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Saving Lives and Property Through Improved Interoperability

***Sample Request for Proposals for a
VHF Trunked System Based on
Commercial off-the-Shelf
Project 25 Standard System***

Final

August 2001

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TABLE OF CONTENTS

	PAGE
1. REQUEST FOR PROPOSAL (RFP) OVERVIEW	1
1.1 TIA/EIA-102 DIGITAL STANDARDS	2
1.2 TOTAL PROJECT SCOPE	2
1.2.1 Time Frame.....	3
2. PROPOSAL PROCEDURE AND INSTRUCTIONS	4
2.1 SITE WALK-THROUGH.....	4
2.2 PLANNED SCHEDULE OF RFP EVENTS.....	4
2.3 SUBMISSION OF PROPOSAL	4
2.4 RESPONSIBILITY FOR COMPLIANCE WITH LEGAL REQUIREMENTS	5
2.5 VENDOR RIGHTS	5
2.6 VENDOR INCURRED COSTS.....	5
2.7 VENDOR ERRORS OR OMISSIONS	5
2.8 MODIFICATION OR WITHDRAWAL OF A PROPOSAL.....	5
2.9 COVENANT AGAINST CONTINGENT FEES	5
2.10 RESERVATION OF RIGHTS.....	5
2.11 REJECTION OF SOLICITATION RESPONSE	6
2.12 VENDOR INQUIRIES	6
2.13 ADDENDUM.....	6
2.14 DESCRIPTION OF PROPOSAL.....	6
2.15 PROPOSAL FORMAT—INSTRUCTIONS.....	6
2.15.1 Response Format and Organization.....	7
2.15.2 Letter of Transmittal.....	7
2.15.3 Table of Contents.....	7
2.15.4 Work Plan and Performance Schedules.....	7
2.15.5 Organizational Chart/Assigned Personnel.....	7
2.15.6 Contractors List.....	7
2.15.7 Contract Form and Languages.....	8
2.15.8 Technical Proposal.....	8
2.15.9 Deliverables Checklist.....	8
2.15.10 Cost Proposal.....	8
3. PROPOSAL EVALUATION.....	9
3.1 KEY PERSONNEL	9
3.2 EVALUATION CRITERIA	9
3.2.1 VENDORS's Understanding of Scope of Work.....	10
3.2.2 Organizational Capabilities	10
3.2.3 Past Performances.....	10
3.2.4 Implementation	11
3.2.5 System Performance	11
3.2.6 Contract Logistics Support.....	12
3.2.7 Management Evaluation.....	12
3.2.8 Feature Richness	12
3.2.9 Time Schedule.....	12
3.2.10 Total Cost	12
3.3 CONTRACT AWARD	12

Procurement Sensitive

	PAGE
4. DELIVERY, INSTALLATION, AND TRAINING REQUIREMENTS	13
4.1 RESPONSIBILITY	13
4.2 DELIVERY/INSTALLATION SCHEDULES	13
4.3 CLEANING	14
4.4 SECURITY	14
4.5 SYSTEMS AND EQUIPMENT WARRANTY	14
4.5.1 <i>Systems and Subsystems Warranty</i>	14
4.5.2 <i>Software Warranty</i>	14
4.5.3 <i>Software Licensing</i>	14
4.6 TRAINING	15
5. GENERAL TERMS AND CONDITIONS	16
5.1 INTRODUCTION	16
5.2 PART I—SCHEDULE.....	17
5.3 PART II—GENERAL PROVISIONS	22
5.4 PART III—<STATE AGENCY NAME> PROVISIONS	31
5.5 PART IV—SUPPLEMENTAL PROVISIONS	34
5.6 PART V—STATEMENT OF WORK	39
5.7 PART VI—ATTACHMENTS	39
6. STATEMENT OF WORK.....	43
6.1 SITE SELECTION	44
6.1.1 <i>Site Survey</i>	45
6.1.2 <i>Modification to Existing Sites</i>	45
6.1.3 <i>New Radio Sites</i>	45
6.1.4 <i>Site Access Requirements</i>	45
6.1.5 <i>Licenses and Permits</i>	45
6.2 PROPAGATION ANALYSIS	47
6.3 INTERFERENCE ANALYSIS	47
6.4 PRELIMINARY DESIGN	48
6.5 DETAILED DESIGN.....	49
6.5.1 <i>System Security Requirements</i>	49
6.5.2 <i>Leased Lines</i>	49
6.5.3 <i>Interface Designs</i>	49
6.5.4 <i>System Equipment Specifications</i>	50
6.5.5 <i>Design Approval Process</i>	50
6.6 INSTALLATION.....	50
6.6.1 <i>Infrastructure Equipment</i>	50
6.6.2 <i>System Documentation</i>	50
6.6.3 <i>Codes</i>	51
6.6.4 <i>Cleaning</i>	51
6.6.5 <i>Spare Parts</i>	51
6.6.6 <i>Test Equipment</i>	51
6.6.7 <i>Equipment Labeling</i>	52
6.7 ACCEPTANCE TESTING	52
6.8 TRAINING	52
6.8.1 <i>Training Plan</i>	52
6.8.2 <i>Videotapes</i>	53
6.8.3 <i>Technical Training</i>	53
6.8.4 <i>System Manager Training</i>	53
6.8.5 <i>Operational Training</i>	53
6.8.6 <i>Classes</i>	54
6.9 WARRANTY AND MAINTENANCE.....	54

Procurement Sensitive

	PAGE
7. TECHNICAL SPECIFICATIONS	55
7.1 SYSTEM FUNCTIONAL REQUIREMENTS.....	55
7.1.1 <i>Emergency Alarm Requirements</i>	55
7.1.2 <i>Radio Control Subsystem</i>	55
7.1.3 <i>Frequency Band/Spectrum</i>	55
7.1.4 <i>The System Communications Facility</i>	55
7.1.5 <i>Trunking System Features</i>	56
7.1.6 <i>Interoperability</i>	56
7.2 SYSTEM PERFORMANCE SPECIFICATIONS	56
7.2.1 <i>Coverage</i>	56
7.2.2 <i>Access Time</i>	58
7.2.3 <i>Encrypted Transmission</i>	58
7.2.4 <i>Simulcast/Multisite</i>	58
8. GENERAL INSTALLATION SPECIFICATIONS	59
8.1 INSTALLATION PLANS, PROCEDURES, AND APPROVALS.....	59
8.2 INSTALLATION COORDINATION	59
8.3 EQUIPMENT INSTALLATION REQUIREMENTS	59
8.3.1 <i>Grounding, Bonding, and Lightning Protection Requirements</i>	60
8.3.2 <i>Equipment Racks and Cabinets</i>	61
8.3.3 <i>Interface Requirements Including the Main Distribution Frame</i>	61
8.3.4 <i>Equipment Placement Requirements</i>	62
8.3.5 <i>Equipment Surge Protection Requirements</i>	62
8.3.6 <i>Antenna and Transmission Line Installation</i>	63
8.3.7 <i>Site Internal Cabling</i>	65
8.3.8 <i>Cable Tray Requirements</i>	65
8.3.9 <i>Communications Dispatch Centers</i>	66
8.3.10 <i>Antenna Support Structures</i>	66
8.3.11 <i>Site Restoration</i>	67
8.4 QUALITY CONTROL REQUIREMENTS	67
9. ACCEPTANCE TESTING.....	69
9.1 ACCEPTANCE TEST PLAN	69
9.1.1 <i>First Article Testing</i>	70
9.1.2 <i>Field Acceptance Testing</i>	70
9.1.3 <i>Operational Test</i>	71
9.1.4 <i>Re-Testing</i>	72
9.2 FINAL ACCEPTANCE	72
9.2.1 <i>Failure to Comply</i>	73
APPENDIX A—LIST OF FREQUENCIES	A-1
APPENDIX B—LIST OF RADIO SITES.....	B-1
APPENDIX C—SERVICE AREA MAP.....	C-1
APPENDIX D—APPLICABLE TIA/EIA-102 DOCUMENTS AND ASSOCIATED RELEASE DATA.....	D-1
APPENDIX E—PROPOSAL CHECKLIST.....	E-1
APPENDIX F—PROPOSAL PRICE INFORMATION.....	F-1
APPENDIX G—LIST OF ACRONYMS	G-1

Procurement Sensitive

LIST OF FIGURES

	PAGE
Figure C-1 Coverage Area Requirements.....	C-1

LIST OF TABLES

	PAGE
Table E-1 Proposal Checklist	E-1
Table E-2 List of Deliverables.....	E-2

Procurement Sensitive

1. REQUEST FOR PROPOSAL (RFP) OVERVIEW

<State Agency Name> plans to purchase a commercial off-the-shelf (COTS), very high frequency (VHF) trunked LMR system (hereinafter referred to as “the system”), which will be deployed in <state geographic region>. This RFP sets forth terms and conditions, technical requirements, and operational constraints for the implementation of the infrastructure to support the System. The VENDOR should study this RFP and prepare a response that conforms to its requirements.

The system is required to support both the voice and data radio communication requirements of several federal agencies having different performance and reliability objectives (i.e., public safety, emergency response, and administrative use). The system must also support integrated dispatch and automatic aid operations between participating agencies. The system is required to operate in the VHF high band, 162-174 megahertz (MHz), and be fully compliant with the Telecommunications Industry Association / Electronic Industry Association-102 (TIA/EIA-102) suite of standards and specifications.

<State Agency Name> will not accept a proposed system that is not fully TIA/EIA-102 compliant.

Mandatory system infrastructure attributes must include, but are not limited to—

- The systems shall be fully TIA/EIA-102 compliant (Phase 1).
- Radio equipment shall meet National Telecommunications and Information Administration (NTIA) standards.
- The system shall be trunked and operate in the VHF high band, 162–174 MHz.
- The system shall be multisite or simulcast; however, simulcast is the preferred alternative and will receive heavier weighting during the evaluation process.
- The system shall include encryption, as specified in the TIA/EIA-102 standards.
- The system shall include over-the-air rekeying (OTAR), as specified in the TIA/EIA-102 standard.
- The system shall be upgradeable to include over-the-air programming (OTAP), as specified in the TIA/EIA-102 standard.
- The system shall support both voice and data communications, as specified in the TIA/EIA-102 standard.
- The system design objective will be to provide balanced, portable (5-watt), on-the-street, shoulder-level, coverage for 95 percent of <State Region> (as indicated in

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Appendix C), with delivered audio quality (DAQ) of 3.4 or bit error rate (BER) of 2 percent and area coverage reliability (ACR) of 97 percent.

- The system shall consist of six (6) or fewer sites with five (5) channels per site. The proposal with fewest sites and greatest coverage may receive higher weight scores in this category during the evaluation process.
- The system shall provide protection against unauthorized access, use, and interception.
- The system shall provide each federal agency with independent, autonomous control of the system management system for its users only. Each agency's system management data shall be inaccessible to the other agencies.
- The system shall be expandable, with the capability to add other TIA/EIA-102 radio frequency subsystem (RFSS) elements to the network, irrespective of the manufacturer of the System or of the added system.
- The VENDOR shall be responsible for providing one (1) year of warranty maintenance and may be asked to provide optional follow-on maintenance for a period of twenty-four (24) months.
- The system shall be capable of interfacing with a computer-aided dispatch (CAD) system.
- The system shall include two (2) main dispatch console positions and multiple remote dispatch positions (number to be determined later).
- Equipment proposed for the system shall be commercial off-the-shelf (COTS) and shall not require additional development to make it compliant with this RFP.

1.1 TIA/EIA-102 Digital Standards

The system shall support several agencies located in <state geographic region>. The proposed system must be fully compliant with the Phase 1 TIA/EIA-102 specifications and standards, and be fully interoperable with all TIA/EIA-102 compliant mobile and portable field radios. Adherence to the approved, applicable TIA/EIA-102 digital standards shall ensure compatibility and interoperability of radio equipment and systems manufactured by various vendors.

1.2 Total Project Scope

<State Agency Name> intends to purchase the infrastructure equipment, with a one (1) year warranty and a two (2) year follow-on maintenance agreement. The VENDOR is required to provide such equipment and turnkey services as specified in this RFP. The RFP includes, but is not limited to, the provision of a trunked radio system, the console system, and other ancillary

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equipment as required. The turnkey services include, but are not limited to, engineering, furnishing, installing, optimizing, testing, integrating, and maintaining the equipment and systems in accordance with the specifications contained in this RFP. In addition, the VENDOR is responsible for the provision of all documentation, training, warranty, and other services associated with the equipment supplied, as specified in this RFP.

Along with the functional requirements contained in this RFP, the VENDOR shall adhere to referenced communications industry standards and related governmental regulations. The project tasks to be accomplished are detailed in Section 6, STATEMENT OF WORK, of this RFP.

1.2.1 Time Frame

The project shall be fully implemented in accordance with the time schedule specified in Section 2.2, PLANNED SCHEDULE OF RFP EVENTS, of this RFP. The VENDOR is expected to complete each task and milestone as agreed upon in the schedule adopted under the negotiated Contract.

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2. PROPOSAL PROCEDURE AND INSTRUCTIONS

This section of the RFP provides the general procedures and instructions the VENDOR is expected to follow in completing its response. It also introduces the project timeline.

2.1 Site Walk-Through

<State Agency Name> anticipates conducting a limited number of site walk-through tours. The VENDOR shall submit on company letterhead, the names, titles, and company of those representatives desiring to attend the site walk-through. The VENDOR shall include a requested list of sites to be visited and an estimate of the time needed at each site. <State Agency Name> will develop a site visit itinerary based on the VENDOR's input. The VENDOR shall be contacted by <State Agency Name> with the site visit schedule. VENDOR representatives may be required to visit sites not specifically requested to accommodate transportation logistics.

2.2 Planned Schedule of RFP Events

Due Date for RFP Responses/Preliminary Design	RFP release plus ninety (90) calendar days
Response Letter of Intent to Bid/No Bid	RFP release plus thirty (30) calendar days
Questions Submission on RFP	RFP release plus thirty (30) calendar days
Contract Award	RFP Due Date plus thirty (30) calendar days
Detailed Design Review	Contract Award plus sixty (60) calendar days
Installation Completion	Contract Award plus two hundred forty (240) calendar days
Systems Acceptance Testing Completion	Installation Completion plus sixty (60) calendar days

2.3 Submission of Proposal

The VENDOR shall submit one (1) original, five (5) hard copies, and two (2) electronic copies of its response to this RFP. The VENDOR's proposal must be received no later than 5:00 PM Eastern Time on the 90th calendar day after the release of this RFP, at the following address:

<State Agency Name>
<State Street address>
<State Street address>
ATTN: <State Point of Contact Name>

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2.4 Responsibility for Compliance With Legal Requirements

The VENDOR's products, services, and facilities shall be in full compliance with all applicable federal, state, and local laws, regulations, codes, standards, and ordinances, regardless of whether or not they are referred to by <State Agency Name>.

2.5 Vendor Rights

Upon delivery, all materials submitted in response to this RFP become the property of <State Agency Name> and may be appended to any formal documentation establishing a contractual relationship between <State Agency Name> and the VENDOR. VENDOR shall not submit any information that is of a proprietary nature or mark its proposal as proprietary or confidential.

2.6 Vendor Incurred Costs

The VENDOR shall be responsible for all costs incurred in preparing or responding to this RFP. All materials and documents submitted in response to this RFP become the property of <State Agency Name> and will not be returned.

2.7 Vendor Errors or Omissions

<State Agency Name> is not responsible for any VENDOR errors or omissions concerning the RFP process.

2.8 Modification or Withdrawal of a Proposal

The VENDOR agrees in submitting a proposal that the proposal may not be modified, withdrawn, or canceled by the VENDOR for one hundred eighty (180) calendar days following the submittal date. VENDOR's proposal will be valid for a period of one hundred eighty (180) calendar days following submittal date.

2.9 Covenant Against Contingent Fees

The VENDOR warrants that no person or selling agent has been employed or retained to solicit or secure the contract upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, except for bona fide employees or bona fide established commercial or selling agencies maintained by the seller for the purpose of securing business. If the VENDOR breaches or is found in violation of this warranty, <State Agency Name> will have the right to annul the contract without liability or in its discretion to deduct the commission, brokerage, or contingent fee from any amounts due the VENDOR.

2.10 Reservation of Rights

This RFP does not commit <State Agency Name> to award a contract, to pay any costs incurred in the preparation of a proposal to this request, or to procure or contract for services or

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supplies. <State Agency Name> may require the VENDOR to participate in negotiations and to submit such monetary, technical, or other revisions of its proposals that may result from negotiations.

2.11 Rejection of Solicitation Response

<State Agency Name> reserves the right to reject any or all responses received or any part thereof, to accept any response or any part thereof, or to waive any informalities when it is deemed to be in <State Agency Name>'s best interest.

2.12 Vendor Inquiries

All questions relating to this RFP shall be directed, by e-mail or in writing to—

<Point of Contact E-mail Address>

<State Agency Name>

<State Street address>

<State Street address>

ATTN: <State Point of Contact Name>

All questions and answers will be disseminated to all parties responding to this RFP.

All questions concerning or issues related to this RFP shall be presented by e-mail or in writing via overnight express.

2.13 Addendum

<State Agency Name> shall not be responsible for any oral instructions made by any employees, officers of <State Agency Name>, or their representatives in regard to the proposal instructions, specifications, or contract documents. Changes to the plans and specifications will be in the form of an addendum issued by <State Agency Name> to all parties receiving the RFP.

2.14 Description of Proposal

Proposals are requested on the material and services specified in this RFP. All responses shall adhere to the terms and conditions set forth in the following contractual sections of this document. Instructions are for descriptive purposes to guide the VENDOR in the interpretation of the quality, design, and performance desired. Proposals must address all sections in the RFP by their reference number.

2.15 Proposal Format—Instructions

This section outlines the minimum requirements for the preparation and presentation of a response. The VENDOR shall define its capability to design, supply, maintain, and train for a Telecommunications Industry Association / Electronic Industry Association-102 (TIA/EIA-102)

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compliant system as specified in this RFP. The response should be specific and complete in every detail, and prepared in a simple and straightforward manner.

2.15.1 Response Format and Organization

Proposals should be submitted on the forms and in the format as contained in the RFP. Proposals should be indexed and sectioned in a manner consistent with the RFP. Material presented in response to one section may be referenced, if it is applicable, to the response to another section of the RFP.

The proposal (hard copy) should be submitted in a loose leaf, three-ring binder. The proposal, including all copies, should contain all descriptive literature, specifications, samples, etc. Electronic copies shall be formatted in Microsoft Word version 6.0 or Excel 6.0 as appropriate on an IBM formatted CD-ROM. Responses consisting solely of marketing material will not be accepted.

2.15.2 Letter of Transmittal

The letter of transmittal shall include the VENDOR's legal name and business name, if different, address, telephone and fax numbers of the office(s) that will perform the work. The letter shall state the full name of the contact person(s) who will be authorized to represent the company regarding all issues related to this proposal or any contract subsequently awarded to said VENDOR. The letter must bear the signature(s) of the person(s) with binding authority for the firm.

2.15.3 Table of Contents

The Table of Contents of the proposal must include a clear definition of the material, identified by sequential page number and by section reference number.

2.15.4 Work Plan and Performance Schedules

Each proposal must be accompanied by an estimated performance schedule detailing each phase. Significant completion intervals for major tasks with itemized deliverables shall be scheduled based upon the milestones listed in Section 2.2, PLANNED SCHEDULE OF RFP EVENTS.

2.15.5 Organizational Chart/Assigned Personnel

The VENDOR shall identify its program manager in the response and include the names of all personnel who require site access.

2.15.6 Contractors List

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A list of all proposed Contractors and each Contractor's functions, tasks as related to specific sections to the STATEMENT OF WORK, and schedule shall be included in the response to this RFP.

2.15.7 Contract Form and Languages

All documents submitted by the VENDOR concerning this RFP shall be written in the English language. Numerical data furnished herein shall use U.S. customary units of measurement (i.e., not metric).

The VENDOR shall submit forms of any additional agreements that <State Agency Name> will be required to enter into because of the VENDOR's proposal. Such additional agreements shall include, without limitation, any computer software licensing agreements, leasing agreements, etc. required for the proper operation and maintenance of the system.

2.15.8 Technical Proposal

The VENDOR shall respond to the specifications and technical requirements stated in this RFP. Required responses are shown in underlined Italics within each section.

2.15.9 Deliverables Checklist

The VENDOR's response to this RFP shall comply with the PROPOSAL CHECKLIST shown in Table E-1 of Appendix E. Additionally, after contract award, the VENDOR shall provide the deliverables listed in Table E-2.

2.15.10 Cost Proposal

<State Agency Name> requires the VENDOR to provide detailed, itemized pricing for its proposed design. In addition, a number of deliverables and activities are identified that should be separately priced as options. <State Agency Name> may or may not elect to purchase these options. The VENDOR is instructed to use the format in the PROPOSAL PRICE INFORMATION form (Appendix F) to provide a price breakdown of the proposed system.

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3. PROPOSAL EVALUATION

The VENDOR shall describe in detail its understanding of the project's scope of work and the VENDOR's concept of the methodologies to achieve the results described. The VENDOR's response shall address the specific deliverable items required in the STATEMENT OF WORK. The level of detail described for each item will provide <State Agency Name> with insight into the VENDOR's understanding of the project scope.

3.1 Key Personnel

- A. For purposes of this clause, "Key Personnel" is defined as those individuals who are mutually recognized by <State Agency Name> and VENDOR as essential to the successful completion and execution of this Agreement.
- B. Personnel designated as "Key Personnel" shall be assigned to the extent necessary for the timely completion of the task to which they are assigned. Any substitution or reassignment involving VENDOR's Key Personnel assigned to this work shall be made only with persons of equal abilities and qualifications and is subject to prior approval of <State Agency Name>, in writing.
- C. <State Agency Name> reserves the right to direct the removal of any individual assigned to this Agreement.
- D. If <State Agency Name> determines that suitable and timely replacement of key personnel who have been reassigned, terminated, or have otherwise become unavailable for the Agreement work is not reasonably forthcoming or that the resultant reduction of productive effort would be so substantial as to impair the successful completion of the Agreement, the VENDOR may be terminated by <State Agency Name> for default or for the convenience of <State Agency Name>, as appropriate, or at the discretion of <State Agency Name> if he/she finds the VENDOR at fault for the condition. The VENDOR price or fixed fee may be equitably adjusted downward to compensate <State Agency Name> for any resultant delay, loss, or damages.
- E. VENDOR's Key Personnel are—

3.2 Evaluation Criteria

The evaluation of responses received will include an initial review and a final detailed review. The initial review will evaluate all submissions for conformance to stated specifications to eliminate all responses that deviate substantially from the basic intent and/or budget of the request, and that fail to satisfy the mandatory requirements. Only those proposals that meet or exceed the intent of the mandatory requirements will be further evaluated.

The requirements stated in this RFP will be used in a weighted evaluation matrix against which each VENDOR's offering will be compared. The degree to which the proposals exceed the mandatory requirements will be assigned a point value and the total for each offering will be computed as the sum of the products of weight value times point value. Weight values will be assigned in accordance with the perceived importance of each function/capability.

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VENDOR's proposal must adhere to the terms and conditions of this RFP. Any exceptions must be noted in VENDOR's response.

The evaluation factors for the System, including mandatory requirements, are—

- VENDOR's Understanding of Scope of Work
- Organizational Capabilities
- Past Performances
- Implementation
- System Performance
- Contract Logistics Support
- Management Evaluation
- Feature Richness
- Time Schedule
- Total Cost.

3.2.1 VENDORS's Understanding of Scope of Work

The VENDOR shall describe in detail its understanding of the project's scope of work and the VENDOR's concept of the methodologies used to achieve the results described. The VENDOR's response shall address the specific deliverable items required in the STATEMENT OF WORK. The level of detail described for each item will provide <State Agency Name> with insights into the VENDOR's understanding of the project scope.

3.2.2 Organizational Capabilities

Consideration will be given to the qualifications of the VENDOR's project team proposed for assignment to this project. Staff qualifications and specific experience demonstrated on projects of a similar nature will receive primary attention. Consideration will also be given to prior activities such as system engineering, detailed design effort, equipment development, equipment installation, and construction of facilities. The VENDOR shall submit the resumes of the Project Manager, Principal Engineer, and other essential personnel who will be assigned to the project.

3.2.3 Past Performances

The VENDOR's successful past performance on similar projects will be considered as a significant indicator of the VENDOR's technical competency and capability to complete this project. The VENDOR shall submit a list of at least three (3) projects of similar size and complexity that demonstrate the firm's qualifications due to past experience with similar projects. The list shall contain details regarding type of system(s), name(s) of customer(s) to whom the services were provided, dates and periods during which the indicated services were provided, the extent and exact nature of services provided, and whether or not the proposed systems were implemented.

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3.2.4 Implementation

The VENDOR's proposal will be evaluated for the quality, completeness, and realism of the approach to the complete and timely implementation of the system in accordance with the requirements of the SOW. The following evaluation considerations are listed and are equal in order of importance:

- A. Approach for lease/acquisition and implementation of towers and other infrastructure.
- B. Plans to coordinate activities, schedules, and resources and ensure availability of required components to ensure timely site implementation.
- C. Approach to data gathering and obtaining access to <State Agency Name> information, facilities, and personnel.
- D. Availability of qualified personnel resources to complete large scale, implementation within schedule requirements.
- E. Approach for coordinating with other service and equipment providers to obtain data, establish schedules, and coordinate activities.
- F. Environmental considerations and process for satisfying environmental, land use, zoning and other regulatory requirements.
- G. Extent to which implementation plans minimize loss of service and disruption to existing operations.

3.2.5 System Performance

An evaluation will be made of the VENDOR's proposed design. The proposed design documents will be evaluated in accordance with the following considerations listed in equal order of importance:

- A. Quality of the design and demonstrated ability to meet performance requirements, with particular emphasis on coverage, operational reliability, and recoverability.
- B. Extent to which system performance will exceed performance requirements in the performance specification and the richness of features that will be provided.
- C. Understanding of the operational and security requirements, and the performance risks and the relative changes associated with meeting the varied service, schedule, feature, and geographic requirements.
- D. Extent to which the facilities employ proven, commercial technology and standards and allow connection to the broadest possible range of commercial equipment.

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3.2.6 Contract Logistics Support

The VENDOR's proposal will be evaluated for the understanding and completeness of the VENDOR's plans for meeting Contract Logistics Support requirements of the SOW. The evaluation considerations are listed below and are equal in order of importance:

- A. Availability of qualified personnel
- B. Plans to ensure timely maintenance and warranty response on a nationwide basis
- C. Plans for receiving, processing, and tracking maintenance and warranty calls
- D. Proposed design, media, approach, and content for development of training materials and training presentation.
- E. Plans for providing spare parts and identifying/obtaining long lead-time materials.

3.2.7 Management Evaluation

Each proposal will be evaluated to assess the VENDOR's management ability to plan, schedule and coordinate implementation and operation of the system in accordance with the requirements. The VENDOR's proposal must convey to the <State Agency Name> that the VENDOR has a suitable approach, the required resources, and possesses sufficient management expertise and experience to manage resources and effectively achieve all requirements.

3.2.8 Feature Richness

Consideration will be given to the degree to which the system being offered by the VENDOR exceeds the minimum requirements. Extra weight will be given to proposals that provide state-of-the-art technology, ensure long-term compliance with Telecommunications Industry Association / Electronic Industry Association-102 (TIA/EIA-102) standards, provide useful user-friendly features, conserve radio spectrum, and address the needs of the federal community for wide area multiagency wireless services.

3.2.9 Time Schedule

The VENDOR shall make every effort to comply with the time frame specified in Section 2.2, PLANNED SCHEDULE OF RFP EVENTS of this RFP. A detailed time schedule, proposed by the VENDOR, will be considered.

3.2.10 Total Cost

An important factor in the selection of a VENDOR will be the project cost of the proposed solution that meets the goals of the System.

3.3 Contract Award

The award, if made, shall be made by giving written notice to the VENDOR.

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4. DELIVERY, INSTALLATION, AND TRAINING REQUIREMENTS

This section covers design, delivery, installation, acceptance, and performance requirements for all equipment delivered by the VENDOR.

4.1 Responsibility

The VENDOR shall be responsible for engineering, furnishing, installing, and testing all elements of the system in accordance with the specifications and requirements of this RFP. The period of performance is expected to be for the design, delivery, and install period plus three (3) years after final acceptance of the system by <State Agency Name>. The VENDOR shall also be responsible for the work and cost for temporarily moving and/or repositioning existing equipment to facilitate the new installation. After final system acceptance, the VENDOR shall be responsible for providing one (1) year of warranty maintenance and two (2) years of engineering-level assistance for system operation, management, and development issues. The VENDOR may be asked to provide optional follow-on maintenance for a period of two (2) years.

The VENDOR shall make necessary provisions to warehouse all materials and equipment to be installed.

4.2 Delivery/Installation Schedules

The VENDOR shall propose a baseline schedule for design, delivery, installation, and testing of all items required for the system. The schedule shall address, as a minimum, the following:

- Site Surveys and Site Selections
- Site Preparation
- Preliminary Design
- Detailed Design/Critical Design
- Equipment Manufacturing
- Acquisition of Other Subsystems
- Equipment Delivery
- System Installation
- System Configuration
- System Testing
- Acceptance Test
- User Training
- System and Equipment Warranty
- System Documentation.

The VENDOR shall propose the implementation schedule and shall identify any tasks that <State Agency Name> must perform to maintain the schedule. <State Agency Name> reserves the right to make reasonable changes to the proposed schedule or any subsequent schedule at no cost to <State Agency Name>.

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4.3 Cleaning

All work areas shall be cleaned at the end of each workday. The VENDOR shall keep all premises clear of all rubbish and debris generated by the work involved and shall leave all premises neat and clean. The VENDOR, at the VENDOR's expense, shall dispose of all surplus material, rubbish, and debris.

4.4 Security

<State Agency Name> will not assume any responsibility, at any time, for the protection of or for loss of materials, from the time the contract operations have commenced until the final acceptance of the work.

4.5 Systems and Equipment Warranty

The following warranties are inclusive and are given in addition to other warranties expressed and implied. The VENDOR shall provide multiple warranty options with their associated costs for both the system and subsystem warranty and the software warranty.

4.5.1 Systems and Subsystems Warranty

The VENDOR shall warrant that the system and all subsystems, including all components, will be fully operational and free from defects for a minimum of one (1) year from date of final acceptance. The VENDOR shall provide all parts and labor during warranty period.

4.5.2 Software Warranty

The VENDOR shall warrant that software products provided for the system remain free from defects and errors for a minimum of one (1) year from date of final acceptance. The VENDOR shall provide all necessary services to promptly correct any defects at no cost to <State Agency Name>.

The VENDOR shall provide any software program upgrades or enhancements developed for any subsystems supplied as part of the system along with any software maintenance needed to keep the system fully functional, for three (3) years from date of final acceptance.

4.5.3 Software Licensing

The VENDOR shall comply with software licensing requirements for its and <State Agency Name>'s, or their designated representatives, use during installation and ongoing use after system implementation.

The VENDOR shall provide software license rights to <State Agency Name>, and shall continue to support the software over that period.

The VENDOR shall guarantee <State Agency Name> an "Open Architecture" interface, which is non-proprietary, for the future connection of external systems such as computer aided

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dispatch (CAD), network management system (NMS), data, diagnostics and control, and usage tracking.

4.6 Training

The VENDOR shall provide complete technical and operational training for <State Agency Name> employees. The technical training shall be designed and presented to <State Agency Name> for system components and equipment operation, preventive maintenance, system testing, and repair. The operational training shall cover operational capabilities of the system. Such training shall meet the requirements specified in Section 6.8, TRAINING, of this RFP.

The VENDOR shall also support <State Agency Name> in producing information and training videotapes to facilitate all system users becoming familiar with the operation of the system.

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5. GENERAL TERMS AND CONDITIONS

PRIME CONTRACT AGREEMENT

CONTRACTOR:	CONTRACT #*****
	PROJECT #*****-
ADDRESS:	DPAS RATING: N/A
	TYPE: Firm Fixed Price/Task Order
	CEILING VALUE: *****
	FUNDED VALUE: TBD by Task Order
	PERIOD OF PERFORMANCE: ***** Through *****

5.1 Introduction

This Contract Agreement, effective ----- is made between <State Agency Name> (hereinafter known as “<STATE AGENCY ABBREVIATIONS>”), and ***** (hereinafter known as “Contractor”). The Work, defined in Part V (Statement of Work) will be performed on a Firm Fixed-Price, Indefinite Delivery, Indefinite Quantity, Task Order basis (with the exception of any Travel or Other Direct Costs, which are cost reimbursable and limited to a Not To Exceed amount), in accordance with the terms and conditions of this Agreement.

This Contract Agreement consists of this signature page and the following sections marked with an X:

X	Part I, Schedule	X	Part IV, Supplemental Provisions
X	Part II, General Provisions	X	Part V, Statement of Work
X	Part III, <State Agency Name> Provisions	X	Part VI, Attachments

EACH PARTY ACKNOWLEDGES HAVING READ THIS ENTIRE CONTRACT AGREEMENT AND WITH THE FULL POWER AND AUTHORITY TO EXECUTE THIS CONTRACT, AGREES TO PERFORM IN ACCORDANCE WITH THE TERMS AND CONDITIONS CONTAINED HEREIN.

	<State Agency Name>
Name:	Name:
Signed:	Signed:
Title:	Title:
Date:	Date:

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5.2 PART I—Schedule

ARTICLE 1.1—SCOPE OF WORK

A. The Contractor, as an independent Contractor, and not as an agent of <State Agency Name>, shall perform work for <State Agency Name> in accordance with the Statement of Work in Part V of this Contract.

B. All of the work and services to be performed hereunder by the Contractor shall be under the direction of <State Agency Name> but in all other respects, the Contractor shall be an independent Contractor and its employees shall at all times be, and remain, employees of the Contractor, subject to its rights of direction, control and discipline.

ARTICLE 1.2—PRICES

Contractor shall be paid the amount specified in each task order payment schedule upon satisfactory completion and/or delivery and acceptance of said item(s)and/or services. Any travel or other direct costs (ODC) as authorized in Article 1.7 (Travel & ODCs) below shall be invoiced on a cost reimbursable basis and **contain no fee**. Contractor is permitted to load travel and ODCs with DCAA approved G&A consistent with the Contractor’s disclosure statement.

Reference Part VI, Attachment 4, for Service Contract Act and/or Davis Bacon Act labor categories that show labor categories that require compensation in accordance with the Service Contract Act or Davis Bacon Act that are part of this Contract.

ARTICLE 1.3—TERM OF CONTRACT

The term of this Contract is ****** through *******.

ARTICLE 1.4—CONTRACT ADMINISTRATOR

All correspondence or notifications involving contractual or financial matters under this Contract shall be addressed as follows:

CONTRACTOR	<State Agency Name>
	<State Agency Name>
	<State Street address>
	<State Street address>
Attn:	Attn: <State Point of Contact Name>
Title:	Title: Contract Administrator
Phone:	Phone:
Fax:	Fax:

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ARTICLE 1.5—TECHNICAL SURVEILLANCE

A. <State Agency Name>'s Program Manager for this Contract is ***** who is the contact for technical matters under this Contract. His/her telephone number is*****.

B. <State Agency Name>'s Program Manager is authorized to issue technical direction under the Contract on behalf of <State Agency Name>. This direction may include instruction to the Contractor that provides details or otherwise completes the general scope of the work set forth in the Statement of Work. **This direction may not constitute new assignments of work or changes, modifications, or amendments of such a nature as to justify an adjustment in the Contract/Task, terms and conditions, or price.**

C. Any technical work undertaken by the Contractor without express written direction from <State Agency Name> shall be done at the Contractor's risk and expense.

ARTICLE 1.6—LIMITATION OF OBLIGATION

Funding for this Agreement shall be authorized through issuance of individual task orders. The cumulative total of all such task orders issued under this Agreement shall be considered as the funded value. Total estimated ceiling value is *****. **Any work performed in excess of each Task Order amount shall be at the Contractor's risk.**

ARTICLE 1.7—TRAVEL AND OTHER DIRECT COSTS

A. TRAVEL

(i) Travel may be required in the performance of this Contract. Individual Task Orders will set forth any travel requirements. Travel is reimbursable at cost in accordance with FAR Part 31. Receipts are required for travel expenses that exceed \$25 per incident.

(ii) The costs for travel shall be determined reasonable and allowable to the extent that they do not exceed, on a daily basis, the maximum per diem rates in effect at the time of travel as set forth in the:

1. Federal Travel Regulations, prescribed by the General Services Administration, for travel in the contiguous 48 United States, available on a subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, Stock No. 022-001-81003-7;

2. Joint Travel Regulations, Volume 2, DOD Civilian Personnel, Appendix A, prescribed by the Department of Defense, for travel; in Alaska, Hawaii, the Commonwealth of Puerto Rico, and territories and possessions of the United States, available on a subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, Stock No. 906-010-00000-1.

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(iii) Cited Federal Regulations are not incorporated in their entirety. Only sections defining lodging, meals, and incidental expenses, and those sections dealing with special or unusual situations and setting forth maximum per diem rates are incorporated herein.

B. Other Direct Costs

(i) Other Direct Costs (ODCs), including material necessary for the performance of this Contract, are anticipated for this effort. ODCs will be set forth in individual Task Orders. A full Bill of Materials containing all allowable ODCs will be found in individual Task Orders. Receipts are required for reimbursement of all ODCs over \$25 in value.

(ii) The cost of general-purpose items required for the conduct of the Contractor's normal business operations will not be considered an allowable ODC in the performance of this Contract. General-purpose items include, but are not limited to, telephones and telephone charges, typewriters, reproduction machines, word processing equipment, personal computers and other office equipment and supplies.

ARTICLE 1.8—INVOICE INSTRUCTIONS

A. The Contractor shall submit invoices, which will be paid at net thirty (30) upon submission in accordance with the negotiated milestone schedule in each task order. <State Agency Name> shall pay after receipt of proper executed invoices or vouchers, the prices specified for items or services delivered and accepted by <State Agency Name>. Unless otherwise specified, payment will not be made on partial deliveries.

B. Invoices shall be submitted in triplicate (one marked original and two copies) and shall contain the following information:

(i) The name of the Contractor, date of invoice, Prime Contract Number, Contract Number and Task Order Number, Project Number and Invoice Number (which shall be sequential for the term of the Contract);

(ii) Milestone Number;

(iii) A summary of total charges for the invoice period and cumulative for the Contracted effort;

(iv) Completed Milestone Completion Report (Part VI, Attachment 6)

(v) Remittance address to which payment shall be sent;

(vi) Name, title and telephone number of the Contractor's representative who should be contacted in the event problems or questions arise regarding the invoice.

C. All invoices submitted shall be signed and approved by an authorized official of the Contractor, who shall certify that the invoiced amounts are accurate and that the Contractor has

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complied with all requirements of this Contract, and that acceptance of the items or services for which payment is requested has been made.

D. Invoices shall be sent to:

<State Agency Name>
Attn: Invoice Central
<State Street address>
<State Street address>

E. Please submit one copy of the invoice to the Task Manager as indicated on the Task Order or the Technical Surveillance section of this Contract.

F. Payment shall be made net thirty (30) calendar days after receipt of proper invoices.

G. Final Invoices

(i) Final Invoices must be submitted to <State Agency Name> no later than twenty (20) calendar days after acceptance of the final deliverable and completion of the task. Final invoices shall be clearly marked "FINAL INVOICE" and shall include a schedule of cumulative costs invoiced and previously paid.

(ii) If the final invoice is not received within twenty (20) calendar days of final acceptance by <State Agency Name>, <State Agency Name> will not accept the invoice and no additional payments will be made to Contractor. This is a prime contract flow-down which cannot be waived.

(iii) Prior to final payment of the overall Contract, and as a condition thereof, the Contractor shall furnish <State Agency Name> with a release of all claims against <State Agency Name> arising under and by virtue of the Contracted effort. This documentation shall be furnished to the Contractor upon completion of the effort.

(iv) All products delivered hereunder shall be free and clear from any and all encumbrances whatsoever, prior to the submittal of the "FINAL INVOICE."

H. Taxes

The prices appearing in each task order include all packaging, crating and federal, state and local taxes and are firm for the delivery period shown.

ARTICLE 1.9—TASK ORDERS

A. <State Agency Name> may place Task Orders under this Contract to the Contractor for the performance of work. Each Task Order shall contain as a minimum the following information:

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1. A reference to the Contract and document control number.
2. A statement of work in sufficient detail to allow for proper and expeditious performance of the Task Order.
3. The Task Order number and period of performance, which must commence within the overall Contract period of performance.
4. Deliverable item(s) and delivery date(s).
5. Reserved.
6. The not-to-exceed total or fixed price for the Task Order.
7. Any other data as deemed appropriate by <State Agency Name>.

B. The Contractor shall review the requirements of the Task Order and return within five (5) business days after receipt, a signed copy confirming approval and acceptance. Should the Contractor not agree with the terms of the Task Order, the Contractor shall return it to <State Agency Name> within five (5) business days after receipt with a counter proposal to complete the requirements of the Statement of Work. <State Agency Name> will review, and when applicable negotiate the terms of the Task Order, in order to arrive at a mutual agreement.

C. The Contractor may not incur, and <State Agency Name> will not recognize, any costs incurred prior to specific written authorization. When it is in the best interest of the program, <State Agency Name> may issue an Authorization to Proceed with recognition of costs prior to issuance of a Task Order.

D. Where Contractor proceeds based upon the issuance of the Authorization to Proceed under a Task Order it is understood that failure to reach an agreement will be considered a dispute of fact and subject to the “Disputes” clause procedures.

ARTICLE 1.10—INDEFINITE QUANTITY

A. The quantities of priced supplies and services specified in Article 1.6 (Limitation of Obligation) above are estimates only and are not purchased by this Contract.

B. Delivery or performance shall be made only as authorized by task orders issued in accordance with Article 1.9 (Task Orders) above. The Contractor shall furnish to <State Agency Name>, when ordered, the supplies or services specified in each Task Order.

C. Reserved.

D. Any order issued during the effective period of this Contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The Contract shall govern the Contractor’s and <State Agency Name>’s rights and obligations with respect to that order to the same extent as if the order were completed during the Contract’s effective period.

ARTICLE 1.11—LEASE ADDENDUM

<State Agency Name> and Contractor will execute a separate lease agreement for any equipment that may be leased under this Contract.

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ARTICLE 1.12—PAYMENT TO SECOND TIER CONTRACTORS

- A. In the event that <State Agency Name> has received written verification that performance is delayed due to Contractor's non-payment to second tier Contractor(s), <State Agency Name> reserves the right, at <State Agency Name> option, to pay the second tier Contractor directly and set-off such amounts due to Contractor. Contractor will have seven (7) days to cure a non-payment situation with a second-tier Contractor, before <State Agency Name> invokes this right.
- B. Notwithstanding the above, nothing in this clause is intended to create a third party beneficiary relationship with any second tier Contractor. Nor is it intended to create a right of action against <State Agency Name> for payment of fees to a second tier Contractor.

5.3 PART II—General Provisions

ARTICLE 2.1—PRIORITY RATING FOR NATIONAL DEFENSE USE

If this Contract is rated under the Defense Priorities and Allocations System (DPAS) (15 CFR 700), as indicated on the signature page hereof, Contractor must follow all the requirements of that regulation.

ARTICLE 2.2—NONDISCLOSURE

- A. Contractor acknowledges that, in performing this Contract, <State Agency Name> may be required to make available to Contractor certain information that <State Agency Name> may consider proprietary. Such information includes without limitation, information related to patents, research, development, computer software, designs or processes, pricing, trade secrets, customer lists and technical and business information and know-how of <State Agency Name> ("Proprietary Information"). Contractor agrees to safeguard and hold in strictest confidence all Proprietary Information.
- B. Contractor agrees not to make use of nor disclose to third parties any Proprietary Information except in performance hereunder or as expressly authorized in writing by <State Agency Name>. Contractor's obligations under the terms of this provision shall survive termination of this Contract for a period of three (3) years.
- C. Notwithstanding anything contained in paragraphs A and B above, Contractor shall not be liable for any release or use of any information if Contractor can demonstrate by written evidence that the information:

is part of the public domain through no fault of Contractor; or
is in Contractor's rightful possession at the time of receipt thereof; or
is known to Contractor independently of <State Agency Name> and from a source other than one having an obligation of confidentiality to <State Agency Name>; or
is independently developed by Contractor without violation of this or any other agreement.

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ARTICLE 2.3—IN-PROCESS TECHNICAL REVIEW

Contractor's performance of the Work shall be subject to in-process technical review by the <State Agency Name> Technical Representative or such other person(s) as may be designated in writing by <State Agency Name>, provided such actions are not unreasonable and do not interfere with the progress of the work.

ARTICLE 2.4—INSPECTION AND ACCEPTANCE OF DELIVERABLES

- A. In all other instances, <State Agency Name>'s acceptance of the Work shall be deemed to have occurred upon successful completion of inspection and testing by <State Agency Name>'s Technical Representative specified in Part I, "Schedule" of this Contract.
- B. Inspection shall be made in accordance with, and the Technical Representative may perform any tests necessary to demonstrate compliance with, the requirements of Part V, "Statement of Work," and specifications contained in all documentation accompanying any articles furnished. Contractor shall facilitate performance of such tests.

ARTICLE 2.5—RISK OF LOSS AND DAMAGE

Unless this Contract specifically provides elsewhere for earlier passage of title, title to all articles sold hereunder shall pass to <State Agency Name> on final acceptance, regardless of when or where <State Agency Name> takes physical possession.

ARTICLE 2.6—WARRANTY

A. Contractor warrants that it has all rights necessary to fulfill the requirements of this Contract, and that Contractor employees, and lower-tier Contractors are fully qualified to perform hereunder. Additionally, Contractor warrants that all services performed hereunder, including without limitation, development of software, shall be performed to the highest professional standards. Furthermore, Contractor warrants that: (i) all articles furnished hereunder shall be free from defects in workmanship and material, (ii) all articles, services, and other deliverables furnished hereunder shall comply with the requirements of Part V, "Statement of Work," and specifications contained in all accompanying documentation, regardless of any prior course of performance or dealing between <State Agency Name> and Contractor, and (iii) where the Work includes or requires design by Contractor, the design shall be free from defects. The foregoing warranties shall survive acceptance of and payment for the articles, services, and all other aspects of the Work by <State Agency Name>.

THE WARRANTIES EXPRESSLY SET FORTH ABOVE ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

B. The foregoing remedies are in addition to all other remedies at law or in equity and shall not be deemed to be exclusive.

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ARTICLE 2.7—SOFTWARE LICENSE RIGHTS

A. For the purpose of this Article 2.7, "Contractor Software" shall mean software developed by Contractor or its third party licensors independently of, and not funded under, this Contract. The term "software" shall include without limitation, firmware, computer operating systems, application programs, databases, and interface systems and devices.

B. Contractor hereby grants and <State Agency Name> hereby accepts the grant of a nonexclusive, nontransferable license to use the object code, and to make one copy for archival purposes, of the Contractor Software expressly listed below or in the Statement of work.

{Insert Name of Software Here}

C. Contractor hereby grants and <State Agency Name> hereby accepts the grant of a nonexclusive, nontransferable license to reproduce and sublicense, under the terms of the Contract, the object code of the Contractor Software listed below.

{Insert Name of Software Here}

ARTICLE 2.8—YEAR 2000 COMPLIANCE

A. Contractor warrants and represents that all software provided hereunder shall be (i) free of any willfully introduced computer virus or any other similar harmful, malicious, or hidden programs or data and (ii) Year 2000 Compliant for the life of the software. Contractor shall indemnify and hold harmless <State Agency Name> from all costs incurred by <State Agency Name> in connection with any virus, programs, or data, (including without limitation the costs of debugging any virus and of alternative processing while debugging is under way) and shall promptly correct, repair, or replace, at <State Agency Name>'s option and at Contractor's sole expense, any Year 2000 noncompliance so as to comply with the above warranty.

B. For the purposes of this Article 2.8, the term "software" shall include without limitation, firmware, computer operating systems, application programs, databases, and interface systems and devices. Additionally, the term "Year 2000 Compliant" shall mean the ability to accurately generate, display, store, retrieve, and process an eight-digit "day-month-year" date (four-digit year) data, including without limitation calculating, comparing, and sequencing from, into, and between the twentieth and twenty-first centuries, including leap year calculations.

ARTICLE 2.9—WORKS FOR HIRE

Contractor agrees that all materials and work products that it develops under this Contract, including software and documentation, shall be considered "Works for Hire." However, to the extent performance under this Contract is subject to DFAR 252.227-7013 or 252.227-7014, the provisions of this Article are superceded by those of DFAR 252.227-7013 or 252.227-7014, as identified and modified in Part III or Part IV of this Contract, and those materials and work products developed hereunder which are subject to said DFAR provision shall not be deemed "Works for Hire."

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ARTICLE 2.10—PRESERVATION, PACKING, PACKAGING, AND MARKING

Preservation, packing, packaging, and marking for shipment of all products and materials ordered hereunder shall be in accordance with best commercial practice and adequate to ensure both acceptance by common carrier and safe transportation at the most economical rate.

ARTICLE 2.11—TERMINATION

A. <State Agency Name> may terminate this Contract, in whole or in part, for default based upon any of the following default conditions: (i) Contractor fails to fulfill any of its obligations hereunder; (ii) Contractor fails to provide written assurances of performance after such assurances are requested by <State Agency Name>, (iii) the cessation of Contractor's operations in the normal course of business; or (iv) insolvency of Contractor or the entering into or filing by or against the Contractor of a petition, arrangement, or proceeding seeking an order for relief under the bankruptcy laws of the United States, a receivership for any of the assets of the Contractor, a composition with or assignment for the benefit of creditors, a readjustment of debt, or the dissolution or liquidation of the Contractor.

B. Prior to termination for default under any conditions, <State Agency Name> shall notify Contractor of the default condition and shall allow Contractor seven (7) calendar days within which to effect a cure. If the condition is cured within the allowed period, this Contract shall remain in full force and effect. If the default condition remains uncured beyond the allowed period, <State Agency Name> may terminate this Contract, in whole or in part by written notice of termination to the Contractor.

C. Additionally, <State Agency Name> may terminate this Contract, in whole or in part, for its convenience.

D. All notices of termination shall minimally state the basis for termination, and the date upon which such termination will become effective.

E. Upon termination of this Contract for any reason, and except as otherwise directed by <State Agency Name>, Contractor shall: (i) stop work under this Contract on the date and to the extent specified in the notice of termination, (ii) terminate all orders and Contracts to the extent that they relate to the performance of any work terminated by the notice of termination, and (iii) transfer all work in progress which is included in the terminated work to <State Agency Name>.

ARTICLE 2.12—INDEMNITY

A. Contractor agrees to indemnify and save harmless <State Agency Name>, its officers, agents, and employees from and against any and all claims and liability, loss, expenses, suits, damages, judgments, demands, and costs (including reasonable legal fees and expenses) arising out of: (i) the acts or omissions of Contractor, its employees, agents or its Contractors; (ii) injury or death to persons, or loss of or damage to property, or fines and penalties which may result, in whole or in part, by reason of the buying, selling, distribution, or use of any of the goods or services purchased or provided under this Contract except to the extent that such damage is due

Procurement Sensitive

solely and directly to the negligence of <State Agency Name>; (iii) the infringement or violation of any patent, copyright, trade secret, or other proprietary interest of any third party resulting from <State Agency Name>'s use, distribution, sale, sublicensing, or possession of the goods (including software and all forms of written materials) or services purchased or provided, as authorized hereunder, as authorized hereunder; or (iv) false claims submitted by Contractor under this Contract or as a result of a Contractor misrepresentation of fact or fraud by Contractor.

B. Contractor shall defend and settle at its sole expense all suits or proceedings arising out of the foregoing, provided that Contractor has notice or is given prompt written notice of such claim or suit and, further, that Contractor shall be given necessary information, reasonable assistance and the authority to defend such claim or suit.

C. If any of the goods or services provided by Contractor hereunder, including without limitation software and all forms of written materials, become the subject of a claim of infringement or violation of a third party's proprietary rights, Contractor shall, at its own expense, use its best efforts first to procure for <State Agency Name> the right to continue use and, if authorized under this Contract, distribution of the infringing goods or services or, if that right cannot be procured, then to modify the goods or services to make them non-infringing or, if such modification cannot be made, then to replace them with equivalent, non-infringing counterparts. If none of the above mentioned can be successfully implemented, then Contractor shall refund to <State Agency Name> all monies paid Contractor for the infringing goods and services.

ARTICLE 2.13—INSURANCE

Contractor must purchase and maintain the following insurance coverages:

A. Commercial General Liability insurance in an amount no less than \$10 Million Combined Single Limit for Bodily Injury and/or Property Damage per occurrence and \$10 Million in the aggregate. Coverage to include the following extensions: Contractual Liability, Independent Contractors' Liability, Premises Operations, Products/Completed Operations, Broad Form Property Damage. There will be no exclusions for claims alleging bodily injury or property damage arising from Electromagnetic Frequency (EMF) or Radio Frequency (RF) waves.

B. Automobile Liability insurance in an amount no less than \$1 Million combined single limit for bodily injury and/or property damage per occurrence. Coverage to apply to any auto, including hired and non-owned. Auto Physical Damage coverage to be maintained for all autos used on the project.

C. Statutory Workers' Compensation and Employers' Liability in an amount no less than \$1 Million per occurrence.

D. Professional Liability in an amount no less than \$5 Million per occurrence.

E. All-Risk Property insurance. Contractor is responsible for insuring all of its own property and/or property owned by <State Agency Name> in its care, custody and control.

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- F. <State Agency Name>, its Officers and employees to be included as Additional Insureds on the General Liability, Automobile Liability coverages referenced above.
- G. A Waiver of Subrogation will be obtained from General Liability and Workers' Compensation insurance carriers in favor of <State Agency Name>.
- H. <State Agency Name> is to be named as a Loss Payee with respect to all-risk property if Contractor has care, custody and control of <State Agency Name>'s property and/or equipment.
- I. The insurance required by this clause shall be endorsed to state that the coverage shall not be suspended, voided, canceled, reduced in coverage or in limits except after 30 days written notice has been given to <State Agency Name>.
- J. Any deductibles, self-insured retentions, or self-insured programs must be approved by <State Agency Name>. Payment of all amounts falling within deductibles, retentions and self-insured programs are the responsibility of the Contractor.
- K. For claims arising out of this project, the Contractor's insurance shall be primary. Any insurance maintained by <State Agency Name> shall not contribute with it.
- L. If any of the aforementioned insurance policies are written on a claims-made basis, the Contractor warrants that continuous coverage will be maintained or an extended discovery period will be exercised for a period of two (2) years beginning from the time this work is completed.
- M. Insurance is to be placed with insurers with a current A.M. Best Rating A,X or better, unless otherwise approved by <State Agency Name>.
- N. Insurance is to be evidenced via a Certificate of Insurance. All Certificates to be received and approved by <State Agency Name> prior to the commencement of work.
- O. Contractors shall include all of its Contractors as insureds under its policy and/or require any and all Contractors to meet the requirements referenced above.

ARTICLE 2.14—DISPUTES

Both parties shall attempt to mutually dispose of good faith disputes concerning questions of fact and/or law arising hereunder. Any dispute that is not settled by the parties shall be decided by a court of competent jurisdiction in the <State Region>. Pending resolution of any dispute, Contractor agrees to proceed diligently with the performance of this Contract.

ARTICLE 2.15—NOTICE TO <State Agency Name> OF DELAYS

If Contractor encounters difficulty in meeting performance requirements, anticipates difficulty in complying with this Contract's delivery schedule or dates, or has knowledge that any actual or potential situation is delaying or threatens to delay the timely performance of this Contract, Contractor shall immediately notify <State Agency Name> in writing, giving pertinent

Procurement Sensitive

details. This notification shall be informational only, and compliance with this provision shall not be construed as a waiver by <State Agency Name> of any delivery schedule or date or of any rights or remedies.

ARTICLE 2.16—CONTRACT AND ASSIGNMENT

- A. Contractor shall not Contract all or any portion of this Contract without <State Agency Name>'s prior written approval.
- B. No assignment or transfer of this Contract, in whole or part, shall be binding upon <State Agency Name> without <State Agency Name>'s prior written consent. Payments, whether to Contractor or any assignee, shall be subject to setoff or recoupment for claims that <State Agency Name> may have against Contractor, however arising.

ARTICLE 2.17—MODIFICATIONS

Neither this Contract nor any term, condition, or provision hereof, or Task Order issued hereunder, may be altered, changed, or modified in any manner whatsoever except upon the mutual agreement of both parties evidenced by a modification to the Contract that is signed by both parties.

ARTICLE 2.18—PUBLIC RELEASES

No news release, public announcement, or advertising material pertaining to this Contract or the Work shall be issued by Contractor without the prior review and written consent of <State Agency Name>.

ARTICLE 2.19—NOTICES

Any notice or other communication required hereunder shall be in writing and shall be sufficiently given if personally delivered or sent by confirmed facsimile, confirmed overnight delivery, or by first class mail, return receipt requested, postage prepaid, and addressed to the other party at its respective address or facsimile number (as applicable) shown in Article 1.5, "Contract Administrator." Any notice provided hereunder shall be deemed to have been given and received as shown below:

<u>Type of Delivery</u>	<u>Given and Received</u>
Personally delivered	Immediately upon delivery
Facsimile	04 hours after transmission
Mailed by Overnight Delivery	24 hours after mailed
First Class Mail (Return Receipt)	72 hours after mailing

ARTICLE 2.20—CHANGES (Fixed Price)

<State Agency Name> may, by written notice to Contractor at any time before completion of this Contract, make changes within the general scope of this Contract in any one of the following: (a) drawings, designs or specifications; (b) description of services to be

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performed; (c) time of performance (i.e., hours of the day, days of the week); (d) place of performance of the services. If any such change causes a material increase or decrease in the cost of, or the time required for, performance of any part of the work under this Contract, <State Agency Name> shall make an equitable adjustment in the Contract price, the delivery schedule, or both and shall modify the Contract. The Contractor must have notified <State Agency Name> in writing of any request for such adjustment within twenty (20) days from the date of such notice from <State Agency Name> or from the date of any act of <State Agency Name> that Contractor considers constitutes a change. Failure to agree to any adjustment shall be a dispute under the Disputes clause of this Contract. However, Contractor shall proceed with the work as changed without interruption and without awaiting settlement of any such claim.

ARTICLE 2.21—SEVERABILITY

If any provision of this Contract is or becomes void or unenforceable by force or operation of law, the other provisions shall remain valid and enforceable.

ARTICLE 2.22—FORCE MAJEURE

A. Neither party shall be responsible for any failure to comply with, or for any delay in performance of the terms of this Contract, where such failure or delay arises from: (i) acts of God, (ii) acts of the <State Agency Name> in its sovereign (and not contractual) capacity, (iii) fires, (iv) floods, (v) epidemics, (vi) quarantine restrictions, (vii) strikes, (viii) freight embargoes, (ix) unusually severe weather, or (x) shortages of supplies or materials where such supplies or materials were unobtainable from an alternate source. In all such events where performance is delayed or prevented, the affected party shall nonetheless exert reasonable and diligent efforts to remove said causes and resume performance hereunder.

B. If failure or delay of performance resulting from a condition of force majeure continues for more than thirty (30) days, or if the affected party is unable to provide, upon request, immediate written assurances that performance will be tendered within thirty (30) days following initial occurrence of the force majeure condition, the other party may terminate this Contract, in whole or in part, for default in accordance with the provisions of Article 2.11, Termination.

ARTICLE 2.23—ANTI-KICKBACK

The Anti-Kickback Enforcement Act of 1986 as referenced in FAR 52.203-7 is hereby incorporated into this Contract as a condition of acceptance. If you have reasonable grounds to believe that a violation, as described in paragraph (b) of FAR 52.203-7, may have occurred, you should report this suspected violation to the <State Agency Name> Ethics Hotline at <state telephone number>. You may report a suspected violation anonymously.

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ARTICLE 2.24—ORDER OF PRECEDENCE

In the event of an inconsistency in this Contract, unless otherwise provided herein, the inconsistency shall be resolved by giving precedence in the following order:

- A. Part I Schedule
- B. Part IV Supplemental Provisions
- C. Part II General Provisions
- D. Part III <State Agency Name> Provisions
- E. Part V Statement of Work and/or Specifications
- F. Part VI Attachments

ARTICLE 2.25—SURVIVABILITY

The terms of Article 2.2, “Nondisclosure,” Article 2.6, “Warranty,” Article 2.8, “Year 2000 Compliance,” Article 2.9 “Works for Hire,” Article 2.11(E), “Termination,” Article 2.12, “Indemnity,” Article 2.14, “Disputes,” and Article 2.18, “Public Releases,” shall survive the expiration or earlier termination of this Contract, as well as those provisions of Part III, “<State Agency Name> Provisions” and Part IV, “Supplemental Provisions,” which, by the nature of their terms, shall survive.

ARTICLE 2.26—CHOICE OF LAW

The Contract shall be governed by the laws of the <State Region>, with the exception of its conflict of laws provisions, and all controversies or disputes arising out of this Contract shall be heard in either the Circuit Court of <State Region>.

ARTICLE 2.27—WAIVER

Neither party shall be deemed to have waived any right or remedy unless such waiver is made expressly and in writing.

ARTICLE 2.29—COMPLETE AGREEMENT

This Contract is the complete and exclusive statement of the understandings between the parties with regard to the subject matter hereof, and supersedes in its entirety any previous understandings between the parties, whether oral or written.

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5.4 PART III—<State Agency Name> Provisions

The following clauses set forth in the Federal Acquisition Regulation (FAR), as amended and modified below, are applicable to this Contract. Without limiting the Contract provisions, the FAR clauses are incorporated by reference into this Contract with the same force and effect as though set forth in full text. The dates of the FAR clauses incorporated by reference are the same as the corresponding clause in the prime contract or higher tier Contract. The following definitions shall apply to this Contract except as otherwise specifically provided.

PART I (FAR CLAUSES)

A. DEFINITIONS

The following definitions apply unless otherwise specifically stated:

“<State Agency Abbreviations>”—<State Agency Name> —the legal entity issuing this Order

“**Purchasing Representative**”—<State Agency Name>’s authorized representative

“**Contractor**”—the legal entity that contracts with <State Agency Name>

“**This Order**”—this contractual instrument, including changes

“**Prime Contract**”—the <State Agency Name> contract under which this Order is issued

“**FAR**”—the Federal Acquisition Regulation

B. FAR CLAUSES APPLICABLE TO THIS ORDER

The clauses in FAR Subpart 52.2 referenced in subparagraph (A) and those clauses referenced and checked in subparagraph (B) below, in effect on the date of this Order, are incorporated herein and made a part of this Order. To the extent that an earlier version of any such clause is included in the Prime Contract or Contract under which this Order is issued, and the date of the clause as it appears in such Prime Contract or Contract shall be controlling and said version shall be incorporated herein. In all such clauses, unless the context of the clause requires otherwise, the term “Contractor” shall mean Contract, the term “Contract” shall mean this Order, and the terms “<State Agency Name>,” “Contracting Officer,” and equivalent phrases shall mean <State Agency Name> and <State Agency Name>’s Purchasing Representative, respectively. It is intended that the referenced clauses shall apply to Contractor in such manner as is necessary to reflect the position of Contractor to <State Agency Name>, to insure Contractor obligations to <State Agency Name> and to the United States <State Agency Name>, and to enable <State Agency Name> to meet its obligations under its Prime Contract or Contract.

Procurement Sensitive

(i) The following clauses are applicable to this Order:

FAR Reference	Title of Clause
52.202-1	Definitions
52.203-3	Gratuities
52.203-5	Covenant Against Contingent Fees
52.203-6	Restrictions on Contractor Sales to the <State Agency Name>
	Alternate I
52.203-7	Anti-Kickback Procedures
52.203-12	Limitation on Payments to Influence Certain Federal Transactions
52.209-6	Protecting the <State Agency Name>'s Interest When Contracting with Contractors Debarred, Suspended, or Proposed for Debarment
52.210-5	New Material
52.210-7	Used or Reconditioned Material, Residual Inventory and Former <State Agency Name> Surplus Property
52.212-8	Priorities, Allocations and Allotments
52.212-13	Stop-Work Order
52.215-2	Audit and Records - Negotiation
52.215-10	Price Reduction for Defective Cost or Pricing Data
52.215-11	Price Reduction for Defective Cost or Pricing Data - Modifications
52.215-12	Contractor Cost or Pricing Data (If Order exceeds \$500,000)
52.215-13	Contractor Cost or Pricing Data-Modifications (If Order Exceeds \$500,000)
52.215-14	Integrity of Unit Prices (excluding subparagraph (c))
52.219-8	Utilization of Small Business Concerns and Small Disadvantaged Business Concerns
52.222-1	Notice to the <State Agency Name> of Labor Disputes
52.222-4	Contract Work Hours and Safety Standards Act - Overtime- Compensation - General
52.222-20	Walsh-Healy Public Contracts Act
52.222-26	Equal Opportunity
52.222-35	Affirmative Action for Special Disabled & Vietnam Era Veterans
52.222-36	Affirmative Action for Handicapped Workers
52.222-37	Employment Reports on Special Disabled Veterans and Veterans of the Vietnam Era
52.223-3	Hazardous Material Identification and Material Safety Data
52.223-6	Drug-Free Workplace
52.225-3	Buy American Act—Supplies
52.225-13	Restrictions on Certain Foreign Purchases
52.225-12	Notice of Buy American Act Requirement - Construction Materials under Trade Agreements Act and North American Free Trade Agreement
	Alternate I
52.227-2	Notice and Assistance Regarding Patent and Copyright Infringement (If Order Exceeds \$25,000)
52.227-10	Filing of Patent Applications—Classified Subject Matter
52.246-2	Inspection of Supplies—Fixed-Price
52.246-4	Inspection of Services—Fixed Price
52.247-63	Preference for U.S.—Flag Air Carriers

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(ii) The following clauses are applicable to this Order if checked:

FAR Reference		Title of Clause
X	52.203-10	Price or Fee Adjustment for Illegal or Improper Activity
X	52.204-2	Security Requirements
	52.204-3	Tax Payer Identification
X	52.211	Liquidated Damages—Supplies, Services or Research and Development
X	52.215-23	Price reduction for Defective Cost or Pricing Data-Modifications
X	52.216-7	Allowable Cost and Payment
X	52.219-9	Small, Small Disadvantaged and Women-Owned Small Business Contracting Plan
X	52.219-16	Liquidation Damages—Small Business Contracting Plan
X	52.222-6	Davis-Bacon Act
X	52.222-7	Withholding of Funds
X	52.222-8	Payrolls and Basic Records
X	52.222-9	Apprentices and Trainees
X	52.222-10	Compliance with Copeland Act Requirements
X	52.222-11	Contracts (Labor Standards)
X	52.222-12	Contract Termination—Debarment
X	52.222-13	Compliance with Davis-Bacon and Related Act Regulation
X	52.222-14	Disputes Concerning Labor Standards
X	52.222-15	Certification of Eligibility
X	52.222-16	Approval of Wage Rates
X	52.222-24	Preaward On-Site Equal Opportunity Compliance Evaluation
X	52.222-29	Notification of Visa Denial
X	52.222-41	Service Contract Act of 1965, As Amended
X	52.222-42	Statement of Equivalent Rates for Federal Hires
X	52.222-43	Fair Labor Standards Act and Service Contract Act—Price Adjustment (Multiple Year and Option Contracts)
X	52.224-1	Privacy Act Notification
X	52.227-1	Authorization and Consent
X	52.227-3	Patent Indemnity
X	52.227-14	Rights in Data—General
X	52.227-23	Rights to Proposal Data (Technical)
X	52.228-3	Worker's Compensation Insurance (Defense Base Act)
	52.228-5	Insurance—Work on <State Agency Name> Installation
X	52.229-3	Federal, State and Local Taxes
X	52.229-5	Taxes—Contracts Performed in U.S. Possessions or Puerto Rico
X	52.230-2	Cost Accounting Standards
X	52.230-4	Consistency in Cost Accounting Practices
X	52.230-5	Cost-Accounting Standards - Educational Institution
	52.232-1	Payments
	52.232-7	Payments under Time-and-Materials and Labor-Hour Contracts
		Alternate I
		Alternate II
	52.232-8	Discounts for Prompt Payment
	52.232-9	Limitation on Withholding of Payments
	52.232-11	Extras
	52.232-20	Limitation of Cost
	52.232-23	Assignment of Claims
		Alternate I

Procurement Sensitive

FAR Reference	Title of Clause
	52.233-1
	Disputes
	Alternate I
	52.233-3
	Protest After Award
	Alternate I
X	52.236-2
	Differing Site Conditions
X	52.236-3
	Site Investigation and Conditions Affecting the Work
X	52.236-5
	Material and Workmanship
X	52.236-9
	Protection of Existing Vegetation, Structures, Equipment, Utilities and Improvements
X	52.236-13
	Accident Prevention
X	52.237-2
	Protection of <State Agency Name> Buildings, Equipment & Vegetation
X	52.237-3
	Continuity of Services
X	52.242-13
	Bankruptcy
X	52.243-1
	Changes - Fixed Price
	Alternate I
X	
	Alternate II
X	
	Alternate III
	Alternate IV
	Alternate V
	52.243-7
	Notification of Changes
	52.244-2
	Contracts (Fixed Price Contracts)
	Alternate I
X	52.244-5
	Competition in Contracting
X	52.245-2
	<State Agency Name> Property (Fixed-Price Contracts)
X	52.245-5
	<State Agency Name> Property (Cost-Reimbursement, Time and Materials, or Labor-
	52.246-16
	Responsibility for Supplies
X	52.246-20
	Warranty of Services
	52-246-25
	Limitation of Liability - Services
X	52.247-34
	F.O.B. Destination

5.5 PART IV—Supplemental Provisions

ARTICLE 4.1—TRAVEL REQUIREMENTS

A. Regular Duty Station

A regular duty station is defined as Contractor employee’s continuing place of duty, whether on a permanent or temporary assignment.

B. Local Travel

Reimbursement will not be allowed for local travel within 50-mile radius of the employee’s regular duty station unless the Contractor employee is on temporary assignment. Any such request for reimbursement of local travel must be separately identified in Contractor’s proposal and accepted by <State Agency Name>. Travel expenses associated with Contractor approved travel within a <State Agency Name> installation may be billed to <State Agency

Procurement Sensitive

Name> provided it is required by the task order, approved by the Task Manager, and occurs on a frequent basis, is in excess of a 10-mile radius of the employee's regular duty station, and is specified in the delivery order.

C. Temporary Assignments

If the Contract requires assignment of Contractor personnel at <State Agency Name> site locations away from the employee's regular duty station for less than six (6) months, such assignments are considered temporary assignments. Travel and per diem expenses associated with <State Agency Name> approved temporary assignments may be billed to the Contractor. On work of this nature, reimbursable travel and per diem expenses shall not exceed the time or cost of travel from the Issuing Office to the place of temporary duty assignment or as mutually agreed upon by <State Agency Name> and the Contractor and incorporated into the delivery order. No relocation, travel, per diem expenses, or travel time will be allowed by the <State Agency Name> for placing Contractor personnel on permanent assignments.

D. Permanent Assignments

If this Contract requires continuous, on-site assignment of Contractor personnel at a <State Agency Name> site location for a continuous period of six (6) months or longer, such assignments are considered permanent assignments. The Contractor may, at its discretion, accept assignments of less than six (6) months under permanent assignment terms. No relocation, travel, per diem expenses, or travel time will be allowed by the <State Agency Name> for placing Contractor personnel on permanent assignments.

E. Relocation Expenses

The Contractor shall not be reimbursed as a direct cost, for any costs associated with the relocation of Contractor personnel.

F. Rates

Except as otherwise provided herein, payment will be made for actual common carrier fares plus cost of travel between Contractor employee's home or regular duty station and the carrier terminal and temporary duty points for travel by the most reasonable and economical means. If a Contractor employee resides within 50 miles of a temporary duty station, they shall not be entitled to travel or per diem expenses for duty at that location.

ARTICLE 4.2—REPORTS

A. Monthly Status Report

The Contractor shall submit a report on each delivery order to <State Agency Name>. Two (2) copies of the report shall be submitted on or before the 5th <State Agency Name> workday of the month following the reporting period and shall contain the following:

Procurement Sensitive

1. Contract number
2. Reporting period
3. <State Agency Name> Task Coordinator
4. Reserved
5. A narrative review of work accomplished during the period and/or significant events.
6. Deliverable progress
7. Problem areas
8. Anticipated activity for the next reporting period
9. Description of any travel or other direct costs incurred.

B. Staffing and Vacancy Report

Not applicable.

C. Problem Notification Report

Contractor shall prepare and submit a Problem Notification Report (PNR) in accordance with Part VI, Attachment 1, attached hereto and incorporated herein, in the event that performance may be delayed or Contractor has reason to believe a delay may occur under this Contract. PNRs shall be submitted within one (1) working day of problem identification.

D. Additional special written and oral reports may be required and will be negotiated on an as needed basis.

E. Contractor shall identify any potential problems affecting performance to the attention of <State Agency Name> as soon as they are known.

ARTICLE 4.3—CONTRACTOR PERSONNEL

A. The Contractor shall submit to <State Agency Name>, for review and approval, the resumes of proposed key personnel to staff a task order, at least ten (10) calendar days before the proposed task initiation date. In addition to the Program Manager, Contractor shall identify other designated key personnel.

B. All proposed personnel must meet any security clearance requirements established in the task order, if applicable.

ARTICLE 4.4—REMOVAL OF CONTRACTOR PERSONNEL

It is understood that any personnel assigned by the Contractor in performance of the work hereunder, if deemed by the <State Agency Name> or <State Agency Name> to be in conflict with the best interest of the <State Agency Name> or <State Agency Name>, shall be immediately removed from working on this Contract/task order.

Procurement Sensitive

ARTICLE 4.5—SPECIAL REQUIREMENTS FOR WORK IN AREAS CONTAINING ASBESTOS

A. The Contractor is fully aware and cognizant of the dangers of working with asbestos and agrees to take all reasonable and necessary measures to mitigate the effects of working with asbestos and to avoid any harm, whether foreseen or unforeseen, to both its employees and all other persons or property.

B. This Contract incorporates those requirements of the OSHA asbestos regulations contained in Title 29, Part 1910 of the Code of Federal Regulations. All installation and/or site preparation work undertaken in areas containing asbestos shall be completed in accordance with these requirements.

C. If during the course of performance under this Contract, the Contractor suspects contact with hazardous or toxic materials/substances, such as asbestos, polychlorinated biphenyl (PCB), explosives, or radioactive materials, as specified in Subpart H and Z of 29 CFR 1910 and Federal Standard 313, the Contractor shall immediately inform <State Agency Name> of these harmful materials/substances. The Contractor shall not disturb suspected harmful materials/substances, but will take responsible measures to prevent exposure to individuals, pending receipt of direction from <State Agency Name>. <State Agency Name> will coordinate any necessary action with the appropriate <State Agency Name> representatives.

D. The Contractor maintains full responsibility and liability for compliance with all applicable regulations pertaining to the protection of workers, visitors to the site, and persons occupying affected and adjacent areas. The Contractor holds <State Agency Name> and the <State Agency Name> harmless for injury resulting from failure on the Contractor's part, or on the part of the Contractor's employees to comply with any applicable safety or health regulation.

ARTICLE 4.6—ORGANIZATIONAL CONFLICT OF INTEREST AND LIMITATION ON FUTURE CONTRACTING

A. The General Service Administration and any customer under this Contract will not consider the Contractor, its successor-in-interest, assignee, or affiliates as a prime source of supply for, or allow it to be a Contractor or consultant to a supplier for any competitive procurements for which Contractor provides technical support services/analyses/system design and evaluation or other types of assistance.

B. To prevent unfair competitive advantage in a competitive procurement, the Contractor agrees that until award of a contract by GSA or customer agency for any competitive procurement for which the Contractor performs a service under this Contract, it

- (i) Shall not disclose any information concerning the work under this Contract, including technology developed or findings and conclusions rendered by the Contractor in performing this contract, to any prospective VENDOR; and
- (ii) Shall not render any services of any kind related to such competitive procurements thereof to any such prospective VENDORS(s).

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ARTICLE 4.7—EXAMINATION OF RECORDS

The Contractor agrees that the Administrator of <State Agency Name> authorized representatives shall, until the expiration of three (3) years after final payment under this contract, of the time periods for the particular records specified in Subpart 4.7 of the Federal Acquisition Regulation (48 CFR 4.7), whichever expires earlier, have access to and the right to examine any books, documents, papers, and records of the Contractor involving transactions related to this Contract or compliance with any clauses thereunder. The Contractor further agrees to include in all its Contracts hereunder a provision to the effect that the Contractors agree that the Administrator of <State Agency Name>, or any of his duly authorized representatives shall, until the expiration of three (3) years after final payment under the Contract, or of the time periods for the particular records specified in Subpart 4.7 of the Federal Acquisition Regulation (48 CFR 4.7), whichever expires earlier, have access to and the right to examine any books, documents, papers, and records of such Contractor involving transactions related to the Contract for compliance with any clauses thereunder. The term "Contract" as used in this clause excludes (a) purchase orders not exceeding \$10,000 and (b) Contracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

ARTICLE 4.8—WORKING HOURS

- A. It is contemplated that all work will be performed during the customary working hours of the trade involved unless otherwise specified in this Contract. Work performed by Contractor at his own volition outside such customary working hours shall be at no additional expense to <State Agency Name>.
- B. Any requests received by the Contractor from occupants of existing buildings to change the hours of work shall be referred to <State Agency Name> for determination.

ARTICLE 4.9—FACILITIES, SUPPLIES, AND SERVICES

The Contractor shall furnish the following at no additional cost:

- A. Office equipment necessary to perform contract related services, including sufficient hardware and software for routine application of state-of-the-art word processing, spreadsheet, data base, printing, and communications capabilities including e-mail, CAD drawings, postage, express mail, paper and copying expenses, local and long distance telephone service, electronic data transmission capabilities, and other consumable supplies required in support of this contract.
- B. Security Clearances including charges. The Contractor shall also furnish information and completed forms to the delivery order <State Agency Name> Representative, as necessary, for the purpose of processing clearances, such as National Agency Checks and National Agency Check Investigations.

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ARTICLE 4.10—SERVICE CONTRACT AND DAVIS-BACON ACT

Contractor is responsible for paying minimum wages as specified under the Service Contract (SCA) and Davis-Bacon Acts (DBA). Immediately upon determining a need to use any SCA or DBA labor categories as described in Part VI, Attachment 4, Contractor shall comply with the wage determination as attached.

ARTICLE 4.11—QUALITY ASSURANCE

A. Contractor shall be responsible for the implementation of a quality assurance program through which all products and services must pass prior to delivery. Contractor shall establish quality assurance methods and procedures that demonstrate a commitment to ensuring the ability to deliver the best quality products and services, and in developing improvements in performance, productivity and management of this Contract. Contractor's quality assurance program shall establish, document, and maintain a system of records to allow the monitoring of the quality assurance program effectiveness. The records are to be maintained at the Contractor's task site(s) location. Access to such records will be provided to authorized <State Agency Name> representatives and copies shall be provided, upon request by a proper representative, at no additional cost.

B. Quality assurance records maintained will document the quality assurance process the Contractor followed to ensure that all tasks, including all products and services under each task, represented the best product the Contractor was capable of delivering.

5.6 PART V—Statement Of Work

Work shall be identified in task order(s) issued hereunder as addressed in Part I, Article 1.9.

5.7 PART VI—Attachments

Attachment	1-	Problem Notification Report
	2-	N/A
	3-	N/A
	4-	Service Contract Act and Davis-Bacon Skill Categories
	5-	DOL Wage Determinations, <State Region>
	6-	Milestone Completion Report

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ATTACHMENT 1

PROBLEM NOTIFICATION REPORT

CONTRACT NUMBER:

DELIVERY ORDER NUMBER:

ACO & COTR:

1. Identify the nature and source of the problem:
2. COTR was verbally notified on:
3. Is action required by the <State Agency Name>? (If yes, give date required.):
4. Describe the <State Agency Name> action required:
5. Will the problem impact the delivery schedule? (If yes, identify the deliverable(s)/service that will be affected and the extent of the delay.):
6. Can the required delivery service be brought back on schedule?
7. Identify the corrective action needed to solve the problem:
8. When will the corrective action be complete?
9. Are increased costs anticipated?
10. Identify the amount of anticipated costs, their nature and define <State Agency Name> responsibility for problem and costs:

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ATTACHMENT 4 SERVICE CONTRACT ACT DAVIS BACON ACT SKILL CATEGORIES

Technical Writer/Editor (SERVICE CONTRACT ACT APPLIES)

Experience: Three years of technical writing and editing support in system development, automated office support systems, telecommunications documentation, and other technical material as required. One year of the required experience shall be editing experience in the technical publication field involving engineering, scientific or academic disciplines. ADP or telecommunications documentation experience is required.

Education: Must have a bachelors degree in a Mass Communications, English Literature or Journalistic field from an accredited college or university.

Duties: Prepared and edits telecommunication documentation incorporating information provided by the client, specialists, analysts, engineers, and operations personnel. Must have substantial knowledge of telecommunications and data systems and terminology. Duties include writing, editing, and graphic presentation of technical information for both technical and non-technical personnel. Interprets documentation according to defined standards. Must communicate effectively with all levels of technical and management personnel, as required.

Technical Draftsman (SERVICE CONTRACT ACT APPLIES)

Experience: Minimum of four years experience in technical drafting, with an emphasis on telecommunication wiring documentation and outside plan facilities. Must be knowledgeable, capable, and experienced in the use of computer based drafting and design tools (i.e., AUTOCAD).

Education: Must be a high school graduate and have two years of education or technical training, to include computer aided drafting.

Duties: Will be assigned to provide drafting support, either manual or computer aided, for other skill categories in documentation, through drafting procedures, current or existing systems, proposed systems, technical job drawings, etc., required by specific Delivery Orders. Must communicate effectively in writing and orally with all levels of technical and management personnel, as required.

Data Entry Clerk (SERVICE CONTRACT ACT APPLIES)

Experience: One year of data entry and verifications using Contemporary ADP key entry devices. Formal specialized training beyond high school may be substituted on the basis of one month of training for each one month of experience, not to exceed six months.

Duties: Work requires the application of experience and judgment in selecting procedures to be followed and in searching for, interpreting, selecting or coding items to be entered from a variety of source documents.

Technical Typist (SERVICE CONTRACT ACT APPLIES)

Experience: One year of technical typing. Formal specialized training beyond high school may be substituted on the basis of one month of training for each month of experience, not to exceed six months.

Education: Must be a high school graduate or equivalent and have two years of education or technical training.

Duties: Prepares draft and final-form technical documents which will become Task Order deliverable items. Must be familiar with telecommunications/data terminology and capable of typing at least 40 wpm. Must be capable of typing technical narratives and data. Will be responsible for spelling, grammar, and proper format, and for proofreading finished documents. Must be capable of using various word processing equipment with various software applications.

Procurement Sensitive

Cable Splicer (DAVIS-BACON ACT APPLIES)

Experience: Must have four years experience in splicing, installing, modifying, troubleshooting aerial and underground copper, and fiber optic cable.

Education: Must be a high school graduate and certified for splicing of copper and/or fiber optic cable.

Duties: Will perform splicing, inspecting, maintaining, overhauling, repairing and installing splice cases and cables such as telephone, coaxial, fiber optic, and outside plant cable, portions of radar, navigational aid, radio, UHF, VHF antenna, and meteorological equipment. Locates and diagnoses signal transmission defects using various test equipment and visual inspection. Uses cable splicing and lineman's tools and related test equipment, ground power equipment and pressure equipment. Must communicate effectively with technical and management personnel, as required.

Cable Installer (DAVIS-BACON ACT APPLIES)

Experience: Must have four years experience in splicing, installing, modifying, troubleshooting aerial and underground copper, and fiber optic cable.

Education: Must be a high school graduate and certified for splicing of copper and/or fiber optic cable.

Duties: Will perform splicing, inspecting, maintaining, overhauling, repairing and installing splice cases and cables such as telephone, coaxial, fiber optic, and outside plant cable, portions of radar, navigational aid, radio, UHF, VHF antenna, and meteorological defects using various test equipment and visual inspection. Uses cable splicing and lineman's tools and related test equipment, ground power equipment and pressure equipment. Prepares necessary written reports. Must communicate effectively with technical and management personnel, as required.

General Laborer (DAVIS-BACON ACT APPLIES)

Duties: Performs manual labor as required to assist in installation of copper and fiber optic cable.

Physical Requirements: Must be capable of standing, stooping, bending, pulling, pushing, and reaching for long periods of time. Must be capable of lifting and carrying tools and materials up to sixty pounds in weight up ladders and overhead.

Education: Must be capable of understanding and speaking and reading and writing basic English.

Power Equipment Operator, Group 2 (DAVIS-BACON ACT APPLIES)

Duties: Operates backhoes, cranes, tunnel shovels, front end loaders, etc.

Certifications: Must be certified and/or licensed in the operation of equipment with local ordinances.

Education: Must be capable of understanding and speaking, and reading and writing basic English.

Power Equipment Operator, Group 3 (DAVIS-BACON ACT APPLIES)

Duties: Operates front end loader, boom trucks, hydraulic backhoes, trenching machines, etc.

Certifications: Must be certified and/or licensed in the operation of equipment with local ordinances.

Education: Must be capable of understanding and speaking, and reading and writing basic English.

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6. STATEMENT OF WORK

This Statement of Work (SOW) describes the services, equipment, facilities, software, and subsystems to be provided by the VENDOR for engineering, furnishing, installing, integrating, testing, documenting, training, warranting, and maintaining equipment and services for the system to be acquired under this RFP. For the purposes of this RFP, the term “system” refers to the complete radio system infrastructure. It does not include subscriber (portable/mobile) radios.

The VENDOR shall propose a commercial off-the-shelf (COTS), very high frequency (VHF) high-band, digital, trunked, LMR system meeting all requirements of this RFP. This system shall be fully compliant with the Telecommunications Industry Association / Electronic Industry Association-102 (TIA/EIA-102) suite of standards and specifications. (See Appendix D.)

The VENDOR’s response to this RFP shall comply with all mandatory requirements and shall specifically address all italicized requirements specified in this section and in Sections 7, 8, and 9 of this RFP. The technical specifications in Section 7 identify in detail the technical attributes of the equipment and services to be provided.

The VENDOR shall perform engineering, design, equipment selection, implementation, optimization, training, system testing, integration, maintenance, and other associated tasks necessary to ensure the installed system is functional and complete, and that it meets the Technical Specifications of this RFP. The VENDOR shall provide project management, installation, testing, training, and original equipment manufacturer (OEM) VENDOR support services as necessary to implement and maintain a complete and fully operational system in accordance with the specifications and requirements of this RFP. The VENDOR shall identify and cost out all necessary site facility additions and modifications and may, at <State Agency Name>’s option, be required to perform the modifications.

The VENDOR’s responsibilities include, but are not limited to, the following requirements. The VENDOR shall refer to appropriate paragraphs of this section for more detail.

- Conduct site surveys to determine all construction and/or modification of facilities required, including towers, equipment rooms, power systems, antenna support structures, and buildings. The VENDOR shall identify and cost out the modifications and upgrades required for these facilities to support the system. Additionally, the VENDOR shall prepare all documents and construction specifications for new sites, as required.
- Perform a detailed radio frequency (RF) propagation study and perform test measurements to confirm the validity of the propagation study.
- Perform an interference analysis, including transmitter noise, intermodulation, and receiver desensitization estimates for each site.

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- Develop a preliminary design for the system using allocated VHF frequencies. (See Appendix A for a list of frequencies.) The VENDOR shall submit the preliminary design and required studies to <State Agency Name> for approval. The VENDOR shall not commence any further work until approval is received.
- Develop a detailed design for the system. Prepare, in a format agreed upon during contract negotiations, all documentation, drawings, and implementation plans necessary for system installation, testing, and acceptance. The VENDOR shall submit the detailed design to <State Agency Name> for approval. The VENDOR shall not commence any further work until approval is received.
- Install the system as defined in the approved detailed design document. The VENDOR shall supply and warehouse all equipment until installation.
- Identify and define all required leased communication circuits and submit pricing information, including a three (3) year lease estimate, to <State Agency Name> for evaluation and approval.
- Prepare and conduct test plans and procedures, including, but not limited to, first article tests, installation tests, final acceptance tests, and field tests.
- Provide project management and scheduling to ensure proper coordination and timely completion of the system.
- Conduct operations and system administration training for the system and all subsystems as specified in this RFP. The VENDOR shall provide all training aids, class material, and operations manuals for each student.
- Provide “as-built” documentation, including wiring and cable diagrams, system manuals, equipment manuals, and maintenance manuals.
- Provide one (1) year of system warranty maintenance and if asked provide optional follow-on maintenance for a period of twenty-four (24) months.

6.1 Site Selection

All communications sites proposed by the VENDOR shall be identified in the VENDOR's response to this RFP.

The VENDOR shall propose the sites to be used in meeting the requirements of this RFP.

Refer to Appendix B for a list of known sites. VENDOR may recommend alternative sites. Final site selection is subject to <State Agency Name> approval.

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6.1.1 Site Survey

The *VENDOR* shall include in the response to this RFP a complete description of all anticipated site work required to meet the requirements of this RFP.

The *VENDOR* shall be responsible for gathering all data needed and shall conduct site surveys at each site to determine its present condition and suitability for use.

6.1.2 Modification to Existing Sites

The *VENDOR* shall identify all site improvements, including pricing, necessary to meet the system/subsystem performance specifications outlined in this RFP. A list of site deficiencies and/or other circumstances that may present potential problems shall be included in the response to the RFP.

On a site-by-site basis, the *VENDOR* shall determine work required to prepare sites for installation of the system. The *VENDOR* shall submit all designs and specifications to <State Agency Name>. If the *VENDOR* fails to mention necessary improvements or neglects to specify all facility requirements, the *VENDOR* shall remedy the problems that arise at its own expense. The *VENDOR* may be required to perform needed site modifications.

6.1.3 New Radio Sites

Should the results of site surveys and propagation analyses indicate the requirement for new transceiver sites, the *VENDOR* shall be responsible for identifying all site construction/modification requirements and providing full documentation of the construction/modifications required to establish a fully operational radio site. The *VENDOR* may be required to develop, construct, and provide a fully operational site.

The *VENDOR* shall provide a not-to-exceed budgetary estimate for each new site in the response to this RFP. Final prices based on these estimates for site preparation will be negotiated during the design phase.

6.1.4 Site Access Requirements

The *VENDOR* shall provide or obtain permission for site access by <State Agency Name> and delineate in the response to the RFP any special ingress or egress requirements.

The *VENDOR* shall have final responsibility for arranging for and ensuring site access at proposed sites.

6.1.5 Licenses and Permits

The *VENDOR* shall be responsible for obtaining any and all applicable approvals, licenses, and permits other than Federal Communications Commission (FCC) licenses and/or

Procurement Sensitive

National Telecommunications and Information Administration (NTIA) authorizations. Responsibilities of the VENDOR may include, but not be limited to, the following for each site:

- Researching and reviewing land title, tax map, and reference deed information
- Confirming regulations to clearly understand applicable zoning regulations, environmental regulations, and building permits at the local, county, state, and federal levels
- Reviewing, preparing, and securing applicable environmental body approval(s), including approvals regarding stream encroachment, flood plains, and wetlands
- Preparing zoning drawings for zoning application(s), including site plan, elevations, site boundary survey, antenna specifications, and computer-enhanced photograph(s) with antennas
- Submitting zoning or planning commission application(s) for the construction or modification of any antenna support structure(s) when required
- Conducting zoning or planning commission hearing(s) if necessary
- Requesting necessary Federal Aviation Administration (FAA) clearance(s) using Form 7460-1, Notice of Proposed Construction
- Working with the local jurisdiction and any appropriate legal counsel to obtain documentation attesting that all the property taxes on the subject property have been paid and are current
- Reviewing a “title report” to ensure that there are no problems with the title that would affect future lease agreements or zoning applications
- Preparing a request for a Phase I Environmental study to be completed
- Submitting to General Services Administration (GSA) construction drawing(s) for the construction or modification of any antenna support structure(s) required, if necessary.
- Preparing building permit application(s), including construction drawings, site plan, elevations, site boundary survey, and antenna specifications
- Securing applicable building permit(s).

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6.2 Propagation Analysis

In the response to this RFP, the VENDOR shall identify coverage parameters and provide detailed descriptions of the coverage analysis for the VENDOR's preliminary design. A list of all assumptions and considerations for proposed sites shall be included.

The system shall be designed to meet the coverage performance requirements specified in Appendix C. The VENDOR shall perform in-depth coverage analysis to determine the location and number of sites needed to meet the requirements and objectives of this RFP. <State Agency Name> prefers to use the existing communications sites listed in Appendix B to the maximum degree possible. The vendor may propose alternative communications sites. <State Agency Name> will only consider radio sites for which the VENDOR has determined that long-term access rights can be obtained.

The coverage simulation output shall provide talk-out and talk-back coverage maps for all individual sites and the composite system for the service areas covered (assume 5 watt portable radios with -10 decibels relative to a dipole antenna [dBd] gain). The out-of-boundary RF signal level shall comply with any regional regulatory conditions. The VENDOR shall provide coverage maps overlaid on a topographic map with 1:50,000 scale or better.

6.3 Interference Analysis

The VENDOR shall minimize the effects of interference at each site. The VENDOR shall perform RF interference analyses for each radio site. The analyses shall identify on-site and off-site interference problems, including those created by the proposed systems. These analyses shall specify the preventive measures that will be taken at each site to eliminate or reduce interference to an acceptable level. The interference analysis shall be part of the detailed design. In addition, measurements shall be made on the installed system to verify acceptable interference levels during the final acceptance tests. Interference analysis and measurements must include—

- Co-channel and adjacent channel interference
- Intermodulation (IM)
- Transmitter noise
- Receiver desensitization.

If interference occurs to/from others as a result of implementation, the VENDOR shall be responsible for making recommendations to <State Agency Name> for changes needed to resolve inter-system interference.

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6.4 Preliminary Design

The VENDOR shall describe, in the response to this RFP, the preliminary design proposed for a trunked radio system.

The system will employ five (5) channels per transceiver site. The system shall be designed to be expandable and capable of accommodating additional channels.

The preliminary design is defined as those functions performed by the VENDOR during preparation of the proposal to satisfy the RFP requirements and to provide substantiated pricing and baseline project schedule for engineering, materials, construction, implementation, testing, and acceptance of the project. The VENDOR's preliminary design must include all engineering, coverage, reliability, and interference analyses to ensure that its proposal meets all requirements of this RFP. The preliminary design will serve as a system baseline document to begin contract negotiations.

The preliminary design shall be based on the functional and performance requirements provided in Section 7, TECHNICAL SPECIFICATIONS, in conjunction with the results of the analyses performed. The preliminary design for the overall system and each subsystem shall include, but not be limited to—

- Block diagrams representing the overall system and subsystems
- Descriptions of the system and subsystem functions
- Propagation analysis
- Interface definitions
- Project working schedule
- List of all major hardware and software elements required to substantiate the design
- List of all site modifications, construction, and their associated costs
- List of all site support services and utilities necessary to ensure proper operation of the system.

The VENDOR's approach to all system engineering tasks is extremely important. The VENDOR's studies and analyses shall include coverage predictions, interference analyses, and other engineering tasks necessary for a complete preliminary design.

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6.5 Detailed Design

Upon approval of the preliminary design, the VENDOR shall begin the detailed design of each subsystem, including antenna and transmission lines, power, remote consoles, remote access stations, cabling, wiring, and grounding. The VENDOR shall also prepare installation plans, test plans and procedures, and an integration plan. All detailed design data, including the manufacturer's TIA/EIA-102 equipment specifications shall be available for final review, comment, modification, and evaluation. The VENDOR shall obtain approval prior to starting any implementation activities.

The VENDOR shall provide documentation detailing the design in a Critical Design Review (CDR) Report. This report shall include engineering calculations, interference analysis results, detailed functional descriptions of systems and subsystems, system configurations, interface designs, individual facility floor plans, equipment layout, rack elevations, cabling, wiring, wiring lists, electrical distribution and cable routing information, grounding system designs, main distribution frame (MDF) layout, all necessary drawings for modifications to the existing facilities or for building new sites, drawings of site support systems, towers and antenna structures, antenna space allocation on towers or antenna structure, equipment lists, and all other details needed for a complete and successful system implementation. The draft CDR Report shall be submitted according to the schedule in Table E-2 of Appendix E. The VENDOR shall incorporate any and all comments received from <State Agency Name> into the final document.

6.5.1 System Security Requirements

The VENDOR shall provide a detailed description of the physical and electronic security features provided with the proposed system.

6.5.2 Leased Lines

The VENDOR shall identify, in its response to this RFP, the planned locations of leased lines needed to provide interconnection of all sites. The VENDOR shall estimate the cost of the services during the next three (3) year period. This cost shall be based on current lease rates.

The VENDOR shall submit all leased line specification and pricing information.

6.5.3 Interface Designs

The VENDOR shall develop an interface control document describing the physical, mechanical, electrical, and functional relationships of equipment being interfaced. The document shall be very detailed so that it can be followed while designing each subsystem. The interface control document shall provide all detailed specifications of each interface point, including physical, mechanical, environmental, and electrical specifications, levels, and protocols.

The interface control document shall be submitted for approval prior to the start of equipment manufacturing.

Procurement Sensitive

6.5.4 System Equipment Specifications

The VENDOR shall submit the technical specifications on all equipment identified in the Detailed Design.

6.5.5 Design Approval Process

The VENDOR shall conduct a formal CDR, at which time submitted studies, analyses, conceptual designs, and detail designs will be reviewed for completeness in terms of functional capabilities, design performance, and/or other technical issues. <State Agency Name> approval is required for each design document. Approval of the detailed design by <State Agency Name> is required prior to the VENDOR commencing any further work.

6.6 Installation

The VENDOR shall install the system as defined in the approved detailed design document. Rack-mounted equipment shall be installed in lockable closed racks, using minimal floor space.

Before the installation of any equipment, the VENDOR shall provide a Site Preparation Completion Report. The draft Site Preparation Completion Report shall be submitted according to the schedule in Table E-2 of Appendix E. The VENDOR shall incorporate any and all comments received from <State Agency Name> into the final document.

6.6.1 Infrastructure Equipment

The VENDOR is responsible for installing all equipment necessary for the operation of the system as described in this RFP. During the detailed design phase, the VENDOR shall develop detailed installation plans and procedures to perform the work in accordance with the schedule, implementation plan, and contract documents. Installation of all equipment shall comply with the requirements of Section 8, GENERAL INSTALLATION SPECIFICATIONS, of this RFP. After equipment installation, the VENDOR shall provide an Installation Completion Report. The draft Installation Completion Report shall be submitted according to the schedule in Table E-2 of Appendix E. The VENDOR shall incorporate any and all comments received from <State Agency Name> into the final document. An initial and final walk-through will be conducted to determine operational conditions.

6.6.2 System Documentation

The documents provided as part of the contract must reflect the as-built configuration of the delivered product at the time of system acceptance. All redlined drawings must be revised and delivered in final drawing format within sixty (60) days of system acceptance. It is required that all documentation be provided as bound, printed, and digital media to be determined at contract negotiations.

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All drawings, including vendor manuals, must have traceability to allow the technicians to follow signals through the system in a logical sequence during troubleshooting. An equipment manual number and/or title should appear in the block representing that item on the system block diagram, or a cross-reference list may be provided to allow cross-referencing from a model number on the drawing to an appropriate manual that contains the detailed schematics and parts breakout for that item.

The VENDOR shall provide, as part of the Contract, as a minimum, the following types and quantities of system and equipment specific manuals:

- System Manuals—Two (2) copies for the radio system provided and one (1) for each applicable site
- Operator Manuals—Two copies (2) for the type of fixed site equipment provided and one (1) set for each applicable site
- Maintenance Manuals—Two (2) copies for the type of fixed site equipment provided and one (1) set for each applicable site
- Electronic File Copies—Two (2) sets of all applicable manuals on electronic media.

6.6.3 Codes

The installation shall be in complete compliance with all building and fire codes.

6.6.4 Cleaning

All work areas shall be cleaned at the end of each workday. The VENDOR shall keep all premises clear of all rubbish and debris generated by the work involved and shall leave all premises neat and clean. The VENDOR, at the VENDOR's expense, shall dispose of all surplus material, rubbish, and debris.

6.6.5 Spare Parts

The VENDOR shall include, in the response to this RFP, a list of recommended spare parts with pricing and stocking levels required to sustain operation of the system for one (1) year.

The list shall indicate the VENDOR lead-time for delivery of each item.

6.6.6 Test Equipment

The VENDOR shall provide, in the response to this RFP, a complete list of all recommended test equipment, including the specific model, manufacturer, and pricing required to support trunked radio system maintenance.

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6.6.7 Equipment Labeling

The VENDOR shall develop a labeling system and shall mark all installed equipment and associated termination hardware using easy-to-read identification labels as agreed upon during contract negotiations. These labels shall describe the equipment details and/or cable termination points in accordance with the final design drawings. All equipment shall be bar-coded. The information to be shown on the label shall be submitted for approval prior to the start of any labeling.

6.7 Acceptance Testing

The VENDOR shall inspect, align, optimize, and fully test all facilities, equipment, and subsystems to ensure compliance with the specifications contained in this RFP and any other pertinent contract documents. The VENDOR shall provide all personnel and equipment necessary for testing.

The VENDOR shall identify all RF interference problems whether internal or external to the system. The VENDOR shall resolve all system-generated RF interference problems and suggest possible solutions to RF interference generated outside the system.

6.8 Training

Prior to the acceptance of the system, the VENDOR shall provide the training described in this section to <State Agency Name>, and/or others as directed by <State Agency Name>.

Three types of training are to be provided: a) operational training, b) technical training, and c) system manager training.

6.8.1 Training Plan

The VENDOR shall provide, in response to this RFP, a condensed training plan describing how the VENDOR intends to provide training. This training plan shall include class types, duration, size, and cost. Additionally it shall be compatible with the implementation schedule provided by the VENDOR.

The VENDOR shall submit to <State Agency Name> during the detailed design phase, a comprehensive, integrated training plan and schedule of available courses that will enable <State Agency Name> staff, and/or others as directed by <State Agency Name>, to effectively operate and maintain the provided system over its life cycle period. The training plan shall include a list of all subjects, including subject descriptions, class material to be provided, number of classes, class duration, class size, training location, and class cost. The training shall be compatible with the system implementation schedule provided by the VENDOR. <State Agency Name> will coordinate the training requirements and class assignments with the VENDOR during the design phases. It is anticipated that training may be requested for up to ten (10) personnel for any individual training course.

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Training shall occur in two phases: pre-staging and pre-final acceptance. The VENDOR shall provide system concept and design training, upon request, so that system management and technical personnel better understand the system design and operational concepts and requirements. Additional training shall be provided on all remaining topics listed above, if requested, during the installation phase but prior to final acceptance.

6.8.2 Videotapes

The VENDOR shall provide, in response to this RFP, pricing and a description of the level of support the VENDOR can provide to <State Agency Name> in the production of training videotapes.

The VENDOR shall support <State Agency Name> in the production of two (2) videotapes intended for system users and managers. The purpose of these videotapes is to introduce system users, managers, and others to digital, trunked land mobile radio (LMR) systems and to provide specific information regarding the System to all system users. The topics and duration of these videotapes should be as follows:

- Introduction to Digital Trunked Radio Systems 10–15 minutes
- Operational/Functional Overview of the System 10–15 minutes.

6.8.3 Technical Training

The VENDOR shall provide, if requested, complete and comprehensive technical training in the theory, maintenance, and repair of each type of equipment and system provided for the project. This training shall include, as a minimum, system theory, troubleshooting, repair, and servicing techniques applicable to the selected system.

6.8.4 System Manager Training

The VENDOR shall provide, if requested, complete and comprehensive system management training that shall include, but not be limited to, planning and setting up the system and network, building and implementing system and network profiles and configurations, performing database management functions, monitoring and managing the system's performance, and writing and printing system reports.

6.8.5 Operational Training

The VENDOR shall provide, if requested, complete and comprehensive dispatch operational training, including features, operation, and special care pertaining to the provided equipment.

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6.8.6 Classes

<State Agency Name> will coordinate scheduling of classes and attendees with the VENDOR during the design phases of the system. After the initial training, the VENDOR shall provide, as an option, additional system management and technical training classes throughout the life cycle of the system.

The VENDOR and <State Agency Name> shall coordinate dates and times for all training classes. The location of technical training will be determined during contract negotiations. The duration for a complete training class shall be proposed by the VENDOR and shall be subject to <State Agency Name>'s approval. The duration of any single session shall not exceed eight (8) hours in one (1) day. When necessary, training classes shall be scheduled continuously. Any class or session in excess of four (4) hours for any one (1) day shall be broken into two or more segments with appropriate breaks between segments.

The VENDOR shall provide all instructional material, including printed manuals, audio, video, interactive self-paced personal computer programs, and complete equipment operating instructions for all technical and operational training classes. Actual and/or exact model and series of equipment being delivered shall be made available for "hands-on" use and operation during training. All instructional material shall be subject to the approval of <State Agency Name>.

6.9 Warranty and Maintenance

The VENDOR shall be responsible for the maintenance and repair services of all installed equipment during the installation, testing, and first year of the operational phases of this RFP. The VENDOR may be asked to provide maintenance service for a twenty-four (24) month period following the warranty period and should quote the cost for this service in the RFP. Repair response is desired within one (1) working day after notification, with repairs to be completed and system restored to full and normal operations within two (2) working days after notification. The VENDOR shall identify, in the response to this RFP, normal or standard and available repair response for negotiation prior to contract award.

The VENDOR shall provide, in the response to this RFP, price and availability of optional follow-on maintenance services for a two (2) year period following the warranty period. The same repair and restoration response provided during the warranty period is anticipated to be required during the post-warranty period, subject to negotiation prior to contract award.

The VENDOR shall recommend all special tools and software, including those considered proprietary, required or necessary for maintaining any installed equipment. All sets of special tools shall include any hardware or software servicing aids not normally used in the day-to-day operations of a radio service facility. Special tools shall include utility software used to change equipment attributes.

The VENDOR shall provide any utility software specific to the VENDOR's system that is not readily available from a third party.

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7. TECHNICAL SPECIFICATIONS

These specifications define the system, subsystem, and component functionality, and provide performance requirements of the system obtained under this RFP. This section also includes hardware/software specifications for major subsystems, addresses electrical and mechanical attributes, and specifies interfaces to other systems.

7.1 System Functional Requirements

The system to be obtained under this RFP will support the requirements of various user groups within several federal organizations. These user groups have diverse system performance and availability requirements. The system shall be fully compliant with the Project 25 documents adopted as the Telecommunications Industry Association / Electronic Industry Association-102 (TIA/EIA-102) suite of standards and specifications, listed in Appendix D, and must be interconnectable and interoperable in a seamless manner.

7.1.1 Emergency Alarm Requirements

<State Agency Name> requires radios with an “emergency alarm” function to summon emergency assistance. This alarm shall display, at the primary dispatch consoles, the user’s alias or name, the unit ID, and emergency status.

7.1.2 Radio Control Subsystem

The VENDOR shall propose and describe a radio control subsystem (RCSS) that meets the requirements of this RFP. The VENDOR shall ensure that the RCSS is capable of being interfaced with computer aided dispatch (CAD), E911 systems, and logging recorders, and shall indicate as part of its response to this RFP, how the integration would be accomplished and its approximate cost.

Operational control of all radio transceivers, at all radio sites, as well as performance of all system administration functions, shall be able to be performed from the main radio control console positions.

7.1.3 Frequency Band/Spectrum

The network shall operate in the very high frequency (VHF) high band (162–174 megahertz [MHz]) using a combination of the <State Agency Name>-provided frequencies listed in Appendix A.

7.1.4 The System Communications Facility

Two (2) main radio control console positions and several remote control terminals (number to be determined) will be required.

The consoles and terminals shall be installed at locations {to be identified}. <State Agency Name> will provide a point of contact for exact placement.

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7.1.5 Trunking System Features

The VENDOR shall provide, in response to this RFP, the list of all system features included in the proposal, and a separate list of all other features, with pricing that could be made available.

7.1.6 Interoperability

The VENDOR shall describe, in the response to this RFP, methods that can be used to achieve system interoperability between other networks. The VENDOR shall discuss the different methods of interoperability between agencies that will be employed in the proposed system as other trunked or conventional systems are interfaced with the network. These methods should include, but not be limited to:

- Inter-RF Subsystem Interface (ISSI) between systems of the same and/or different vendors
- Interoperability between the proposed network and other
- Interoperability with non-TIA/EIA-102 radios, such as conventional analog systems.

7.2 System Performance Specifications

As previously stated the intent of this RFP is to acquire a digital trunked radio system that is fully TIA/EIA-102 compliant. This section establishes the minimum system performance specifications for the system.

7.2.1 Coverage

Coverage analysis performed by the VENDOR shall be based on the following standards and documents:

- Institute of Electrical and Electronic Engineers (IEEE), Vehicular Technology Society Propagation Committee, *Standard Report on Measuring Field Strength in Radio Wave Propagation*
- TIA/EIA TSB-88-A dated June 1999, *Wireless Communications Systems—Performance in Noise and Interference-Limited Situations—Recommended Methods for Technology-Independent Modeling, Simulation, and Verification*
- National Telecommunications and Information Administration (NTIA) Rules and Regulations.

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7.2.1.1 Coverage Objectives

An outdoor coverage reliability of 97 percent (area reliability) is desired for the entire service area. The radio frequency (RF) signal level at the receiver's input for both talk-out and talk-back should be adequate to support CM 4 (delivered audio quality [DAQ]-3.4) voice quality or 2 percent bit error rate (BER) data quality. The coverage shall be based on using portable units held at a 5-foot level. The Channel Performance Criteria, defined in TSB-88-A, within these areas shall be applied to 95 percent of <State Region>, in the presence of noise and interference. *The VENDOR shall provide coverage analyses maps of the proposed system.*

7.2.1.2 Coverage Conformance Tests

The VENDOR shall describe, in the response to this RFP, the methodology proposed to validate the coverage performance.

The VENDOR must develop a test plan that is based on statistically valid testing procedures. The voice acceptance test will consist of signal level and BER measurements for the mobile and portable outdoor coverage areas. The VENDOR coverage analysis must be complemented with a test plan and procedures to validate the designed coverage reliability over the service area. Conformance testing must be done to validate the required area reliability over the specified service area by measuring statistically significant numbers of test locations in accordance with the TSB-88-A conformance testing methods. The results shall be documented and provided to <State Agency Name>.

Note: A coverage reliability claim will not be accepted unless empirically verified by averaging measurements over the entire coverage area.

7.2.1.3 Prediction Model Selection

The VENDOR shall employ a suitable coverage prediction model using appropriate terrain and land cover data for such an environment. The Anderson 2D radio propagation model, or a model of equal or superior comprehensiveness, is preferred. (Reference TSB 88-A for any guidelines.)

7.2.1.4 Terrain Elevation Data

The 30 meter U.S. Geologic Survey (USGS), NAD-27 terrain elevation data shall be used for coverage simulations. Alternatively, 3 arc second data may be used where 30 meter data is not available.

7.2.1.5 Land Use and Land Clutter

The VENDOR shall include losses due to land use and land clutter obstacles as appropriate.

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7.2.1.6 Simulation and Coverage Maps

The coverage simulation output shall provide talk-out and talk-back for individual site and composite coverage maps for mobile and portable radios (outside), including a list of all assumptions and sites used.

7.2.2 Access Time

The VENDOR shall state, in the response to this RFP, the guaranteed access time of the provided system, including any system setup time and queuing delay.

Throughput delay shall not exceed 500 milliseconds for radio-to-radio communications anywhere within the system. Proposals with the shortest setup times and throughput delay will receive the highest score in the evaluation process.

7.2.3 Encrypted Transmission

The VENDOR shall describe the encryption key management system, how it interfaces with the system, how keys are selected from the console position, the number and location of key loaders, and how dynamic over-the-air rekeying (OTAR) is performed. The VENDOR shall provide costs of encryption on a per channel and per user radio basis. The VENDOR shall state how end-to-end encryption can be provided, if required, by a remote console. Encryption shall comply with TIA/EIA-102 Data Encryption Standard (DES) documents, and OTAR shall comply with TIA/EIA-102 OTAR documents listed in Appendix D.

The system shall be equipped for digital encrypted voice and data communications over all channels without restriction. Encryption functionality for the system shall be controlled using an OTAR method, allowing the encryption key to be changed from the console positions and the system manager's remote terminal.

The VENDOR shall recommend the appropriate quantities of system and radio key loaders required to support the network for thirty-six (36) months. The VENDOR shall recommend the appropriate quantity of key loaders for the anticipated number of field units.

7.2.4 Simulcast/Multisite

The system shall provide either simulcast transmissions or multisite transmissions.

A proposal for a simulcast system will receive greater weight in the evaluation process and VENDOR selection.

Procurement Sensitive

8. GENERAL INSTALLATION SPECIFICATIONS

The VENDOR shall indicate, in the response to this RFP, the installation standards to be used.

The VENDOR shall install all equipment furnished for the system in accordance with good engineering and workmanship practices. The constituent installations shall conform to appropriate installation standards. All equipment installations shall meet all local codes and ordinances. All standards shall be subject to prior approval.

8.1 Installation Plans, Procedures, and Approvals

The VENDOR shall prepare, in response to this RFP, an installation plan, which outlines the installation of the infrastructure equipment on a site-by-site basis.

The installation shall be performed in accordance with the overall system project schedule, implementation plan, and contract documents. The installation plan shall also include the installation of remote control terminals.

The VENDOR shall provide detailed installation plans and procedures showing the proposed installations at each site and facility at least fourteen (14) days before the beginning of work at that site. The VENDOR shall not perform any installation work until approval of the proposed plans and procedures is received. The installation plans shall include the proposed plot plan, floor plan, equipment layout, rack elevations, tower elevations, cabling and wiring diagrams, antenna installation drawings, and seismic bracing details. The equipment layout and space requirements shall be identified at each site and included in the proposed installation plans.

8.2 Installation Coordination

The proposed installations shall be approved prior to commencement of a particular stage of work on a site-by-site basis. Installation at any site or facility shall not commence without written approval. The VENDOR shall install the equipment within the designated space as proposed in the installation plan; all changes require prior written approval. Access to all existing <State Agency Name> facilities shall require prior coordination with <State Agency Name>.

8.3 Equipment Installation Requirements

The VENDOR shall provide a copy of its latest installation and quality standards with the response to this RFP.

The VENDOR shall be responsible for the installation of all equipment furnished for the system project. The equipment shall be installed in accordance with appropriate installation standards.

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The installation of this equipment shall conform to the applicable requirements outlined in this section, the VENDOR's applicable installation and quality practices, and <State Agency Name>'s requests. The most stringent of these requirements and guidelines shall govern if a conflict arises during the installation. <State Agency Name> reserves the right to approve or disapprove the use of any portion of the VENDOR's standards to which it does not agree.

8.3.1 Grounding, Bonding, and Lightning Protection Requirements

The VENDOR shall ensure that all equipment is electrically bonded, grounded, and protected in accordance with MIL-HDBK-419A and the National Electrical Code. This shall include all metal conduit, trays, racks, cabinets, antennas, transmission lines, electrical service entrance conductors, telephone lines, and other metallic conductors.

The VENDOR shall inspect the grounding systems at all facilities and provide a written report delineating any deficiencies and identifying the required corrective action. The written report shall be submitted to <State Agency Name> at least sixty (60) days prior to the installation of new equipment. <State Agency Name> will consider the deficiencies and make disposition in a timely manner. <State Agency Name> may elect to correct the noted deficiencies or have the deficiencies corrected by the VENDOR at additional cost. The VENDOR shall furnish and install all grounding and bonding conductors and make connections to existing facilities. The conductors shall be Number 6 American Wire Gauge (AWG) copper wire or larger.

The VENDOR shall provide all grounding and lightning protection equipment, including surge arrestors, to comply with the requirements of this section for all equipment installed as part of the project. Bonding conductors shall be used to bond the various pieces of equipment, conduit, trays, etc. together.

A four-wire soil resistivity test shall be performed and appropriate electrodes installed to meet the ground resistance requirement of less than 10 Ohms. A ground resistance test shall be performed after ground rods and lines are installed to demonstrate compliance with the requirement. The ground resistance readings shall be recorded and provided to <State Agency Name> prior to site acceptance.

A single point ground system shall be used, whenever possible and approved by the site manager, on all equipment installed as part of the project. The single point ground system installed within equipment shelters or buildings shall be connected to the exterior building/tower ground system. The grounding system installation shall be in accordance with the following guidelines:

- Each single row of equipment shall have a separate ground bus consisting of an AWG #2 or larger solid or stranded copper conductor. Each bus shall be connected to the single point ground window.
- A single cabinet, rack, or enclosure and any associated transmission line or circuit protection devices shall have a ground conductor bonding all components to a single point ground near the equipment installation.

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- The antenna support structure/tower must be bonded to the external ground system using an exothermic weld, if permitted by the tower manufacturer.
- All ground conductors that compose the external ground system shall be connected using exothermic welding.
- Transmission lines shall be grounded with proper sized ground kits and connected to the tower and entry bus.
- The external ground system shall be tested for soil impedance in accordance with MIL-HDBK-419A and shall provide a ground resistance of 10 Ohms or less.

8.3.2 Equipment Racks and Cabinets

All equipment shall be mounted in self-supporting standard closed cabinet racks. Appropriate shielding kits shall be provided where necessary.

The cabinets shall be positioned with a minimum spacing of 36 inches between equipment rows provided adequate space is available at the location. The cabinets and equipment racks shall be anchored to the floor using at least four (4) anchor points or as specified by site management.

The racks and equipment shall comply with the appropriate earthquake protection standards. The cabinets and equipment racks shall be braced and/or attached to the overhead superstructure, if required, to prevent equipment from toppling during an earthquake.

8.3.3 Interface Requirements Including the Main Distribution Frame

A distribution frame shall be provided at each site to facilitate the centralized demarcation of data, voice, telephone, alarm, and control wiring between different pieces of equipment at the site and external lines. Distribution frames may be implemented as follows:

- Type MD110 or equivalent punch blocks attached to a plywood panel mounted on a wall.
- Type MD110 or equivalent punch blocks mounted in an equipment rack or standalone distribution frame.
- Type MD110 blocks with bridging clips (or other types) to establish the connection between the equipment and line shall be used at signal demarcations to facilitate fault isolation. The Type MD110 connector block is preferred.
- All equipment provided for the project shall be wired and tested to the assigned demarcation point.
- A 36-inch (minimum) aisle shall be provided in front of the main distribution frame (MDF) and/or individual demarcation panels.

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8.3.4 Equipment Placement Requirements

The VENDOR shall use existing equipment rooms and antenna support structures for the installation of equipment where possible. The use of any alternative locations is subject to <State Agency Name>'s approval. Equipment shall be installed in the equipment room with appropriate spacing to accommodate maintenance and ensure the safety of personnel. Equipment shall be installed in accordance with applicable requirements, including the National Electrical Code (NEC), the National Fire Protection Association (NFPA) Code, and the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) standards. <State Agency Name>'s specific requirements shall also be incorporated in the facility layout plans.

The VENDOR shall be responsible for both ingress and egress, associated with the installation of antennas on existing antenna support structures. The VENDOR shall perform the necessary intermodulation and interference studies prior to installing antenna equipment.

Active radio frequency (RF) equipment should be mounted in the equipment room to facilitate maintenance in inclement weather. Tower-mounted RF equipment, including RF preamplifiers, are to be avoided.

8.3.5 Equipment Surge Protection Requirements

The VENDOR shall provide lightning surge protection for all metallic cables interfacing with equipment outside the site or facility. This includes alternating current (AC) power, RF cabling to the towers, telephone lines, and other equipment interfaces.

The VENDOR shall install surge protection devices for all RF cabling and wiring associated with the system project. The VENDOR shall identify surge protection deficiencies at existing facilities, if any exist, and recommend changes to <State Agency Name>. In the event that <State Agency Name> does not choose to improve any noted surge protection deficiencies, the VENDOR shall take appropriate steps to protect the new equipment associated with the system project, including the inclusion of surge arrestors in interfaces between equipment.

All coaxial transmission lines to external antennas shall be protected using suitable bulkhead-mounted surge protectors equivalent to the Polyphaser IS-B50XX series, as a minimum.

Telephone lines shall be protected using gas tube protectors that comply with BELLCORE TR-TSY 000070 and TR-TSY-000072 specifications.

All AC power branch circuits powering equipment outside the site or facility, particularly tower lighting, shall use a suitable shunt surge suppressor.

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8.3.6 Antenna and Transmission Line Installation

The antennas and transmission lines for the system must be designed and installed with particular care to ensure proper system performance, reliability, and maintainability. Installation practices, which require particular attention, are presented in this section.

8.3.6.1 RF Coaxial Cable Connectors

The VENDOR shall state, in response to this RFP, the method to be used for weatherproofing outdoor connections.

Standard type RF connectors suitable for the very high frequency (VHF) band are required for all system applications. The RF connectors shall remain in the original packaging until installation to prevent oxidation and corrosion of the mating surfaces. The connector installation procedure should be designed to avoid contamination of the connector mating surfaces by the installer, particularly by contact with the installer's fingers. Silicone compounds and other insulating material shall not be used in the assembly of the connector in order to ensure low electrical resistance between mating surfaces.

Connectors shall be tightened to the manufacturer's specifications with a proper torque wrench; hand tightening is not acceptable. All outdoor connections shall be weatherproof.

8.3.6.2 RF Transmission Lines

Transmission lines at the system repeaters shall use Andrew HELIAX or equivalent coaxial cable with a solid outer shield conductor to minimize signal leakage and interference. Coaxial cables using braided outer conductors shall not be used for the transmission lines. The manufacturer's recommended minimum bend radius for the cable shall not be exceeded in the installation.

The transmit and receive transmission lines shall be securely fastened to the waveguide bridge and antenna support structure using correctly sized Microflect cushion type cable hangers, or an equivalent alternative. The cable hangers or clamps shall be spaced in accordance with the transmission line manufacturer's recommendations. Particular care shall be exercised to prevent any physical damage or deformation to the line. The line shall be sweep tested, by the VENDOR, in the appropriate frequency band to ensure conformance to quality installation standards. The test results shall be provided to <State Agency Name>.

Terminating connectors shall be installed in accordance with the manufacturer's instructions. The quality of the transmission line, connectors, and hardware shall equal or exceed that available from Andrew or Cablewave systems. Hoisting grips shall be left in place to secure the installed cable. Correctly sized grounding straps supplied by the transmission line manufacturer shall be installed at the top and bottom of each transmission line. The lower grounding strap shall be located at the point of the surge and drip loop. The grounding straps shall be installed in accordance with the manufacturer's instructions and routed by the most direct path to the nearest grounding system conductor. Exothermic welds shall be used, subject

Procurement Sensitive

to approval by the tower manufacturer, when making direct connections to the antenna support structure.

The ground strap connection with the transmission line shall be weatherproofed according to manufacturer's instructions using the manufacturer's supplied material to preclude corrosion. Non-exothermic ground connections, if used, shall use metals, which preclude cathodic or galvanic action.

Transmission lines should use adequate service loops and strain relief at cable interfaces and building entrances to prevent physical damage to the cables during an earthquake.

8.3.6.3 Radio Repeater Antennas

Separate transmitting and receiving antennas shall be used at all repeater sites. The antennas shall be mounted to the tower using either galvanized or stainless steel hardware. All support brackets and other installation hardware shall be hot-dip galvanized to provide a long service life. All support brackets and antennas shall be heavy-duty type and shall be installed vertically or down-tilted using the appropriate down-tilt brackets. (Electronic down-tilt is preferred.)

The antennas shall be carefully located to minimize interference. The VENDOR is responsible for correcting and/or mitigating all resulting interference problems. The receivers shall be connected to the receiving antenna. Similarly, the transmitter shall be connected to the transmitting antenna. The antennas shall be physically separated to preclude a common transmitter or receiver antenna failure.

The antennas shall be rugged and designed for a service life of at least ten (10) years. The antennas shall be of a high-quality construction commensurate with public safety applications.

8.3.6.4 Receiver Multicouplers

The multicouplers and associated preamplifiers shall be installed in the receiver cabinet at each site. Neither the preamplifier multicoupler unit nor any other receiver related components shall be placed in the transmitter cabinet or in the transmitter combiner rack. All RF connectors shall be properly tightened. Tower-mounted RF preamplifiers are not preferred.

All interconnecting coaxial cables shall use Andrew Superflexible HELIAX cable or equivalent coaxial cable. All joints and fasteners associated with the multicouplers and equipment shall be securely tightened to preclude RF noise generation.

8.3.6.5 Transmitter Combiners

The transmitter combiner components shall be mounted in a floor-mounted rack. The rack shall be anchored to the floor.

Procurement Sensitive

All interconnecting coaxial cables shall use Andrew Super-flexible HELIAX cable or equivalent coaxial cable. All joints and fasteners associated with the combiners and equipment shall be securely tightened to preclude RF noise generation. All RF connectors shall be tightened in accordance with the manufacturer's specifications.

8.3.7 Site Internal Cabling

The VENDOR shall install all site cabling in a workmanlike manner and in accordance with applicable industry standards. AC and direct current (DC) power cables shall be correctly sized to minimize voltage drop. Control, data, and voice cables shall be shielded and routed separately from AC and DC power cables. RF cabling shall be installed in accordance with the manufacturer's recommended minimum bend radius.

Plenum rated cables shall be used when routed through areas used for air handling and as required to comply with local codes. Cables on cable trays or ladder trays should be separated when secured. Cables that require separation from each other include AC power, DC power, RF, ground, voice, and data cables. These cables can be secured together in "like kind" groups but must be separate from others. A minimum separation of 2 inches shall be provided between power and signal cables. All cables in cable trays shall be secured at intervals of no more than 36 inches. Cables shall be supported for all runs in excess of 24 inches.

All RF, audio, alarm, and data cables shall be labeled to identify the cable destination or termination. Information printed on each label should be brief but clearly understandable. Labels shall be plastic or Mylar, rather than unprotected paper, and shall stand up to the particular site environment.

Cables and transmission lines should be installed with an adequate service loop and strain relief to allow movement during an earthquake. Broad service loops should also be used for all cables at building entrances.

8.3.8 Cable Tray Requirements

The VENDOR shall provide a cable tray or ladder to appropriately support all RF and power cables. The cable tray system shall be designed using the proper size and type sections used as designed by the manufacturer, including straight sections, elbows, tees, dropouts, and expansion connectors. The cable tray shall be of sufficient width to permit a minimum separation of 2 inches between power and signal cables. The cable tray system must be designed with suitable strength and rigidity to provide adequate support for all contained wiring. Cable ladders or other suitable methods shall be used to interface the cable tray system with cable entrances, the MDF, and equipment. The layout and type of system used will require approval.

Cable trays shall be designed and installed at heights that provide adequate clearances the necessary equipment with provisions for expansion. The cable tray layout and design shall consider factors including ceiling height, light fixture locations, cable entry ports, equipment location, and minimum cable bending radius.

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Cable trays shall be installed as designed and shall be securely attached to the ceiling and/or wall such that they are rigid and immovable. Horizontal and vertical tray supports should provide adequate bearing surface and load capacity to meet the requirements of the cable tray system. A support shall be located within 2 feet of each side of an expansion connector. Cable trays shall be positioned such that they are easily accessible with sufficient space to permit access for installation and maintenance of the cables.

The installation shall be in accordance with the cable tray manufacturer's specifications as well as the NEC and any other applicable national, state, and local codes. The cable tray shall be electrically bonded together by an approved method and connected to the grounding system.

8.3.9 Communications Dispatch Centers

The dispatch console equipment and associated furniture shall be installed in accordance with the installation plan and contract documents. The exact positioning of the consoles shall be approved by the <State Agency Name> prior to installation. The VENDOR shall furnish and install the interconnecting wiring, grounding, and power connections.

The dispatch consoles and associated equipment racks shall be installed using suitable racks, floor anchoring, and bracing.

8.3.10 Antenna Support Structures

The VENDOR shall perform a structural analysis of existing towers and other antenna support structures, as required, prior to the installation of additional antennas and transmission line. Specific written approval shall be obtained from the owner prior to the installation of equipment on any existing antenna support structures.

The VENDOR shall be responsible for the installation of the foundation and/or anchor bolts of any new antenna support structure provided under the contract. A structural analysis of the building or structure shall be performed by the VENDOR, if required, prior to installing new antenna support structures. The VENDOR is responsible for all remedial facility work required after the installation, including roof repair and painting.

All antenna support structures shall be constructed and installed in accordance with local, state, and national codes. The antenna supporting structures shall meet the requirements of American National Standards Institute (ANSI) EIA/TIA RS-222-E.

Antenna supporting structures and all mounting hardware shall be hot-dip galvanized to provide a service life of at least twenty five (25) years without painting or other maintenance.

The antenna support structures shall be suitably grounded and equipped with a lightning rod, if required.

Transmission lines shall be suitably protected from damage at all points between the antenna and equipment room. The transmission line shall be supported at intervals of no more

Procurement Sensitive

than 24 inches for horizontal runs. Aerial runs using messenger cable will not be permitted. A cable ladder/ice bridge shall be provided between the equipment shelter/facility and towers. Horizontal transmission runs across rooftops or other areas subject to damage by foot traffic shall be protected using outdoor polyvinyl chloride (PVC) conduit, cable ladder, or other suitable methods.

The penetration of a transmission line into a building or facility requires a weatherproof device. The preferred method of penetration is a commercial cable port assembly composed of an entry plate and boot assembly. The number of ports should accommodate the number of transmission lines plus 50 percent growth. The cable boots shall be correctly sized for the transmission line. No more than a single transmission line shall be installed per port. The VENDOR shall ensure that all installations are properly sealed at all times to avoid damage to the existing facility.

8.3.11 Site Restoration

The VENDOR shall restore the site and adjacent property to at least the condition prior to the execution of the installation work. The VENDOR shall clean up all debris that resulted from the performance of its work. The trash shall be disposed of in accordance with local regulations and the <State Agency Name>'s requirements.

8.4 Quality Control Requirements

The VENDOR shall include, in the response to this RFP, a Quality Assurance Plan (QAP) for the system project.

The QAP shall include the VENDOR's proposed quality assurance/quality control (QA/QC) plans and procedures, which shall ensure that the system is designed, manufactured, and implemented in accordance with these requirements. The QAP shall address all stages of the project, including detailed system design, acquisition, installation, and acceptance testing.

The proposed QAP shall address the QA/QC procedures related to the following work steps:

- Design analysis and verification
- RF coverage analysis and verification
- Design review and approval
- Design changes and document control
- Acquisition and VENDOR inspection
- Material receiving, storage, and shipping
- Site preparation
- Installation personnel training and certification
- Field installation and inspection
- System testing and validation
- RF coverage validation
- Material and workmanship deficiency reporting and restoration

Procurement Sensitive

- Inspection and testing documentation
- Training and certification of <State Agency Name> personnel or their designated representatives.

The VENDOR shall develop a detailed QA/QC procedure for each major work step associated with the system project and submit it to <State Agency Name> at least fourteen (14) calendar days prior to the execution of the work.

Procurement Sensitive

9. ACCEPTANCE TESTING

This section addresses the acceptance test and final acceptance requirements of the system.

The VENDOR shall perform all tests necessary to demonstrate that the system fully and completely meets the requirements of the RFP. All necessary personnel, labor, materials, documentation, and test equipment to perform all acceptance tests shall be provided by the VENDOR. All test plans are subject to review and approval; it is intended that designated representatives will be at all or part of the testing.

9.1 Acceptance Test Plan

The VENDOR shall include, in the response to this RFP, a detailed Acceptance Test Plan (ATP) demonstrating compliance with the stated requirements.

The VENDOR shall prepare an ATP to demonstrate that all system components, both individually and collectively, meet the requirements of the RFP. The ATP shall also demonstrate the proper operation of the protection switching and/or fallback modes for all critical system elements. The ATP shall include sections describing first article acceptance and field operational tests. The field operational test section shall include equipment level, system level, and coverage testing elements. The test methodology and list of required test equipment shall be included in the ATP. <State Agency Name> reserves the right to modify the test plan and to add additional test requirements that verify compliance with system requirements.

A major failure during acceptance testing is defined as any failure that reduces the overall system, individual system, or site availability as follows:

- Loss of trunking mode of operation
- Radio frequency (RF) coverage reliability (on street) of less than 90 percent throughout service area
- Loss of more than one trunked radio repeater site
- Loss of more than 10 percent traffic capacity of the overall system
- Failure of a console position
- Failure of any other critical system.

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9.1.1 First Article Testing

The VENDOR shall provide, in the response to this RFP, a First Article Test Plan (FAT).

The FAT plan shall contain the test procedures and acceptance criteria for each piece of equipment to be shipped. The equipment shall be tested prior to shipment, and the test results recorded in a readily useable format that includes equipment name, model number, serial number, test, acceptance criteria, pass/fail, and measured parameter(s). Equipment that does not meet the test criteria shall not be shipped without expressed written permission.

9.1.2 Field Acceptance Testing

The VENDOR shall include, in response to this RFP, the proposed (or a representative sample) Field Acceptance Test Plan demonstrating compliance with these requirements.

Field acceptance testing includes acceptance testing performed at the equipment and system levels after the system has been installed. Field-testing is divided into three general categories: Functional Tests, Performance Tests, and RF Coverage Tests. The VENDOR shall develop a Field Acceptance Test Plan during the detailed design phase that fully and completely tests all components and functions of the system. "Fully and completely" means furnishing all personnel, test equipment, supplies, materials, software, and hardware to conduct the tests, as required, to verify that the radio system complies with the RFP's requirements.

9.1.2.1 Functional Tests

The functional testing shall include the following equipment, individual systems, and system level tests:

- Verification that all equipment is delivered and installed in a professional manner in accordance with the RFP
- Demonstration that the radio system includes the attributes, options, number of talk groups, intercommunications, trunked calling features, voice dispatching, encryption, network management, and features necessary to comply with the RFP requirements
- Verification that the system incorporates the necessary fallback modes and redundant equipment in accordance with the RFP requirements
- Performance testing of individual sites after they are installed.

9.1.2.2 Performance Tests

The performance testing shall include the following equipment, individual systems, and overall system tests:

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- Demonstration that all equipment meets the performance requirements of the RFP by the examination of test data and re-performing specific tests. <State Agency Name> may request that all tests be re-performed, if deemed appropriate, at the VENDOR's expense.
- Verification that all functions perform in accordance with the system specifications.
- Verification that the performance of the systems is in accordance with the RFP.
- A successful thirty (30) day Operational Test.

9.1.2.3 RF Coverage Tests

The VENDOR shall provide, in response to this RFP, a representative RF Coverage Test Plan that demonstrates compliance with these requirements.

RF coverage tests shall ensure that the coverage is in accordance with the VENDOR's proposal and the RFP objectives. The RF coverage test shall be based on the EIA/TIA TSB-88-A document, *Modeling, Simulation, and Empirical Verification of Wireless Communications System Performance in Noise and Interference Limited Systems*.

The RF Coverage tests shall verify that the system provides the required signal level necessary to meet the Channel Performance Criteria (CPC), throughout the radio coverage area. The coverage test data shall identify the measurement location, absolute signal strength, bit error rate (BER) or Carrier to Interference (C/I) measurement, Circuit Merit measurement, and the CPC. This data shall be collected, processed, and the coverage depicted on suitably scaled maps. Sampled measurements throughout the service area with statistical processing shall be used to expedite the measurement process. At least the minimum number of measurements necessary to produce measurement validity in accordance with the EIA/TIA TSB-88-A document shall be performed during the coverage tests.

9.1.3 Operational Test

The VENDOR shall provide, in the response to this RFP, a typical Operational Test Plan that demonstrates compliance with these requirements.

The VENDOR shall perform a thirty (30) calendar day Operational Test of the system to ensure that all hardware and software defects have been corrected prior to entering final proof of performance testing. The full integrated operation of the system, including all individual sub-systems, shall be demonstrated during these tests. The tests shall be designed to demonstrate the reliability, long-term stability, and maintainability of the systems. The system shall operate for thirty (30) consecutive days without a Priority 1 or Priority 2 failure (defined below), or more than twenty-four (24) RF channel-hours of cumulative equipment downtime.

The operational test shall also demonstrate the long-term stability of the operation of the system, including the RF reference sources. Manual optimization, alignment, or adjustment of

Procurement Sensitive

the system or subsystems, including remote adjustments shall not be permitted during the test. This test shall ensure that the system does not require constant manual adjustment to maintain the level of performance specified in the RFP.

The VENDOR shall develop a detailed Operational Test Plan during the detail design phase of the project.

If any major failure occurs during the thirty (30) day test period, that test will be terminated, corrective action will be taken and approved, and the entire thirty (30) calendar day test period will be reinitiated. If any minor failure occurs during the thirty (30) day test period, the testing period may resume upon resolution of the problem.

The following failure priority levels are provided to help the VENDOR better understand the systemic effects of major and minor failures. Failure priority levels one (1) and two (2) are considered major failures. Levels three (3) and four (4) are considered minor failures. Nonetheless, the decision on whether a problem is a major or minor failure rests with <State Agency Name>.

- **PRIORITY LEVEL ONE (1)**—Priority level one (1) failures are major system failures that render the system completely unusable and/or inoperable, and are considered unacceptable.
- **PRIORITY LEVEL TWO (2)**—Priority level two (2) failures are major and minor system failures that significantly reduce system operability and usability, and are considered unacceptable.
- **PRIORITY LEVEL THREE (3)**—Priority level three (3) failures are minor system failures that minimally reduce system operability and usability, and are considered acceptable only during the acceptance testing phase.
- **PRIORITY LEVEL FOUR (4)**—Priority level four (4) failures are minor system failures and punch list items that have little to no effect on system operability and usability, and are considered to be operationally acceptable only during the acceptance testing period.

9.1.4 Re-Testing

Acceptance tests that fail to meet the acceptance criteria may be rescheduled and reinitiated one time upon request by the VENDOR and approval by <State Agency Name>. Additional acceptance tests required to demonstrate compliance may be reinitiated only upon expressed written permission.

9.2 Final Acceptance

The VENDOR shall demonstrate that the equipment fulfills all requirements of the RFP. Final acceptance shall require, but not be limited to, the following:

Procurement Sensitive

- Completion of all facility work, system, component, hardware and software delivery, installation, testing, optimization, phased integration, documentation, and training.
- Acceptance of system, facilities, individual systems, and equipment by the <State Agency Name>. Correction of any operational, performance, or workmanship defects shall be at the sole expense of the VENDOR.
- Written certification by the VENDOR of compliance with the RFP requirements, including RF coverage performance and acceptance test results.
- Successful completion of the thirty (30) day Operational Tests.

9.2.1 Failure to Comply

If the system does not satisfy the complete RFP requirements within one hundred eighty (180) consecutive calendar days after installation, or any other period specified in the contract, the VENDOR may be deemed to be in default.

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APPENDIX A—LIST OF FREQUENCIES

TO BE PROVIDED AT A LATER DATE

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APPENDIX C—SERVICE AREA MAP

Figure C-1 depicts the desired coverage area. The system design objective will be to provide balanced, portable (5-watt), on-the-street, shoulder-level, coverage for 95 percent of <State Region> with delivered audio quality (DAQ) of 3.4 or 2 percent bit error rate (BER) and area coverage reliability of 97 percent.

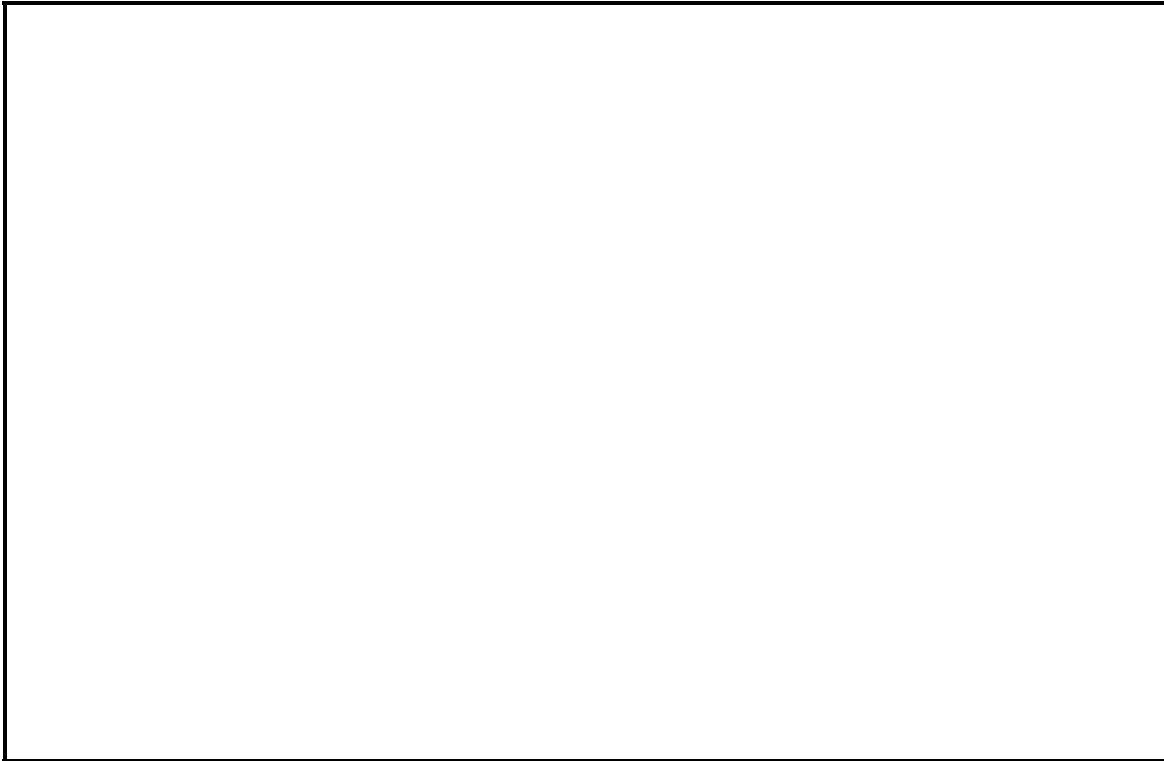


Figure C-1
Coverage Area Requirements

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APPENDIX D—APPLICABLE TIA/EIA-102 DOCUMENTS AND ASSOCIATED RELEASE DATA

Common Air Interface

ANSI/TIA/EIA102.BAAA	Common Air Interface	May 1998
	Addendum 1	Sept 1999
TSB102.BAAB-A	CAI Conformance Test	Aug 1995
	Addendum 1	Apr 1999
ANSI/TIA/EIA 102.BAAC	CAI Reserved Values	May 2000
TSB102.BAAD	CAI Operational Description for Conventional Channels	Oct 1994

Vocoder

ANSI/TIA/EIA 102.BABA	Vocoder Description	May 1998
ANSI/TIA/EIA 102.BABB	Vocoder Mean Opinion Score and Conformance Test	May 1999
ANSI/TIA/EIA 102.BABC	Vocoder Reference Test	Apr 1999

Transceiver Performance

ANSI/TIA/EIA 102.CAAA	Digital C4FM/CQPSK Transceiver Measurement Methods	June 1999
TSB102.CAAB	Digital C4FM/CQPSK Transceiver Performance Recommendations	May 1999

Trunking Applications

TSB102.AABA	Trunking Overview	Apr 1995
ANSI/TIA/EIA 102.AABB	Trunking Control Channel Formats	May 2000
ANSI/TIA/EIA 102.AABC	Trunking Control Channel Messages	May 2000
TSB102.AABD	Trunking Procedures	Oct 1997
TSB102.AABF	Link Control Word Formats and Messages	May 1996

Conventional Applications

TSB102.BAAD	Common Air Interface Operational Description for Conventional Channels	Oct 1994
TSB102.AABG	Conventional Control Messages	July 1996
TSB102.AABF	Link Control Word Formats and Messages	May 1996

Intersystem Interface

TSB102.BACC	Inter-RF Subsystem Interface Overview	Dec 1996
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TSB102.BACA	Inter-RF Subsystem Interface Messages Definition	Dec 1996
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Telephone Interconnect

IS102.BADA	Telephone Interconnect Requirements and Definitions (Voice Service)	Mar 2000
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Data

ANSI/TIA/EIA 102.BAEA	Data Overview	Mar 2000
ANSI/TIA/EIA 102.BAEB	Packet Data Specification	Mar 2000
ANSI/TIA/EIA 102.BAEC	Circuit Data Specifications	June 2000
ANSI/TIA/EIA 102.BAEE	Radio Control Protocol Specifications	Mar 2000

Network Management

TSB102.BAFA-A	Network Management Interface Definition	July 1999
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Security

TSB102.AAAB	Security Services Overview	Jan 1996
IS102.AAAA-A	DES Encryption Protocol	Feb 1997
IS102.AAAC	DES Encryption Conformance	Feb 1997
TSB102.AACA	Over-the-Air-Rekeying Protocol	Jan 1996
TSB102.AACB	OTAR Operational Description	Mar 1998
TSB102.AACC	Conformance Tests for OTAR Protocol	Feb 1997

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APPENDIX E—PROPOSAL CHECKLIST

Table E-1 provides the Proposal Checklist. Each item on the checklist must be included in the VENDOR's response to this RFP. While the list is thought to be complete, it is the VENDOR's responsibility to ensure that all mandatory items of this RFP are provided with its proposal.

For each item on the checklist, there must be a reference indicating where in the VENDOR's proposal the particular item is discussed. The VENDOR must provide references to documentation and/or detailed explanations outlining the specific way or method each item is accomplished. Comments are to be numbered by the RFP paragraph number.

For items to which the VENDOR takes exception to the specifications, a reference must be made on the checklist to a section of the proposal where the VENDOR will state the reason for taking the exception, together with any relevant conditions, assumptions, or interpretations, and describe the alternatives, if applicable, being proposed in place of what was specified.

If variations from the specifications have not been identified or references are inadequate in the checklist, then <State Agency Name> is entitled to assume that the VENDOR's proposal conforms in all respects with the specification.

**Table E-1
Proposal Checklist**

Reference	Item Description
4.2	Prepare a baseline schedule
6.1	Select and recommend sites
6.1.1	Conduct site surveys
6.1.2	Identify existing site preparation requirements and costs
6.1.3	Identify new site requirements and costs (if needed)
6.1.4	Identify site access requirements and obtain access privileges
6.2	Provide a detailed coverage analysis
6.4	Provide a preliminary design
6.5.1	Provide description of system security features
6.5.2	Identify leased line requirements and costs
6.5.3	Provide an interface control document
6.5.4	Provide system technical specifications
6.6.5	Provide a recommended spare parts lists
6.6.6	Provide a recommended test equipment list
6.8.1	Provide a training plan
6.8.2	Provide training video tape price information
6.9	Identify availability and costs of maintenance services
7.1.2	Describe proposed Radio Control Subsystem
7.1.2	Describe the computer aided dispatch (CAD), E-911, and recorder interfaces
7.1.5	Provide a list of system features
7.1.6	Describe the method of interoperability

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Reference	Item Description
7.2.1.1	Provide simulation coverage maps
7.2.1.2	Describe coverage validation methodology
7.2.2	State the guaranteed access time
7.2.3	Discuss the method of encryption and key management system
8	Provide the installation standards
8.1	Provide an installation plan
8.3	Provide the installation and quality standards
8.3.6.1	State RF coaxial cable connector waterproofing methods
8.4	Provide a quality assurance plan
9.1	Provide an acceptance test plan
9.1.1	Provide a first article test plan
9.1.2	Provide a field acceptance test plan
9.1.2.3	Provide a RF coverage test plan
9.1.3	Provide an operational test plan

In an effort to reduce the total number deliverables, some requirements contained in this RFP have been combined into a single report. Table E-2 provides the list of deliverables. Each report will be submitted in draft for approval by the dates indicated. The VENDOR shall incorporate any and all comments received from <State Agency Name> into the final documents.

**Table E-2
List of Deliverables**

Deliverable Description	Date
Monthly Status Report	Monthly within five (5) days of end of month
Critical Design Review (CDR) Report	Contract Award plus sixty (60) days
Maintenance and Training Manuals	Contract Award plus ninety (90) days
Factory Acceptance Test Report	Prior to installation
Site Preparation Completion Report	Thirty (30) days prior to equipment installation
Installation Completion	Contract Award plus two hundred forty (240) days
System Acceptance Test Report	Installation Complete plus sixty (60) days
As-Built System Description Document	Installation Complete plus sixty (60) days
Training Materials	As Required
Maintenance Procedures Changes	As Required
Maintenance Activity Log	Monthly, after acceptance

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APPENDIX F—PROPOSAL PRICE INFORMATION

The following price sheets are provided to show the level of detail and format expected in the VENDOR's proposal. The VENDOR shall provide a bill of materials, including manufacturer and part number, for each location reflecting purchase pricing. The VENDOR shall identify any and all parts and equipment currently listed in <State Appropriate Contract Vehicle Name> schedule with an asterisk. It is the VENDOR's responsibility to ensure that all costs are accurate and included in its proposal.

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TASK 1: DETAILED DESIGN AND DEVELOPMENT

This task includes the following deliverables:

- *CDR Report*

Labor Category	Estimated Number of Hours	Cost

TOTAL LABOR COST: \$ _____.

Category	Description	ODC Cost
Travel: <i>(include To/From, number of trips, and approximate duration of each trip)</i>		
Other Direct Costs (ODC):		

TOTAL ODC COST: \$ _____.

TOTAL TASK 1 (LABOR + ODC) COST: \$ _____.

DURATION OF TASK 1: _____.
(# of Calendar days)

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TASK 2: FACTORY TESTING

This task includes the following deliverables:

- *Factory Acceptance Testing Report*
- *Training Materials*
- *Maintenance and Training Manuals*

A. Include the following information for each radio site in the system design proposed by the VENDOR, including the central dispatch site.

Site: (Site Name)

(Site Name) **Bill of Materials**

Item	Description	Quantity	Cost
1			
2			
3			
4			
5			

(Site Name) **Labor**

Labor Category	Estimated Number of Hours	Cost

TOTAL SITE LABOR COST: \$_____.

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(Site Name) _____ ODCs

Category	Description	ODC Cost
Travel: <i>(include To/From, number of trips, and approximate duration of each trip)</i>		
Other Direct Costs (ODC):		

TOTAL SITE ODC COST: \$ _____.

TOTAL SITE (LABOR + ODC) COST: \$ _____.

B. Include the following information for any additional equipment, labor, or ODCs that have not been accounted for in the site cost data above (i.e., non-site-specific resources).

Additional Task 2 Equipment

Item	Description	Quantity	Cost
1			
2			
3			
4			
5			

Additional Task 2 Labor

Labor Category	Estimated Number of Hours	Cost

TOTAL ADDITIONAL LABOR COST: \$ _____.

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Additional Task 2 ODCs

Category	Description	ODC Cost
Travel: <i>(include To/From, number of trips, and approximate duration of each trip)</i>		
Other Direct Costs (ODC):		

TOTAL ADDITIONAL ODC COST: \$ _____.

TOTAL TASK 2 (LABOR + ODC) COST: \$ _____.

DURATION OF TASK 2: _____.
(# of Calendar days)

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TASK 3: INSTALLATION

This task includes the following deliverables:

- *Site Preparation Completion Report*
- *Installation Completion Report*
- *As-Built System Description Document*

A. Include the following information with respect to the preparation of each radio site in the system design proposed by the VENDOR, including the central dispatch site.

Site: **(Site Name)**

(Site Name) **Site Preparation Bill of Materials**
(List required resources that were not identified under Task 2)

Item	Description	Quantity	Cost
1			
2			
3			
4			
5			

(Site Name) **Site Preparation Labor**

Labor Category	Estimated Number of Hours	Cost

TOTAL SITE LABOR COST: \$ _____.

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_____ (Site Name) _____ **Site Preparation ODCs**

Category	Description	ODC Cost
Travel: <i>(include To/From, number of trips, and approximate duration of each trip)</i>		
Other Direct Costs (ODC):		

TOTAL SITE ODC COST: \$ _____.

TOTAL SITE (LABOR + ODC) COST: \$ _____.

B. Include the following information, with respect to the installation of radio equipment, at each radio site in the system design proposed by the VENDOR, including the central dispatch site.

Site: (Site Name)

_____ (Site Name) _____ **Installation Bill of Materials**
(List required resources that were not identified under Task 2.)

Item	Description	Quantity	Cost
1			
2			
3			
4			
5			

_____ (Site Name) _____ **Installation Labor**

Labor Category	Estimated Number of Hours	Cost

TOTAL SITE LABOR COST: \$ _____.

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(Site Name) _____ Installation ODCs

Category	Description	ODC Cost
Travel: <i>(include To/From, number of trips, and approximate duration of each trip)</i>		
Other Direct Costs (ODC):		

TOTAL SITE ODC COST: \$ _____.

TOTAL SITE (LABOR + ODC) COST: \$ _____.

C. Include the following information for any additional equipment, labor, or ODCs that have not been accounted for in the site cost data above (i.e., non-site-specific resources).

Additional Task 3 Equipment

(List required resources that were not identified under Task 2.)

Item	Description	Quantity	Cost
1			
2			
3			
4			
5			

Additional Task 3 Labor

Labor Category	Estimated Number of Hours	Cost

TOTAL ADDITIONAL LABOR COST: \$ _____.

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Additional Task 3 ODCs

Category	Description	ODC Cost
Travel: <i>(include To/From, number of trips, and approximate duration of each trip)</i>		
Other Direct Costs (ODC):		

TOTAL ADDITIONAL ODC COST: \$ _____.

TOTAL TASK 3 (LABOR + ODC) COST: \$ _____.

DURATION OF TASK 3: _____.
(# of Calendar days)

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TASK 4: OPERATIONAL AND ACCEPTANCE TESTING

This task includes the following deliverables:

- *System Acceptance Test Report*
- *Maintenance Procedure Changes*

A. Include the following information for each radio site in the system design proposed by the VENDOR, including the central dispatch site.

Site: (Site Name)

(Site Name) **Bill of Materials**
(List required resources that were not identified under Tasks 2 or 3.)

Item	Description	Quantity	Cost
1			
2			
3			
4			
5			

TOTAL SITE PURCHASE PRICE: \$ _____.

(Site Name) **Labor**

Labor Category	Estimated Number of Hours	Cost

TOTAL SITE LABOR COST: \$ _____.

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(Site Name) _____ ODCs

Category	Description	ODC Cost
Travel: <i>(include To/From, number of trips, and approximate duration of each trip)</i>		
Other Direct Costs (ODC):		

TOTAL SITE ODC COST: \$ _____.

TOTAL SITE (LABOR + ODC) COST: \$ _____.

B. Include the following information for any additional equipment, labor, or ODCs that have not been accounted for in the site cost data above (i.e., non-site-specific resources).

Additional Task 4 Equipment

(List required resources that were not identified under Tasks 2 or 3.)

Item	Description	Quantity	Cost
1			
2			
3			
4			
5			

TOTAL ADDITIONAL EQ. PURCHASE PRICE: \$ _____.

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Additional Task 4 Labor

Labor Category	Estimated Number of Hours	Cost

TOTAL ADDITIONAL LABOR COST: \$ _____.

Additional Task 4 ODCs

Category	Description	ODC Cost
Travel: <i>(include To/From, number of trips, and approximate duration of each trip)</i>		
Other Direct Costs (ODC):		

TOTAL ADDITIONAL ODC COST: \$ _____.

TOTAL TASK 4 (LABOR + ODC) COST: \$ _____.

DURATION OF TASK 4: _____.
(# of Calendar days)

TOTAL SYSTEM PURCHASE PRICE: \$ _____.

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TASK 5: MAINTENANCE SUPPORT

This task includes the following deliverables:

- *Maintenance Activity Log*

Labor Category	Estimated Number of Hours	Cost

TOTAL LABOR COST: \$ _____.

Category	Description	ODC Cost
Travel: <i>(include To/From, number of trips, and approximate duration of each trip)</i>		
Other Direct Costs (ODC):		

TOTAL ODC COST: \$ _____.

TOTAL TASK 5 (LABOR + ODC) COST: \$ _____.

DURATION OF TASK 5: _____.
(# of Calendar days)

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APPENDIX G—LIST OF ACRONYMS

AC	Alternating Current
ACR	Area Coverage Reliability
ADP	Automated Data Processing
ANSI	American National Standards Institute
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ATP	Acceptance Test Plan
AWG	American Wire Gauge
BER	Bit Error Rate
CAD	Computer Aided Dispatch
CAI	Common Air Interface
CDR	Critical Design Report
CFR	Code of Federal Regulations
C/I	Carrier to Interference Ratio
COTS	Commercial Off-The-Shelf
CPC	Channel Performance Criteria
DAQ	Delivered Audio Quality
dB	Decibel
DBA	Davis-Bacon Acts
DC	Direct Current
DES	Data Encryption Standard
DPAS	Defense Priorities and Allocations System
EIA	Electronic Industries Association
FAA	Federal Aviation Administration
FAT	First Article Test
FAR	Federal Acquisition Regulation
FCC	Federal Communications Commission
HELIAX	Andrew Corporation trademark for coaxial transmission cable
IEEE	Institute of Electrical and Electronic Engineers
ISSI	Inter-RF Subsystem Interface
IM	Intermodulation
LMR	Land Mobile Radio

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MDF	Main Distribution Frame
MHz	Megahertz
NEC	National Electrical Code
NFPA	National Fire Protection Agency
NMS	Network Management System
NTIA	National Telecommunications and Information Administration
ODC	Other Direct Costs
OEM	Original Equipment Manufacturer
OTAP	Over the Air Programming
OTAR	Over-the-Air Rekeying
PVC	Polyvinyl Chloride
QA	Quality Assurance
QAP	Quality Assurance Plan
QC	Quality Control
RCSS	Radio Control Sub-System
RF	Radio Frequency
RFP	Request for Proposal
RFSS	Radio Frequency Subsystem
SCA	Service Contract
SOW	Statement of Work
TIA	Telecommunications Industry Association
UHF	Ultra High Frequency
USGS	U.S. Geodetic Survey
VHF	Very High Frequency