed items. It is also certified that this proposal is made in good faith and without collusion or connection with any GUC employee(s).

Certified check or cash for \$ _____ n/a _____ or bid bond for \$ _____ n/a _____ attached.

Firm Name _____ Phone (____) _____

Address _____

City _____ State _____ Zip Code _____

Fax (____) _____ E-Mail _____

Authorized Official _____ Title _____

Typed Name

_____ Date _____

Signature

**Three (3) copies of your proposal should be received June 30, 2014
no later than 3:00 PM (EDST)**