



INVITATION TO NEGOTIATE (ITN) & RESPONDENT'S ACKNOWLEDGEMENT

ITN TITLE:
Project 25 Public Safety Radio Network

ITN NUMBER:
ITN PS 33-20

ISSUE DATE: May 18, 2020 at 8:00 A.M.

PRE-PROPOSAL MEETING : June 11, 2020 at 9:00 A.M.

LAST DAY FOR QUESTIONS: June 18, 2020 at 3:00 P.M.

ITN OPENING DATE & TIME: July 17, 2020 at 3:00 P.M.

NOTE: PROPOSALS RECEIVED AFTER THE PROPOSAL OPENING DATE & TIME WILL NOT BE CONSIDERED.

Okaloosa County, Florida solicits your company to submit a proposal on the above referenced goods or services. All terms, specifications and conditions set forth in this ITN are incorporated into your response. A proposal will not be accepted unless all conditions have been met. All proposals must have an authorized signature in the space provided below. All envelopes containing sealed proposals must reference the "ITN Title", "ITN Number" and the "ITN Due Date & Time". Okaloosa County is not responsible for lost or late delivery of proposals by the U.S. Postal Service or other delivery services used by the respondent. Neither faxed nor electronically submitted proposals will be accepted. Proposals may not be withdrawn for a period of ninety (90) days after the proposal opening unless otherwise specified.

RESPONDENT ACKNOWLEDGEMENT FORM BELOW MUST BE COMPLETED, SIGNED, AND RETURNED AS PART OF YOUR RESPONSE. RESPONSES WILL NOT BE ACCEPTED WITHOUT THIS FORM, SIGNED BY AN AUTHORIZED AGENT OF THE RESPONDENT.

COMPANY NAME _____
MAILING ADDRESS _____
CITY, STATE, ZIP _____
FEDERAL EMPLOYER'S IDENTIFICATION NUMBER (FEIN): _____
TELEPHONE NUMBER: _____ EXT: _____ FAX: _____
EMAIL: _____

I CERTIFY THAT THIS PROPOSAL IS MADE WITHOUT PRIOR UNDERSTANDING, AGREEMENT, OR CONNECTION WITH ANY OTHER RESPONDENT SUBMITTING A PROPOSAL FOR THE SAME MATERIALS, SUPPLIES, EQUIPMENT OR SERVICES, AND IS IN ALL RESPECTS FAIR AND WITHOUT COLLUSION OR FRAUD. I AGREE TO ABIDE BY ALL TERMS AND CONDITIONS OF THIS PROPOSAL AND CERTIFY THAT I AM AUTHORIZED TO SIGN THIS PROPOSAL FOR THE RESPONDENT.

AUTHORIZED SIGNATURE: _____ TYPED OR PRINTED _____
NAME

TITLE: _____ DATE _____

NOTICE TO RESPONDENTS

ITN PS 33-20

Notice is hereby given that the Board of County Commissioners of Okaloosa County, FL, will accept sealed proposals until **3:00 PM (CST)** on **July 17, 2020**, for **Project 25 Public Safety Radio Network**.

Interested respondents desiring consideration shall provide one (1) original hard copy and one (1) electronic copy on thumb drive of their Invitation to Negotiate (ITN) response with the respondent's areas of expertise identified. Submissions shall be portrait orientation, unbound, and 8 ½" x 11" where practical.

The hard copy original must have original signatures in blue ink.

Proposal documents are available for download by accessing the Okaloosa County website at <http://www.co.okaloosa.fl.us/purchasing/home> then accessing the link "View Current Solicitations" or by accessing the Florida Purchasing Group website at <https://www.bidnetdirect.com/florida>

[A mandatory pre-proposal meeting will be held at 9:00 a.m. \(CST\), June 11, 2020 at the Okaloosa County Administration Building, Training Room, 1st Floor, 1250 Elgin Parkway N., Shalimar, FL 32579, with site visits scheduled immediately afterwards.](#)

Submittals must be delivered to the Okaloosa County Purchasing Department at the address listed below no later 3:00 PM on July 17, 2020 in order to be considered. All proposals received after the stated time and date will be returned unopened and will not be considered. All submittals must be in sealed envelopes reflecting on the outside thereof "**Project 25 Public Safety Radio Network**". Failure to clearly mark the outside of the envelope as set forth herein shall result in the submittal not being considered.

The County reserves the right to award to the firms submitting a responsive proposal with a resulting negotiated agreement that is most advantageous and in the best interest of Okaloosa County, and to waive any irregularity or technicality in proposals received. Okaloosa County shall be the sole judge of the solicitation and the resulting negotiated agreement that is in its best interest and its decision will be final.

NOTE: Crestview, FL is not a next day guaranteed delivery location by most delivery services. Respondents using mail or delivery service assume all risk of late or non-delivery.

All submittals should be addressed as follows:

ITN PS 33-20
Project 25 Public Safety Radio Network
Okaloosa County Purchasing Department
5479A Old Bethel Road
Crestview, FL 32536

Jeffrey A. Hyde
Purchasing Manager

Date

OKALOOSA COUNTY
BOARD OF COUNTY COMMISSIONERS

Robert A. "Trey" Goodwin, III
Chairman

Invitation to Negotiate



ITN PS 33-20

Project 25 Public Safety Radio Network

Okaloosa County, Florida

CHAIRMAN

Robert A. "Trey" Goodwin, III., Chair, District 4

OKALOOSA COUNTY COMMISSIONERS

Carolyn Ketchel, Vice Chair, District 2

Graham W. Fountain, District 1

Nathan Boyles, District 3

Charles K. Windes, Jr., District 5

COUNTY ADMINISTRATOR

John Hofstad

CLERK

JD Peacock II

TABLE OF CONTENTS

1. Project Overview	1
1.1. Introduction	1
1.2. Okaloosa County Background.....	2
1.3. Invitation to Negotiate Overview	2
1.4. Scope of Work Summary	3
1.5. Proposals Desired	5
1.5.1. Systems Technical Requirements	5
1.5.2. Services.....	5
1.6. Quality Assurance and Coordination.....	6
1.6.1. Standards and Guidelines	6
1.6.2. P25 Standard Compliance	7
1.6.3. Frequency Coordination and Licensing	7
1.6.4. Federal Aviation Administration (if applicable).....	8
1.6.5. Local, State, and Federal Environmental and Historical Requirements	8
1.6.6. Permitting.....	8
1.6.7. Project Management.....	9
1.6.8. Project Meetings	10
1.6.9. Project Staffing	11
1.6.10. Quality Assurance/Quality Control Program	12
1.7. Delivery, Storage and Handling	12
1.8. Project Submittals	13
1.8.1. Preliminary Design (45 days after notice to proceed)	13
1.8.2. Final Design (90 days after notice to proceed).....	13
1.8.3. System Staging, Delivery and Installation	14
1.8.4. Final System Acceptance	14
2. Instructions to Respondents	15
2.1. Overview.....	15
2.2. Mandatory Pre-Proposal Conference.....	16
2.3. Timeline Goals.....	17
2.4. Proposal Format	17
2.5. Competition Procedures	19
2.6. Procedures	20
2.7. Negotiation Process.....	20
2.8. Evaluation	21
2.9. Proposal Options	21
2.10. Alternate Proposals	21
2.11. Addenda to the Contract.....	22

2.12.	Award of Contract	22
3.	Radio Communications System Requirements	23
3.1.	Overview	23
3.2.	Interoperability/P25 Statement of Requirements	23
3.3.	System Configuration	24
3.3.1.	Redundancy and Survivability	24
3.3.2.	Expansion	25
3.3.3.	Grade of Service	25
3.4.	Site Selection	26
3.5.	Coverage	27
3.5.1.	Coverage Maps	28
3.5.2.	Map Criteria	29
3.5.3.	Coverage Model	30
3.5.4.	TIA TSB-88 – User Choices	30
3.6.	Site Equipment	31
3.6.1.	Overview	31
3.6.2.	System and Site Control Equipment	32
3.6.3.	Simulcast Equipment	32
3.6.4.	Receiver Voting	32
3.6.5.	Base Station Equipment	32
3.6.6.	Antenna Systems	33
3.6.7.	Antenna Installation	34
3.6.8.	Removal of Existing Infrastructure and Equipment	35
3.7.	Network Management System	35
3.7.1.	Network Management Terminal	37
3.7.2.	Remote Terminal Units	39
3.8.	Mobile Data	40
3.9.	Backup Consolettes	40
4.	Backhaul Network	40
4.1.	Overview	40
4.2.	Digital Microwave Network	41
4.2.1.	Requirements	41
4.2.2.	Microwave Engineering	44
5.	Site Development	45
5.1.	General	45
5.2.	Towers	47
5.3.	Shelters	50
5.4.	Generator and Automatic Transfer Switch	55
5.4.1.	Dual-Fuel Propane/Natural Gas Generator	57
5.4.2.	Automatic Transfer Switch	60
5.4.3.	Dual-Fuel Propane and Natural Gas System	63

5.5.	DC Power	63
5.6.	Site Preparation.....	65
5.7.	Fencing.....	68
6.	Dispatch Consoles.....	71
6.1.	General Requirements.....	71
6.2.	Trunked Requirements.....	72
6.3.	Conventional Requirements	74
6.4.	Paging Requirements	75
6.5.	Systems Integration	75
6.6.	Logging Recorder	76
6.7.	Operator Position Equipment.....	76
6.8.	Common Electronics Equipment.....	77
7.	Warranty, Maintenance, and Support	77
7.1.	Warranty.....	77
7.2.	Maintenance	78
7.2.1.	General Requirements	78
7.2.2.	Maintenance Standards	80
7.3.	Parts Availability.....	80
7.4.	Spare Equipment	81
7.5.	Lifecycle Cost.....	81
8.	System Implementation, Testing, and Acceptance	82
8.1.	General	82
8.2.	System Installation	82
8.3.	Cutover Plan.....	83
8.4.	Staging	84
8.5.	Coverage Testing	85
8.6.	30-day Operational Test.....	87
8.7.	Training.....	87
8.8.	Final Acceptance Testing	89
8.9.	As-Built Documentation	89
8.10.	System Acceptance	90
9.	Subscriber Equipment.....	90
9.1.	Overview.....	90
9.2.	General Requirements	91
9.2.1.	Portable Radios	91
9.2.2.	Mobile Radios/Control Stations	93
9.2.3.	Fleet Mapping.....	95

9.3. Subscriber Warranty and Maintenance.....	96
9.3.1. Subscriber Warranty.....	96
9.3.2. Subscriber Maintenance.....	96
<i>Glossary of Terms and Acronyms</i>	98
<i>Appendix A: Potential Candidate Tower Sites</i>	106
<i>Appendix B: Coverage Requirements Map</i>	108
<i>Appendix C: Compliance Matrix</i>	110
<i>Appendix D: Proposal Pricing Instructions.....</i>	117
<i>Attachment A: County Documents</i>	118

1. PROJECT OVERVIEW

1.1. INTRODUCTION

- A. Okaloosa County, Florida, (County) invites proposals from qualified vendors for the provision of an Association of Public-Safety Communications Officials (APCO) International Project 25 (P25) radio communications system to support mission-critical public safety communications within the county. The proposed communications system shall provide enhanced, two-way wireless communications capabilities to all public safety users. Proposals are requested for the following:
1. A new P25 trunked Phase II system to replace the County's multiple radio systems, including an ultra-high frequency (UHF) conventional analog system and the 800-megahertz (MHz) State Law Enforcement Radio System (SLERS) using Harris Enhanced Digital Access Communications System (EDACS) technology. The County's very-high frequency (VHF) conventional analog system will be expanded to enhance tone-and-voice paging.
 2. A new Internet Protocol (IP)-based microwave and terrestrial fiber backhaul system.
 3. New radio dispatch consoles for twenty-two (22) positions across five dispatch centers, including the County's Emergency Communications Center (911 center – 12), the City of Crestview (4), the City of Fort Walton Beach Police (2), the City of Niceville Police (2), and the City of Valparaiso Police (2). The consoles located in the cities of Fort Walton Beach, Niceville, and Valparaiso may require repositioning to the County's 911 center prior to design review. Respondents shall consider this potential relocation within their proposals.
 4. Mobile and portable subscriber radios for the County's first responders.
 5. Simulcast tone-and-voice paging.
 6. Civil work to support upgrades to new and existing radio sites, and tower upgrades to support the aforementioned communications subsystems.
- B. In addition to the above, Respondents should address in their proposals system installation and commissioning, and ongoing maintenance support, to ensure a state-of-the-art system.
- C. The proposed system will be owned by Okaloosa County. The system procurement process is being administered by Okaloosa County. For brevity, the generic term "County" used throughout the Invitation to Negotiate (ITN) refers to Okaloosa County, unless otherwise specified.

1.2. OKALOOSA COUNTY BACKGROUND

- A. Public safety agencies within Okaloosa County operate on a multitude of communications systems. These systems include the 800 MHz SLERS utilizing EDACS technology, a conventional UHF system with voted receivers, a conventional VHF system with voted receivers, and a UHF MOTOTRBO digital mobile radio (DMR) system.

1.3. INVITATION TO NEGOTIATE OVERVIEW

- A. This section provides a high-level overview of this ITN.
 - 1. Section 1, Project Overview – Provides background information and a general overview of the requirements contained in the ITN.
 - 2. Section 2, Instructions to Respondents – Provides instructions to Respondents, including, but not limited to: proposal due date, pre-proposal conference information, and evaluation criteria.
 - 3. Section 3, Radio Communications System Requirements – Provides requirements for the desired communications systems. The County requires procurement of a P25 radio system. It includes requirements for system configuration, site selection, radio frequency (RF) coverage, and site equipment. Subsections address the need for new radio dispatch consoles, network management system, and VHF tone-and-voice paging.
 - 4. Section 4, Backhaul Network – Provides requirements for a multi-protocol label switching (MPLS) backhaul network utilizing a combination of digital microwave backhaul equipment and County-owned fiber-optic connectivity.
 - 5. Section 5, Site Development – Provides requirements for site development work, including site compound preparation, site grounding, tower deployment, shelter deployment, and electrical and generator systems.
 - 6. Section 6, Dispatch Consoles – Provides requirements for the new dispatch console system and related equipment.
 - 7. Section 7, Warranty, Maintenance, and Support – Provides requirements for the warranty, extended warranty, maintenance, and support of the proposed system and subsystems.
 - 8. Section 8, System Implementation, Test and Acceptance – Provides requirements for system cutover, staging, installation, fleet mapping, coverage testing, and final acceptance.

9. Section 9, Subscriber Equipment – Provides requirements for subscriber equipment, including mobiles, portables, and control stations, as well as subscriber warranty and maintenance.
10. Glossary – Key acronyms and terms contained in the ITN.
11. Appendices
 - Appendix A: Potential Candidate Tower Site
 - Appendix B: Coverage Requirements Map
 - Appendix C: Compliance Matrix
 - Appendix D: Proposal Pricing Instructions
12. Attachment A: County Documents, including insurance requirements and proposal conditions

1.4. SCOPE OF WORK SUMMARY

- A. The selected Respondent shall provide the following project components:
 1. Furnish and install system equipment and ancillary facilities
 2. Engineering, system design, and Federal Communications Commission (FCC) licensing preparation
 3. Project management
 4. Software installation and programming
 5. Training
 6. Acceptance testing, including coverage testing
 7. Cutover plan and execution
 8. Warranty and maintenance
- B. The selected Respondent shall furnish the following complete, highly redundant, and/or fully functional systems and equipment:
 1. P25 land mobile radio (LMR) communications system, including the guarantee of system coverage and reliability
 2. MPLS backhaul network utilizing a combination of point-to-point digital microwave backhaul network with consideration given to using the County-owned fiber-optic network for alternate backhaul connections.

3. Infrastructure facilities (e.g., towers, shelters, fencing)
 4. Network management system (NMS)
 5. Subscriber mobile and portable radio equipment
- C. All equipment shall be provided in new condition and be covered by a full factory and/or manufacturer's warranty of not less than one year beginning at the time of system acceptance.
 - D. Respondents are to identify radio site locations to best meet the County's coverage requirements and provide the greatest overall operational benefit. Any proposed greenfield or existing leased locations must meet the facility requirements identified in Section 5, Site Development. The long-term cost effectiveness of new greenfield towers versus adding other existing towers to the network will be an evaluation factor.
 - E. Existing towers may require structural modifications to support the proposed new system and transitional loading. Respondents should account for the time required to remediate these towers, including time required for engineering, design, procurement, and implementation of any required modifications.
 - F. In the event additional or alternate tower sites are proposed to meet a Respondent's coverage guarantee, the response must include letters of commitment from those site and tower owners, indicating availability of tower space to accommodate the proposed facilities and antennas. Such letters also must indicate a commitment to enter into negotiations with the County for tower space or construction on greenfield sites.
 - G. Work shall be planned, coordinated, and conducted with minimal interruption of service to existing critical systems.
 - H. Proposals shall completely describe the equipment and methods that will be used to implement the system. The intent of this document is to allow the Respondent to propose the best equipment, technology, and methods available to provide state-of-the-art public safety communications systems of the highest quality and performance.
 - I. Proposals shall not be accepted that include systems or equipment within five years of the end of their respective lifecycles at the time of system acceptance. No product with published cancellation dates shall be proposed.
 - J. Proposals shall not be accepted that include systems or equipment that will no longer be supported for software, spare parts, and repair by the Respondent or manufacturer within 15 years of system acceptance. Product roadmaps must be provided.
 - K. If a product or feature included in a Respondent's proposal is no longer offered, supported, or being sold at the time of system acceptance, the selected Respondent shall offer the equivalent product or service at no additional up-front or recurring cost.

- L. In the event that requirements are stated in more than one section and appear to conflict, the more stringent requirement shall apply.

1.5. PROPOSALS DESIRED

- A. The County desires a complete turnkey solution addressing all project systems, subsystems, and components.
- B. Any requirements placed on the County throughout the project must be specifically identified in the Respondent's proposal. Any requirements required for project completion that have not been identified as a County responsibility will be the responsibility of the Respondent at no additional cost to the County.

1.5.1. *Systems Technical Requirements*

- A. This ITN seeks proposals for the construction of a countywide radio system that will include:
 - 1. 700 MHz or 800 MHz P25 Phase II system that will support first responders within Okaloosa County
 - 2. Trunked system to meet the capacity requirements of the County
 - 3. Tone-and-voice paging system with a standalone simulcast channel
 - 4. P25 dispatch consoles
 - 5. Construction of a microwave network utilizing MPLS routing that will provide radio system backhaul for P25 traffic at each site, with integration of the County-owned fiber-optic network, where practical, for redundant routing
 - 6. Purchase of P25 subscriber units (mobiles, portables, and control stations) and any necessary pagers
 - 7. Site construction/improvements

1.5.2. *Services*

- A. Design and engineer the P25 radio system to portable radio coverage in the four coverage areas defined in Appendix B. This includes coverage areas for portable outdoor, 12-decibel (dB) buildings, 20 dB buildings, and boat-mounted mobiles, with the portable carried on the user's belt with a radio-mounted antenna and a wired speaker/microphone.
- B. Design and engineer a microwave system to interconnect the LMR sites and 911 center, with consideration of the County-owned fiber-optic network for redundant connectivity.

- C. Conduct a structural analysis of all towers proposed for use in the system and mitigate any structural shortfalls to meet the current Telecommunications Industry Association (TIA) 222-H, *Structural Standard for Antenna Supporting Structures and Antennas*, Class III standard.

1.6. QUALITY ASSURANCE AND COORDINATION

1.6.1. *Standards and Guidelines*

- A. Respondents shall comply with the latest revisions of the following standards, rules, regulations, and industry guidelines:
 - 1. Florida Building Code (FBC)
 - 2. International Building Code (IBC)
 - 3. American National Standards Institute (ANSI)
 - 4. National Electrical Manufacturers Association (NEMA)
 - 5. Electronics Industry Association (EIA)
 - 6. Telecommunications Industry Association (TIA)
 - 7. Telecommunications Distribution Methods Manual (TDMM)
 - 8. National Electrical Code (NEC)
 - 9. Institute of Electrical and Electronics Engineers (IEEE)
 - 10. Federal Communications Commission (FCC)
 - 11. UL LLC
 - 12. American Society of Testing Materials (ASTM)
 - 13. National Fire Protection Association (NFPA) 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*
 - 14. Other contractor/industry standards
 - a. Respondents shall provide information to the County for review and approval prior to contract award.
- B. The selected Respondent shall comply with industry best practices for system installation, grounding, bonding, and transient voltage surge suppression (TVSS), as outlined in the following standards. A third-party audit shall be performed at the conclusion of the installation to verify that the installation aligns with the applied standard.
 - 1. Motorola R56®, *Standards and Guidelines for Communication Sites* (latest revision)
 - 2. Harris AE/LTZ 123 4618/1, *Grounding Guidelines*
 - 3. Equivalent (Respondents must provide details)
- C. Governing codes and conflicts: If the requirements of this specifications document conflict with those of the governing codes and regulations, then the more stringent of the two shall become applicable.
- D. If a Respondent cannot meet any of the standards or guidelines listed above, the Respondent shall list in its proposal any and all deviations for approval by the County.

- E. The selected Respondent shall identify and coordinate all necessary codes, permitting, etc., including building permits. The selected Respondent shall notify the County of any issues.
- F. The selected Respondent shall be responsible for performing a structural analysis for each tower where loading will be modified, and for advising the County where remediation will be required and the cost options for proposed modifications.

1.6.2. P25 Standard Compliance

- A. The proposed trunked radio system shall comply with the latest applicable P25 suite of standards adopted as TIA and/or ANSI documents at the time of proposal submission.
- B. The system shall be delivered in accordance with the P25 Phase II standards outlined in the ITN. If these standards change or are updated for final release, the selected Respondent shall implement the final standards at no additional charge to the County.
- C. The proposed system shall not include proprietary features that prohibit or impede the use of P25-compliant subscriber equipment provided by any equipment vendor. Any proprietary features that would be available as an option should be clearly explained.

1.6.3. Frequency Coordination and Licensing

- A. LMR Licenses: 700 MHz or 800 MHz band for the trunked radio system. The selected Respondent shall be responsible for the research and preparation of all license acquisitions to support the new system. Following approval of the preliminary design phase, the selected Respondent shall provide all modifications and applicable forms to the County for review and approval. The selected Respondent shall be responsible for evaluating frequencies in the 700 MHz and 800 MHz bands to determine the feasibility of licensing. Any proposed designs shall align with the associated restrictions of the frequency band proposed by the Respondent. For example, the use of 700 MHz or 800 MHz National Public Safety Planning Advisory Committee (NPSPAC) frequencies will need to comply with Region 9 requirements, including protection of Computer Assisted Pre-Coordination Resource & Database System (CAPRAD) allotments, responsible radiation, Florida Region 9 Interference Program (FRIP), etc. The County shall be responsible for coordination and licensing fees, if any, and signatures, as applicable.
- B. Microwave Licenses: The selected Respondent shall be responsible for all microwave frequency research, prior coordination, and preparation of all associated FCC license applications and submittals on behalf of the County. The County shall be responsible for coordination and licensing fees, if any, and signatures, as applicable.
- C. Paging License: The selected Respondent shall be responsible for the frequency research and licensing of the countywide VHF paging channels (one north and one south). The selected Respondent shall be responsible for acquiring any letters of

concurrence that may be required during the licensing process. The County shall be responsible for coordination and licensing fees, if any, and signatures, as applicable.

1.6.4. Federal Aviation Administration (if applicable)

- A. The selected Respondent shall complete Federal Aviation Administration (FAA) forms as necessary. The selected Respondent also shall complete any associated FCC Antenna Structure Registration (ASR) submittals.

1.6.5. Local, State, and Federal Environmental and Historical Requirements

- A. The selected Respondent shall be responsible for securing all approvals acquired for construction and installation activities. This shall include the preparation of all applications and exhibits in support of these approvals. The following exhibits provide examples of required approvals that will be the selected Respondent's responsibility.
 - 1. FCC Tower Notification application
 - 2. National Environmental Policy Act (NEPA) checklist and supporting documentation
 - 3. State Historic Preservation Office (SHPO) requirements
 - 4. Environmental Assessment compliant with FCC/federal requirements
 - 5. Wetland mitigation including any required credits with the Army Corp of Engineers
 - 6. Storm water mitigation plan
 - 7. Native species assessment and mitigation
 - 8. Tribal notification and mitigation, if impact identified
 - 9. Endangered species assessment and mitigation
 - 10. Floodplain assessment and mitigation
 - 11. Local newspaper posting of tower notification

1.6.6. Permitting

- A. The selected Respondent shall be responsible for all permitting activities required to complete site construction and system implementation, including building and electrical permits.
- B. The selected Respondent is responsible for identifying the Authority Having Jurisdiction (AHJ) for each proposed location.
- C. The selected Respondent shall propose designs that fall within the zoning requirements of each AHJ. For example, if a new raw-land site is proposed, the site must comply with the AHJ's tower height and setback requirements.
- D. The selected Respondent shall research all required exhibits required by each AHJ and be responsible for preparing those exhibits.
- E. The selected Respondent shall track the progress of all permit applications and seek expedited processing when possible.

- F. The selected Respondent shall respond to any comments received in response to comments from the AHJ within one week of receipt.
- G. The selected Respondent is responsible for any required certifications of permitting submittals, including engineer-sealed drawings by a Florida registered Professional Engineer (PE).
- H. The selected Respondent shall be available to represent the County at any meetings for site approval, include City Commission, County Commission, or public outreach meetings.
- I. The selected Respondent shall be responsible for preparing any exhibits required in support of zoning variances.

1.6.7. Project Management

- A. Respondents shall provide a project management plan (PMP) in their proposals that provides detail on the following: Project scope, deliverables, schedule, quality assurance/quality control (QA/QC) processes, and risk management.
- B. The PMP shall describe how the selected Respondent intends to monitor and control the installation and deployment of the proposed system and mitigate risks to ensure that the system meets the design specifications and is delivered on time.
- C. Regularly scheduled status meetings shall be established between the County's project team and the selected Respondent. The selected Respondent shall provide a schedule for these meetings subject to the County's approval.

1.6.7.1. Scheduling

- A. The selected Respondent shall develop and maintain a project schedule including tasks, milestones, start and end dates, task precursors and task owners.
- B. The schedule shall represent tasks associated with completing work and shall be updated with actual dates as tasks are completed.
- C. The updated schedule shall be provided as an agenda item for all County/Respondent status meetings.
- D. The schedule shall address the following at a minimum:
 - 1. Site surveys
 - 2. Detailed design review
 - 3. Site preparation
 - 4. Equipment manufacturing
 - 5. Factory acceptance test

6. Equipment delivery
7. System installation
8. System configuration
9. System optimization
10. Acceptance testing
11. Coverage testing
12. User training
13. Fleet map development
14. System cutover
15. System documentation development and delivery
16. System and equipment warranty

1.6.7.2. *Project Punch List*

- A. The selected Respondent shall establish and maintain a punch list, as mutually agreed to with the County, for site facilities, equipment, and acceptance tests.
- B. The punch list shall be maintained in real time and published weekly. The punch list shall include the following at a minimum:
 1. Sequential punch-list item numbers
 2. Date identified
 3. Item description
 4. Party responsible for resolution
 5. Expected resolution date
 6. Resolution date
 7. Details about how each punch-list item was resolved and tested
 8. Notes about the item
- C. The selected Respondent shall be responsible for reviewing each punch-list item and advising the County of any changes. The status of punch-list items shall be updated during each status meeting.

1.6.8. *Project Meetings*

- A. A project kickoff meeting shall be scheduled prior to the beginning of the project.
- B. Regular project status meetings shall be scheduled following contract award and the initial kickoff meeting.
- C. The selected Respondent shall be responsible for scheduling the meetings, as well as preparing meeting agendas and minutes. In addition to those identified in Section 1.6.7.1, Scheduling, above, meeting agenda items shall include, at a minimum, the following items:
 1. Schedule review

2. Status of deliverables
3. Risk items
4. Changes
5. Action-item assignments

1.6.9. *Project Staffing*

- A. Project staffing shall be managed by the selected Respondent based on workload and the level of effort required throughout the implementation/installation process; however, the positions identified below shall be staffed throughout the duration of the project and shall not be changed without prior approval of the County.
- B. Respondent's Project Manager
 1. The selected Respondent's project manager shall be the primary point of contact between the County and the Respondent.
 2. Respondent's project manager shall: bear full responsibility for supervising and coordinating the installation and deployment of the communications system; be responsible for development and acceptance of the PMP; manage the execution of the project against that plan; and oversee the day-to-day project activities, deliverables, and milestone completions.
 3. Respondent's project manager shall be responsible for coordination of the regular project status meetings.
- C. Respondent's Project Engineer
 1. The selected Respondent's project engineer shall have the primary responsibility for managing the system design and ensuring that the system is installed in accordance with the approved system design.
 2. Any deviation from the system design shall be subject to project change control procedures and shall not be undertaken until approved by the County.
 3. Respondent's project engineer shall ensure the development of block diagrams, system-level diagrams, and rack diagrams to assist the installation team in completing the system installation.
 4. The project engineer also shall supervise the development and execution of the acceptance test plan (ATP) and coverage acceptance test plan (CATP), as well as guide the County's project team through the processes and procedures necessary to prove that the system performs as specified in the contract. No test plan shall be executed until approved by the County.

1.6.10. *Quality Assurance/Quality Control Program*

- A. The selected Respondent shall include a QA/QC plan. The QA/QC plan shall be submitted for review during preliminary design as described in this section. The plan shall address all stages of the project, including at a minimum:
 - 1. Procurement
 - 2. System design
 - 3. Installation
 - 4. Implementation
 - 5. Testing
 - 6. Cutover

- B. The QA/QC plan shall specifically describe the plans and procedures that ensure the proposed system is designed in accordance with the standards and requirements described in this specifications document.

- C. The QA/QC plan shall be included as part of the PMP developed by the project manager.

- D. The QA/QC plan shall be an integral part of the project and include County personnel as part of the review-and-approval process for all deliverables and submittals.

- E. The proposed QA/QC plan shall address the following project tasks at a minimum:
 - 1. Design analysis and verification
 - 2. RF coverage analysis and verification
 - 3. Design changes and document control
 - 4. Material shipping, receiving, and storage
 - 5. Site preparation (if required)
 - 6. Field installation and inspection
 - 7. Equipment inventory and tracking
 - 8. System testing and validation
 - 9. Software regression testing
 - 10. Deficiency reporting and correction
 - 11. Implementation and cutover
 - 12. Training and certification

1.7. DELIVERY, STORAGE AND HANDLING

- A. The selected Respondent shall be responsible for the storage of equipment following shipment from staging. All costs associated with the storage shall be the responsibility of the selected Respondent. The County shall not be liable for equipment or material stored onsite prior to system acceptance.

1.8. PROJECT SUBMITTALS

- A. Key project deliverables and submittals are outlined below and are described in further detail throughout this specifications document.
- B. All project submittals shall be subject to review and approval by the County and its engineer/consultant.
- C. All submittals shall be provided in hard copy, properly bound, and in electronic format on a universal serial bus (USB) flash drive. The quantity of hard copies required shall vary for each type of submittal and shall be determined by the County prior to submission.
- D. All submittals shall include a cover letter or letter of transmittal, signed, dated, and fully describing the contents of the submittal.
- E. For the duration of the project, the selected Respondent shall provide a Web-based portal or File Transfer Protocol (FTP) site for sharing and exchanging project documents.

1.8.1. *Preliminary Design (45 days after notice to proceed)*

- A. The selected Respondent shall submit the preliminary design package 45 days after receiving the notice to proceed. The preliminary design package shall include the following:
 - 1. QA/QC plan
 - 2. Detailed project schedule
 - 3. System-level block diagrams
 - 4. Patching schedules and termination details for all cabling necessary for a complete record of the installation
 - 5. Radio and microwave channel plans
 - 6. Microwave path engineering report(s)
 - 7. Equipment room overview drawings
 - 8. Equipment rack/cabinet elevation drawings
 - 9. Tower profile drawings indicating antenna-mounting locations
 - 10. Detailed lists of materials for each site
 - 11. 30-day operational test plan
 - 12. CATP

1.8.2. *Final Design (90 days after notice to proceed)*

- A. The contract design review (CDR) shall occur no sooner than 90 days after the selected Respondent receives the notice to proceed, unless the County agrees to an earlier date, or before the proposed sites acquisition can be validated and the County provides confirmation.

- B. The CDR shall be delayed until proposed sites in the Respondent's design can be validated, acquired and finalized.
- C. The selected Respondent shall submit the final design package no earlier than 90 days after receiving notice to proceed, which shall include the following:
 - 1. Any updates to previously submitted design information
 - 2. Cutover plan
 - 3. System operation and maintenance manuals for all equipment
 - 4. Factory test data
 - 5. Site installation drawings
 - 6. Structural analyses and results
 - 7. A detailed preliminary staging acceptance test plan (SATP) outlining a comprehensive series of tests that will demonstrate proof of performance and readiness for shipment
- D. The final SATP shall be submitted no later than 15 business days before the testing begins and shall be approved no later than five business days before the testing begins.

1.8.3. System Staging, Delivery and Installation

- A. System staging shall not occur earlier than the final CDR approval or site validation and acquisition unless agreed to by the County.
- B. System staging must be performed in the United States.
- C. The selected Respondent shall submit a bill of materials/packing list with two copies for each shipment of equipment. The packing list shall include the following information at a minimum for each component included in the packaging:
 - 1. Manufacturer
 - 2. Model
 - 3. Serial number
 - 4. Unique identification of the package containing the item
- D. All items shipped by the Respondent or its suppliers will include the above information in a barcode format.

1.8.4. Final System Acceptance

- A. The selected Respondent shall submit a detailed final acceptance test plan (FATP) that outlines a comprehensive series of tests that will demonstrate proof of performance and readiness for final acceptance by the County/Owner.

- B. The final FATP shall be submitted no later than 15 business days before the testing begins and shall be approved by the County before it is considered finalized. A preliminary FATP shall be submitted with the Respondent's proposal.
- C. The selected Respondent shall submit three final and complete sets of as-built documentation, including the following:
 - 1. Documentation index
 - 2. Field test reports, with dates and actual readings
 - 3. Coverage test reports
 - 4. Warranty documentation
 - 5. Detailed list of materials for each site
 - 6. A copy of all red-line documents for each site prior to issuance of the as-built documentation
 - 7. As-built system-level block diagrams
 - 8. As-built site drawings, including all cabling and terminations
 - 9. Site layout drawings, as appropriate
 - 10. Tower drawings showing any new installations

2. INSTRUCTIONS TO RESPONDENTS

2.1. OVERVIEW

- A. Proposals must be received by 3:00 p.m. Central Time (CT) on July 17, 2020.
- B. Respondents shall submit a bound original and nine bound copies of the proposal to the County. Each package also shall include a copy of the proposal in electronic format on a USB flash drive. The front of the package shall be marked "Proposal for County of Okaloosa Radio Communications System." Proposals shall be addressed to:

OKALOOSA COUNTY P25 RADIO SYSTEM PROPOSAL

Attention: Jeffrey A. Hyde
Purchasing Manager
Okaloosa County Purchasing
5479A Old Bethel Road
Crestview, FL 32536

- C. Respondents may submit questions to the County in either written or electronic format (email). The County will provide answers to any questions received. Oral responses shall not be binding on the County.
- D. The County's contact for submission of technical questions is:

Attention: Jeffrey A. Hyde
Purchasing Manager
Okaloosa County Purchasing

5479A Old Bethel Road
Crestview, FL 32536

Phone: 850-689-5960

Email: Jeffrey Hyde at: jhyde@myokaloosa.com

E. Respondents shall submit questions by 3:00 p.m. CT on June 18, 2020.

2.2. MANDATORY PRE-PROPOSAL CONFERENCE

A. A mandatory pre-proposal conference will be held on June 11, 2020, at 9:00 a.m. CT. The conference will be held at the Okaloosa County Administration Building, Training Room – 1250 N Eglin Parkway – 1st Floor, Shalimar, FL 32579.

B. Respondents may submit questions to the County in either written or electronic format (email). Questions must be received at least five days prior to the pre-proposal conference for them to be addressed at the conference. During the conference, the County shall provide answers to any questions received and hold an open discussion regarding the project. Oral responses during the conference shall not be binding on the County.

C. The County contact for submission of technical questions is the same as listed above.

D. Following the conference, all attendees shall be provided with a copy of the sign-in sheet, questions, and responses.

E. Following the pre-proposal conference, a familiarization tour of existing tower sites and the 911 center(s) will be conducted. It is anticipated that the tours will require the remainder of the day to complete. For logistical purposes, a head count of personnel planning to view each site is requested and should be submitted to the County's contact at least five business days in advance of the tour date. Some site facilities have limited space and challenging access; thus, vendors are encouraged to limit the number of persons who will need to spend time at each site.

2.3. TIMELINE GOALS

- A. While the County is not obligated to comply with the following timeline, it intends to comply with the following schedule, which may be changed in the County's sole discretion.

Table 1: Schedule of Events

Event	Date and Time
Solicitation Issued	May 18, 2020
Pre-proposal Conference	June 11, 2020, from 9:00 a.m. – 10:00 a.m. CT
Site Walks	June 11, 2020, from 10:00 a.m. – 5:00 p.m. CT
Written Questions Due	June 18, 2020 at 3:00 p.m. CT
Response/Addendum Issued	As required, no later than June 18, 2020
Proposals Due	July 17, 2020, at 3:00 p.m. CT
Evaluation of Proposals	July 17, 2020 through August 10, 2020 Oral interviews may be scheduled for August 20, 2020
Negotiation and Contract Award	Negotiations are anticipated to occur in September and October 2020

2.4. PROPOSAL FORMAT

- A. Respondents shall complete the compliance matrix provided in Appendix C. Failure to respond to any item in the compliance matrix may cause the proposal to be rejected.
- B. Respondents shall adhere to the proposal format provided below, organized by section.
1. Section 1 – Cover letter and non-collusion affidavit
 2. Section 2 – Table of contents
 3. Section 3 – Executive summary
 4. Section 4 – Qualifications

All Respondents shall provide in their proposals, and upon request by the County, information that describes their experience and qualifications concerning similar projects, including at a minimum:

- a. Descriptions of the Respondent's qualifications
- b. Resumes of key personnel and subcontractors
- c. Supplementary information

- d. A list of five systems/solutions of similar size and complexity, successfully completed by the Respondent, including:
 - i. Name of the system/solution
 - ii. Location
 - iii. Contact person
 - iv. Contact telephone number

Note: These references will be contacted. Failure of a reference to respond may count against a Respondent's final score. Respondents are urged to contact references and request their prompt response.
5. Section 5 – Description of the system/solution, including equipment, software, design, and services to be provided
 - a. Radio communications system, including RF coverage predictions
 - b. Dispatch console
 - c. Tower construction, including proposed plan for conducting structural analyses and remediation for existing towers where necessary
 - d. Microwave backhaul connectivity with consideration of fiber-optic network connectivity as an option
 - e. System management systems
 - f. System event-monitoring systems
 - g. Additional subsystems (if applicable)
 - h. Detailed equipment specification sheets for all proposed equipment
 - i. System design information, including a complete detailed description, block diagrams, equipment layouts, and equipment lists necessary to provide a complete and comprehensive description
6. Section 6 – Dispatch console system
7. Section 7 – Preliminary project schedule with detailed Gantt chart
8. Section 8 – Training programs and additional information not covered in other sections
9. Section 9 – Point-by-point compliance matrix

Respondents shall provide compliance statements in the spreadsheet found in Appendix C: Compliance Matrix for each outline level of this ITN. Respondents shall provide a response to every section with which they do not comply. Compliance statements are limited to three choices:

- a. **COMPLY:** The proposal meets or exceeds the specified requirement. When using this statement, a Respondent is confirming that it is providing the equipment and/or service associated with that paragraph.

- b. **COMPLY WITH CLARIFICATION:** The proposal does not meet the exact stated requirement; however, it meets a substantial portion, or meets the intent, of the requirement. Respondents must provide a detailed explanation when using this statement.
 - c. **EXCEPTION:** The proposal does not meet the specified requirements. Respondents must provide a detailed explanation when using this statement.
 - d. **CAPABLE vs ENABLED.** Any time a proposer uses the word “capable” it must use the following language to distinguish if the feature or function is “capable/enabled” (at no additional cost) or “capable/ extra cost” (cost should be provided in the pricing section).
10. Section 10 – System and subsystem warranty information to include: a list of maintenance plans and alternate tiers available, spare parts list, and 15-year cost-of-ownership information.
11. Section 11 – Total proposal cost and detailed pricing breakdown
- a. Respondents shall provide total proposal cost and itemized pricing for both equipment and services using the pricing forms provided in Appendix D: Proposal Pricing Forms, to the greatest extent possible. Costs for optional items also shall be provided on the forms. Each line item shall indicate the Respondent’s list cost and discount offered. Costs for services must include the hourly rate and the total number of hours. Costs for OPTIONAL items also shall be provided. Alternate proposals shall be provided with a separate set of proposal pricing forms.
 - b. The cost utilized for proposal evaluation purposes shall include up-front capital costs and the 15-year cost-of-ownership, including maintenance costs, system update costs, and tower lease costs.
 - c. Pricing shall be valid for a period of not less than 12-months from the date of submittal.
12. Section 12 – Documentation of financial responsibility and stability

2.5. COMPETITION PROCEDURES

- A. The ITN is a competitive negotiation process that is used when the scope of the project is not clearly defined and the County has determined that negotiations may be necessary to receive the best value. A short list of acceptable Respondents will be created for follow-on concurrent negotiations. The County reserves the right to create a short list of Respondents to whom the County wishes to enter negotiations.

2.6. PROCEDURES

- A. Receipt of Responses. Send responses to Okaloosa County Purchasing, 5479A Old Bethel Road, Crestview, FL 32536. Responses received after the deadline will not be considered.
- B. Public opening and listing of all responses received.
- C. An evaluation committee shall meet to evaluate each response in accordance with the requirements of this ITN.
- D. A short list of respondents will be selected to go forward into final evaluation.
- E. Once the short list of Respondents is selected, further information may be requested and clarifications sought on responses.
- F. Short-list Respondents may be requested to make additional written submissions with oral presentation/demonstration/samples on-site or through a hybrid approach using a webinar to the Evaluation Committee. The tentative location for the oral presentation/demonstration/sample presentation will be the Okaloosa County Administration Building, 1250 Eglin Parkway N., Shalimar, FL 32579.
- G. Negotiations will be conducted with best and final offers requested and reviewed.
- H. The evaluation committee shall recommend to the Board of County Commissioners the response or responses which the Evaluation Committee deems to be in the best interest of the County.

2.7. NEGOTIATION PROCESS

- A. Vendors selected for the negotiation process will be selected from those who submit responses to this ITN. Selection of vendors for this phase will be based on the respective Respondent's scores on the criteria outlined in the Evaluation section. Selected Respondents chosen to enter into the negotiation phase of this ITN will be notified.
- B. During the negotiation process, Respondents shall be expected to provide responses in writing to questions or requests of clarification from the Okaloosa County Purchasing Department.
- C. As a part of the evaluation process, the evaluation committee may schedule presentations from the short list of Respondents selected for the negotiation phase. A standard to follow during the presentations along with time limits will be given to the short-list respondents. Respondent(s) will be expected to follow the presentation standard and a set time limit. Presentation slides containing trade secret or business confidential information will be clearly marked for redaction. The scoring criteria for this

phase may be different from the original scoring criteria and shall be provided to all short-listed Respondents prior to the presentations.

- D. Presentations will require Respondent(s) to present information related to the product, implementation, configuration, and services. Failure of a Respondent to furnish the product(s) and/or service(s) to meet the specified requirements during the demonstration may result in rejection of the Respondent's response. The successful demonstration of the Respondent's product(s) and/or service(s) does not constitute acceptance by the County.

2.8. EVALUATION

- A. The County, along with an evaluation committee, shall evaluate proposals based on numerous criteria, including:
 - 1. ITN compliance and willingness to accept the County's contract terms (10%)
 - 2. Vendor experience and demonstrated ability to perform the services described (10%)
 - 3. Cost of equipment, services and lifecycle costs (20%)
 - 4. Capability, features, and functionality (10%)
 - 5. System design (20%)
 - 6. Warranty, maintenance, and support (10%)
 - 7. Quality of work as verified by references (10%)
 - 8. Demonstrated history of providing similar services to comparable entities (10%)
 - 9. Any other factors the evaluation committee deems relevant

Percentages noted for selected criteria elements may be consolidated into similar categories of criteria such as overall design or overall Respondent capabilities.

2.9. PROPOSAL OPTIONS

- A. Requirements described as an "OPTION" or "OPTIONAL" refer to features or equipment that may or may not be purchased by the County, or items whose quantities are not determined yet. It is not the Respondent's option to respond to these requirements; therefore, a Respondent is required to respond to all OPTIONAL requirements to the greatest extent possible.

2.10. ALTERNATE PROPOSALS

- A. In the event that a Respondent has a technological solution that does not meet the exact requirements in this specifications document, the Respondent may offer more than one proposal, as long as each proposal fully addresses the intent of the requirements set forth in this document.
- B. Alternate proposals shall be submitted separately under a different cover from the base proposal and clearly marked "ALTERNATE PROPOSAL."

- C. The Respondent shall comply with the same submittal instructions in Section 2.4, Proposal Format.

2.11. ADDENDA TO THE CONTRACT

- A. During the proposal period, the County may issue written addenda to change or correct the specifications as issued. Such changes or corrections shall be included in the work and/or materials covered by the proposal, and such addenda shall become part of the specifications and contract.

2.12. AWARD OF CONTRACT

The County intends to award a contract(s) that includes each identified system component. However, the County specifically reserves the following rights, consistent with procuring a system that best meets the needs of the County and system users:

- A. The County reserves the right to accept or reject any and all proposals, or any portion thereof, to waive any informalities or irregularities, and to award this bid, in whole or in part, in the best interest of the County.
- B. The County reserves the right to accept all or part of any proposal, depending solely upon the requirements and needs of the County.
- C. The County reserves the right to seek clarifications regarding any proposal submitted, or specific aspects of any proposal, prior to contract award. After seeking such clarifications, the County shall allow the Respondent an opportunity to provide the requested clarification.
- D. The County reserves the right to adjust item quantities and/or reconfigure the communications system in the best interest of the County subsequent to contract award.
- E. The County may request an interview with and/or oral presentation from any firms that submit a proposal. These meetings provide opportunity for the County to ask questions and for the Respondent to clarify its proposal or demonstrate its product/solution.
- F. If multiple contracts are awarded, in lieu of a turnkey contract, the County may:
 - 1. Negotiate additional scope of work to designate one of the selected Respondents as the project's prime contractor.
 - 2. Or allow one of the selected Respondents to provide system integration or prime contractor services, provided that the selected Respondent has submitted a separate proposal for those services.

- G. The County reserves the right to delay evaluation and award for up to 12 months following the receipt of proposals. All proposals must be valid for a period of not-less-than one year following submittal.

3. RADIO COMMUNICATIONS SYSTEM REQUIREMENTS

3.1. OVERVIEW

- A. Respondents shall propose complete systems as described below. Requirements for each system are described herein and are delineated throughout this specifications document according to trunked system requirements.
 - 1. Primary Simulcast System – 700/800 MHz P25 – The digital simulcast system must consider the radio site in Appendix A: Potential Candidate Tower Site, along with any other radio site locations identified by the Respondent, and integrate them into a standalone system with a controller owned and operated by Okaloosa County. Multiple simulcast cells will be considered if there are licensable frequencies to meet the system loading requirements. The system must seamlessly integrate all sites such that end users can roam freely throughout the service area without interruption of service or the need to manually select sites. The system must utilize the latest system platform at the time of system acceptance. The system must meet the coverage and capacity needs of Okaloosa County. The system must be expandable to allow for additional capacity and features.
 - 2. Tone-and-Voice Simulcast Paging – The system must provide geographical coverage to meet the needs of first responders for tone-and-voice paging. Respondents shall propose a simulcast paging system utilizing one frequency covering those areas south of Eglin Air Force Base and a second frequency covering those areas north of Eglin Air Force Base. The system must be compatible with fielded VHF tone and voice pagers. As an OPTION, Respondents may propose an integrated digital voice paging solution utilizing the P25 infrastructure with compatible P25 pagers (e.g., Unication G5 pager or equivalent). For the integrated digital voice paging option, Respondents shall base their proposal on 200 pagers.
- B. These systems shall provide mobile, portable, and paging coverage throughout the county as described in Section 3.5, Coverage, below

3.2. INTEROPERABILITY/P25 STATEMENT OF REQUIREMENTS

- A. The proposed radio system shall comply with the latest applicable P25 suite of standards adopted as TIA, ANSI, and/or Electronics Industry Alliance (EIA) documents at the time of proposal submission. These standards establish technical parameters that allow compatibility and interoperability of digital radio equipment from different manufacturers.
- B. By stating compliance with a level-two heading in the Statement of Requirements (SoR), a Respondent claims compliance with all applicable level-three requirements in the SoR.

If a Respondent is not compliant with a requirement, the Respondent shall identify the requirement by number and name and provide a detailed explanation of why the proposed system does not meet the requirement.

3.3. SYSTEM CONFIGURATION

3.3.1. *Redundancy and Survivability*

- A. The proposed radio communications systems are intended to support mission-critical operations; therefore, a high degree of redundancy and survivability is required. A network topology utilizing fault tolerance shall be incorporated to the greatest extent possible through a distributed and/or redundant architecture.
- B. Geographic redundancy is required for all system elements in which failure would result in a major failure of the system; single points of failure are not acceptable. Such elements include, but are not limited to, the following:
 - 1. System controllers and fixed site equipment
 - a. System servers
 - b. Simulcast controllers
 - c. Network components, switches, and routers
 - 2. Simulcast controllers and voting equipment
 - 3. Backhaul network – Reversible ring, monitored hot standby (MHSB), or ad-hoc routing
 - 4. Power systems
 - 5. Network management and fault reporting systems
- C. The system shall include several modes of degraded operation, known as failure modes. The system shall maintain communications in the event of a system failure. Additionally, the system shall switch to a failure mode gracefully. Failure modes shall include the following scenarios, at a minimum:
 - 1. Loss of single site
 - 2. Loss of multiple sites
 - 3. Loss of system/console controller
 - 4. Loss of simulcast controller
 - 5. Loss of a frequency channel due to interference
 - 6. Loss of multiple channels due to wideband interference
 - 7. Loss of a repeater station due to an equipment failure
- D. Respondents shall provide a description of each failure mode and describe how communications are affected by the failure.
- E. Equipment shall be proposed with redundant power supplies and network interfaces.

- F. Network routers and switches shall have a sufficient number of spare ports to accommodate all equipment connected to a failed network router or switch.

3.3.2. *Expansion*

- A. The systems shall be expandable by adding additional hardware and/or software to increase coverage, capacity or features. Where possible, Respondents shall propose equipment such that the system can be easily expanded by a minimum factor of 20 percent. For example, if a transmitter combiner requires five ports for the system design, a six-port combiner should be provided for ready expansion.
- B. The system shall be expandable to meet the capacities listed below through the addition of hardware and/or software. Replacement of the system and site control equipment to meet this requirement shall not be acceptable.
 - 1. Total frequency channels – 28
 - 2. Total sites – 30
 - 3. Unit identifications (IDs) – 20,000
 - 4. Affiliated users – 5,000
 - 5. Talkgroups – 2,000
 - 6. Dispatch positions – 20
- C. The system shall include all required licenses to meet the capacities without any additional costs incurred.
 - 1. Total frequency channels – Proposed total plus 20 percent
 - 2. Total sites – Proposed total plus 20 percent
 - 3. Unit IDs – 10,000
 - 4. Affiliated users – Proposed total plus 50 percent
 - 5. Talkgroups – 1,000
 - 6. Dispatch positions – Proposed total plus 20 percent

3.3.3. *Grade of Service*

- A. The measure of traffic-loading capacity for any trunked system is defined by grade of service (GoS). GoS is used to measure the probability that a radio call will not gain immediate access to a radio channel, but rather be placed in a busy queue for later processing when a voice channel becomes available. For example, a GoS of 2 percent represents that 98 percent of the radio calls attempted on the system are processed immediately, and 2 percent are placed into the user queue.
- B. The proposed system shall meet a GoS of 1 percent, with 90 percent of units that are placed in queue receiving a channel grant within two seconds. Respondents shall use the following information in developing their designs:
 - 1. Assume 1,000 active users on the system

2. Assume five calls per unit per hour
 3. Assume a four-second call duration.
- C. If a Respondent's proposed system contains multiple subsystems or cells, an additional loading increase shall be included to account for calls that involve talkgroups on two or more cells. Respondents shall provide calculations and explain justifications.
- D. Respondents shall submit traffic-engineering studies in their proposals describing how their proposed system designs meet this criterion. The traffic-engineering study shall describe the methodology used in developing the study, along with any assumptions.

3.4. SITE SELECTION

- A. Respondents shall determine the number and location of sites needed to provide the required coverage. Respondents shall determine the radio sites that provide the best combination of coverage and value for the County. Respondents shall perform mandatory site visits prior to submitting their proposals to ensure a full understanding of each site's condition.
- B. The number and location of sites within a Respondent's design are the Respondent's responsibility.
- C. Government, utility, and/or commercial sites for lease may be proposed, as well as greenfield sites that would be owned by the County. However, it is the County's desire to consider the long-term cost/value factor when evaluating designs.
- D. It will be the responsibility of a Respondent to ensure that the identified frequencies are licensable at the proposed locations. It is also a Respondent's responsibility to perform due diligence with the tower or landowner to determine availability of the site to accommodate the proposed antennas (lease) and/or tower and shelter (greenfield), as well as associated costs, zoning, and planning restrictions. Availability and associated costs related to these sites must be documented and included in the Respondent's proposal.
- E. For any leased locations, Respondents shall include a system lifecycle cost of \$3,000 per month for tower sites north of Eglin Air Force Base and \$4,000 per month for tower sites south of Eglin Air Force Base over the expected 15-year lifecycle of the system, with a 3 percent annual escalation. The lease cost will be factored into the evaluation. A lower monthly payment will be considered if a Respondent can guarantee a lease cost less than the above listed costs per month with written confirmation from the tower owner.

3.5. COVERAGE

- A. The radio system shall be designed to provide highly reliable coverage within the geographical boundaries of Okaloosa County while meeting licensing restrictions and requirements for 700/800 MHz systems regarding out-of-county signal propagation.
- B. Coverage design, implementation, and testing for the system shall adhere to the TIA Telecommunications Systems Bulletin (TSB)-88-D, *Wireless Communications Systems Performance in Noise-Limited Situations*, latest version.
- C. Channel Performance Criteria (CPC)
 - 1. RF coverage is defined as the digital bit error rate (BER) that provides an audio signal that delivers a minimum delivered audio quality (DAQ) score of 3.4 for both outbound (talk-out) and inbound (talk-in) communications.
 - 2. TIA defines DAQ 3.4 as “speech understandable with repetition only rarely required,” which is the minimum acceptable level for public safety communications.
- D. The radio and paging systems must provide coverage as described below:
 - 1. The system should provide mobile radio coverage of 95 percent within the county boundary with 95 percent reliability.
 - a. Trunk-mounted antennas should be assumed for all mobile coverage calculations.
 - 2. The radio system shall provide portable radio coverage of 95 percent outdoors with 95 percent reliability within the boundaries identified in Appendix B: Coverage Requirements Map.
 - a. Portable configuration is with the radio on the hip in both transmit and receive modes using a wired speaker microphone with a radio-mounted antenna.
 - 3. The radio system shall provide portable radio coverage of 95 percent in 12 dB buildings with 95 percent reliability within the boundaries identified in Appendix B: Coverage Requirements Map.
 - a. Portable configuration is with the radio on the hip in both transmit and receive modes using a wired speaker microphone with a radio-mounted antenna.
 - 4. The radio system shall provide portable radio coverage of 95 percent in 20 dB buildings with 95 percent reliability within the boundaries identified in Appendix B: Coverage Requirements Map.

- a. Portable configuration is with the radio on the hip in both transmit and receive modes using a wired speaker microphone with a radio-mounted antenna.
5. The system should provide boat-mounted mobile radio coverage of 95 percent within the boundaries identified in Appendix B: Coverage Requirements Map.
 - a. Boat-mounted antennas should be assumed for all mobile coverage calculations with an antenna mounted 3-feet above ground level.
6. System coverage should be at DAQ 3.4 or better, per TIA TSB-88-D definitions of DAQ. The County will not allow for grid re-testing in the case of a single failed grid. Grid retesting (re-try) will only be allowed in the case of human error or test equipment failure.
7. The tone-and-voice paging system shall provide pager radio coverage of 95 percent in 12 dB buildings with 95 percent reliability for all land areas identified with 12 dB and 20 dB coverage for the primary trunked system within the boundaries identified in Appendix B: Coverage Requirements Map. Expectation is that the same site locations as the radio system will be used for paging.
8. System coverage should ensure a 97 percent passing rate on portable radios operating outdoors along Highway 85, State Route (SR) 123, SR 293, and SR 285.

3.5.1. Coverage Maps

- A. Respondents shall include a detailed description of the propagation models used and the assumptions made in preparation of the maps. A brief description of the methodology the software used to calculate coverage also shall be included in the proposal narrative.
- B. Respondents shall submit both talk-out and talk-in system composite coverage maps for all proposed design configurations. The maps shall be clearly labeled and shall show link budget calculations for each of the following:
 1. Mobile radios – Standard dash- or trunk-mount, with antenna mounted on the trunk
 2. Portable radios – Standard portable radio outdoors with $\frac{1}{2}$ wavelength antenna:
 - a. Talk-out to a portable radio on hip with a swivel belt clip
 - b. Talk-in from a portable radio at hip level with a swivel belt clip
 3. Portable radios – Standard portable radio indoors
 - a. Talk-out to a portable radio on hip with a swivel belt clip, with 12 dB of building loss
 - b. Talk-in from a portable radio at hip with swivel belt clip, with 12 dB of building loss
 - c. Talk-out to a portable radio on hip with swivel belt clip, with 20 dB of building loss

- d. Talk-in from a portable radio at hip with swivel belt clip with 20 dB of building loss
- 4. Pagers – Tone-and-voice pager in street
 - a. Talk-out to a pager on hip with belt clip in street
 - b. Talk-out to a pager on hip with belt clip with 12 dB building penetration margin
- C. Coverage shall be depicted using a light transparent color or cross-hatching for those areas that meet or exceed the minimum coverage reliability threshold.
- D. All maps must clearly delineate the difference between areas with coverage predicted to be equal to or greater than DAQ 3.4 and areas that do not meet this coverage requirement. Respondents shall include the effects of simulcast interference in all coverage maps.
- E. Coverage maps must include sufficient detail to allow another party to duplicate the predicted coverage utilizing propagation software. This information must include a complete link budget calculating the minimum signal threshold (in dBm) required to obtain the performance depicted.
- F. At least one set of maps depicting mobile and portable (in a 12 dB building) radio coverage shall be provided showing coverage extending outside the service area, although the County acknowledges this is not guaranteed coverage. These maps will show the extent of interoperability coverage outside the service area.
- G. Coverage maps shall be provided in the proposal in two formats:
 - 1. 11-inch x 17-inch (minimum), full-color, hardcopy format
 - 2. In PDF file format on USB flash drive

3.5.2. *Map Criteria*

- A. All maps shall include a background layer suitable for County reference (e.g., topographic map, roads, rivers). Link budgets shall be provided, clearly defining the following minimum information relating to each map and each site:
 - 1. Base station/repeater RF power output
 - 2. Antenna gain
 - 3. Antenna model
 - 4. Antenna mounting height and azimuth
 - 5. Antenna down tilt (if applicable)
 - 6. Transmit power and effective radiated power (ERP)
 - 7. Receiver sensitivity
 - 8. Transmit and receive antenna heights
 - 9. Combiner/multicouplers/tower-top amplifier (TTA) gains/losses of each
 - 10. Transmission line lengths and line loss
 - 11. Mobile and portable antenna height for talk-out and talk-in

12. Mobile and portable RF output power
13. Configuration of field units (e.g., talk-out to portable inside 12 dB-loss buildings)
14. Simulcast timing parameters (if applicable)
15. Signal strength thresholds (in decibels referenced to one milliwatt or dBm)

- B. Thirty-meter U.S. Geological Survey (USGS), National American Datum (NAD)-83 terrain elevation data shall be used for coverage simulations. Alternatively, three arc-second data may be used where 30-meter data is not available.

3.5.3. Coverage Model

- A. Respondents shall employ a suitable coverage prediction model using appropriate terrain and land-cover data for the county environment. (Reference TIA TSB-88, latest revision, for guidelines.)

3.5.4. TIA TSB-88 – User Choices

A. User Choices

1. 700/800 MHz system
 - a. Minimum of ten voice paths for trunking
 - b. One frequency channel for control in a trunking design
2. P25 compliance

B. Service Area

1. The service area is the defined geographical area of the county and specific locations identified in Appendix B: Coverage Requirements Map.
2. The target device, usage, and location are:
 - a. Mobile radios: Standard dash- or trunk-mount, with antenna mounted in the center of the trunk
 - b. Portable radios: Standard portable radio on hip with swivel belt clip
 - i. Outbound (talk-out) from the transmitter to a portable radio on hip
 - ii. Inbound (talk-in) to the transmitter from a portable radio on hip
 - c. Basic network coverage for mobile radios shall be designed to accommodate vehicles traveling at speeds up to 75 miles per hour
 - i. This criterion is to be applied to the coverage areas defined in this Section, 3.5, Coverage, and to the coverage maps as defined in Section 3.5.2, Map Criteria, above

- C. CPC: Minimum CPC – BER that provides a minimum DAQ 3.4
- D. Reliability Design Target: The CPC reliability design target is a service area probability of 95 percent
- E. Terrain Profile Extraction Method: map-to-grid method
- F. Interference Calculation Method: Monte Carlo Simulation method
- G. Metaphors to Describe the Plane of the Service Area: Tiled method
- H. Required Service Area Reliability: 95 percent
- I. Willingness to Accept a Lower Area Reliability to Obtain a Frequency: The County is not willing to accept lower area reliability in order to obtain a frequency.
- J. Adjacent Channel Drift Confidence Factor: Confidence that combined drift due to desired and adjacent channel stations will not cause degradation: 95 percent
- K. Conformance Test Confidence Level: 99 percent
- L. Sampling Error Allowance
 - 1. True value error: ± 1 percent
 - 2. Number of subsamples: 50
- M. Pass/Fail Criterion: “Greater than” test
- N. Treatment of Inaccessible Grids: All inaccessible grids will be eliminated from the calculation

3.6. SITE EQUIPMENT

3.6.1. *Overview*

- A. All site equipment supplied shall be new, of high quality, designed to provide high reliability to support mission-critical communications, and in current production. The site equipment, or RF infrastructure, consists of the following components:
 - 1. System and site control equipment
 - 2. Simulcast equipment
 - 3. Receiver voting
 - 4. Transmitters
 - 5. Receivers
 - 6. Combiners/multicouplers
 - 7. Antenna systems

3.6.2. *System and Site Control Equipment*

- A. The system and site control equipment shall be capable of controlling all voice and data channels in the proposed system. The control equipment may use a distributed or centralized architecture.
- B. The control equipment shall fully support APCO P25 functional requirements, features, and performance objectives as outlined in Section 3.2, Interoperability/P25 Statement of Requirements, above, including the common air interface (CAI).
- C. Respondents shall fully describe the manner in which the proposed system and site controllers function and operate (if used).
- D. Because the system and site control equipment are critical to the network, placement of the equipment at a secure, highly stable location is of the utmost importance. Respondents shall carefully consider the location for this equipment.
- E. Respondents shall define backhaul bandwidth requirements for each backhaul link within the network.

3.6.3. *Simulcast Equipment*

- A. The selected Respondent shall provide all necessary simulcast components and signal-processing elements that are required to optimize voice quality in coverage overlap areas.
- B. Non-captured overlap areas with delay spreads in excess of those required to meet the DAQ objective shall be minimized inside the service area.
- C. Simulcast systems shall operate without the need for frequent manual optimization and system/subsystem alignment. All alignments and adjustments shall be automated where possible (e.g., signal-conditioning adjustments for channel banks, signal launch times at sites).

3.6.4. *Receiver Voting*

- A. Receiver voting equipment shall monitor all receivers in the simulcast system and select the best signal for processing and rebroadcast through the network.

3.6.5. *Base Station Equipment*

- A. General
 - 1. Base station equipment shall be solid state in design and function with standard site conditions for temperature, altitude, and humidity.

2. Equipment shall have alarm contact interfaces to provide status to a separate alarm system.
 3. The units shall be as compact as possible, with mounting configurations for standard relay racks or cabinets.
- B. Prior to implementation, the selected Respondent shall perform the following studies at each site:
1. Intermodulation analysis – The selected Respondent shall consider equipment from all tenants located at the proposed site. The Respondent will be responsible for gathering the required information from the tower owner and/or any co-located tenants.
 2. Maximum Permissible Exposure (MPE) study (per latest revision of Office of Engineering & Technology [OET] Bulletin 65) – The selected Respondent shall consider equipment from all tenants located at the proposed site, per FCC license information.
 3. The selected Respondent shall gather the site data needed for these studies.
- C. The selected Respondent shall resolve all issues predicted during the intermodulation analysis and MPE studies. If an intermodulation problem is identified following implementation and within 12 months after final acceptance, the selected Respondent shall resolve the issue without degrading system coverage or performance, at no cost to the County.
- D. Respondents shall include detailed specification sheets for all proposed equipment in their proposals.
- E. All base stations shall be installed with all available modes of operation and software options, including those modes of operation that are not otherwise required for system operation as designed. For example, base stations shall include the ability to dynamically operate in the frequency division multiple access (FDMA) or time division multiple access (TDMA) modes, and support frequency modulation (FM) operation.

3.6.6. *Antenna Systems*

- A. Respondents shall propose all antenna system equipment necessary for a complete design.
- B. Antennas shall be appropriate to provide the required coverage and meet applicable FCC rules and regulations.
- C. Transmission line type and length shall be constructed of copper and appropriate to provide the required coverage. Antenna line shall be of the type to withstand at least 20

- years of prolonged exposure to the environment in Okaloosa County without degradation.
- D. Respondents shall fully describe expansion capacity for combiner and multicoupler systems.
 - E. Respondents shall include detailed specification sheets for all proposed equipment, including, at a minimum: antennas, receiver multicouplers, transmitter combiners, and TTAs (if applicable) in their proposals.
 - F. If applicable, TTAs shall be accompanied by a test line for troubleshooting purposes.
 - G. Antenna systems shall be designed with sufficient redundancy so that a failure to any one component in the transmission system will not disable the entire site.
 - H. Both transmit and receive antennas shall be equipped with power monitors that automatically report antenna or line faults.
 - I. Receive antenna systems shall be configured in a diversity configuration that allows complete receive antenna system redundancy that will not result in a reduction of channels in the event one receive antenna becomes inoperable.

3.6.7. *Antenna Installation*

- A. Antennas and cable shall be provided and installed by the selected Respondent. Antennas shall be fed with the coaxial cable specified below.
- B. The selected Respondent shall supply, install, and make operational the antennas specified.
- C. The selected Respondent shall install antennas at the appropriate height and direction specified by the County or County's representative and the selected Respondent's engineer.
- D. Vertical transmission line shall be supported by an appropriate system designed to securely attach antenna transmission lines when installed on tower structures.
- E. Antennas shall be installed in accordance with the manufacturer's requirements.
- F. Tower lighting cables shall not be bundled along with transmission lines or other conductors anywhere within cable ladders or the building interior.
- G. Each transmission line run shall have entry port boots (inside and/or outside), lightning protectors and associated mounting brackets, and any additional jumpers required by the site-specific RF configuration. Some manufacturers provide transmission line kits, which

- include the main line connectors, top and bottom jumpers, line grounding kits (typically three per line), hoist grips, and weatherproofing materials.
- H. Transmission lines shall be anchored to the tower using hardware recommended by the transmission line manufacturer for that type of tower.
 - 1. Spacing of anchoring hardware is determined by the line manufacturer and is dependent on the type and size of the line.
 - 2. Hangers and/or angle adapters typically are provided for every three feet of line, including any ice bridge paths. No snap-on style hanger kits shall be utilized.
 - 3. Clamps and hardware shall be corrosion resistant.
 - I. Cables shall be secured to the tower with the appropriate cable hangers and hardware. The selected Respondent shall not use tie wraps, wire wraps, pieces of wire, tape, or similar temporary material to secure cables on the tower.
 - J. Cables shall be secured to the tower by the use of hanger kits supplied by the tower contractor. Such hangers shall be used in the quantity and attached in the manner specified in this document.
 - K. An ice bridge with a cable support system may be utilized at the communications shelter point of entry.
 - L. The transmission line support system shall run to the highest-mounted antenna and allow for two times the identified cable requirements in the contract drawings.
 - M. The selected Respondent shall install and run RF jumpers from the RF surge protectors to the radio equipment.
 - N. Transmission lines shall be identified in a permanent manner using metal tags (or equivalent method) located at the antenna, at the bottom of the tower, at the shelter cable entrance, and inside the shelter or building.

3.6.8. *Removal of Existing Infrastructure and Equipment*

- A. The selected Respondent shall be responsible for the decommissioning, removal, and disposal of legacy equipment from existing County sites. This shall occur no earlier than the completion of system cutover.

3.7. NETWORK MANAGEMENT SYSTEM

- A. This section provides specifications and requirements for an integrated monitoring-and-control system for local and remote site facilities and equipment. The network management system (NMS) is used to provide remote indication of status, alarms, and

analog values, and to provide remote control relay operations. Some of the terminals may be required to manage or provision different subsystems in the network. Respondents shall provide a description of their NMS, including capabilities and available options.

- B. System Alarms: The NMS shall acquire, process, and display information in an integrated and uniform fashion for a variety of critical systems. Alarms on major components that allow for Simple Network Management Protocol (SNMP) will be displayed via the NMS. Devices that have an option for SNMP must be properly configured to allow for transport back to the NMS. The following devices should be monitored:
1. Trunked simulcast radio system
 2. Tone-and-voice simulcast paging
 3. Local and remote site facilities
 4. Primary and backup power systems to include generator
 5. Microwave, leased line, and data networks
- C. Site Alarms: Any change in the state of site equipment shall induce an alarmed state. Equipment monitored shall include, at a minimum:
1. Surge arrestors
 2. Transfer switch (normal or bypass state)
 3. Power fail
 4. Heating, ventilation, and air-conditioning (HVAC)
 5. Smoke detector
 6. Intrusion detection
 7. High temperature
 8. Low temperature
 9. High humidity
 10. Uninterruptible power supply (UPS)/direct current (DC) power fail
 11. UPS/DC power state (normal or bypass)
 12. Generator (including generator run, low fuel, high temperature, fail, etc.)
 13. Generator not in automatic mode
 14. Floor water/flood alarm

In order to reduce false alarms, all alarm contacts normally shall be closed when no alarm is present. Any device that can send alarms via IP methods should be provided instead of contact closures.

- D. NMS components include network management terminals (NMTs) and remote terminal units (RTUs).
- E. Historical Reports: Respondents shall describe the equipped capabilities the system will provide to generate reports for system historical data, including the following search fields for user-specific date ranges:

1. System capacity/GoS
2. Number of busies
3. Number of affiliated users
4. Affiliated subscriber IDs
5. Affiliation history of individual subscriber IDs
6. Subscriber registrations/de-registrations
7. Denied registration attempts

3.7.1. *Network Management Terminal*

- A. The NMT shall provide primary processing, display, and control of information to and from a variety of RTU locations. System status and alarm conditions shall be displayed. The system shall provide the ability to remotely access the system to check the operational status of the system and to view alarms.
- B. The NMT shall be installed at a “to be determined” location of the County’s choosing.
- C. The NMT shall meet the following general requirements:
 1. Expandable software and hardware architecture shall be easily updated by adding software modules and hardware boards.
 2. Hardware and software platforms shall be personal computer (PC)-based using current versions of hardware and software.
 3. Both graphic and tabular displays shall provide instantaneous and comprehensive network status information.
 4. The NMT shall provide full archiving and control functions.
 5. Multiple alarm protocols for higher-level NMSs shall be mediated by the NMT.
 6. The NMT shall be designed to monitor a large cross section of equipment so that it can consolidate multiple alarm systems, rather than just poll alarms from RTU locations.
 7. The NMT must perform full management functions with a local terminal.
 8. The NMT shall provide email notification of alarms.
 9. The NMT shall provide alarm filtration and consolidation.
 10. A Web browser interface shall be provided for common management functions. Functions that cannot be displayed for remote access shall be listed in the proposal response.

11. A secure Web browser interface shall be provided to monitor alarms and perform control and management functions via Intranet or Internet.

D. NMTs/RTUs Communications Protocol(s)

1. Respondents shall fully describe all protocols used or supported.
2. Respondents shall identify which of the following protocols are supported, either standard or as an option:
 - a. American Standard Code for Information Interchange (ASCII)
 - b. SNMP and version
3. Proprietary protocols may be acceptable, provided that all requirements are met.

E. Standard Features: Respondent's solution shall include the following features:

1. Respondents shall provide programmable display screens including the following:
 - a. System Summary: High-level screen summary window with links to other screens
 - b. Change of State: Summary of points that have changed state from alarm to normal or normal to alarm
 - c. Standing Alarms: Summary of all points in alarm condition
 - d. Programmable Alarm Windows: Allowing logical grouping of alarms, such as by type or site
2. Respondents shall provide for the graphic depiction of the network allowing annunciation and point selection via icons:
 - a. Nested-tree depiction of the network with drill-down capability
 - b. Capability to drive external display devices
3. Programmable console environment, including:
 - a. Database definition
 - b. Screen colors
 - c. Alarm summary formats
 - d. Blink attributes
 - e. Pager alarm formats
 - f. Audible alert formats
4. Status Points – The following status types shall be supported:
 - a. Simple status: Contact open or closed
 - b. Change detect: Simple status plus change detect since last scan

5. Control Points – The following relay control types shall be supported:
 - a. Direct control
 - b. Select before operate
 - c. Batch: Control multiple relays with a single operation
6. Analog points – Display the value of a monitored quantity such as temperature, fuel level, voltage standing wave ratio (VSWR), etc.
7. Time stamp indicating date and time of message within 0.5 seconds
8. Conditional assignable text messages (minimum 256 characters) for each point to be issued on a change of state or alarm
9. Alarm qualification – On a point basis, programmable delay before alarm is issued
10. Alarm deactivation – On a point basis, the ability for the operator to deactivate an alarm to inhibit additional annunciation
11. Alarm history
 - a. Logging of all alarms to disk and printer (selectable)
 - b. Minimum history log of 500,000 entries
12. Email support – Text message of alarm sent to email lists
13. Ping interrogator – To confirm that servers, routers, and IP-based equipment are physically present on the network
14. Editor – Providing point configuration utilities to create and edit point databases
15. Security – Multiple levels of username and password protection to all for flexible system management
16. Reports – Respondents shall define the reports that are available. Respondents shall describe how trend analysis is supported and how current system status is reported. The system shall be able to provide comprehensive planning and analysis, and shall have a flexible user interface.

3.7.2. Remote Terminal Units

- A. RTUs shall be provided in sufficient quantities to monitor the entire network, including:
 1. Trunked and conventional radio network components
 2. Site facilities including shelter, tower, lighting, power, and generator
 3. Microwave radios, channel banks, etc.

4. Simulcast paging transmitters (if equipped)
 5. Data network equipment, including routers, switches, etc.
 6. Remote access to all data and provisioning aspects of the system
 7. Other miscellaneous equipment
- B. RTUs shall be fully compatible with NMTs supplied and provide complementary functionality wherever necessary to provide a complete working system.
- C. RTUs shall support the following points:
1. Status/alarms – 48 minimum, expandable to 256
 2. Control outputs – 8 minimum, expandable to 32
 3. Analog inputs – 8 minimum, expandable to 16
- D. RTUs shall support time stamp and system time synchronization.
- E. Terminations for all points shall be provided on suitable terminal blocks providing ease of installation, testing, and maintenance.
- F. Respondents will submit as a part of the proposal a cloud diagram showing each NMS server and terminal in the system. This diagram will show how to remotely access each terminal for any of the NMS, including a proposed IP scheme.
- 3.8. MOBILE DATA
- A. Respondents should include the ability to utilize the P25 backbone to support third-party data applications, including at a minimum such applications as mobile data, subscriber unit global positioning system (GPS), over-the-air programming (OTAP), over-the-air rekeying (OTAR), and fire station alerting.
- 3.9. BACKUP CONSOLETTES
- A. Respondents shall provide backup consolettes for each console position. Respondents will provide details regarding the interface between the consolettes and the consoles. The design of the consolette system shall include all necessary cabling, surge protection, and antennas.
4. BACKHAUL NETWORK
- 4.1. OVERVIEW
- A. Respondents shall propose a microwave backhaul system that provides loop protection to all connected radio sites and the Okaloosa County 911 center. Spur sites connected with hot standby shall be authorized when paths do not support loop protection.

- B. Consideration shall be made for providing redundant backhaul leveraging the County-owned fiber-optic network. Respondents shall coordinate fiber-optic network availability to their proposed sites and to the 911 center and shall evaluate the merits of using this network where available as an option.
- C. Respondents shall provide MPLS routers at each location. Network routing shall leverage MPLS for alternate routing and traffic engineering capabilities to optimize network performance. Respondents shall provide all traffic engineering associated with optimizing the MPLS network. Respondents shall configure layer 2 and layer 3 tunnels in support of other County applications that will traverse the network. All MPLS equipment must be fully fault-tolerant and redundant, with the failure of any card not impairing or reducing system functionality. All MPLS routers shall include an additional 100 percent of available ports beyond those required for system deployment.
- D. Respondents shall propose a detailed backhaul plan. The plan shall include, at a minimum, path-loss calculations and annual availability for each path, as well as an overall network topology.
- E. The County does not have existing microwave equipment that will be leveraged in the new system design.

4.2. DIGITAL MICROWAVE NETWORK

- A. The digital microwave network shall consist of the following components:
 - 1. Point-to-point digital microwave radios
 - 2. Microwave antennas
 - 3. Antenna systems
 - 4. Alarms
 - 5. NMS

4.2.1. Requirements

- A. The digital microwave backhaul network shall consist of monitored ring-protected point-to-point licensed microwave hops. Monitored hot standby (MHSB) shall be permitted if paths are not available for ring-protection.
- B. Microwave terminal equipment shall include transmitter, receiver, modem, power supply, automatic switching device, multiplexer, service channel(s), and all associated interconnections to provide a complete and functional system.
- C. The radio shall deliver two-frequency, full-duplex operation. Space diversity configurations are acceptable, if necessary, to meet reliability requirements.
- D. The network shall support MPLS routing to support seamless integration and ad hoc routing with landline-based Ethernet connections.

E. Capacity

1. Each hop shall be equipped for the proposed IP radio network requirements.
2. Each hop shall deliver a minimum payload capacity of 155 megabits per second (Mbps) or more, as required to serve the proposed network.

F. Performance Objectives

1. Each microwave hop shall be designed to meet or exceed end-to-end annual reliability performance (BER = 10^{-3}) of 99.995 percent at the required capacity.
2. Each microwave hop shall be designed to meet or exceed end-to-end annual quality performance (BER = 10^{-6}) of 99.999 percent at the required capacity.
3. The mean time between failures (MTBF) for the proposed MHSB transceiver equipment shall exceed 25 years.
4. Adaptive modulation shall be included but shall not negate the requirement to meet the required capacity at the defined performance objectives.

G. Frequency

1. The selected Respondent shall be responsible for all microwave frequency research, prior coordination, and preparation of all associated FCC license applications and submittals on behalf of the County.
2. The County shall be responsible for coordination fees and licensing fees, if any, and signatures, if applicable.
3. Respondents shall propose the most appropriate licensed frequency band for each hop based on the requirements and FCC Part 101 regulations. Operation in the 6 gigahertz (GHz) licensed frequency band is preferred.

H. Transmitter

1. Respondents shall provide transmit output power referenced to the antenna port.
2. Transmit output power shall be software adjustable.
3. Automatic transmit power control (ATPC) shall be available.
4. A switch from the main transmitter to the standby transmitter shall not result in a system outage. Respondents shall describe expected switchover time.

5. Radios shall be equipped with redundant power amplifiers. Switching between power amplifiers shall not result in a system outage.

I. Receiver

1. Respondents shall provide a guaranteed receiver threshold.
2. Respondents shall provide performance criteria of the proposed radios for the following:
 - a. Co-channel interference
 - b. Adjacent-channel interference
 - c. Dispersive fade margin
3. The receiver shall be designed to ensure that the receiver with the better performance is operational at any given moment. Respondents shall equip radios with a 10:1 split to prevent frequent switching.
4. Transfer to the backup receiver shall not result in a system outage.

J. Antenna System

1. Microwave antennas shall be compatible with the radio frequency bands and conform to applicable FCC requirements. Solid parabolic-type, Category A antennas shall be used in accordance with FCC Part 101.115.
2. A pressurized elliptical waveguide shall be used. Connectors shall be standard, premium-type, and compatible with antenna and radio and in accordance with latest revision of the ANSI/TIA-222 interfaces. Tower-mounted outdoor units (ODUs) shall not be proposed.
3. All mounting brackets, connectors, and other hardware shall be supplied as necessary for a complete installation.
4. An automatic dehydrator/pressurization system shall be provided to maintain at least 5- pounds per square foot gauge (psig) positive pressure of conditioned air in the elliptical waveguide and antenna feed unit. Individual pressure gauges on a distribution manifold shall be provided for each line.
5. All installed antenna/transmission lines shall be purged, pressure tested, and tested for low VSWR using return loss measurements. The minimum acceptable return loss shall be a VSWR of 1.5:1 and return loss of 14 dB.
6. All RF paths shall be tested to demonstrate proper antenna alignment by measuring the net path loss between sites, as measured at the equipment rack interface.

7. All antenna sweep testing results shall be documented and provided in the as-built documentation at each site.

K. Microwave NMS (MNMS)

1. Respondents shall fully describe alarm, monitor, and control capabilities of the microwave terminal equipment, including capacity for external alarms (e.g., door alarms, generator).
2. Respondents shall define each alarm to the MNMS, and define the alarm protocol, e.g., SNMP v.3 or dry contact closure.
3. The County prefers to have alarm and control capabilities for microwave equipment integrated into the NMS for the P25 trunked system; see Section 3.7, Network Management System. Respondents shall fully describe the nature of the interface between the systems and how to provision the microwave or MPLS paths.

L. Power

1. A DC power subsystem, as detailed in Section 5.5, DC Power, shall be provided for each microwave terminal.

4.2.2. *Microwave Engineering*

- A. The selected Respondent shall conduct physical path surveys following notice to proceed to assure that all proposed paths meet proper clearance criteria.
- B. The selected Respondent also shall conduct mandatory visits at all sites and notify the County/Owner of any site modifications necessary for the microwave hop.
- C. The selected Respondent shall provide antenna centerline mounting height recommendations, based upon the information gathered during the physical path surveys and site visits.
- D. Respondents shall include fade margin calculations with the proposal, showing the preliminary antenna sizes, system gains, and system losses.
- E. Radomes shall be provided for each microwave antenna.
- F. The equipment shall be type-accepted for licensing under Part 101 of the FCC Rules and Regulations.

5. SITE DEVELOPMENT

5.1. GENERAL

- A. Respondents shall consider reuse of existing County sites, the site from the candidate site list in Appendix A: Potential Candidate Tower Site, new leased sites, and new raw-land sites as they develop a design. Site selection that will support the required system performance while minimizing costs is desired. Proposals shall include items such as shelter, generator, and site development to support the radio site as appropriate to the sites being recommended.
- B. Respondents shall perform due diligence in verifying all proposed site data for inclusion in the proposed radio system. A Respondent is responsible for all work and costs associated with the locations proposed, except for tower modification costs.
- C. Respondents shall be responsible for ensuring all radio sites are brought up to the latest revision of Motorola R56 or equivalent. Respondents must identify any specific enhancements required to existing radio sites during the mandatory site visits. If Respondents identify leased tower locations, any associated work required to upgrade those sites to Motorola R56, or equivalent, must be included.
- D. Respondents shall identify and propose any additional work necessary to bring radio sites to the latest revision of Motorola R56 or equivalent for new or existing sites, including, at a minimum:
 - 1. Towers
 - 2. Shelters
 - 3. Backup power
 - 4. Site preparation
 - 5. Fencing
- E. For the 45-day design, the selected Respondent shall provide detailed drawings, including all structures and foundations, sealed by a professional engineer registered in the State of Florida.
 - 1. Detailed drawings containing dimensions shall be provided that show all system components and locations.
 - 2. Drawings and/or specifications shall describe any auxiliary equipment.
 - 3. Manufacturer slick sheets of all equipment used also shall be provided.

F. Code Compliance

1. Installation of all electrical equipment, power distribution, lighting assemblies, and associated wiring shall comply with the most recent edition of the NEC and Occupational Safety and Health Administration (OSHA) regulations.
2. All electrical equipment shall be listed or approved by UL.
3. The selected Respondent, and any subcontractor employed by the Respondent, shall comply with all local codes and industry best practices and guidelines stipulated in Section 1.6.1, Standards and Guidelines.

G. The selected Respondent shall assume total responsibility for maintaining liability insurance covering the following items:

1. Project design
2. Implementation
3. Licenses
4. Shipping
5. Receiving
6. All required site work
7. Any items required for Respondent or any required subcontractors

H. Prior to any excavations, the selected Respondent or its subcontractor(s) shall follow appropriate procedures outlined at the following website: www.call811.com.

I. The selected Respondent shall coordinate with utility companies for all utility-related items, such as electrical service hookups and disconnects.

J. Concrete

1. For all foundations and concrete work, the selected Respondent or its subcontractor(s) shall provide to the project engineer a test sample of each mix of concrete demonstrating that it has been tested for compliance with the foundation specifications set forth by the requisite site engineer. Written reports certifying the strength of the concrete shall accompany each test cylinder.
2. If any concrete used in the foundation does not meet specifications, the selected Respondent or its subcontractor(s) shall remove the foundation and pour a new foundation using compliant materials, at no expense to the County/Owner.

K. The selected Respondent shall ensure any proposed leased locations meet the following standards:

1. Tower, shelter, and generator rated for sustained and Vult wind loading consistent with the Florida Building Code requirements for a Risk Category IV structure, and ANSI/TIA-222 Rev H for a Class III tower.
 2. New dedicated 12-foot x 20-foot equipment shelter compliant with Section 5.3, Shelters. Use of an existing shared shelter will not be permitted.
 3. New, dedicated, 50-kilowatt (kW) dual-fuel propane/natural gas generator with associated automatic transfer switch (ATS) and fuel tank appropriately sized for a minimum 72-hour runtime compliant with Section 5.4, Generator and Automatic Transfer Switch.
 4. Upgrade of sites to meet Motorola R56, or equivalent, including the subterranean grounding system (if required).
 5. Modifications to compound to accommodate the shelter, generator, and fuel tank as described above.
 6. Coordination of power delivery with a dedicated utility meter.
 7. DC power system as described in Section 5.5, DC Power.
- L. The selected Respondent is responsible for all regulatory approvals, permitting, and zoning requirements with the proposed locations, including preparation of all exhibits required to obtain such approvals consistent with Sections 1.6.5, Local, State, and Federal Environmental and Historical Requirements, and 1.6.6, Permitting.

5.2. TOWERS

A. General

1. If the Respondent determines that additional towers are required, or existing towers must be replaced or modified, the Respondent shall propose required solutions.
2. Any tower manufacturer supplying a tower(s) for this system shall guarantee structural integrity of the tower for a period of not less than 20 years from the date of acceptance.
3. The Respondent shall propose tower heights to achieve the required coverage levels and achieve microwave path requirements.

B. Tower Loading

1. The tower and foundation shall be designed for all proposed equipment, legacy equipment, appurtenances, ancillary equipment, and initial antenna loading, plus 50

percent future antenna system growth, without addition to or modification of the finished tower or foundation.

2. The proposed tower structure shall be designed and installed in accordance with ANSI/TIA-222 Rev H standard for a Class III structure.
3. The tower shall be rated for sustained and Vult wind loading consistent with the Florida Building Code requirements for a Risk Category IV structure.

C. Proposed towers shall include the following:

1. Ice Bridge – A 24-inch, open mesh-type, horizontal transmission-line ice bridge, extending from the tower cable ladder to the equipment building, including 24 four-inch-diameter line entry ports, shall be provided.
2. Transmission Line Support – A vertical transmission line support system shall be provided to securely attach the antenna transmission lines. Holes shall be provided in the tower support members, tower hanger adapter plates, or separate ladder structures to allow installation of cable hangers and bolt-in cable hangers at maximum three-foot intervals. The mounting holes shall be precision punched or drilled, and sufficiently separated to accommodate the snap-in or bolt-in hangers.
3. Climbing Access – A ladder, beginning at a point at least ten feet off the ground, shall be provided as an integral part of the tower to permit access by authorized personnel. The tower shall be equipped with an OSHA-approved anti-fall safety device in accordance with the latest revision of ANSI/TIA-222. This device must not interfere with the climber's ease of reach by hand or foot from one rung of the ladder to the next, either going up or coming down. Two safety climbing belts shall be supplied with each new tower.
4. Lighting (as applicable)
 - a. Tower lighting shall be supplied, as required, by the applicable determination as issued by the FAA for this project, and shall be fully compliant with FAA AC 70/7460-1K, latest revision.
 - b. The system control circuitry shall provide synchronization and intensity control of the obstruction lighting system and shall monitor the overall integrity of the lighting system for component failure or improper operation.
 - c. The selected Respondent or its subcontractor(s) shall wire all alarms to the provided Type 66 block located in the communications shelter or equipment room. All alarms shall be clearly labeled.
5. A lightning ground rod shall be installed at the very top of the tower to extend at least two feet above the top of the tower or lighting fixture.

6. Labeling shall be clearly provided near the base of all new towers for the following:

- a. Make
- b. Model
- c. Serial number
- d. Tower height
- e. Latitude and longitude
- f. FAA and FCC identification numbers (if applicable)

D. Construction

1. All welding must be done in the factory prior to the galvanizing process. Field welding is not acceptable.
2. The tower shall be constructed of high-strength steel. All components and hardware shall be hot-dip galvanized with a zinc coating after fabrication, in accordance with latest revision of the ANSI/TIA-222 standards. A zinc coating shall be permanently fused to the steel, both inside and outside, so that all surfaces are protected and no painting is required for rust protection.
3. Prior to galvanization, each piece of steel and every weld must be deburred and smooth finished.

E. Final Testing and Acceptance – Upon completion of the work, documentation detailing final inspection and testing shall be submitted, documenting the following:

1. Steel structure
 - a. Vertical alignment and plumbness
 - b. All bolts tight and torqued to specification
 - c. No damaged or missing structural members
 - d. All surface scratches and damage to the galvanization repaired
 - e. No signs of stress or vibration
 - f. All climbing ladders and other devices installed correctly
 - g. Labels and tags
2. Foundation
 - a. Concrete finish shall exhibit no cracks or blemishes
 - b. Grouting, if used, shall have drain holes if the tower uses hollow leg construction or monopole design
 - c. Backfilling and grading shall be conducted
3. Grounding shall meet applicable standards such as Motorola R56; items include the following, at a minimum:

- a. Verify lugs and exothermic welds
 - b. Test and record ground resistance
 - c. Install lightning ground rod at top of tower
4. Ice Bridge – Install per tower manufacturer specifications
5. Lighting and controls
 - a. Inspect conduit and wiring installation
 - b. Verify proper lamp operation
 - c. Verify alarm contact operation
 - d. Verify labeling
6. Photographs
 - a. Overall structure from north, east, south, and west
 - b. Footers
 - c. Grounding

5.3. SHELTERS

A. General

1. Respondents shall propose a new or used equipment shelter at new site locations and where existing shelters are deemed inadequate. If used shelters are proposed, the Respondent shall ensure that the used shelters meet the same specifications as a new shelter, as specified within this ITN.
2. The shelter shall be a prefabricated, preassembled shelter. The shelter can be constructed from concrete and/or aggregate materials.

B. Size

1. Shelter dimensions shall be determined by the selected Respondent dependent upon final design. Legacy and proposed systems shall use up to 60 percent of the floor space, leaving a minimum of 40 percent for future expansion.
2. Minimum shelter size shall be 12-foot x 20-foot, with a minimum interior height of nine feet.

- C. Foundation – The foundation for the shelter shall consist of concrete piers or a poured concrete slab constructed by the selected Respondent or subcontractor that will properly support and secure the shelter. Foundation drawings recommended by the shelter manufacturer shall be the criteria by which the foundation is constructed.

D. Flooring

1. Respondents shall propose a structure where the floor or solid foundation features a minimum uniform load rating of 200 pounds per square foot with no more than 3,000 pounds over any four-square-foot area, unless additional load rating is required for batteries. This rating shall be increased in sections as necessary to support heavyweight equipment. If the shelter is delivered with the floor already assembled, the floor shall exhibit a minimum 90 pounds per square foot uniform live load capacity while the building is being lifted.
2. Floors shall be insulated to a minimum R-11 rating. Insulation shall be secured in place to prevent shifting during construction and transportation.
3. Exterior covering of the floor shall be included to prevent rodent penetration.
4. The floor shall be covered by a high-quality, industrial/commercial-grade asphalt or vinyl tile. All edges shall be covered by wall molding.

E. Walls

1. The shelter shall be rated for sustained and Vult wind loading consistent with the Florida Building Code requirements for a Risk Category IV structure.
2. Walls shall withstand the effects of bullets or other projectiles equivalent to a 30.06 high-power rifle load fired from a distance of 50 feet, with no penetration to the inner cavity of the wall. No interior damage shall be sustained, including to insulation, interior walls, etc.
3. The outside walls shall be finished concrete or an aggregate composition.
4. A wall feed-through with 12 four-inch openings shall be provided on the tower side of the building to accommodate elliptical waveguide and coaxial transmission lines. The openings shall be properly booted to provide a good weather seal. The wall feed-through shall be bonded to the site ground system per guidelines specified in Section 1.6.1, Standards and Guidelines.
5. The inside walls shall be finished with minimum $\frac{5}{8}$ -inch plywood (or equivalent) to allow mounting of panels, blocks, etc., and trimmed with coordinated molding.
6. High-performance insulation shall provide a minimum insulation factor of R-11.

F. Roof

1. The building roof shall support a minimum 100-pounds-per-square-foot uniform live load.

2. The roof is to be pitched to facilitate water runoff.
3. The shelter roof shall withstand the impact of ice falling from the adjacent tower without suffering any damage or shall otherwise be protected from such damage. Respondents are to describe in their proposals how this requirement will be met.
4. High-performance insulation shall provide a minimum insulation factor of R-19.

G. Doors

1. Shelters shall have one 42-inch by 84-inch insulated door, with three stainless steel tamper-proof hinges, passage-style lever handle, deadbolt lockset, and fiberglass weather hood or awning. The door shall be equipped with a hydraulic door closer.
2. The exterior door shall be of aluminum or steel (stainless or galvanized) construction with a finish to match the building finish.
3. The door shall withstand the effects of bullets or other projectiles equivalent to a 30.06 high-power rifle load fired from a distance of 50 feet, with no penetration to the inner cavity of the door. No interior damage shall be sustained, including to insulation, interior walls, etc.
4. The door sill shall be of stepped construction to prevent rainwater from entering the shelter at the bottom of the door or from around the door frame. The door frame shall have a weather seal around the door to limit air and water intrusion.
5. Locks shall be constructed of non-corroding materials, and shelter locks shall be keyed alike for shelters. Four keys shall be provided to the County/Owner.

H. Finishing

1. Respondents shall describe the interior and exterior finishes. Color and finishes shall be selected by the County from samples provided by the selected Respondent or its subcontractor.
2. All joints shall be sealed with a compressible, resilient sealant.

I. Alternating Current (AC) Power System

1. The selected Respondent shall deliver the building complete with a 200-ampere-capacity, 240-volt, single-phase electrical panel box with a ground bar.
2. This panel shall be equipped with a 200-ampere-capacity main circuit breaker used to supply power for all electrical functions related to the site.
3. Overall panel size shall be determined by the need to provide the number of individual breakers required, plus a reserve of at least six 240-volt slots.

4. Breakers for shelter air conditioning will be of the bolt-down, not snap-in, type.
 5. Receptacles
 - a. Each radio equipment unit (or rack) shall be supplied with two 20-ampere circuits, each terminated at a typical NEMA 5-20 receptacle. Receptacles shall be mounted to the side of the overhead cable tray.
 - b. Service receptacles shall be mounted on the walls at six-foot intervals or less.
 - c. One weatherproof ground fault interrupter (GFI) exterior power receptacle shall be provided with each shelter, to be mounted near air-conditioning units.
 - d. Each receptacle shall be fed from an individual breaker. The feeding breaker shall be identified at the receptacle and the receptacle shall be identified at the breaker. All breakers or circuits shall be rated at 20 amperes, unless otherwise noted.
- J. Power Line Surge Suppression
1. An AC surge protector shall be provided and installed inside the shelter.
 2. An acceptable unit shall be an in-line type such as the AC Data Systems "integrated load center." An alternate unit must meet or exceed all capabilities of this model unit.
 3. Minimum surge protector requirements:
 - a. Built-in redundancy of dual stages per phase with filtering
 - b. Surge energy shunted to ground, not to neutral
 - c. Front panel indicator lamps
 - d. Remote/local status contacts
 - e. Fusible link protected so as not to interrupt power
 - f. Field replacement protection blocks or fuses, if needed
 - g. UL-listed components
 - h. 45 kiloamperes (kA)-per-phase ANSI C62.1 8/20 waveform
 - i. Electromagnetic interference/radio frequency interference (EMI/RFI) filtering per MIL-STD-220
 - j. Capable of handling the full 240-volt, 200-ampere capacity of the electrical system

K. Wiring Methods

1. All wiring noted on the site drawings or otherwise included by the selected Respondent shall be installed in conduit or ductwork. Where no protection method is specified, conduit shall be used.
2. All conduits and ducts shall be securely surface-mounted and supported by approved clamps, brackets, or straps as applicable, and held in place with properly selected screws. No wiring shall be embedded inside any walls, floor, or ceiling. Entrance power, outside light, air-conditioning outlet, and telecommunications are the only wiring that may penetrate shelter walls or floor.
3. All wire raceways, conduits, etc. are to be mechanically joined and secured.
4. Flexible steel conduit or armored cable shall protect wiring connected to motors, fans, etc., and other short runs where rigid conduit is not practical.
5. Unless otherwise specified, all power wiring shall be a minimum #12 American wire gauge (AWG)-size solid copper conductors with insulation rated for 600 volts AC (VAC).

L. Portable Generator Support

1. The shelter shall have an external generator power connector for portable generator support. The selected Respondent shall provide an Appleton connector, or equivalent, on the outside of the shelter on the short wall closest to the shelter door, or where possible.

M. Light Fixtures

1. Ceiling-mounted, four-foot, fluorescent light fixtures (two 40-watt [W] bulbs per fixture) with RFI ballasts shall be supplied for the equipment shelters. A sufficient quantity of light fixtures shall be supplied to provide a uniform light level throughout the building of 150-foot candles at four feet above the floor.
2. Light fixtures shall be fed as a gang from a common breaker and controlled by an on/off switch near the door.

N. Outdoor Lighting

1. An exterior 100-W, wall-mounted, motion-controlled light shall be mounted on the front entrance of the shelter.
2. The exterior lighting system shall be fed from a separate, appropriately rated breaker and light switch by the door.

O. HVAC

1. Respondents shall provide an HVAC system for each shelter proposed. Respondents shall propose dual air-conditioning units with lead lag controller. Each air-conditioning unit shall be sized for 100 percent of the building's required cooling capacity, as determined by British thermal unit (BTU) analysis.
2. The selected Respondent shall perform BTU analysis (heat-load calculations) for all shelter equipment during preliminary design to verify HVAC system size. All calculations shall include a 50 percent expansion factor, and all assumptions regarding power consumption, duty factor, and heat loading shall be thoroughly explained.
3. Each unit shall be capable of maintaining an inside ambient temperature range between 65 and 85 degrees (°) Fahrenheit (F). Each unit shall be sized to maintain temperatures inside the shelter at 70° F when exterior temperatures go as high as 100° F.
4. The HVAC system shall be controlled by a wall-mounted thermostat. The thermostat shall turn the heater on when the temperature inside the shelter drops to 65° F and off when it rises to 68° F. It shall turn on the air-conditioner when the interior temperature reaches 78° F and off when the temperature drops below 75° F. Thermostat control shall be adjustable within the range of 45° to 85° F.

P. Antenna Cable Conduit Entry: A bulkhead panel shall be supplied to accommodate coaxial transmission lines between ½-inch and 1⁵/₈-inch diameter elliptical waveguides. A minimum of 12 transmission lines shall be accommodated with four-inch openings. The building manufacturer shall seal the conduits into the wall to assure that they are watertight.

Q. Cable Tray: All shelters shall be equipped with cable trays. The selected Respondent shall install a minimum 18-inch-wide cable-tray system above the equipment.

R. Shelters shall be supplied with an FM200 (or equivalent) automated fire suppression system.

S. Shelters shall be supplied with an approved eye-wash station and first-aid kit.

5.4. GENERATOR AND AUTOMATIC TRANSFER SWITCH

This section provides specifications and requirements for standby power systems to supply electrical power in the event that the normal supply fails. Standby power systems shall consist of a liquid-cooled engine, an AC alternator, and system controls with all necessary accessories for a complete operating system, including at a minimum the items as specified.

- A. Respondents shall provide an emergency generator system at each new radio communications site for backup power, sized appropriately for the maximum shelter breaker panel supply current with a minimum capacity of 50 kW. For existing sites where a generator may be reused, an assessment of sufficiency should be completed and any recommended enhancements proposed.
- B. Respondents shall perform electrical-loading analysis for shelter equipment, including HVAC subsystems, during preliminary design to verify generator size and fuel-tank capacity. All electrical-loading calculations shall include a 50 percent expansion factor, and all assumptions regarding power consumption and duty factor shall be thoroughly explained.
For the purpose of the proposal, Respondents shall assume the following:
1. Single phase
 2. 60 Hertz (Hz) operating frequency
 3. 0.8 power factor
 4. Dual fuel supporting both propane and natural gas
 5. Minimum 72-hour runtime
- C. In the event of a commercial power outage, the emergency generator shall provide power to the entire shelter without a system outage.
- D. Quality Assurance – The system shall be supplied by a manufacturer that has been regularly engaged in the production of engine-alternator sets, ATSS, and associated controls for a minimum of ten years, thereby identifying one source of supply and responsibility.
- E. The generator system and all accessories and ancillary equipment shall comply with the following standards:
1. NFPA 37, *Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines*
 2. NFPA 55, *Compressed Gases and Cryogenic Fluids Code*
 3. NFPA 70, *National Electrical Code*, with particular attention to Article 700, “Emergency Systems”
 4. NFPA 110, *Standard for Emergency and Standby Power Systems*, requirements for Level 1 Emergency Power Supply System
 5. NFPA 101, *Life Safety Code*[®]
 6. ANSI/NEMA MG 1, *Motors and Generators*
 7. ANSI/NEMA 250-2018, *Enclosures for Electrical Equipment (1000 Volts Maximum)*
- F. Labeling and Identification – All wiring harnesses and connectors shall be clearly identified by number and function according to the associated schematic diagrams and documentation provided by the Respondent.

G. Factory Testing

1. Before shipment of the equipment, the generator set shall be tested under rated load for performance and proper functioning of control and interfacing circuits. Tests shall include:
 - a. Verification that all safety shutdowns are functioning properly
 - b. Verification of single-step load pick-up, per NFPA 110-1996, paragraph 5-13.2.6
 - c. Verification of transient and voltage-dip responses and steady-state voltage and speed (frequency) checks
 - d. Full load test for a minimum of one hour
2. The selected Respondent shall provide complete report(s) of all testing performed.

H. Startup and Checkout

1. The supplier of the electricity-generating plant and associated items covered herein shall provide factory-trained technicians to check the completed installation and to perform an initial startup inspection to include:
 - a. Ensuring that the engine starts (both hot and cold) within the specified timeframe
 - b. Verifying that engine parameters are within specification
 - c. Verification of no-load frequency and voltage adjustment (if required)
 - d. Testing of all generator automatic shutdowns
 - e. Performing a simulation of power failure to test generator startup and the ability of the ATS to pick up building load correctly
 - f. Returning to commercial power and testing the generator and ATS to demonstrate correct cycling to normal commercial power
 - g. Performing a load test, for a minimum of one hour, of the generator, to ensure full-load frequency and voltage is within specification when using building load
 - h. Testing and verifying all remote indicators and controls
2. The selected Respondent shall provide complete report(s) of all testing performed.

5.4.1. *Dual-Fuel Propane/Natural Gas Generator*

- A. The prime mover shall be a liquid-cooled, dual-fuel engine supporting both propane and natural gas. Natural gas shall be the primary fuel source, with propane only utilized in the event of a disruption to the natural gas source. The switch from natural gas to propane shall be automatic.
- B. The engine shall have a sufficient horsepower rating to drive the generator to full output power without a gear box between the engine and generator.
- C. The engine shall have a battery-charging DC alternator with a solid-state voltage regulator.

- D. The generator shall meet temperature-rise standards for Class H insulation, operating within Class F standards for extended life.
- E. The alternator shall have internal thermal-overload protection and an automatic-reset field circuit breaker.
- F. One-step load acceptance shall be 100 percent of the generator set nameplate rating, and shall meet the requirements of NFPA 110, paragraph 5-13.2.6.
- G. The electricity-generating plant shall be mounted with vibration isolators on a welded-steel base that shall permit suitable mounting to any level surface.
- H. A main-line-output circuit breaker carrying the UL mark shall be factory installed.
 - 1. Form C auxiliary contacts rated at 250-volt AC/10 amperes shall be provided to allow remote sensing of the breaker status.
 - 2. A system utilizing manual-reset field circuit breakers and current transformers is unacceptable.
- I. An alternator strip heater shall be installed to prevent moisture condensation from forming on the alternator windings.
- J. Controls
 - 1. All engine alternator controls and instrumentation shall be designed, built, wired, tested, and shock-mounted in a NEMA 1 enclosure mounted to the generator set by the manufacturer. It shall contain panel lighting, a fused DC circuit to protect the controls and a +/- 5 percent voltage-adjusting control.
 - 2. The generator set shall contain a complete two-wire automatic engine start-stop control that starts the engine on closing contacts and stops the engine on opening contacts.
 - 3. A programmable cyclic cranking limiter shall be provided to open the starting circuit after four attempts if the engine has not started within that time. Engine control modules must be solid-state plug-in type for high reliability and easy service.
 - 4. The panel shall include:
 - a. Analog meters to monitor:
 - i. AC voltage
 - ii. AC current
 - iii. AC frequency

- b. Phase selector switch
 - c. Emergency stop switch
 - d. Audible alarm
 - e. Battery charger fuse
 - f. Programmable engine control
 - g. Monitoring module
5. The programmable module shall include:
- a. Manual on/off/auto switch
 - b. Four light-emitting diode (LED) status lights to indicate:
 - i. Not in Automatic Mode
 - ii. Alarm Active
 - iii. Generator Running
 - iv. Generator Ready
6. The module shall display all pertinent unit parameters including:
- a. Generator Status – on/off/auto
 - b. Instrumentation – Real-time readouts of the following engine and alternator analog values:
 - i. Oil pressure
 - ii. Coolant temperature
 - iii. Fuel level
 - iv. DC battery voltage
 - v. Run-time hours
 - c. Alarm Status
 - i. High or low AC voltage
 - ii. High or low battery voltage
 - iii. High or low frequency
 - iv. High or low oil pressure
 - v. Low water level
 - vi. High or low water temperature
 - vii. High and pre-high engine temperature
 - viii. High, low, and critical-low fuel levels (where applicable)
 - ix. Over crank
 - x. Over speed
 - xi. Unit not in automatic mode

K. Unit Accessories

1. Weather-protective enclosure
 - a. The generator set shall be factory enclosed in a heavy-gauge steel enclosure constructed with 12-gauge corner posts, uprights, and headers.
 - b. The enclosure shall be coated with electrostatically applied powder paint, baked, and finished to manufacturer's specifications.
 - c. The enclosure shall have large, hinged doors to allow access to the engine, alternator, and control panel.
2. The exhaust silencer(s) shall be provided of the size recommended by the manufacturer and shall be of critical grade.
3. The generator set shall include an automatic dual-rate battery charger manufactured by the generator set supplier. The battery charger shall be factory installed on the generator set. Due to line-voltage-drop concerns, a battery charger mounted in the transfer switch is unacceptable.
4. A heavy-duty, lead-acid, 12-volt DC battery shall be provided by the generator set manufacturer. The generator set shall have a frame suitable for mounting the battery and shall include all connecting battery cables.

5.4.2. *Automatic Transfer Switch*

- A. The ATS shall be compatible with the generator set so as to maintain system compatibility and local service responsibility for the complete emergency power system.
- B. Representative production samples of the ATS supplied shall have demonstrated through tests the ability to withstand at least 10,000 mechanical operation cycles. One operation cycle is defined as the electrically operated transfer from normal to emergency and back to normal.
- C. Wiring must comply with NEC table 373-6(b). The manufacturer shall furnish schematic and wiring diagrams for the ATS proposed and a typical wiring diagram for the entire system.
- D. Ratings and Performance
 1. The ATS shall be adequately sized to match the generator and shelter electrical systems.

2. The ATS shall be a two-pole design rated for 600-VAC, 200-amperes continuous operation in ambient temperatures of -20° F (-29° Celsius [C]) to +140 degrees F (+60° C).
3. The operating mechanism shall be a single operating coil design, electrically operated, and mechanically held in position.
4. A provision shall be supplied to be able to manually operate the switch in the event of logic or electrical coil failure.

E. Controls

1. A solid-state under-voltage sensor shall monitor all phases of the normal source and provide adjustable ranges for field adjustments for specific application needs.
 - a. Pick-up and drop-out settings shall be adjustable from a minimum of 70 percent to a maximum of 95 percent of nominal voltage.
 - b. A utility-sensing interface shall be used, stepping down system voltage of 120/240 VAC single phase to 24 VAC, helping to protect the printed circuit board from voltage spikes and increasing personnel safety when troubleshooting.
2. Controls shall signal the generator set to start in the event of a power interruption.
 - a. A solid-state time-delay start, adjustable from 0.1 to 10 seconds, shall delay this signal to avoid nuisance start-ups on momentary voltage dips or power outages.
3. Controls shall transfer the load to the generator set after it reaches proper voltage.
 - a. Adjustable from 70–90 percent of system voltage.
 - b. Adjustable from 80–90 percent of system frequency.
 - c. A solid-state time delay, adjustable from 5 seconds to 3 minutes, shall delay this transfer to allow the generator to warm up before application of load.
 - d. There shall be a switch to bypass this warm-up timer when immediate transfer is required.
4. Controls shall retransfer the load to the line after normal power restoration.
 - a. A return-to-utility timer, adjustable from 1 to 30 minutes, shall delay this transfer to avoid short-term normal power restoration.
5. The operating power for transfer and retransfer shall be obtained from the source to which the load is being transferred.

6. Controls shall signal the generator to stop after the load retransfers to normal.
 - a. A solid-state engine cool-down timer, adjustable from 1 to 30 minutes, shall permit the engine to run unloaded to cool down before shutdown.
 - b. Should the utility power fail during this time, the switch shall immediately transfer back to the generator.
7. The transfer switch shall have a time-delay-neutral feature to provide a time delay, adjustable from 0.1 to 10 seconds, during the transfer in either direction, during which time the load is isolated from both power sources. This allows residual voltage components of motors or other inductive loads (such as transformers) to decay before completing the switching cycle.
8. A switch shall be provided to bypass all transition features when immediate transfer is required.
9. The transfer switch shall have an in-phase monitor, which allows the switch to transfer between live sources if their voltage waveforms become synchronous within 20 electrical degrees within 10 seconds of the transfer-initiation signal.
 - a. If the in-phase monitor will not allow such a transfer, the control must default to time-delay-neutral operation.
10. Front-mounted controls shall include a selector switch to provide for a NORMAL TEST mode with full use of time delays; FAST TEST mode that bypasses all time delays to allow for testing the entire system in less than one minute; or AUTOMATIC mode to set the system for normal operation.
 - a. The controls shall provide bright lamps to indicate the transfer switch position in either UTILITY (white) or EMERGENCY (red). A third lamp is needed to indicate STANDBY OPERATING (amber). These lights must be energized from the utility source or the generator set.
 - b. The controls shall provide a manually operated handle to allow for manual transfer. This handle must be mounted inside the lockable enclosure and be accessible only to authorized personnel.
 - c. The controls shall provide a safety disconnect switch to prevent load transfer and automatic engine start while performing maintenance. This switch also shall be used for manual transfer switch operation.
 - d. The controls shall provide LED status lights to give a visual readout of the operating sequence including:
 - i. Utility on

- ii. Engine warmup
- iii. Standby ready
- iv. Transfer to standby
- v. In-phase monitor
- vi. Time-delay neutral
- vii. Return to utility
- viii. Engine cool down
- ix. Engine minimum run

5.4.3. *Dual-Fuel Propane and Natural Gas System*

- A. Respondents shall provide a complete fuel system including tank(s) and all associated piping, valves, controls, etc.
- B. Above-ground tanks shall be bulletproof or protected.
- C. Tank and fuel system components shall be sized to provide a minimum of 72 hours of run time at full load.
- D. Clear access shall be provided for refueling.
- E. Controls and Monitoring Equipment
 - 1. Fuel capacity gauge with low-fuel-level alarm contact closure
 - 2. Multi-valve for filling, pressure relief, and gauging
- F. Respondents shall provide any required plumbing to extend the natural gas connection from the generator to the utility provider demarcation.

5.5. DC POWER

- A. Respondents shall provide a -48 VDC power system to support P25 equipment, microwave equipment, and ancillary site equipment at existing and proposed sites used in the Respondent's system design.
- B. Respondents shall provide dedicated 220-VAC/30-ampere circuits for each pair of rectifiers on the DC plant and provide electrical connections and grounding to the DC plant.
- C. The selected Respondent shall perform electrical-loading analysis for shelter equipment, radio system equipment, and microwave equipment, excluding HVAC subsystems, during preliminary design to verify the DC system size required. All assumptions regarding power consumption and duty factor shall be thoroughly explained.

- D. Respondents shall appropriate distribution breakers and circuits for DC power to each designated row of equipment racks. Equipment installed within those racks shall be immediately accessible to the DC power source.
- E. The DC power system shall utilize a modular fault tolerant design with N+1 redundancy of rectifiers. The system shall include no single points of failure.
- F. QA
 - 1. Electrical components, devices, and accessories shall be listed and labeled, as defined in NEC, by a qualified testing agency, and marked for its intended location and application.
 - 2. UL compliance shall be listed and labeled under UL 1778 by a nationally recognized testing laboratory (NRTL).
 - 3. NFPA compliance shall identify UPS components as suitable for installation in computer rooms according to NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*.
- G. Performance Requirements
 - 1. Input
 - a. Single-phase, three-wire
 - b. Voltage: 120/240 V nominal
 - c. Frequency: 50/60 Hz +/- 3 Hz
 - 2. Output
 - a. Capacity: Assumed at 1,000 amperes, to be finalized during the design phase
 - b. Voltage: -24/-48 VDC, 12 VDC, and 120 VAC
 - 3. Minimum Duration of Supply – If the DC power system is the sole backup energy source, duration of the supply is eight hours. Respondents shall assume 50 percent average base station/repeater usage (transmit and receive) for eight-hour runtime calculations. Respondents also shall ensure four hours of DC runtime under 100 percent load.
 - 4. EMI Emissions – Comply with FCC Rules and Regulations and with Title 47 of the Code of Federal Regulations (CFR), Part 15 for Class A equipment.
 - 5. Electronic Equipment – Solid-state devices using hermetically sealed semiconductor elements. Devices include rectifier-charger, inverter, and system controls.

6. Surge Suppression – Protect internal DC components from surges that enter at each AC power input connection and protect controls and output components.

H. Tests and Inspections

1. Comply with manufacturer's written instructions.
2. Inspect interiors of enclosures, including the following:
 - a. Integrity of mechanical and electrical connections
 - b. Component type and labeling verification
 - c. Ratings of installed components
3. Test manual and automatic operational features, as well as system-protection and alarm functions.
4. Provide inspection reports.

- I. Demonstration: Train County's maintenance personnel to adjust, operate, and maintain the DC power system.

- J. Respondents shall supply an inverter system to supply AC-only equipment housed within the shelter. The inverter system shall meet the following requirements:

1. Output
 - a. Capacity: Assumed at 100 amperes, to be finalized during the design phase
 - b. Voltage: 120 VAC
2. Fully redundant modular design with N+1 redundancy and no single points of failure
3. Electrical wiring to wall-mounted AC distribution panel

5.6. SITE PREPARATION

- A. The selected Respondent shall perform all preparations for site improvements as necessary. Work includes the following at a minimum:
 1. Protecting existing plants and grass to remain
 2. Removing existing plants and grass as necessary
 3. Clearing and grubbing
 4. Stripping and stockpiling topsoil
 5. Removing above- and below-grade site improvements
 6. Disconnecting, capping or sealing, and removing site utilities
 7. Temporary erosion and sedimentation control measures
 8. Access road development

- B. The following Construction Specifications Institute (CSI) standard sections are referenced, but are not included in this specifications document:
1. Division 1 Section, *Temporary Facilities and Controls* – for temporary utilities, temporary construction and support facilities, temporary security and protection facilities, and temporary erosion and sedimentation control procedures
 2. Division 1 Section, *Execution Requirements* – for verifying utility locations and for recording field measurements
 3. Division 1 Section, *Selective Demolition* – for partial demolition of buildings or structures undergoing alterations
 4. Division 2 Section, *Building Demolition* – for demolition of buildings, structures, and site improvements
 5. Division 2 Section, *Tree Protection and Trimming* – for protecting trees remaining onsite that are affected by site operations
 6. Division 2 Section, *Earthwork* – for soil materials, excavating, backfilling, and site grading
 7. Division 2 Section, *Lawns and Grasses* – for finish grading including preparing and placing planting soil mixes and testing of topsoil material
- C. The selected Respondent or its subcontractor(s) shall comply with local guidelines for erosion and sedimentation (E&S) control.
- D. Respondents shall carefully examine and study existing conditions, difficulties, and utilities affecting execution of work. Later claims for additional compensation due to additional labor, equipment, or materials required due to difficulties encountered or underground water conditions will not be considered.
- E. The selected Respondent shall verify that existing plant life to remain and clearing limits are clearly tagged, identified, and marked in such a manner as to ensure the safety of said plant life throughout construction operations.
- F. Protection
1. The selected Respondent shall protect and maintain benchmark, monument, property corner, and other reference points, reestablishing them by registered professional surveyor if disturbed or destroyed, at no cost to the County.
 2. The selected Respondent shall locate and identify existing utilities that are to remain and protect them from damage, reestablishing them if disturbed or destroyed, at no cost to the County.
 3. The selected Respondent shall protect trees, plant growth, and features to remain as final landscape. Branches or roots of any trees that are to remain shall not be disturbed. Adequate guards, fences, lighting, warning signs and similar items shall be provided and maintained as required.

4. The selected Respondent shall install protection such as fencing, boxing of tree trunks, or other measures as approved by the project engineer.
5. The selected Respondent shall conduct operations with minimum interference to public or private accesses and facilities, maintain ingress and egress at all times, and clean or sweep any roadways daily or as required by the governing authority. At such times as deemed necessary by the County, dust control shall be provided by water-sprinkling systems or equipment provided by the Respondent or its subcontractor(s).
6. When appropriate, the selected Respondent shall provide traffic control as required, in accordance with contract documents, the U.S. Department of Transportation "Manual of Uniform Traffic Control Devices" and the Florida Department of Transportation requirements.

G. Clearing

1. The selected Respondent shall clear areas required for access to the site and execution of work.
2. Unless otherwise indicated, the selected Respondent shall remove trees, shrubs, grass, other vegetation, improvements, or obstructions interfering with the installation of new construction. Removal includes digging out stumps, roots, and root material. Depressions caused by clearing and grubbing operations are to be filled to sub-grade elevation to avoid water pooling. Satisfactory fill material shall be placed in horizontal layers not exceeding eight inches loose depth, and thoroughly compacted per fill requirements of this section and CSI Division 2, *Site Construction*, Section 02200.
3. The selected Respondent shall remove grass, trees, plant life, stumps, and all other construction debris from the site to a location that is suitable for handling such material according to state laws and regulations.

H. Demolition: The selected Respondent shall remove existing pavement, utilities, curbing, and shrubbery as necessary for construction of improvements.

I. Topsoil Excavation

1. The selected Respondent shall strip topsoil from areas that are to be filled, excavated, landscaped, or regraded to such a depth that it prevents intermingling with underlying subsoil or questionable material.
2. The selected Respondent shall stockpile topsoil in storage piles in areas not scheduled for construction, job trailer location, or equipment laydown, or where directed by the project engineer. Storage piles shall be constructed to freely drain surface water. Storage piles shall be covered as required to prevent windblown dust. Unsuitable soil shall be disposed of as specified for waste material, unless otherwise

desired by the County. Excess topsoil shall be removed from the site by the selected Respondent or its subcontractor(s).

3. Final topsoil coatings shall consist of organic soil applied in depth of not less than six inches. Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects greater than two inches in diameter, as well as weeds, roots, and other objectionable material.

J. Access Roads

1. A 12-foot-wide access road shall be provided from the closest navigable roadway to the fence gate at new sites. For existing access roads, Respondents shall evaluate sufficiency and propose improvements where necessary.
2. Roadbeds shall be prepared, rolled, and provided with six inches of aggregate base course.
3. Roads shall be graded appropriately for proper drainage and minimal erosion.
4. Roads shall be sufficient to support all vehicles required for construction, system maintenance, and emergency services consistent with AHJ requirements.

5.7. FENCING

A. The selected Respondent shall provide chain-link fencing around the perimeter of all new proposed sites.

B. Framework: Type I or Type II steel pipe

1. Type I – Schedule 40 steel pipe with 1.8 ounces of zinc coating per square foot of surface area conforming to ASTM F1083.
2. Type II – Pipe manufactured from steel conforming to ASTM A569. External surface triple coated per ASTM F1234. Type II pipe shall demonstrate the ability to resist 1,000 hours of exposure to salt spray with a maximum of five percent red rust in a test conducted in accordance with ASTM B117.
3. All coatings are to be applied inside and out after welding.
4. Unless otherwise noted, Type II framework shall be provided.
5. Pipe shall be straight, true to section and conform to the following weights:

Table 2: Type I and Type II Steel Pipe Specifications

Pipe Size Outside Diameter (O.D.)	Type I Weight (Lbs./Ft.)	Type II Weight (Lbs./Ft.)
1 ⁵ / ₈ "	2.27	1.84
2"	2.72	2.28
2 ¹ / ₂ "	3.65	3.12
3"	5.79	4.64
3 ¹ / ₂ "	7.58	5.71
4"	9.11	6.56
6 ⁵ / ₈ "	18.97	N/A

C. Fabric

1. Aluminized fabric shall be manufactured in accordance with ASTM A491 and coated before weaving with a minimum of 0.4 ounces of aluminum per square foot of surface area. The steel wire and coating shall conform to ASTM A817. Fabric shall be nine-gauge wire woven in a two-inch diamond mesh. The top selvage shall be twisted and barbed. The bottom selvage shall be knuckled.
2. Zinc-coated fabric shall be galvanized after weaving with a minimum of 1.2 ounces of zinc per square foot of surface area, and shall conform to ASTM A392, Class I. Fabric shall be nine-gauge wire woven in a two-inch diamond mesh. The top selvage shall be twisted and barbed. The bottom selvage shall be knuckled.

D. Fence Posts

Table 3: Fence Post Specifications

Fence Posts Type I - II		
Fabric Height	Line Post O.D.	Terminal Post O.D.
Under 6'	2"	2 ¹ / ₂ "
6'-9'	2 ¹ / ₂ "	3"
9'-12'	3"	4"

E. Gate Posts

Table 4: Gate Posts Specifications

Gate Posts Type II		
Single Gate Width	Double Gate Width	Post O.D. Type II
Up to 6'	Up to 12'	3"
7' to 12'	13' to 25'	4"

F. Rails and Braces: 1⁵/₈-inch outside diameter (O.D.)

G. Gates: Frame assembly of two-inch O.D. pipe (Type I or Type II) with welded joints. Weld areas shall be repaired with zinc-rich coating applied per manufacturer's directions. The fence fabric shall match the fence posts, gateposts, and gates. Gate accessories, hinges, latches, center stops, keepers, and necessary hardware shall be of a quality required for industrial and commercial application. Latches shall permit padlocking. Respondents shall provide one padlock for each gate with three keys for each padlock. All padlocks shall be keyed alike.

H. Installation

1. General – Fence installation shall conform to ASTM F567, *Standard Practice for Installation of Chain-Link Fence*.
2. Height – Fence height shall be as indicated on contract drawings. If no height is indicated, the fence shall be seven-feet high, plus one foot for barbed wire.
3. Post Spacing – Line posts shall be uniformly spaced between angle points at intervals not exceeding ten feet.
4. Bracing – Gate and terminal posts shall be braced back to adjacent line posts with horizontal brace rails and diagonal truss rods.
5. Top Rail – The top rail shall be installed through the line post loop caps, connecting sections with sleeves to form a continuous rail between terminal posts.
6. Fencing shall have a bottom rail instead of a tension wire.
7. Fabric – The fabric shall be pulled taut with the bottom selvage two inches above grade. The fabric shall be fastened to the terminal posts with tension bars threaded through mesh and secured with tension bands at maximum 15-inch intervals. The fabric shall be tied to the line posts and top rails with tie wires spaced at a maximum

of 12 inches on posts and 24 inches on rails. The fabric shall be attached to the bottom rail with top rings at maximum 24-inch intervals.

8. Barbed Wire – Barbed wire shall be anchored to the terminal extension arms, pulled taut and firmly installed in the slots of the line post extension arms.
9. Valleys – Should the fence cross a ditch or drainage swell, $\frac{3}{8}$ -inch diameter aluminum alloy rods shall be driven vertically 18 inches into the ground on four-inch centers and woven through the fence fabric to provide security for these areas.
10. Vegetation stop and aggregate shall be applied to the entire compound area (the area inside the fencing) and six inches beyond the fencing. Vegetation stop shall be constructed with weed barrier geotextile and aggregate shall be applied three inches in depth and consist of American Association of State Highway and Transportation Officials (AASHTO) #10 coarse aggregate.

6. DISPATCH CONSOLES

6.1. GENERAL REQUIREMENTS AND FEATURES

- A. Respondents shall provide pricing for 22 state-of-the-art, IP-controlled radio consoles across five dispatch locations.
- B. The dispatch console is a critical link for public safety personnel. It is here that the dispatch operator must relay critical information from the public to public safety personnel in the field. At times, the dispatcher may be in stressful conditions with lives at risk. It is imperative that the dispatch console be laid out in a manner that results in the operation of such consoles being second nature to the dispatch personnel. The dispatch console shall provide the operator with as much information as necessary without the screen being cluttered and shall be easily navigated to perform necessary functions. Features of the console shall include the below at a minimum.
 1. Dispatch console equipment (operator positions) shall be designed to be placed on existing furniture and provide operators with an ergonomic design that permits ease of operation over extended periods, typically 8 to 12 hours for each operator.
 2. Console positions shall be able to acoustically cross-mute channels to eliminate acoustic feedback between operators.
 3. The screen display shall be designed so that all dispatching functions shall be operable from one display.
 4. The screen display shall be very flexible, enabling authorized personnel to determine which functions are available at each operator position.

5. New features and screen configurations shall be supported through software programming and not hardware reconfiguration.
6. Capability to program, store, retrieve, and edit multiple custom operator screens and configurations for each operator position shall be provided.
7. Operator screen configurations and alias database shall be stored locally or on a centrally located server.
8. The dispatch console shall display an alias name on screen when a unit with a radio ID stored in the alias database is transmitting.
9. Operator positions shall have the ability to decrypt and encrypt secure voice communications. Channels shall have a distinctive icon if encryption is being used for that channel. All consoles shall be configured to provide end-to-end Advanced Encryption Standard (AES) encryption to personnel in the field.
10. Upon activation of an emergency alarm by field units, dispatch positions shall provide an audible alert, display calling unit ID, and provide a visual alert of an emergency activation.
11. Operators shall have the ability to utilize a headset, foot pedal, or stationary gooseneck-type microphone for transmitting audio.
12. The capability to converse on the telephone utilizing the same operator headset that is used for radio conversations shall be provided.
13. Instant recall shall be provided allowing the operator to review and verify his or her recent traffic. Playback shall be available at the operator position.

6.2. TRUNKED REQUIREMENTS

- A. Dispatch consoles shall be compatible with a proposed P25 trunked radio system. Dispatch consoles shall directly interface with single- and multisite trunked system controllers and shall allow interoperability between trunked and non-trunked channels in the system.
- B. Dispatch consoles shall be able to monitor and transmit on all proposed trunked systems. Backward compatibility with the existing trunked system for ease of cutover is desired, but not required.
- C. Dispatch consoles shall be equipped with an instant transmit switch for each talkgroup displayed.

- D. In a trunked system with radio IDs, the push-to-talk (PTT) ID of the unit calling shall appear in addition to a call indicator. After the call is completed, the unit's PTT ID shall remain displayed until another call is received.
- E. To aid dispatchers in a busy system, a list of the last 15 radio IDs shall be available in a "recent calls" list.
- F. Dispatch equipment shall include an instant transmit switch for each conventional repeater channel and/or base station.
- G. On conventional resources capable of operating on multiple frequencies/modes, a control/indicator shall be provided to select the desired transmit frequency/mode (select channel). The select-channel function shall cause the associated channel to switch frequencies/modes. Once a channel has been selected, the operator shall be able to transmit on this channel by pressing the footswitch or transmit button.
- H. A transmit-audio-level meter shall be provided that indicates the level of transmitted voice. This meter also shall indicate the level of receive audio present on the selected channel.
- I. Operator positions shall have the ability to independently set each channel's volume level. Minimum audio levels shall be capable of being set to avoid missed calls.
- J. A control/indicator shall be provided to allow the operator to mute or unmute audio from unselected channels. Selected audio and unselected audio shall be audible from separate speakers.
- K. A control/indicator shall be provided that enables the operator to select multiple channels, which in turn gives the dispatcher the ability to broadcast to several channels at once.
- L. Operators shall have the ability to patch two or more conventional repeaters and/or base stations together so that users may communicate directly. Operator positions shall be equipped such that a minimum of eight simultaneous patches shall be available.
- M. To enhance dispatcher effectiveness in a PTT ID system, the various display modes available shall interact as follows:
 - 1. An operator shall have the capability of setting up (and subsequently knocking down) an emergency call from the dispatch console position.
 - 2. An OPTION shall be provided to allow private communication between a dispatch console operator and a radio user. Once the operator is involved in a private call on a specific resource, the operator shall not receive audio from another radio attempting to call on that same resource.

3. An OPTION shall be provided that assigns priority to associated talkgroups. The dispatcher shall have the choice between normal preset priority and tactical priority, with tactical being the second-highest priority for a talkgroup in a system.
- N. In the cases of multi-talkgroup transmit or talkgroup patch, the use of more than one trunked repeater shall not be allowed; the talkgroups shall be merged onto a single repeater to conserve repeaters.
- O. It shall be possible to temporarily mute unselected talkgroups. The unselected audio will un-mute automatically after a programmable preset time. Mute shall be 20 dB minimum.
- P. Dispatch consoles shall have the capability to patch together two or more talkgroups so that users may communicate directly.
- Q. If the dispatcher attempts to make a call on a trunked radio system connected to the dispatch consoles and all trunked channels are busy, visual and audible alerts will be initiated at the dispatch consoles.

6.3. CONVENTIONAL REQUIREMENTS

- A. Dispatch equipment shall include an instant transmit switch for each conventional repeater channel and/or base station.
- B. On conventional resources capable of operating on multiple frequencies/modes, a control/indicator shall be provided to select the desired transmit frequency/mode (select channel). The select-channel function shall cause the associated channel to switch frequencies/modes. Once a channel has been selected, the operator shall be able to transmit on this channel by pressing the footswitch or transmit button.
- C. A transmit-audio-level meter shall be provided that indicates the level of transmitted voice. This meter also shall indicate the level of receive audio present on the selected channel.
- D. Operator positions shall have the ability to independently set each channel's volume level. Minimum audio levels shall be capable of being set to avoid missed calls.
- E. A control/indicator shall be provided to allow the operator to mute or unmute audio from unselected channels. Selected audio and unselected audio shall be audible from separate speakers.
- F. A control/indicator shall be provided that enables the operator to select multiple channels, which in turn gives the dispatcher the ability to broadcast to several channels at once.

- G. Operators shall have the ability to patch two or more conventional repeaters and/or base stations together so that users may communicate directly. Operator positions shall be equipped such that a minimum of eight simultaneous patches shall be available.
- H. To aid dispatchers in a busy system, a list of the last 15 radio IDs shall be available in a "recent calls" list.

6.4. PAGING REQUIREMENTS

- A. Consoles shall support current signaling methods as well the proposed paging format. Additional features shall be described.
- B. Respondents shall describe the following paging formats supported:
 - 1. Quick Call I
 - 2. Quick Call II
 - 3. Dual-tone multi-frequency (DTMF)
 - 4. MDC-1200 selective call
 - 5. Trunking call alert
 - 6. Post Office Code Standardization Advisory Group (POCSAG) 512/1200/2400 bits
- C. Preprogrammed pages and groups shall be created and modified using the console alias database program.
- D. A manual page feature shall be provided.
- E. A visible indication shall be given when each page ends.
- F. A list of standard pages shall be created to enable the operator to select or stack pages to be sent to multiple recipients.
- G. An instant page feature shall allow operators to send multiple pages with the single press of a button.
- H. Consoles shall be capable of transmitting at least three distinctive alert tones indicating to field units the priority or type of dispatch to follow.

6.5. SYSTEMS INTEGRATION

- A. The console system shall integrate with a minimum of 20 conventional channels utilized by the County at the 911 center.
- B. The dispatch console system shall support interfaces with the Smart Cop computer-aided dispatch (CAD) system in use by Okaloosa County to provide the ability for the CAD system to display the radio system unit ID, user alias, and talkgroup information.

- C. The dispatch console system shall support connections to both existing resources and conventional resources as determined by the County.

6.6. LOGGING RECORDER

- A. Respondents shall propose a logging recorder solution that will interface with the County's existing Verint® Audiolog utilized for 911 telephony and radio. The proposal must include any required upgrades necessary to the Verint logging recorder for integration with the proposed radio system. The proposed solution must provide a single Verint portal that can access both radio traffic and telephony.
- B. The County's Verint Audiolog is managed by Replay Systems. The selected Respondent shall subcontract with Replay Systems for any required updates or integration to the logging recorder.
- C. The logging recorder shall be provided for each talkgroup used for primary dispatch and select tactical talkgroups, as well as selected receive audio and the operator's transmit audio for each dispatch position. The recorder shall support recording the maximum number of proposed simultaneous talk paths, plus audio from the four console positions at the dispatch centers.
- D. The County desires a logging recorder link that will support a direct connection without requiring a conventional interface. Respondents must include any required application program interface (API) associated with completing the connection. Respondents shall identify within their proposals all requirements necessary to complete the interface.

6.7. OPERATOR POSITION EQUIPMENT

- A. All equipment supplied for use by the dispatch operators shall be capable of withstanding the 24 hours a day, 7 days a week (24 x 7) environment of today's dispatch centers.
- B. All equipment supplied for use by the dispatch operators shall be integrated into the existing console furniture at the dispatch locations.
- C. Operator position display monitors will be, at a minimum, 19-inch liquid crystal display (LCD) or LED screens, with resolution of 1920 x 1080 or better.
- D. Keyboards shall be a standard 101-key keyboard.
- E. Operator functions shall be executed by positioning a screen pointer (cursor) over the appropriate icon and pressing the mouse button, or by touching the monitor screen.
- F. A high-quality gooseneck-type microphone shall be provided for each operator position.
- G. Headset jacks shall be provided that enable the operator to hear select audio via a headset and allow the operator to respond via a microphone attached to the headset.

The headset plug inserted into the jack shall automatically disconnect the console's microphone and mute the select speakers.

- H. Optional pricing for wireless headsets shall be provided by the Respondents.
- I. A heavy-duty footswitch shall be provided to allow the operator to key the selected channel hands-free.
- J. If PCs are supplied, they shall be capable of providing a graphical user interface (GUI) using the Microsoft® Windows 10 operating system, be capable of local-area network (LAN) client-server architecture for network access, and be capable of supporting multiple Microsoft® Windows 10-compliant applications.
- K. PCs supplied shall be based on present state-of-the-art PC technology.

6.8. COMMON ELECTRONICS EQUIPMENT

- A. The common electronics equipment shall contain all equipment necessary to route audio and control signals between the dispatch operator positions and the proposed P25 system.
- B. The common electronics equipment shall be capable of controlling the proposed P25 trunked system.
- C. The common electronics equipment shall be capable of controlling the channels required/proposed.
- D. The common electronics equipment shall not have a single point of failure. Redundant cards and power supplies shall be used when feasible.
- E. The common electronics equipment shall be connected to the radio system directly; RF control stations shall not be used as primary connection to the radio system.
- F. The common electronics equipment shall be capable of receiving alarm information from distant communications sites and displaying this information on the dispatch screen.
- G. The common electronics equipment shall allow for a remote dispatch position. This remote dispatch position shall be connected via a local area network/wide area network (LAN/WAN) connection.

7. WARRANTY, MAINTENANCE, AND SUPPORT

7.1. WARRANTY

- A. The proposed communications system shall have a warranty period of one year. The one-year warranty period shall commence upon final acceptance.

- B. All services identified in Section 7.2, Maintenance, shall be included within the warranty period.
- C. Respondents shall provide a single toll-free telephone number that answers 24 x 7, 365 days a year, for service requests and warranty claims.
- D. Respondents shall state in their proposals the name, address, and capabilities of the service facility(ies) providing warranty service.
- E. The following procedures shall be followed during the warranty period:
 - 1. Warranty maintenance shall be performed 24 hours a day with no additional charges for work on critical infrastructure outside of normal 8:00 a.m. to 5:00 p.m. business hours.
 - 2. The service facility shall provide prompt repair service, with service personnel arriving onsite within two hours after a service request by the County and returning the system to service within four hours after a service request by the County.
 - 3. On-call County technical personnel shall be notified when service personnel have been dispatched and be given the opportunity to accompany the warranty provider.
 - 4. The County shall be provided with written documentation indicating the cause of the service outage, the resolution, and all post-repair testing procedures to ensure proper operation. In the event County-owned spares are used to complete the repair, the model and serial number of both the defective unit and the spare shall be noted in the documentation.
 - 5. For all equipment needing factory or depot repairs, a comprehensive tracking system shall be put in place by the selected Respondent to track units to and from the factory/depot.

7.2. MAINTENANCE

- A. The selected Respondent shall maintain and repair all systems, equipment, hardware, and software throughout the implementation, migration, and warranty periods. The County reserves the right to have technical staff onsite to witness, and if desired, assist in the maintenance and troubleshooting procedures. This does not relieve the selected Respondent from its warranty and maintenance responsibilities as defined in this document.

7.2.1. *General Requirements*

- A. The approach to maintenance of this system shall be one of preventive maintenance.
- B. Comprehensive maintenance services shall be proposed for each system.

- C. Maintenance plans should be based on the quantities of equipment included in the proposed system. Plans shall include yearly pricing for years 2 through 15 following system acceptance (year one is provided under warranty). Pricing shall be broken out according to each of the services defined below. These plans shall include:
1. Fixed equipment onsite service
 - a. Two-hour response time, four-hour restoration time
 2. Fixed equipment mail-in board repair
 - a. Emergency response: next day
 3. All fixed equipment maintenance plans shall provide 24-hour system support so that users can dial one toll-free number to report problems and/or receive technical support.
 4. The selected Respondent's staff will dispatch the proper technician in the prescribed response time to resolve the problem, if Respondent is unable to resolve the problem through telephone consultation.
 5. Maintenance plans shall include a semiannual preventive-maintenance check to include a retune of all RF components, including base stations, subscriber radios, and microwave radios. The retune should restore components to the manufacturer specifications.
 6. Maintenance plans shall include 24 x 7 system monitoring and dispatch services.
 7. Maintenance plans shall include the regular update of antivirus software on all servers and workstations.
 8. OPTION – Respondents shall propose a tower maintenance package for any new raw-land sites. The tower maintenance package shall include all activities that may be required to maintain the proposed tower locations, including but not limited to annual inspections, light changes, painting, guy-wire tensioning, and treatment for rust.
 9. OPTION – Respondents shall include a radio compound maintenance package for any new raw-land sites or sites where new shelters have been proposed. The compound maintenance shall include all activities that may be required to maintain the proposed radio site compound, including but not limited to annual testing of the subterranean grounding system, treatment of weeds, ensuring adequate gravel cover of compound, and providing preventive maintenance of the equipment shelter. .
 10. OPTION – Respondents shall include a generator maintenance package for any sites where new generators are proposed. The generator maintenance package shall

include all activities that may be required to maintain the proposed generators, including but not limited to annual inspections, facilitation of weekly testing, regular as-needed refueling, oil changes, and tune-ups.

7.2.2. *Maintenance Standards*

- A. Replacement parts used in repairs shall be equal in quality and ratings to the original parts.
- B. Equipment shall be maintained in a clean condition. Oil, dust, and other foreign substances shall be removed on a routine basis.
- C. Equipment and system performance shall be maintained at the level initially described in these equipment and systems specifications. The service organization shall maintain records to confirm this has been done at intervals defined by the County.
- D. Respondents shall provide only factory-trained and -authorized maintenance personnel.
- E. If fixed equipment or a fixed equipment module fails more than twice during the acceptance test or twice during the first year, the Respondent shall meet with the County to discuss and explain such failures. If, in the opinion of the County, these failures indicate that the equipment is potentially prone to continuing failures, the selected Respondent shall replace it at no cost to the County.
- F. Automatic system alerts generated via email or short message service (SMS) and sent to maintenance personnel that indicate system impairment shall constitute an actionable event requiring technician response.

7.3. PARTS AVAILABILITY

- A. From the date of final acceptance to the seventh anniversary of the date of final acceptance, the selected Respondent shall maintain replacement parts for all delivered equipment.
- B. In the event the selected Respondent plans to discontinue stocking any part required for maintenance after the seventh anniversary of final acceptance, the Respondent shall send written notice to the County 24 months prior to the date of discontinuance, to allow for last-time buys and replenishment.
- C. In the event the selected Respondent plans to discontinue manufacturing any part required for maintenance, the Respondent shall notify the County within one week following the publication of the cancellation notice. The manufacturer shall sufficiently stock the parts to be made available to the County for a minimum period of five years following cancellation.

- D. All parts ordered on a priority basis shall be delivered within 24 hours after placing an order. Respondents shall provide year-round, 24-hour ordering facilities via telephone, Internet, email, and fax service.

7.4. SPARE EQUIPMENT

- A. Respondents shall propose recommended spare parts for the system, subsystems, and individual equipment in their proposals.
- B. The list of spare parts shall include the following, at a minimum:
 - 1. Any vendor-identified field-replaceable units (FRUs)
 - 2. Any infrastructure component that does not have FRUs that can cause a critical failure if it were to fail; e.g., base station antennas and other non-modular components
 - 3. Power supplies
 - 4. Spares for less-critical items
- C. The list shall include items that will rapidly and completely restore all critical system functionality with the least amount of effort, e.g., board replacement instead of troubleshooting to the component level when a critical unit has failed.
- D. The quantities of spares in the list shall be appropriately sized to accommodate equipment quantities in the system.
- E. The list shall define the primary equipment category each spare kit supports, e.g., transceiver board for a repeater, interface board for a console, etc.
- F. The system engineering design documentation shall include a narrative on the Respondent's ability to replace failed units from stock, as well as the process and timing to repair, replace, and return failed units delivered for repair.
- G. System engineering design documentation also shall include the lifecycle of equipment, parts, and other maintenance support for the system.
- H. Spares shall be included in any system update to keep them current.

7.5. LIFECYCLE COST

- A. Respondents shall propose an extended warranty for additional years beyond the initial warranty, renewable on an annual basis. Pricing shall be provided for years 2 through 15 following system acceptance.
- B. Respondents shall propose a complete hardware and software maintenance package that provides a complete cost of ownership for the system(s) being offered to the County. The package should include system release updates, and hardware updates for those

components that reach end of life (EOL) within the support period. Costs associated with the cost of ownership should be provided for years 2 through 15 following system acceptance.

- C. Respondents shall fully describe the terms and conditions of the extended maintenance plan in their proposals.

8. SYSTEM IMPLEMENTATION, TESTING, AND ACCEPTANCE

8.1. GENERAL

- A. The selected Respondent shall attend biweekly project and construction meetings as deemed necessary by the County prior to and during installation. Additional meetings may be scheduled at the discretion of the County.
- B. If any changes in the overall timeline occur, the selected Respondent shall update the project schedule for discussion during these project meetings.
- C. The selected Respondent shall provide written minutes of all meetings no later than five business days after the meeting.

8.2. SYSTEM INSTALLATION

- A. Installation shall include a complete, tested system to include placement of associated cabling, appropriate system layout, and terminal connections. The selected Respondent shall provide associated power supplies and any other hardware, adapters, and/or connections to deliver a complete operable system to the County at the time of acceptance.
- B. All installations shall be performed by factory-authorized or Respondent-affiliated service shops. Other shops or installers may be used upon mutual agreement between the County and Respondent. Qualified, adequately trained personnel familiar with this type of work shall perform all installations. Respondents shall provide the names of the service shops, their qualifications, a description of their certified training on the proposed system, a summary of their experience and a list of five references (minimum) for each proposed shop.
- C. Prior to the start of system installation, the selected Respondent shall participate in a mandatory project site survey with the County or County's representative to confirm actual equipment location within each space. At that time, the exact equipment locations shall be determined and documented by the selected Respondent.
- D. The selected Respondent shall coordinate with others, as appropriate, to confirm that any preparation work that affects the installation of the base station equipment, such as tower work, coring, bracing, conduit, electrical, etc., is complete before final inspection.

- E. The selected Respondent shall provide and pay for all materials necessary for the execution and completion of all work. Unless otherwise specified, all materials incorporated into the permanent work shall be new and shall meet the requirements of this specifications document. All materials furnished and work completed shall be subject to inspection by the County or the County's representative.
- F. Equipment supplied as spare equipment shall not be used for installation of the proposed system. All spare equipment shall be supplied in an unused condition.
- G. All equipment and devices shall be cleaned internally and externally, and all damaged finishes shall be repaired.
- H. Worksites shall be left neat and be broom swept upon completion of work each day. All shelter floors will be cleaned thoroughly, and all scuff marks and abrasions shall be removed prior to acceptance. All trash shall be removed weekly.
- I. Inspection
 - 1. The County shall conduct an inspection of the installations upon substantial completion. Any deficiencies shall be documented on a single punch list and provided to the Respondent for resolution.
 - 2. Final acceptance testing shall not commence until all punch-list items are resolved.

8.3. CUTOVER PLAN

- A. The selected Respondent shall be responsible for planning and coordinating the implementation of all equipment, subsystems, and the overall system.
- B. Execution of the cutover plan shall ensure that new systems are brought online with minimum interruption to all existing systems and communications.
- C. During final design, the selected Respondent shall deliver a preliminary cutover plan describing how the radio system will be phased into a fully operational system.
 - 1. The selected Respondent shall successfully complete all tests and training prior to the actual cutover of systems.
 - 2. The selected Respondent shall provide the necessary labor to cutover from existing systems to the new system.
 - 3. The plan shall include the schedule and procedures associated with the transition of each operational user group. The plan shall specifically address how the existing users will begin using the new system with minimal operational impact.

4. The plan shall provide detailed component or subsystem cutover plans, and specifically delineate between systems that affect and do not affect ongoing operations.
5. The plan shall include contingencies.
6. The County reserves the right to approve and change the cutover plan as it relates to any or all system components.

8.4. STAGING

- A. Each individual assembly or equipment unit shall undergo factory testing prior to shipment.
- B. Standard factory test documentation, documenting the tests performed and indicating successful completion of testing, shall be submitted to the County.
- C. System Staging
 1. The complete system shall be staged and tested at the factory, in the United States, to the greatest extent practical. The intent of the staging tests is to demonstrate to the County that the system is ready for shipment and installation. The selected Respondent shall provide travel expense coverage for three County personnel and two engineer/consultants to participate in the SATP.
 2. The selected Respondent shall provide all necessary technical personnel and test equipment to conduct staging tests. All deviations, anomalies, and test failures shall be resolved at the selected Respondent's expense.
 3. The selected Respondent shall use an approved SATP. It is expected that a preliminary SATP has been performed and all tests have been successful before the County witnesses the official SATP. The SATP shall be signed and dated by the selected Respondent and County representatives and engineers/consultants following completion of all tests. All tests in the SATP shall be marked as either pass, fail, or pass qualify.
 4. Failed tests shall be documented, corrected, and retested. All defective components shall be replaced and retested. Defective components that cannot be corrected shall be replaced at the expense of the selected Respondent.
 5. Retest of individual failed SATP tests or the entire plan shall be at the County's discretion.
 6. The fully executed and completed SATP document shall be provided to the County.

7. Major subsystems, such as the microwave system, may be tested at a different facility, at a different time, from the radio system. However, all items identified above shall apply if the subsystems are staged at different locations and times.

8.5. COVERAGE TESTING

- A. Respondents shall submit a preliminary CATP with their proposals. The final CATP shall be submitted during the final design stage of the project.

B. CATP

1. The CATP shall be consistent with the procedures and guidelines outlined in TIA TSB-88, latest revision.
2. Retries only will be allowed if there is a proven equipment failure.
3. Coverage testing shall commence only after the radio system is fully tested and aligned. Changes to the system by the selected Respondent that could potentially change coverage shall require retesting of coverage at the County's discretion, and at no cost to the County.
4. The selected Respondent shall perform two types of coverage testing. Each type of test will include an inbound test and an outbound test. Both types of testing shall be complementary and serve to fully verify that coverage requirements are met both technically and operationally.
 - a. Automated objective mobile drive testing
 - b. Non-automated subjective DAQ testing (intelligibility testing)
5. In the interest of avoiding large system dead spots, the failure of five or more adjoining grids shall deem the coverage test a failure. Retesting of the entire coverage area shall only be performed after the selected Respondent has demonstrated corrective action to address the coverage gap.
6. Test Configurations
 - a. Testing configurations for the objective and subjective testing shall represent typical operating configurations to the greatest extent possible, using portable and mobile radio equipment to be used with the system.
 - b. Automated Objective Mobile Drive Testing

- i. The selected Respondent shall test both the signal level and BER, as applicable, at a statistically significant number of test locations throughout the county utilizing automated test equipment.
 - ii. Both outbound (talk-out) and inbound (talk-in) BER testing shall be conducted.
 - iii. The County requires BER testing conducted at a failure rate of two percent for FDMA and 2.4 percent for TDMA.
 - iv. For testing purposes, the county shall be divided into $\frac{1}{4}$ -square-mile bins ($\frac{1}{2}$ -mile by $\frac{1}{2}$ -mile). The selected Respondent or its subcontractor(s) may subdivide grids if necessary.
 - v. The selected Respondent shall complete the “estimate of proportions” test identified in TSB-88 to validate that $\frac{1}{2}$ -mile by $\frac{1}{2}$ -mile grids yield a sufficient number of test points to achieve statistical significance, accounting for inaccessible grids. If there are an insufficient number of grids, then smaller grid sizes shall be proposed.
 - vi. Inaccessible grids shall not count as either a pass or fail in the statistical analysis.
 - vii. The selected Respondent shall not be allowed to retest any failed grids without authorization from the County.
 - viii. The selected Respondent shall develop a link budget to ensure that the receiver utilized in the automated drive testing receives the equivalent signal strength of the specified coverage configuration (i.e., portable radio worn at hip level). The selected Respondent shall utilize attenuators to properly account for gains and losses of the testing setup, plus any required in-building losses.
 - ix. All test equipment must be calibrated prior to testing, and signal losses through each component must be tested.
 - x. The selected Respondent shall provide an NMO adaptor to test signal losses through the testing antenna port and cable.
- c. Non-automated Subjective DAQ Testing
- i. Non-automated subjective DAQ coverage testing shall be conducted using typical portable radios supplied with the system.
 - ii. Talk-out and talk-in performance shall be documented.
 - iii. The selected Respondent shall provide a standardized test form for testing.
 - iv. Retries are not permitted.
 - v. Automatic audio capture shall be an acceptable method of completing this test and is preferred if available.
- d. The selected Respondent shall guarantee coverage for both subjective and objective drive testing at the levels specified.

- e. Both the objective and subjective tests must independently yield a ratio of passing grids to total grids tested greater than the mandated coverage percentages.

8.6. 30-DAY OPERATIONAL TEST

- A. The selected Respondent shall perform a 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 fully integrated operation of the system, including all individual subsystems, shall be demonstrated during these tests. The tests shall be designed to demonstrate the reliability, long-term stability, and maintainability of the systems. A failure of any critical component of the system during this test will cause the test to restart after the repair is completed. The selected Respondent and the County shall agree on what constitutes a critical failure prior to commencing this test.
- B. The selected Respondent shall provide a 30-day operational test plan during the preliminary design phase.

8.7. TRAINING

- A. The selected Respondent shall develop and conduct training programs to allow personnel to become knowledgeable with the system, subsystems, and individual equipment.
- B. The selected Respondent shall provide complete and comprehensive system management training for up to 12 staff charged with managing the system. This training shall include the following, at a minimum:
 - 1. System theory of operation
 - 2. Monitoring and managing the system's performance (system manager level)
 - 3. System monitoring techniques
 - 4. Writing and printing system reports
- C. The selected Respondent shall provide complete and comprehensive operational training for up to 20 user agency dispatchers on the provided dispatch console systems. This training shall include the following, at a minimum:
 - 1. Setup and use of all functional elements and features included in the consoles
 - 2. All GUI elements, manipulation, function, and use
 - 3. Patching and multiple talkgroup operation
 - 4. Use of headsets, microphones, speakers, and mouse controls
- D. The selected Respondent shall provide operator train-the-trainer for up to 50 end user personnel on the proper operation and care of assigned mobile and portable radio equipment. This training shall include the following, at a minimum:

1. Proper microphone technique
 2. Button, knob, and keypad functionality as programmed for that agency
 3. Proper battery maintenance
 4. Screen icon interpretation and meaning
- E. Respondents shall fully describe all proposed training programs in their proposals detailing how the Respondent intends to provide training. The training description shall include the following:
1. A list of all subjects with a description of each
 2. Class materials to be provided by the Respondent
 3. Number of classes
 4. Class duration
 5. Need for recurring training
 6. Class size
 7. Class cost
- F. All operator training shall be conducted at “to be determined” locations within Okaloosa County. System management training shall be provided on the Okaloosa County system where practical. Technical training requiring lab and live system training may be scheduled at the selected Respondent’s training facility. The selected Respondent shall coordinate with the County regarding the number of attendees and schedule at least one month prior to the first scheduled class.
- G. Classes shall be scheduled as near to system cutover as possible. The selected Respondent shall work with the County to develop the schedule.
- H. The selected Respondent shall provide all instructional materials, including printed manuals, audiovisual presentations, interactive self-paced PC programs, and complete equipment operating instructions for all technical and operational training classes.
1. Actual and/or exact model and series of equipment being delivered shall be made available for hands-on use and operation during training.
 2. All instructional materials shall be subject to the approval of the County and shall become property of the County.
 3. Additional training courseware and related media to be used in future academy training and refresher training shall be provided in a reproducible format with no limitation on the number of copies to be reproduced for training use. At least one hard copy and an electronic copy (on compact disc [CD] or USB stick) of all materials shall be provided.

8.8. FINAL ACCEPTANCE TESTING

A. Prior to final acceptance testing, the selected Respondent shall verify and document that all equipment, hardware, and software are upgraded to the latest factory revision including subscribers. Multiple revision levels among similar equipment are not acceptable. An FATP may not proceed without an agreed-upon final acceptance plan. This plan will be submitted to the County at least 45 days before testing. No testing may begin without County approval of the plan. The County shall be given two weeks written notice that the system is ready for final acceptance testing.

B. FATP

1. The selected Respondent shall use the completed and approved FATP. It is expected that a preliminary FATP has been performed and all tests have been successful before the County witnesses the official FATP. The FATP shall be signed and dated by the selected Respondent and County representatives following completion of all tests. All tests in the FATP shall be marked as either pass, fail, or pass qualify.
2. The selected Respondent shall provide all necessary technical personnel and test equipment to conduct FATP tests. All deviations, anomalies, and test failures shall be resolved at the selected Respondent's expense.
3. Failed tests shall be documented, corrected, and retested. All defective components shall be replaced and retested. Defective components that cannot be corrected shall be replaced at the selected Respondent's expense.
4. Retest of individual failed FATP tests or the entire plan shall be at the County's discretion.
5. The fully executed and completed FATP document shall be provided to the County.

8.9. AS-BUILT DOCUMENTATION

A. At the completion of the installation phase, the selected Respondent shall provide complete as-built documentation as outlined below:

1. Equipment provided
2. Plan and elevation drawings of all equipment, including antennas on towers
3. Cabling and terminations
4. Block and system-level diagrams
5. Programming
6. Setup and alignment information
7. Successfully completed, signed, and dated SATP

8.10. SYSTEM ACCEPTANCE

- A. The County shall deem the system ready for final acceptance following successful completion and approval of the following:
 - 1. Final design submittals
 - 2. SATP
 - 3. System installation
 - 4. Final inspection and punch-list resolution
 - 5. As-built documentation
 - 6. FATP, including CATP
 - 7. 30-day operational test completion
 - 8. Training

9. SUBSCRIBER EQUIPMENT

9.1. OVERVIEW

- A. Subscriber equipment includes all 700/800 MHz band, non-fixed user equipment, such as:
 - 1. 1,047 portable radios
 - 2. 771 mobile radios
 - 3. 31 control stations
- B. There are an estimated 1,818 subscriber radios (portable and mobile) that will need to be replaced across primary system users to ensure compliance with a P25 700/800 MHz system. While the County intends to directly purchase all subscribers required for system deployment, subscriber radio proposals submitted in response to this solicitation must permit direct purchasing by any municipality, local government, or public safety entity on the Okaloosa County system, at the discounted pricing levels provided.
- C. Given the large number of subscriber radio replacements required, Respondents are encouraged to provide competitive pricing and bulk-purchase discounts and incentives.
- D. Respondents shall provide unit pricing for all user subscriber equipment and accessories. Pricing information shall be provided for the full range of installation configurations offered by the Respondent, with the specific installation costs for each.
- E. Respondents shall provide an LMR-over-cellular network solution as an OPTION to the County. Pricing shall include all needed equipment, labor, project management, and licensing for the proposed solution. A minimum of 100 user licenses is sought, with pricing for additional blocks of licenses.

9.2. GENERAL REQUIREMENTS

- A. All subscriber equipment shall be of high quality and intended to provide high reliability under heavy use in severe environments. Equipment shall be type-accepted by the FCC in accordance with the Commission's Part 90 Rules and Regulations.
- B. All subscriber equipment shall meet MIL-STD-810 C, D, E, and F.
- C. All subscriber equipment shall be software programmable.
- D. All subscriber equipment shall support the following operating modes:
 - 1. Conventional analog FM network
 - 2. Conventional analog FM off-network (talkaround)
 - 3. Conventional P25 Phase I network
 - 4. Conventional P25 Phase I off-network (talkaround)
 - 5. Trunked P25 Phase II network (if a P25 Phase II network is proposed)
- E. All equipment shall be programmed for operation on the proposed system that will be procured through this ITN.
- F. Respondents shall propose a comprehensive subscriber maintenance program that includes provisions for subscriber repair and preventive maintenance on annual and biannual schedules.

9.2.1. *Portable Radios*

- A. Respondents shall provide pricing for portable radios in the pricing forms found in Appendix D: Proposal Pricing Instructions. There are approximately 1,047 portable radios on the system that will need to be replaced. All portables shall be included under Model 2 (see description below) for the purposes of the proposal; however, unit pricing shall be included for the other models as well as all available feature sets. The municipality, local government, or public safety entity will select the desired model and feature(s).
- B. Respondents shall include unit programming.
- C. As an OPTION, Respondents shall propose radios certified as intrinsically safe.
- D. Respondents shall provide the highest-tier product available, highly reliable, and intended for mission-critical operations. Pricing shall be provided for a minimum of three models:
 - 1. Model 1: Basic model, typically identified with no keypad or display
 - 2. Model 2: Mid-range model, typically identified with limited keypad and display
 - 3. Model 3: Advanced model, typically identified with full keypad and display

E. Features

1. Full compliance with P25 features and operation
2. PTT button
3. Top-mounted on/off volume knob
4. Talkgroup/channel selector
5. Emergency button, protected from inadvertent activation
6. Alphanumeric display (on applicable models), minimum of eight characters
7. Transmit indicator
8. OPTIONAL – OTAP and associated fixed equipment
9. OPTIONAL – OTAR and associated fixed equipment
10. OPTIONAL – Subscriber radio GPS and associated fixed equipment
11. OPTIONAL – Noise cancellation

F. Battery

1. Respondents shall provide pricing for a battery sized to support a 12-hour shift.
2. Respondents shall propose batteries certified as intrinsically safe as an OPTION.
3. Batteries shall provide a minimum operational use of eight hours based on a 5-5-90 duty cycle.
4. Recharge time to full capacity shall not exceed one hour.
5. Lithium-ion batteries are required.
6. Respondents shall provide detailed specifications for all batteries proposed, including the following, at a minimum:
 - a. Battery life
 - b. Total battery lifecycle expectancy
 - c. Recharge time
 - d. Dimensions
 - e. Weight
 - f. Warranty

G. Accessories: Respondents shall provide, as a base proposal, 275 wired remote speaker microphones for law enforcement with a standard swivel case and single charger. OPTIONAL pricing for all accessories, including the following, shall be provided at a minimum:

1. AES encryption
2. Data cables
3. Battery chargers

- a. Single-bay battery charger
 - b. Multiple-bay battery charger
 - c. Vehicular charger
 4. Alternate antennas
 5. Remote speaker microphone
 6. Remote speaker microphone with antenna
 7. Wireless remote speaker microphone
 8. Large/rugged remote speaker microphone for high-noise environments
 9. Headset
 - a. Wired
 - b. Wireless/Bluetooth
 10. Carrying cases/belt clips
- H. Respondents shall provide detailed equipment specifications for all proposed portables and accessories, including the following information:
1. Radio dimensions
 2. Radio weight with battery
 3. Antenna type
 4. Frequency channel capacity
 5. General features, transmit/receive parameters, and mechanical specifications
- I. Multiband portable radios
1. As an OPTION, Respondents shall provide multiband portable radios capable of operating in the following frequency bands:
 - a. VHF: 136–174 MHz
 - b. UHF: 380–520 MHz
 - c. 700/800 MHz: 762–870 MHz
 2. Respondents shall provide detailed specifications for radios and all accessories.

9.2.2. *Mobile Radios/Control Stations*

- A. Respondents shall provide pricing for mobile radios and control stations in the pricing forms found in Appendix D: Proposal Pricing Instructions. There are approximately 771 mobiles and 31 control station radios on the system that will need to be replaced. All mobile radios and control stations shall be included as dash-mount Model 2 (mid-tier) for the purposes of the proposal; however, unit pricing shall be included for remote mounts, as well as all available configurations and feature sets.
- B. Pricing shall include installation and programming.

- C. Respondents shall provide pricing for a minimum of three tiers with the base proposal cost at the mid-tier.
- D. Mobile radios shall be supplied complete with microphone, external speaker, cables, fusing, mounting hardware, coaxial cable, and antennas to provide for a complete installation.
- E. Control station radios shall be supplied complete with desk microphone, speaker, cables, coaxial cable, and omnidirectional antennas to provide for a complete installation.
- F. OPTIONAL: Control station configurations shall be offered with both a desk set console setup with built-in power supply and as a mobile radio with a DC power supply.
- G. Respondents shall provide pricing for dash-mounted units and remote-mounted units.
- H. Features
 - 1. Full compliance with P25 features and operation
 - 2. Remote speaker microphones
 - 3. Front-mounted on/off volume knob
 - 4. Talkgroup/channel selector
 - 5. Emergency button, protected from inadvertent activation
 - 6. Alphanumeric display
 - 7. Transmit indicator
 - 8. Dash- and remote-mount configurations
 - 9. OPTIONAL – OTAP and associated fixed equipment
 - 10. OPTIONAL – OTAR and associated fixed equipment
 - 11. OPTIONAL – Subscriber radio GPS and associated fixed equipment
 - 12. OPTIONAL – Noise cancellation
 - 13. OPTIONAL – Control station combiners for configurations supporting 4/8/12/16/32 ports
- I. Accessories: Respondents shall provide OPTIONAL pricing for all accessories, including the following, at a minimum:
 - 1. AES encryption
 - 2. Cables
 - a. Data cables
 - b. Extension cables
 - c. Adapters
 - d. Power cables
 - 3. Antennas
 - 4. External speakers

5. Public address kits
 6. Remote speaker microphones
 7. Desktop microphone (control stations only)
 8. GPS functionality and associated fixed network hardware
 9. Mobile data interface
- J. Respondents shall provide detailed equipment specifications for all proposed mobiles and accessories, including the following information:
1. Radio dimensions
 2. Radio weight with battery
 3. Antenna type
 4. Frequency channel capacity
 5. General features, transmit/receive parameters, and mechanical specifications
- K. Multiband mobile radios
1. As an OPTION, Respondents shall provide multiband mobile radios capable of operating in the following frequency bands:
 - a. VHF: 136 – 174 MHz
 - b. UHF: 380 – 520 MHz
 - c. 700/800 MHz: 762 – 870 MHz
 2. Respondents shall provide detailed specifications for radios and all accessories.

9.2.3. *Fleet Mapping*

- A. The selected Respondent shall develop the actual fleet map with input and direction from the County. The fleet map shall contain at a minimum:
1. Talkgroup ID
 2. Agency
 3. Emergency actions
 4. Encryption capability
 5. Roaming capability
 6. Priority
 7. Scan
- B. The selected Respondent also shall develop subscriber unit programming templates. These templates shall have the basic features and functions defined for a particular subscriber unit and user type. Templates shall be developed on a per-agency basis.
- C. Once the fleet map and templates are approved and completed, the selected Respondent shall use these for installation of subscriber units and for further

configuration of the system. The selected Respondent shall submit these with the final as-built documentation.

9.3. SUBSCRIBER WARRANTY AND MAINTENANCE

9.3.1. *Subscriber Warranty*

- A. Respondents shall offer a subscriber radio warranty that commences on final acceptance of the County's P25 system or upon delivery of the radios, whichever is later; any subsequent purchases shall include warranty periods of at least one year that co-terminate with the warranty or maintenance periods of any previously purchased radios, unless otherwise agreed by the purchasing entity. The warranty shall include the repair of any radio that fails due to manufacturer defects within the warranty period, at no additional cost to the owning agency.

9.3.2. *Subscriber Maintenance*

- A. Respondents shall offer subscriber maintenance plans on a recurring fee structure to provide added services and coverage beyond the initial warranty period. Respondents shall provide pricing in the pricing forms found in Appendix D: Proposal Pricing Instructions for the following subscriber maintenance packages:
 1. Extended warranty beyond the initial warranty period for failures that occur due to manufacturer defects or normal wear and tear
 2. Preventive maintenance plan to restore the radios to the manufacturer's specifications at the following recurring intervals:
 - a. One year
 - b. Two years
 3. Accidental damage replacement plan to cover the repair or replacement of radios that have failed due to accidental damage, at no additional cost to the owning agency
- B. Respondents shall offer subscriber maintenance pricing on a per-request fee structure to provide added services and coverage beyond the initial warranty period. Respondents shall provide pricing in the pricing forms found in Appendix D: Proposal Pricing Instructions for the following subscriber maintenance services:
 1. Factory repair of a radio that has failed due to manufacturer defects or normal wear and tear
 2. Preventive maintenance to restore the radios to the manufacturer's specifications
 3. Factory repair of a radio that has failed due to accidental damage

4. Programming of a radio to update the radio's programming parameters
5. Programming of a radio to update the radio's firmware (firmware purchased separately)

GLOSSARY OF TERMS AND ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
AC	Alternating current
agency	Term that applies generically to any local, state, federal entity or organization, such as: a department, division, city/town, or bureau. Includes: government, quasi-government and private groups
ANSI	American National Standards Institute
APCO	Association of Public-Safety Communications Officials–International
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing Materials
ATPC	Automatic transmit power control
ATS	Automatic transfer switch
AWG	American wire gauge
backhaul	The transporting of radio communications traffic between distributed sites (typically access points) and more centralized points of presence.
bandwidth	The capacity of a channel to carry signals. The amount of spectrum required to transmit a signal without distortion or loss of information.
BER	Bit error rate; a measure of the number of errors in received transmissions when compared to the original transmission, frequently expressed as a percentage.
bit	Binary digit
BTU	British thermal unit
CAI	Common air interface
CATP	Coverage acceptance test plan
C	Celsius
CFR	Code of Federal Regulations
channel	The route through which a message is sent. A connection between initiating and terminating nodes of a circuit. A single path provided by a transmission

	medium via an electrical separation, such as by frequency or frequency pairs.
communications	Information transfer among or between users. In public safety communications, the ability of public safety agencies to talk across agencies.
connectivity	The complete path between two terminals.
conventional	A radio system with dedicated, single-purpose channels (can be shared between several users with different operational needs; e.g., fire and police). A user must select the specific channel to be used.
coverage	The geographic area included within the range of a wireless radio system.
CPC	Channel performance criterion
CSI	Construction Specifications Institute
CSSI	Console subsystem interface
DAQ	Delivered audio quality
dB	Decibel
dBm	Decibel referenced to one milliwatt. (zero dBm)
DC	Direct current
digital	Radio transmission method that replaces analog systems and transmits its signal in binary 1s and 0s the same as a computer. One major difference is that digital signals do not degrade gradually the way analog signals do as the distance between the transmitter and receiver increases.
DS-0	A basic digital signaling rate of 64 kilobits per second (kbps), corresponding to the capacity of one voice-frequency-equivalent channel. The DS-0 rate, and its equivalents E-0 and J-0, form the basis for the digital multiplex transmission hierarchy in telecommunications systems used in North America.
DS-1	Digital Signal, Level 1
DTMF	Dual-tone multi-frequency
EIA	Electronic Industries Alliance
EMI	Electromagnetic interference

encryption	The reversible transformation of data from the original (plain text) format to a difficult-to-interpret format as a mechanism for protecting its confidentiality, integrity and sometimes its authenticity. Encryption uses an encryption algorithm and one or more encryption keys.
ERP	Effective radiated power
F	Fahrenheit
FAA	Federal Aviation Administration
FATP	Final acceptance test plan
FCC	Federal Communications Commission
FDMA	Frequency division multiple access
first responders	The first professionals called to an incident or emergency that provides immediate support services during prevention, response, and recovery operations.
FM	Frequency Modulation; a signal transmission with constant signal strength, where the center frequency varies in proportion to the voice being transmitted. FM signals are not susceptible to most interference sources. Radio systems operating on FM are being replaced by digital systems.
frequency	The number of cycles or events of a periodic process in a unit of time.
frequency bands	The spectrum of transmission space where mobile radio systems operate in the United States. They are (from low to high): High HF (25-29.99 MHz) Low VHF (30-50 MHz) High VHF (150-174 MHz) Low UHF (450-470 MHz) UHF TV Sharing (470-512 MHz) 700 MHz (764-776 and 794-806 MHz) 800 MHz (806-869 MHz) 2.4 GHz 4.9 GHz
FRU	Field replaceable unit
gateway	A device that can transparently interconnect radio audio paths so that agencies can patch into each other's radio channels in real time. This can be done at the baseband level or using IP. A gateway provides interconnection between two networks with different communications protocols.

GFI	Ground fault interrupter
GHz	Gigahertz (1 billion hertz)
GoS	Grade of service
GPS	Global Positioning System; a U.S. satellite system that lets persons or systems determine their position with extreme accuracy using GPS receivers.
GUI	Graphical user interface
HVAC	Heating, ventilation, and air conditioning
Hz	Hertz (same as cycles per second)
ID	Identification
IEEE	Institute of Electrical and Electronic Engineers
infrastructure	Dedicated telecommunications networks; the hardware and software needed to complete and maintain a public safety communications system.
interference	Extraneous energy, from natural or man-made sources, that impedes the reception of desired RF signals.
interoperability	The ability of diverse systems and organizations to work together (interoperate). In public safety, the ability of personnel to exchange voice and data communications with staff from other agencies, on demand and in real time.
intranet	A private computer network that uses Internet technologies to share an organization's information or operational systems with its employees in a secure manner.
IP	Internet Protocol
ISSI	Inter-RF subsystem interface
ITN	Invitation to Negotiate
kHz	Kilohertz (1000 hertz)
kVA	Kilovolt ampere
kW	Kilowatts
LAN	Local-area network

LCD	Liquid crystal display
LED	Light-emitting diode
LMR	Land mobile radio; a public or private radio service providing two-way communication, service paging and radio signaling on land.
Mbps	Megabits per second (1 million bits per second)
MHSB	Monitored hot standby
MHz	Megahertz (1 million hertz)
modem	An acronym for modulator/demodulator, which is a device that translates digital signals coming from a computer into analog signals that can be transmitted over standard telephone lines. The modem also translates the analog signals back into digital signals that a computer can understand.
MPE	Maximum permissible exposure
MTBF	Mean time between failures
NAD	National American Datum
NEBS	Network Equipment Building System
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NiMH	Nickel-metal hydride
NMI	Network management interface
NMS	Network management system
NMT	Network management terminal
NPSPAC	National Public Safety Planning Advisory Committee
NRTL	Nationally recognized testing laboratory
O.D.	Outside diameter
OET	Office of Engineering & Technology

OSHA	Occupational Safety and Health Administration
OTAP	Over-the-air programming
PC	Personal computer
P25 or APCO 25	Project 25; a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies in North America to enable them to communicate with other agencies and mutual-aid response teams in emergencies.
psig	Pounds per square inch gauge
PTT	Push to talk
Public safety spectrum	Specific bands of frequencies set aside by the FCC for use by public safety agencies. They are: Low Band (25-50 MHz) VHF High Band (150-174 MHz) 220 MHz Band (220-222 MHz) UHF Band (450-470 MHz) 700 MHz Band (764-776 and 794-806 MHz) 800 MHz Band (806-824 and 851-869 MHz) 4.9 GHz Band
QA/QC	Quality assurance/quality control
R56	Motorola installation guide; <i>Standards and Guidelines for Communication Sites</i>
receiver	The component(s) of a radio device that converts the radio waves into audible signals.
repeater	A special receiver/transmitter combination that receives a signal on one frequency and retransmits a new signal on another frequency, usually within the same frequency band, sometimes referred to as a relay station.
Respondent	Any individual or entity bidding on the right to supply products and services in response to this ITN.
RF	Radio frequency
RFI	Radio frequency interference
RTU	Remote terminal unit

SATP	Staging acceptance test plan
Selected Respondent	Any individual or entity selected from among all Respondents to supply products and services in response to this ITN.
SoR	Statement of requirements
spectrum	The range of electromagnetic radio frequencies that can be decomposed into frequency components, used in the transmission of sound, data and television.
subscriber	User/customer on a network.
subscriber unit	User's equipment (usually a mobile or portable radio)
talkgroup	An assigned talk path similar to a channel on a conventional system.
TDMA	Time division multiple access
TDMM	Telecommunications Distribution Methods Manual
Telco	Telecommunications company
TIA	Telecommunications Industry Association
trunked	A radio system with a group of channels available and assigned as needed to specific "groups" or operations. The channels are programmed for automatic system assignment while in use, and then released for other users. A trunked system maximizes channel utilization.
TSB	Telecommunications Systems Bulletin
TTA	Tower-top amplifier
turnkey	Entire system with hardware and software assembled and installed by a vendor and sold as a package.
TVSS	Transient voltage surge suppression
UHF	Ultra-high frequency
UL	Global safety certification company; formerly known as Underwriters Laboratories
UPS	Uninterruptible power supply
USGS	U.S. Geological Survey

VHF	Very-high frequency
VSWR	Voltage standing wave ratio
Voting receiver	Multiple remote receivers tied together through a comparator device at a transmitter site to improve portable coverage; signal strength is compared from each receiver, and the best receiver becomes the receiver during a specific transmission.
WAN	Wide-area network
WBS	Work breakdown structure

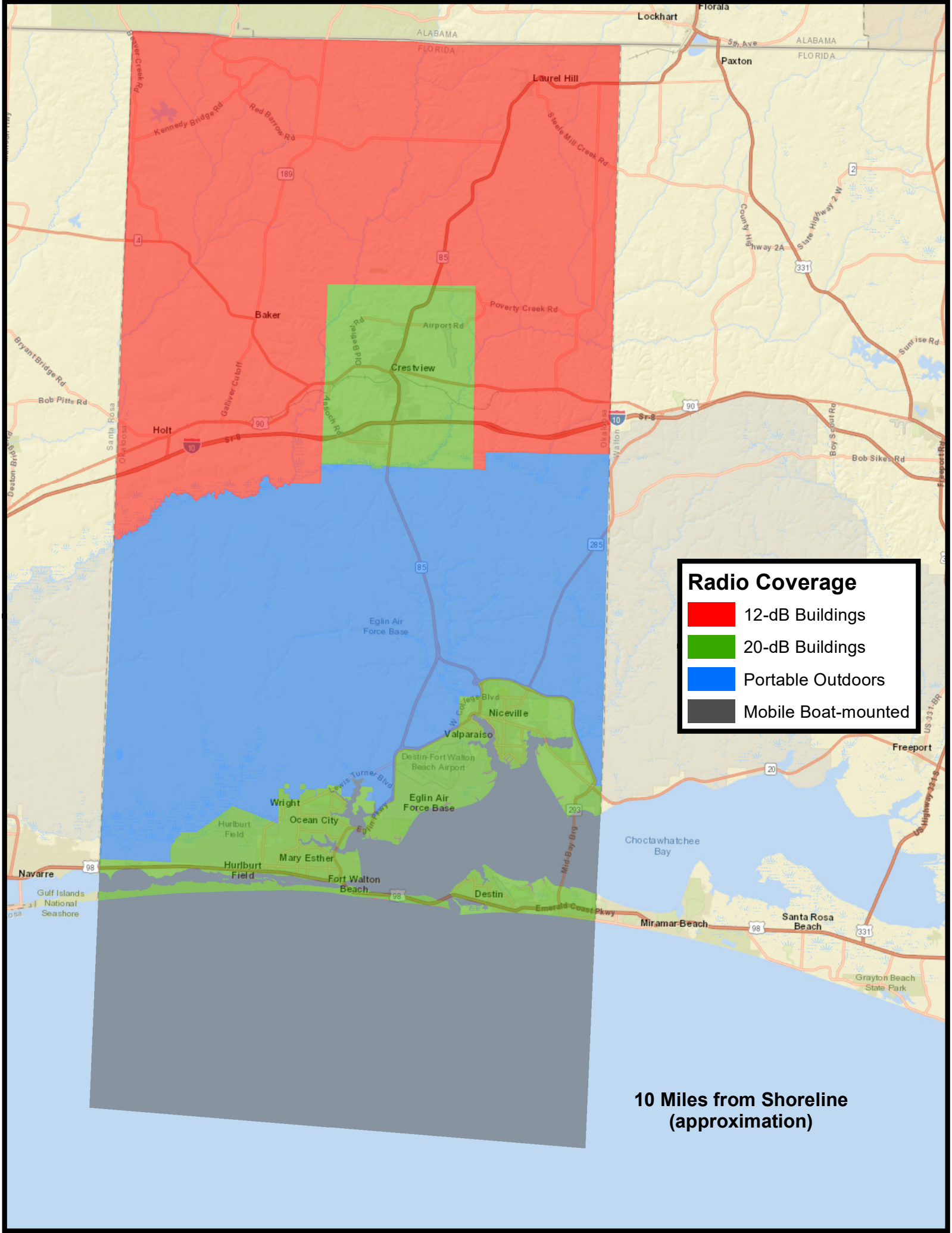
APPENDIX A: POTENTIAL CANDIDATE TOWER SITES

The following table summarizes candidate sites for consideration by Respondents. Please note that vetting has not been performed for these locations, and Respondents must independently verify their feasibility for use in the new system.

Site Name	Latitude	Longitude	ASR	Site Owner	Notes
Destin (Rooftop)	30-24-5.9	86-25-41.9	N/A	1 Water Place	Existing SLERS site with rooftop lease by the City of Destin
Ocean City	30-25-25.9	86-39-59.6	1231933	Ft. Walton Communications	Existing SLERS site
Nelson Point Rd	30-29-57.2	86-26-34.6	1294682	Pinnacle Towers	Existing SLERS / UHF site
Crestview	30-43-56.6	86-36-5.8	1222087	SBA Towers	Existing SLERS site
Harold	30-42-0	86-48-13	1033737	Ft. Walton Communications	Existing SLERS site
Laurel Hill	30-53-53.5	86-31-32.4	1233372	SBA Properties	Existing SLERS site
Shalimar	30-26-43.3	86-34-54.7	1203550	Verizon Wireless	Existing VHF site
Florosa Water Tank	30-24-55.2	86-45-52.6	N/A	City of Florosa	Existing VHF / UHF site
Holt Water Tank	30-41-39	86-44-43.2	N/A	City of Holt	Existing VHF / UHF site
Crestview DOT	30-45-40.8	86-34-17.8	1058430	State of Florida	Existing VHF / UHF site
Baker Water Tank	30-50-43.3	86-40-32.9	N/A	City of Baker	Existing VHF / UHF site
Laurel Hill Water Tank	30-57-3.9	86-28-34.7	N/A	City of Laurel Hill	Existing VHF / UHF site
Denton Blvd	30-26-20.3	86-37-31.8	1026862	Verizon Wireless	Existing UHF site

Site Name	Latitude	Longitude	ASR	Site Owner	Notes
Niceville Range Rd. Water Tank	30-29-20.2	86-25-22.9	1275692	SBA Towers	Existing UHF site
Destin Water Tank	30-23-41.9	86-29-43.8	N/A	City of Destin	Existing UHF site
Holt SOF	30-41-56.1	86-45-7	1058429	State of Florida	Government-owned Site
Okaloosa County School Board	30-27-3.7	86-34-16.8	1200585	Okaloosa County School Board	School Board-owned Site

APPENDIX B: COVERAGE REQUIREMENTS MAP



Radio Coverage

- 12-dB Buildings
- 20-dB Buildings
- Portable Outdoors
- Mobile Boat-mounted

**10 Miles from Shoreline
(approximation)**

APPENDIX C: COMPLIANCE MATRIX

The Compliance Matrix is provided below for review. A separate Excel spreadsheet will be provided for completion.

ITN Section	Description	Respondent's Statement of Compliance Select one from the drop-down list: Comply Comply with Clarification Exception	Respondent's Clarifications and Comments
1	Project Overview		
1.1.	Introduction		
1.2.	Okaloosa County Background		
1.3.	Invitation to Negotiate Overview		
1.4.	Scope of Work Summary		
1.5.	Proposals Desired		
1.5.1.	Systems Technical Requirements		
1.5.2.	Services		
1.6.	Quality Assurance and Coordination		
1.6.1.	Standards and Guidelines		
1.6.2.	P25 Standard Compliance		
1.6.3.	Frequency Coordination and Licensing		
1.6.4.	Federal Aviation Administration (if applicable)		
1.6.5.	Local, State, and Federal Environmental and Historical Requirements		
1.6.6.	Permitting		
1.6.7.	Project Management		
1.6.8.	Project Meetings		

ITN Section	Description	Respondent's Statement of Compliance Select one from the drop-down list: Comply Comply with Clarification Exception	Respondent's Clarifications and Comments
1.6.9.	Project Staffing		
1.6.10.	Quality Assurance/Quality Control Program		
1.7.	Delivery, Storage and Handling		
1.8.	Project Submittals		
1.8.1.	Preliminary Design		
1.8.2.	Final Design		
1.8.3.	System Staging, Delivery and Installation		
1.8.4.	Final System Acceptance		
2	Instructions to Respondents		
2.1.	Overview		
2.2.	Mandatory Pre-Proposal Conference		
2.3.	Timeline Goals		
2.4.	Proposal Format		
2.5.	Competition Procedures		
2.6.	Procedures		
2.7.	Negotiation Process		
2.8.	Evaluation		
2.9.	Proposal Options		
2.10.	Alternate Proposals		
2.11.	Addenda to the Contract		
2.12.	Award of Contract		

ITN Section	Description	Respondent's Statement of Compliance Select one from the drop-down list: Comply Comply with Clarification Exception	Respondent's Clarifications and Comments
3	Radio Communications System Requirements		
3.1.	Overview		
3.2.	Interoperability/P25 Statement of Requirements		
3.3.	System Configuration		
3.3.1.	Redundancy and Survivability		
3.3.2.	Expansion		
3.3.3.	Grade of Service		
3.4.	Site Selection		
3.5.	Coverage		
3.5.1.	Coverage Maps		
3.5.2.	Map Criteria		
3.5.3.	Coverage Model		
3.5.4.	TIA TSB-88 – User Choices		
3.6.	Site Equipment		
3.6.1.	Overview		
3.6.2.	System and Site Control Equipment		
3.6.3.	Simulcast Equipment		
3.6.4.	Receiver Voting		
3.6.5.	Base Station Equipment		
3.6.6.	Antenna Systems		

ITN Section	Description	Respondent's Statement of Compliance Select one from the drop-down list: Comply Comply with Clarification Exception	Respondent's Clarifications and Comments
3.6.7.	Antenna Installation		
3.6.8.	Removal of Existing Infrastructure and Equipment		
3.7.	Network Management System		
3.7.1.	Network Management Terminal		
3.7.2.	Remote Terminal Units		
3.8.	Mobile Data		
3.9.	Backup Consolettes		
4	Backhaul Network		
4.1.	Overview		
4.2.	Digital Microwave Network		
4.2.1.	Requirements		
4.2.2.	Microwave Engineering		
5	Site Development		
5.1.	General		
5.2.	Towers		
5.3.	Shelters		
5.4.	Generator and Automatic Transfer Switch		
5.4.1.	Dual-Fuel Propane/Natural Gas Generator		
5.4.2.	Automatic Transfer Switch		
5.4.3.	Dual-Fuel Propane and Natural Gas System		

ITN Section	Description	Respondent's Statement of Compliance Select one from the drop-down list: Comply Comply with Clarification Exception	Respondent's Clarifications and Comments
5.5.	DC Power		
5.6.	Site Preparation		
5.7.	Fencing		
6	Dispatch Consoles		
6.1.	General Requirements and Features		
6.2.	Trunked Requirements		
6.3.	Conventional Requirements		
6.4.	Paging Requirements		
6.5.	Systems Integration		
6.6.	Logging Recorder		
6.7.	Operator Position Equipment		
6.8.	Common Electronics Equipment		
7	Warranty, Maintenance, and Support		
7.1.	Warranty		
7.2.	Maintenance		
7.2.1.	General Requirements		
7.2.2.	Maintenance Standards		
7.3.	Parts Availability		
7.4.	Spare Equipment		
7.5.	Lifecycle Cost		
8	System Implementation, Testing, and Acceptance		

ITN Section	Description	Respondent's Statement of Compliance Select one from the drop-down list: Comply Comply with Clarification Exception	Respondent's Clarifications and Comments
8.1.	General		
8.2.	System Installation		
8.3.	Cutover Plan		
8.4.	Staging		
8.5.	Coverage Testing		
8.6.	30-day Operational Test		
8.7.	Training		
8.8.	Final Acceptance Testing		
8.9.	As-Built Documentation		
8.10.	System Acceptance		
9	Subscriber Equipment		
9.1.	Overview		
9.2.	General Requirements		
9.2.1.	Portable Radios		
9.2.2.	Mobile Radios/Control Stations		
9.2.3.	Fleet Mapping		
9.3.	Subscriber Warranty and Maintenance		
9.3.1.	Subscriber Warranty		
9.3.2.	Subscriber Maintenance		
	Glossary of Terms and Acronyms		

ITN Section	Description	Respondent's Statement of Compliance Select one from the drop-down list: Comply Comply with Clarification Exception	Respondent's Clarifications and Comments
Appendix A	Potential Candidate Tower Sites		
Appendix B	Coverage Requirements Map		
Appendix C	Compliance Matrix		
Appendix D	Proposal Pricing Instructions		
Attachment A	County Documents		

APPENDIX D: PROPOSAL PRICING INSTRUCTIONS

The Pricing Workbook, a separate Excel document, has been developed to foster conformity of Respondents' pricing proposals and aid in evaluation of these proposals. The price sheets are designed to provide justification for a Respondent's pricing proposal and evaluation criteria.

Detailed line item pricing for all material and services is requested. Respondents may add lines to the worksheets to accommodate their in-depth pricing details in support of their project approach.

The sum of the costs provided on the sheets shall total the cost of a Respondent's proposal before any incentive discounts are applied.

Any optional equipment or services shall be clearly marked "OPTIONAL" so as not to be included in the project cost calculation.

A separate worksheet should be generated for each tower site and equipment location, including, but not limited to, the core controllers, simulcast cell controllers, each site where RF equipment is located, and dispatch locations.

Antenna systems for LMR and microwave systems should be listed on the worksheet page for that site. Additional lines may be inserted as needed.

Subscriber pricing sheets shall include the full list of radios, software options, and accessories included within a Respondent's base proposal. Separate sheets shall be provided for any alternate radio models, options, and accessories not included in a Respondent's base proposal.

The 15-year cost of ownership should include all services available from the Respondent.

ATTACHMENT A: COUNTY DOCUMENTS

County documents can be found on the pages that follow; many will need to be returned with a Respondent's proposal. Respondents should review the documents carefully.

- General Services Insurance Requirements – w/Cyber Liability
- General Proposal Conditions, including:
 - Drug-Free Workplace Certification
 - Conflict of Interest Disclosure Form
 - Federal E-Verify Compliance Certification
 - Cone of Silence Clause
 - Recycled Content Form
 - Indemnification and Hold Harmless
 - Company Data
 - System for Award Management
 - Addendum Acknowledgement
 - Lobby – 31 U.S.C. 1352, as amended
 - Government Debarment & Suspension
 - Vendors on Scrutinized Companies List
- Exhibit B – Standard Contract Clauses

GENERAL SERVICES INSURANCE REQUIREMENTS – w/CYBER LIABILITY

BOND

A performance bond in the amount of 100% of the awarded contract amount will be required before contract execution.

CONTRACTORS INSURANCE

1. The Contractor shall not commence any work in connection with this Agreement until he has obtained all required insurance and the Okaloosa County Risk Manager or designee has approved the certificate of insurance.
2. All insurance policies shall be with insurers authorized to do business in the State of Florida and having a minimum rating of A, Class X in the Best Key Rating Guide published by A.M. Best & Co. Inc.
3. All insurance shall include the interest of all entities named and their respective officials, employees & volunteers of each and all other interests as may be reasonably required by Okaloosa County. The coverage afforded the Additional Insured under this policy shall be primary insurance. If the Additional Insured have other insurance that is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the company's liability under this policy shall not be reduced by the existence of such other insurance.
4. With the exception of Workers' Compensation policies, the County shall be shown as an Additional Insured with a Waiver of Subrogation on the Certificate of Insurance.
5. The County shall retain the right to reject all insurance policies that do not meet the requirement of this Agreement. Further, the County reserves the right to change these insurance requirements with 60-day notice to the Contractor.
6. The County reserves the right at any time to require the Contractor to provide copies of any insurance policies to document the insurance coverage specified in this Agreement.
7. Any subsidiaries used shall also be required to obtain and maintain the same insurance requirements as are being required herein of the Contractor.
8. Any exclusions or provisions in the insurance maintained by the Contractor that excludes coverage for work contemplated in this agreement shall be deemed unacceptable and shall be considered a breach of contract.

WORKERS' COMPENSATION INSURANCE

1. The Contractor shall secure and maintain during the life of this Agreement Workers' Compensation insurance for all of his employees employed for the project or any site connected with the work, including supervision, administration or management, of this

project and in case any work is sublet, with the approval of the County, the Contractor shall require the Subcontractor similarly to provide Workers' Compensation insurance for all employees employed at the site of the project, and such evidence of insurance shall be furnished to the County not less than ten (10) days prior to the commencement of any and all sub-contractual Agreements which have been approved by the County.

2. Contractor must comply with all applicable State and Federal workers' compensation laws, including the U.S. Longshore Harbor Workers' Act or Jones Act, if applicable.
3. No class of employee, including the Contractor himself, shall be excluded from the Workers' Compensation insurance coverage. The Workers' Compensation insurance shall also include Employer's Liability coverage.
4. A Waiver of Subrogation is required to be shown on all Workers Compensation Certificates of Insurance.

BUSINESS AUTOMOBILE LIABILITY

Coverage must be afforded for all Owned, Hired, Scheduled, and Non-Owned vehicles for Bodily Injury and Property Damage in an amount not less than \$1,000,000 (One Million Dollars) combined single limit each accident. If the contractor does not own vehicles, the contractor shall maintain coverage for Hired & Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Policy. Contractor must maintain this insurance coverage throughout the life of this Agreement.

COMMERCIAL GENERAL LIABILITY INSURANCE

1. The Contractor shall carry Commercial General Liability insurance against all claims for Bodily Injury, Property Damage and Personal and Advertising Injury caused by the Contractor.
2. Commercial General Liability coverage shall include the following:
 - 1.) Premises & Operations Liability
 - 2.) Bodily Injury and Property Damage Liability
 - 3.) Independent Contractors Liability
 - 4.) Contractual Liability
 - 5.) Products and Completed Operations Liability
3. Contractor shall agree to keep in continuous force Commercial General Liability coverage for the length of the contract.

CYBER LIABILITY

The Contractor shall carry Cyber Liability insurance coverage for third party liability. Coverage will include ID Theft Monitoring, Credit Monitoring (if necessary) & Notification. Coverage must be

afforded for negligent retention of data as well as notification and related costs for actual or alleged breaches of data.

INSURANCE LIMITS OF LIABILITY

The insurance required shall be written for not less than the following, or greater if required by law and shall include Employer's liability with limits as prescribed in this contract:

	<u>LIMIT</u>
1. Workers' Compensation	
1.) State	Statutory
2.) Employer's Liability	\$500,000 each accident
2. Business Automobile	\$1,000,000 each accident (A combined single limit)
3. Commercial General Liability	\$1,000,000 each occurrence Bodily Injury & Property Damage \$1,000,000 each occurrence Products and completed operations
4. Personal and Advertising Injury	\$1,000,000 each occurrence
5. Cyber Liability	\$1,000,000 per claim

NOTICE OF CLAIMS OR LITIGATION

The Contractor agrees to report any incident or claim that results from performance of this Agreement. The County representative shall receive written notice in the form of a detailed written report describing the incident or claim within ten (10) days of the Contractor's knowledge. In the event such incident or claim involves injury and/or property damage to a third party, verbal notification shall be given the same day the Contractor becomes aware of the incident or claim followed by a written detailed report within ten (10) days of verbal notification.

INDEMNIFICATION & HOLD HARMLESS

To the fullest extent permitted by law, Contractor shall indemnify and hold harmless the County, its officers and employees from liabilities, damages, losses, and costs including but not limited to reasonable attorney fees, to the extent caused by the negligence, recklessness, or wrongful conduct of the Contractor and other persons employed or utilized by the Contractor in the performance of this contract.

CERTIFICATE OF INSURANCE

1. Certificates of insurance indicating the project name and number and evidencing all required coverage must be submitted not less than 10 days prior to the commencement

- of any of the work. The certificate holder(s) shall be as follows: Okaloosa County, 5479A Old Bethel Road, Crestview, Florida, 32536.
2. The contractor shall provide a Certificate of Insurance to the County with a thirty (30) day prior written notice of cancellation; ten (10) days' prior written notice if cancellation is for nonpayment of premium.
 3. In the event that the insurer is unable to accommodate the cancellation notice requirement, it shall be the responsibility of the contractor to provide the proper notice to the County. Such notification shall be in writing by registered mail, return receipt requested, and addressed to the Okaloosa County Purchasing Department at 5479-A Old Bethel Road, Crestview, FL 32536.
 4. In the event the contract term goes beyond the expiration date of the insurance policy, the contractor shall provide the County with an updated Certificate of insurance no later than ten (10) days prior to the expiration of the insurance currently in effect. The County reserves the right to suspend the contract until this requirement is met.
 5. The certificate shall indicate if coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the certificate will show a retroactive date, which should be the same date of the initial contract or prior.
 6. All certificates shall be subject to Okaloosa County's approval of adequacy of protection.
 7. All deductibles or self-insured retentions (SIRs), whether approved by Okaloosa County or not, shall be the Contractor's full responsibility.
 8. In no way will the entities listed as Additional Insured be responsible for, pay for, be damaged by, or limited to coverage required by this schedule due to the existence of a deductible or SIR.

GENERAL TERMS

Any type of insurance or increase of limits of liability not described above which, the Contractor required for its own protection or on account of statute shall be its own responsibility and at its own expense.

Any exclusions or provisions in the insurance maintained by the contractor that excludes coverage for work contemplated in this contract shall be deemed unacceptable and shall be considered breach of contract.

The carrying of the insurance described shall in no way be interpreted as relieving the Contractor of any responsibility under this contract.

Should the Contractor engage a subcontractor or sub-subcontractor, the same conditions will apply under this Agreement to each subcontractor and sub-subcontractor.

The Contractor hereby waives all rights of subrogation against Okaloosa County and its employees under all the foregoing policies of insurance.

EXCESS/UMBRELLA INSURANCE

The Contractor shall have the right to meet the liability insurance requirements with the purchase of an EXCESS/UMBRELLA insurance policy. In all instances, the combination of primary and EXCESS/UMBRELLA liability coverage must equal or exceed the minimum liability insurance limits stated in this Agreement. An Excess liability policy must be submitted indicating which policy it applies to.

GENERAL PROPOSAL CONDITIONS

1. PRE-PROPOSAL ACTIVITY

Except as provided in this section, respondents are prohibited from contacting or lobbying the County, County Administrator, Commissioners, County staff, and Selection Committee members, or any other person authorized on behalf of the County related or involved with the solicitation. All inquiries on the scope of work, specifications, additional requirements, attachments, terms and general conditions or instructions, or any issue must be directed in writing, by US mail or email to:

Okaloosa County Purchasing Department
5479A Old Bethel Road
Crestview, FL 32536
Email: dmason@myokaloosa.com
(850) 689-5960

All questions or inquiries must be received no later than the last day for questions (reference ITN & Respondent's Acknowledgement form). Any addenda or other modification to the bid documents will be issued by the County five (5) days prior to the date and time of bid closing, as a written addenda distributed to all prospective respondents by posting to the Florida Online Bid System (Florida Purchasing Group) and the Okaloosa County Web Site.

To access the Florida Online Bid System go to: <https://www.bidnetdirect.com/florida> . To access the Okaloosa County Web Site go to: <http://www.myokaloosa.com/purchasing/current-solicitations>.

Such written addenda or modification shall be part of the proposal documents and shall be binding upon each respondent. Each respondent is required to acknowledge receipt of any and all addenda in writing and submit with their proposal. No respondent may rely upon any verbal modification or interpretation.

- 2. PREPARATION OF PROPOSAL** – The proposal form is included with the proposal documents. Additional copies may be obtained from the County. The respondent shall submit originals and proposal forms in accordance with the public notice.

All blanks in the proposal documents shall be completed by printing in ink or by typewriter in both words and numbers with the amounts extended, totaled and the proposal signed. A proposal price shall be indicated for each section, proposal item, alternative, adjustment unit price item, and unit price item listed therein, or the words "No Proposal", "No Change", or "Not Applicable" entered. No changes shall be made to the phraseology of the form or in the items mentioned therein. In case of any discrepancy between the written amount and the numeric figures, the written amount shall govern. Any proposal which contains any omissions, erasures, alterations, additions, irregularities of any kind, or items not called for which shall in any manner fail to conform to the conditions of public notice inviting proposals may be rejected.

A proposal submitted by a corporation shall be executed in the corporate name by the president or a vice president or other corporate officer who has legal authority to sign.

A proposal submitted by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature). The official address of the partnership shall be shown below the signature.

A proposal submitted by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.

A proposal submitted by an individual shall show the respondent's name and official address.

A proposal submitted by a joint venture shall be executed by each joint venture in the manner indicated on the proposal form. The official address of the joint venture must be shown below the signature.

All signatures shall be in blue ink. All names shall be typed or printed below the signature.

The proposal shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the form. The address and telephone # for communications regarding the proposal shall be shown.

If the respondent is an out-of-state corporation, the proposal shall contain evidence of respondent's authority and qualification to do business as an out-of-state corporation in the State of.

- 3. INTEGRITY OF PROPOSAL DOCUMENTS** – Respondents shall use the original Proposal documents provided by the Purchasing Department and enter information only in the spaces where a response is requested. Respondents may use an attachment as an addendum to the Proposal documents if sufficient space is not available. Any modifications or alterations to the original proposal documents by the respondent, whether intentional or otherwise, will constitute grounds for rejection of a proposal. Any such modifications or alterations that a respondent wish to propose must be clearly stated in the respondent's response in the form of an addendum to the original proposal documents.

- 4. SUBMITTAL OF PROPOSAL** – A proposal shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to proposal and shall be enclosed in an opaque sealed envelope plainly marked with the project title (and, if applicable, the designated portion of the project for which the proposal is submitted), the name and address of the respondent, and shall be accompanied by the proposal security and other required documents. It is the respondent's responsibility to assure that its

proposal is delivered at the proper time and place. Offers by telegram, facsimile, or telephone will **NOT** be accepted.

Note: Crestview is not a next day delivery site for overnight carriers.

5. **MODIFICATION & WITHDRAWAL OF PROPOSAL** – A proposal may be modified or withdrawn by an appropriate document duly executed in the manner that a proposal must be executed and delivered to the place where proposals are to be submitted prior to the date and time for the opening of proposals.

If within 24 hours after proposals are opened any respondent files a duly signed written notice with the County and promptly thereafter demonstrates to the reasonable satisfaction of the County that there was a material substantial mistake in the preparation of its proposal, that respondent may withdraw its proposal, and the proposal security may be returned. Thereafter, if the work is re-proposal, that respondent will be disqualified from 1) further purposing on the work, and 2) doing any work on the contract, either as a subcontractor or in any other capacity.

6. **PROPOSALS TO REMAIN SUBJECT TO ACCEPTANCE** – All proposals will remain subject to acceptance or rejection for ninety (90) calendar days after the day of the proposal opening, but the County may, in its sole discretion, release any proposal and return the proposal security prior to the end of this period.
7. **IDENTICAL TIE BIDS** – In cases of identical procurement responses, the award shall be determined either by lot or on the basis of factors deemed to serve the best interest of the County. In the case of the latter, there must be adequate documentation to support such a decision.
8. **CONDITIONAL & INCOMPLETE PROPOSALS** – Okaloosa County specifically reserves the right to reject any conditional proposal and proposals which make it impossible to determine the true amount of the proposal.
9. **PROPOSAL PRICE** – The proposal price shall include all equipment, labor, materials, permit(s), freight, taxes, required insurance, Public Liability, Property Damage and Workers' Compensation, etc. to cover the finished work called for.
10. **ADDITION/DELETION OF ITEM** – The County reserves the right to add or delete any item from this proposal or resulting contract when deemed to be in the County's best interest.
11. **SPECIFICATION EXCEPTIONS** – Specifications are based on the most current literature available. Respondent shall clearly list any change in the manufacturer's specifications which conflict with the proposal specifications. Respondent must also explain any deviation from the proposal specification in writing, as a foot note on the applicable proposal page and enclose a copy of the manufacturer's specifications data detailing the changed item(s) with their proposal. Failure of the respondent to comply with these provisions will result in

respondents being held responsible for all costs required to bring the equipment in compliance with proposal specifications.

12. APPLICABLE LAWS & REGULATIONS – All applicable Federal and State laws, County and municipal ordinances, orders, rules and regulations of all authorities having jurisdiction over the project shall apply to the proposal throughout, and they will be deemed to be included in the contract the same as though they were written in full therein.

13. DISQUALIFICATION OF RESPONDENTS - Any of the following reasons may be considered as sufficient for the disqualification of a respondent and the rejection of its proposal:

- a. Submission of more than one proposal for the same work from an individual, firm or corporation under the same or different name.
- b. Evidence that the respondent has a financial interest in the firm of another respondent for the same work.
- c. Evidence of collusion among respondents. Participants in such collusion will receive no recognition as respondents for any future work of the County until such participant has been reinstated as a qualified respondent.
- d. Uncompleted work which in the judgment of the County might hinder or prevent the prompt completion of additional work if awarded.
- e. Failure to pay or satisfactorily settle all bills due for labor and material on former contracts in force at the time of advertisement of proposals.
- f. Default under previous contract.
- g. Listing of the respondent by Local, State or Federal Government on its barred/suspended vendor list.

14. AWARD OF CONTRACT

Okaloosa County Review – A selection committee will review all proposals and will participate in the Recommendation to Award.

The contract shall be awarded to the responsible and responsive respondent whose proposal is determined to be the most advantageous to the County, taking into consideration the price and other criteria set forth in the invitation to negotiate. The County reserves the right to reject any and all proposals or to waive any irregularity or technicality in proposals received. The County shall be the sole judge of the proposal and the resulting negotiated agreement that is in its best interest and its decision shall be final.

Okaloosa County reserves the right to waive any informalities or reject any and all proposals, in whole or part, to utilize any applicable state contracts in lieu of or in addition to this proposal and to accept the proposal that in its judgment will best serve the interest of the County.

Okaloosa County specifically reserves the right to reject any conditional proposals and proposals which make it impossible to determine the true amount of the proposal. Each item must be proposal separately and no attempt is to be made to tie any item or items to any other item or items.

15. **PAYMENTS** – The respondent shall be paid upon submission of invoices and approval of acceptance by Okaloosa County Board of County Commissioners, Finance Department, 101 E. James Lee Blvd, Crestview, FL 32536, for the prices stipulated herein for articles delivered and accepted. Invoices must show Contract number.
16. **DISCRIMINATION** – An entity or affiliate who has been placed on the discriminatory vendor list may not submit a proposal on a contract to provide goods or services to a public entity, may not submit a proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit proposals on leases of real property to a public entity, may not award or perform work as a contractor, supplier, subcontractor, or consultant under contract with any public entity, and may not transact business with any public entity.
17. **PUBLIC ENTITY CRIME INFORMATION** – Pursuant to Florida Statute 287.133, a respondent may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. [287.017](#) for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list.
18. **CONFLICT OF INTEREST** – The award hereunder is subject to the provisions of Chapter 112, Florida Statutes. All respondents must disclose with their proposals the name of any officer, director, or agent who is also a public officer or an employee of the Okaloosa Board of County Commissioners, or any of its agencies. Furthermore, all respondents must disclose the name of any County officer or employee who owns, directly or indirectly, an interest of five percent (5%) or more in the firm or any of its branches.

Note: For respondent's convenience, this certification form is enclosed and is made a part of the proposal package.
19. **REORGANIZATION OR BANKRUPTCY PROCEEDINGS** – Proposals will not be considered from respondents who are currently involved in official financial reorganization or bankruptcy proceedings.
20. **INVESTIGATION OF RESPONDENT** – The County may make such investigations, as it deems necessary to determine the stability of the respondent to perform the work and that there is no conflict of interest as it relates to the project. The respondent shall furnish to the

Owner any additional information and financial data for this purpose as the County may request.

- 21. CONE OF SILENCE CLAUSE** – The Okaloosa County Board of County Commissioners has established a solicitation silence policy (**Cone of Silence Clause**) that prohibits oral and written communication regarding all formal solicitations for goods and services (formal bids, Request for Proposals, Requests for Qualifications, Invitations to Negotiate) issued by the Board through the County Purchasing Department. The period commences from the date of advertisement until award of contract.

All communications shall be directed to the Purchasing Department -see attached form.

Note: For respondent's convenience, this certification form is enclosed and is made a part of the bid package.

- 22. REVIEW OF PROCUREMENT DOCUMENTS** – Per Florida Statute 119.071(1)(b)2. sealed bids, proposals, or replies received by the County pursuant to a competitive solicitation are exempt from public disclosure until such time as the County provides notice of an intended decision or until 30 days after opening the bids, proposals, or final replies, whichever is earlier.
- 23. COMPLIANCE WITH FLORIDA STATUTE 119.0701** – The Respondent shall comply with all the provisions of section 119.0701, Florida Statutes relating to the public records which requires, among other things, that the Respondent: (a) Keep and maintain public records; (b) Provide the public with access to public records on the same terms and conditions that the public agency would provide the records; (c) ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law; and (d) Meet all requirements for retaining public records and transfer, at no cost, to the public agency all public records in possession of the respondent upon termination of the contract.
- 24. PROTECTION OF RESIDENT WORKERS** – The Okaloosa County Board of County Commissioners actively supports the Immigration and Nationality Act (INA) which includes provisions addressing employment eligibility, employment verifications, and nondiscrimination. Under the INA, employers may hire only persons who may legally work in the United States (i.e., citizens and nationals of the U.S.) and aliens authorized to work in the U.S. The employer must verify the identity and employment eligibility of anyone to be hired, which includes completing the Employment Eligibility Verifications. The respondent shall establish appropriate procedures and controls so no services or products under the Contract Documents will be performed or manufactured by any worker who is not legally eligible to perform such services or employment. Okaloosa County reserves the right to request documentation showing compliance with the requirements.

Respondents doing construction business with Okaloosa County are required to use the Federal Government Department of Homeland Security's website and use the E-Verify

Employment Eligibility Verifications System to confirm eligibility of all employees to work in the United States.

25. **SUSPENSION OR TERMINATION FOR CONVENIENCE** – The County may, at any time, without cause, order Respondent in writing to suspend, delay or interrupt the work in whole or in part for such period of time as the County may determine, or to terminate all or a portion of the Contract for the County’s convenience. Upon such termination, the Contract Price earned to the date of termination shall be paid to Respondent, but Respondent waives any claim for damages, including loss of profits arising out of or related to the early termination. Those Contract provisions which by their nature survive final acceptance shall remain in full force and effect. If the County orders a suspension, the Contract price and Contract time may be adjusted for increases in the cost and time caused by suspension, delay or interruption. No adjustment shall be made to the extent that performance is, was or would have been so suspended, delayed or interrupted by reason for which Respondent is responsible; or that an equitable adjustment is made or denied under another provision of this Contract.
26. **FAILURE OF PERFORMANCE/DELIVERY** – In case of default by the respondent, the County after due notice (oral or written) may procure the necessary supplies or services from other sources and hold the respondent responsible for difference in cost incurred. Continuous instances of default shall result in cancellation of the contract and removal of the respondent from the proposal list for duration of one (1) year, at the option of the County.
27. **AUDIT** – If requested, respondent shall permit the County or its authorized representative to inspect all data and records of respondent relating to its performance and its subcontracts under this contract from the date of the contract through and until three (3) years after the expiration of contract. Respondent shall permit access to premises and employees with adequate notice and during reasonable hours for the purpose of examining and assessing controls in place over the work they perform for the County.
28. **EQUAL EMPLOYMENT OPPORTUNITY; NON-DISCRIMINATION** – Respondent shall not discriminate against any employee or an applicant for employment because of race, color, religion, gender, sexual orientation, national origin, age, familial status or handicap.
29. **NON-COLLUSION** – Respondent certifies that it has entered into no agreement to commit a fraudulent, deceitful, unlawful or wrongful act, or any act which may result in an unfair advantage over other respondents. See Florida Statute 838.22.
30. **UNAUTHORIZED ALIENS/PATRIOT’S ACT** – The knowing employment by respondent or its subcontractors of any alien not authorized to work by the immigration laws is prohibited and shall be a default of the contract. In the event that the respondent is notified or becomes aware of such default, the respondent shall take steps as are necessary to terminate said employment with 24 hours of notification or actual knowledge that an alien is being employed. Respondent’s failure to take such steps as are necessary to terminate the employment of any said alien within 24 hours of notification or actual knowledge that an alien is being employed shall be grounds for immediate termination of the contract. Respondent

shall take all commercially reasonable precautions to ensure that it and its subcontractors do not employ persons who are not authorized to work by the immigration laws.

- 31. TITLE VI SOLICITATION NOTICE** – The Okaloosa County Board of County Commissioners, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 USC §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders or offerors that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.
- 32. FEDERAL REGULATIONS** – The parties agree to comply with the Federal Regulations as set forth in Exhibit B, which is expressly incorporated herein as part of the Agreement.
- 33. CERTIFICATE OF GOOD STANDING FOR STATE OF FLORIDA** – Florida Statute 607.1501 requires that all vendors who wish to do business in the State of Florida be licensed to do business through the Department of State of Florida and be in good standing with the State of Florida. As such, to do business with Okaloosa County a vendor must provide a Certificate of Good Standing with their bid/proposal package to the County. For more information on doing business in the State of Florida, please refer to the Florida Department of State. The website to register is <https://dos.myflorida.com/sunbiz>.
- 34.** The following documents shall be submitted with the bid packet. Failure to submit all required forms might result in your submittal being deemed non-responsive:

 - a. Drug-Free Workplace Certification Form
 - b. Conflict of Interest
 - c. Federal E-Verify
 - d. Cone of Silence Form
 - e. Recycled Content Form
 - f. Indemnification and Hold Harmless
 - g. Company Data
 - h. System of Awards Management
 - i. Addendum Acknowledgement
 - j. Certification Regarding Lobbying
 - k. Governmental Debarment & Suspension
 - l. Vendors on Scrutinized Companies List
 - m. Certificate of Good Standing

DRUG-FREE WORKPLACE CERTIFICATION

THE BELOW SIGNED RESPONDENT CERTIFIES that it has implemented a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under quote a copy of the statement specified in subsection 1.
4. In the statement specified in subsection 1, notify the employees that, as a condition of working on the commodities or contractual services that are under quote, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893, Florida Statutes, or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in, drug abuse assistance or rehabilitation program if such is available in employee's community, by any employee who is convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

DATE: _____

SIGNATURE: _____

COMPANY: _____

NAME: _____

(Typed or Printed)

ADDRESS: _____

TITLE: _____

E-MAIL: _____

PHONE
NO.: _____

CONFLICT OF INTEREST DISCLOSURE FORM

For purposes of determining any possible conflict of interest, all respondents, must disclose if any Okaloosa Board of County Commissioner, employee(s), elected officials(s), or if any of its agencies is also an owner, corporate officer, agency, employee, etc., of their business.

Indicate either "yes" (a county employee, elected official, or agency is also associated with your business), or "no". If yes, give person(s) name(s) and position(s) with your business.

YES: _____ NO: _____

NAME(S)	POSITION(S)
---------	-------------

_____	_____
_____	_____
_____	_____
_____	_____

FIRM NAME: _____

BY (PRINTED): _____

BY (SIGNATURE): _____

TITLE: _____

ADDRESS: _____

PHONE NO.: _____

E-MAIL : _____

DATE: _____

FEDERAL E-VERIFY COMPLIANCE CERTIFICATION

In accordance with Okaloosa County Policy and Executive Order Number 11-116 from the office of the Governor of the State of Florida, Respondent hereby certifies that the U.S. Department of Homeland Security's E-Verify system will be used to verify the employment eligibility of all new employees hired by the respondent during the contract term, and shall expressly require any subcontractors performing work or providing services pursuant to the contact to likewise utilize the U.S. Department of Homeland Securities E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term; and shall provide documentation such verification to the COUNTY upon request.

As the person authorized to sign this statement, I certify that this company complies/will comply fully with the above requirements.

DATE: _____

SIGNATURE: _____

COMPANY: _____

NAME: _____

ADDRESS: _____

TITLE: _____

E-MAIL: _____

PHONE NO. _____

CONE OF SILENCE CLAUSE

The Board of County Commissioners have established a solicitation silence policy (**Cone of Silence**) that prohibits oral and written communication regarding all formal solicitations for goods and services (ITB, RFP, ITQ, ITN, and RFQ) or other competitive solicitation between the bidder (or its agents or representatives) or other entity with the potential for a financial interest in the award (or their respective agents or representatives) regarding such competitive solicitation, and any County Commissioner or County employee, selection committee member or other persons authorized to act on behalf of the Board including the County’s Architect, Engineer or their sub-consultants, or anyone designated to provide a recommendation to award a particular contract, other than the Purchasing Department Staff..

The period commences from the time of advertisement until contract award.

When the solicitation silence period is in effect, no oral or written communication is allowed regarding the solicitation between prospective respondents and members of the Board of County Commissioners, the County Administrator, county employees or members of the Board Approved Review Committee. All questions or requests for information regarding the solicitation **MUST** be directed to the designated Purchasing Representative listed in the solicitation.

Any information thought to affect the committee or staff recommendation submitted after bids are due, should be directed to the Purchasing Director or an appointed representative. It shall be the Purchasing Director decision whether to consider this information in the decision process.

Any violation of this policy shall be grounds to disqualify the respondent from consideration during the selection process.

All respondents must agree to comply with this policy by signing the following statement and including it with their submittal.

I _____ representing _____
Signature **Company Name**

On this _____ day of _____ 2019 hereby agree to abide by the County’s “**Cone of Silence Clause**” and understand violation of this policy shall result in disqualification of my proposal/submittal.

RECYCLED CONTENT FORM

RECYCLED CONTENT INFORMATION

1. Is the material in the proposal: Virgin _____ or Recycled _____ (Check the applicable blank).
If recycled, what percentage _____ %

Product

Description: _____

2. Is your product packaged and/or shipped in material containing recycled content?

Yes _____ No _____

Specify: _____

3. Is your product recyclable after it has reached its intended end use?

Yes _____ No _____

Specify: _____

The above is not applicable if there is only a personal service involved with no product involvement.

Name of Respondent: _____

E-Mail: _____

INDEMNIFICATION AND HOLD HARMLESS

Respondent shall indemnify and hold harmless the County, its officers and employees from liabilities, damages, losses, and costs including but not limited to reasonable attorney fees, to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the Respondent and other persons employed or utilized by the Respondent in the performance of this Agreement.

Respondent's Company Name

Authorized Signature – Manual

Physical Address

Authorized Signature – Typed

Mailing Address

Title

Phone Number

FAX Number

Cellular Number

After-Hours Number(s)

Date

COMPANY DATA

Respondent's Company Name: _____

Physical Address & Phone #: _____

Contact Person (Typed-Printed): _____

Phone #: _____

Cell #: _____

Email: _____

Federal ID or SS #: _____

DUNS #: _____

Respondent's License #: _____

Fax #: _____

Emergency #'s After Hours,
Weekends & Holidays: _____

SYSTEM FOR AWARD MANAGEMENT (OCT 2016)

(a) Definitions. As used in this provision.

“Electronic Funds Transfer (EFT) indicator” means a four-character suffix to the unique entity identifier. The suffix is assigned at the discretion of the commercial, nonprofit, or Government entity to establish additional System for Award Management records for identifying alternative EFT accounts (see [subpart 32.11](#)) for the same entity.

“Registered in the System for Award Management (SAM) database” means that.

(1) The Offeror has entered all mandatory information, including the unique entity identifier and the EFT indicator, if applicable, the Commercial and Government Entity (CAGE) code, as well as data required by the Federal Funding Accountability and Transparency Act of 2006 (see [subpart 4.14](#)) into the SAM database;

(2) The offeror has completed the Core, Assertions, and Representations and Certifications, and Points of Contact sections of the registration in the SAM database;

(3) The Government has validated all mandatory data fields, to include validation of the Taxpayer Identification Number (TIN) with the Internal Revenue Service (IRS). The offeror will be required to provide consent for TIN validation to the Government as a part of the SAM registration process; and

(4) The Government has marked the record “Active”.

“Unique entity identifier” means a number or other identifier used to identify a specific commercial, nonprofit, or Government entity. See www.sam.gov for the designated entity for establishing unique entity identifiers.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee shall be registered in the SAM database prior to award, during performance, and through final payment of any contract, basic agreement, basic ordering agreement, or blanket purchasing agreement resulting from this solicitation.

(2) The Offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation “Unique Entity Identifier” followed by the unique entity identifier that identifies the Offeror’s name and address exactly as stated in the offer. The Offeror also shall enter its EFT indicator, if applicable. The unique entity identifier will be used by the Contracting Officer to verify that the Offeror is registered in the SAM database.

(c) If the Offeror does not have a unique entity identifier, it should contact the entity designated at www.sam.gov for establishment of the unique entity identifier directly to obtain one. The Offeror should be prepared to provide the following information:

- (1) Company legal business name.
- (2) Tradestyle, doing business, or other name by which your entity is commonly recognized.
- (3) Company Physical Street Address, City, State, and Zip Code.
- (4) Company Mailing Address, City, State and Zip Code (if separate from physical).
- (5) Company telephone number.
- (6) Date the company was started.
- (7) Number of employees at your location.
- (8) Chief executive officer/key manager.
- (9) Line of business (industry).
- (10) Company Headquarters name and address (reporting relationship within your entity).

(d) If the Offeror does not become registered in the SAM database in the time prescribed by the Contracting Officer, the Contracting Officer will proceed to award to the next otherwise successful registered Offeror.

(e) Processing time, which normally takes 48 hours, should be taken into consideration when registering. Offerors who are not registered should consider applying for registration immediately upon receipt of this solicitation.

(f) Offerors may obtain information on registration at <https://www.acquisition.gov> .

Offerors SAM information:

Entity Name: _____

Entity Address: _____

Duns Number: _____

CAGE Code: _____

ADDENDUM ACKNOWLEDGEMENT

ITN PS 33-20

Acknowledgment is hereby made of the following addenda (identified by number) received since issuance of solicitation:

ADDENDUM NO.

DATE

NOTE: Prior to submitting the response to this solicitation, it is the responsibility of the respondent to confirm if any addenda have been issued. If such addenda have been issued, acknowledge receipt by noting number(s) and date(s) above.

LOBBYING - 31 U.S.C. 1352, as amended

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements
(To be submitted with each bid or offer exceeding \$100,000)

The undersigned [Contractor] certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form--LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

_____ Signature of Contractor's Authorized Official

_____ Name and Title of Contractor's Authorized Official

_____ Date

Government Debarment & Suspension

Instructions

1. By signing and submitting this form, the prospective lower tier participant is providing the certification set out in accordance with these instructions.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person(s) to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Orders 12549, at Subpart C of OMB 2 C.F.R. Part 180 and 3000.332. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the System for Award Management (SAM) database.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge

and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph (5) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

**Certification Regarding Debarment, Suspension,
Ineligibility and Voluntary Exclusion
Lower Tier Covered Transactions**

The following statement is made in accordance with the Privacy Act of 1974 (5 U.S.C. § 552(a), as amended). This certification is required by the regulations implementing Executive Orders 12549, Debarment and Suspension, and OMB 2 C.F.R. Part 180, Participants' responsibilities. The regulations were amended and published on August 31, 2005, in 70 Fed. Reg. 51865-51880.

[READ INSTRUCTIONS ON PREVIOUS PAGE BEFORE COMPLETING CERTIFICATION]

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal or State department or agency;
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal

Printed Name and Title of Authorized Representative

Signature

Date

VENDORS ON SCRUTINIZED COMPANIES LISTS

By executing this Certificate _____, the bid proposer, certifies that it is not: (1) listed on the Scrutinized Companies that Boycott Israel List, created pursuant to section 215.4725, Florida Statutes, (2) engaged in a boycott of Israel, (3) listed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to section 215.473, Florida Statutes, or (4) engaged in business operations in Cuba or Syria. Pursuant to section 287.135(5), Florida Statutes, the County may disqualify the bid proper immediately or immediately terminate any agreement entered into for cause if the bid proposer is found to have submitted a false certification as to the above or if the Contractor is placed on the Scrutinized Companies that Boycott Israel List, is engaged in a boycott of Israel, has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has been engaged in business operations in Cuba or Syria, during the term of the Agreement. If the County determines that the bid proposer has submitted a false certification, the County will provide written notice to the bid proposer. Unless the bid proposer demonstrates in writing, within 90 calendar days of receipt of the notice, that the County's determination of false certification was made in error, the County shall bring a civil action against the bid proposer. If the County's determination is upheld, a civil penalty shall apply, and the bid proposer will be ineligible to bid on any Agreement with a Florida agency or local governmental entity for three years after the date of County's determination of false certification by bid proposer.

As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

DATE: _____

SIGNATURE: _____

COMPANY: _____

NAME: _____
(Typed or Printed)

ADDRESS: _____

TITLE: _____

E-MAIL: _____

PHONE NO.: _____

Exhibit B – Standard Contract Clauses

Title VI Clauses for Compliance with Nondiscrimination Requirements

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts And Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor’s obligations under this contract and the Nondiscrimination Acts And Authorities on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts And Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor’s noncompliance with the Non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:
 - a. Withholding payments to the contractor under the contract until the contractor complies; and/or
 - b. Cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Title VI List of Pertinent Nondiscrimination Acts and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

Federal Fair Labor Standards Act (Federal Minimum Wage)

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers.

The [*contractor | consultant*] has full responsibility to monitor compliance to the referenced statute or regulation. The [*contractor | consultant*] must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division

Occupational Safety and Health Act of 1970

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Contractor retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). Contractor must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

E-Verify

Enrollment and verification requirements.

- (1) If the Contractor is not enrolled as a Federal Contractor in E-Verify at time of contract award, the Contractor shall-
 - a. Enroll. Enroll as a Federal Contractor in the E-Verify Program within thirty (30) calendar days of contract award;
 - b. Verify all new employees. Within ninety (90) calendar days of enrollment in the E-Verify program, begin to use E-Verify to initiate verification of employment eligibility of all new hires of the Contractor, who are working in the United States, whether or not assigned to the contract, within three (3) business days after the date of hire (but see paragraph (b)(3) of this section); and,

- c. Verify employees assigned to the contract. For each employee assigned to the contract, initiate verification within ninety (90) calendar days after date of enrollment or within thirty (30) calendar days of the employee's assignment to the contract, whichever date is later (but see paragraph (b)(4) of this section.)
- (2) If the Contractor is enrolled as a Federal Contractor in E-Verify at time of contract award, the Contractor shall use E-Verify to initiate verification of employment eligibility of
- a. All new employees.
 - i. Enrolled ninety (90) calendar days or more. The Contractor shall initiate verification of all new hires of the Contractor, who are working in the United States, whether or not assigned to the contract, within three (3) business days after the date of hire (but see paragraph (b)(3) of this section); or
 - b. Enrolled less than ninety (90) calendar days. Within ninety (90) calendar days after enrollment as a Federal Contractor in E-Verify, the Contractor shall initiate verification of all new hires of the contractor, who are working in the United States, whether or not assigned to the contract, within three (3) business days after the date of hire (but see paragraph (b)(3) of this section); or
 - ii. Employees assigned to the contract. For each employee assigned to the contract, the Contractor shall initiate verification within ninety (90) calendar days after date of contract award or within thirty (30) days after assignment to the contract, whichever date is later (but see paragraph (b)(4) of this section.)
- (3) If the Contractor is an institution of higher education (as defined at 20 U.S.C. 1001(a)); a State of local government or the government of a Federally recognized Indian tribe, or a surety performing under a takeover agreement entered into with a Federal agency pursuant to a performance bond, the Contractor may choose to verify only employees assigned to the contract, whether existing employees or new hires. The Contractor shall follow the applicable verification requirements of (b)(1) or (b)(2), respectively, except that any requirement for verification of new employees applies only to new employees assigned to the contract.
- (4) Option to verify employment eligibility of all employees. The Contractor may elect to verify all existing employees hired after November 6, 1986 (after November 27, 2009, in the Commonwealth of the Northern Mariana Islands), rather than just those employees assigned to the contract. The Contractor shall initiate verification for each existing employee working in the United States who was hired after November 6, 1986 (after November 27, 2009, in the Commonwealth of the Northern Mariana Islands), within one hundred eighty (180) calendar days of-
- i. Enrollment in the E-Verify program; or
 - ii. Notification to E-Verify Operations of the Contractor's decision to exercise this option, using the contract information provided in the E-Verify program Memorandum of Understanding (MOU)
- (5) The Contractor shall comply, for the period of performance of this contract, with the requirements of the E-Verify program MOU.

- i. The Department of Homeland Security (DHS) or the Social Security Administration (SSA) may terminate the Contractor's MOU and deny access to the E-Verify system in accordance with the terms of the MOU. In such case, the Contractor, will be referred to a suspension or debarment official.
- ii. During the period between termination of the MOU and a decision by the suspension or debarment official whether to suspend or debar, the contractor is excused from its obligations under paragraph (b) of this clause. If the suspension or debarment official determines not to suspend or debar the Contractor, then the Contractor must reenroll in E-Verify.
- iii. Web site. Information on registration for and use of the E-Verify program can be obtained via the Internet at the Department of Homeland Security Web site: <http://www.dhs.gov/E-Verify>. Individuals previously verified. The Contractor is not required by this clause to perform additional employment verification using E-Verify for any employee –
 - (a) Whose employment eligibility was previously verified by the Contractor through the E-Verify program;
 - (b) Who has been granted and holds an active U.S. Government security clearance for access to confidential, secret, or top secret information in accordance with the National Industrial Security Program Operating Manual; or
 - (c) Who has undergone a completed background investigation and been issued credentials pursuant to Homeland Security Presidential Directive (HSPD)-12. Policy for a Common Identification Standard for Federal Employees and Contractors.

Subcontracts. The Contractor shall include the requirements of this clause, including this paragraph € (appropriately modified for identification of the parties in each subcontract that –

- (1) Is for-(i) Commercial and noncommercial services (except for commercial services that are part of the purchase of a COTS item (or an item that would be a COTS item, but for minor modifications), performed by the COTS provider, and are normally provided for that COTS item); or
(ii) Construction;
- (2) Has a value of more than \$3,500; and
- (3) Includes work performed in the United States.