

Statement of Work - Request for Proposal VHF Radio Equipment and Installation North County Dispatch Joint Powers Authority

1.0 PURPOSE:

The North Zone Fire Chiefs and the North County Dispatch Joint Powers Authority, hereafter referred to as the (“JPA”), is seeking assistance in a Request for Proposal (“RFP”) to establish a VHF radio system that is P25 capable.

The existing systems in the North Zone operates in the VHF frequency band via single-site repeaters that will be a part of the San Diego County Regional VHF Radio System. The existing radio equipment is facing three primary issues: equipment obsolescence or lack of, backhaul to the emergency communications centers from each site, and the need for increased portable and mobile radio coverage. The San Diego Regional VHF Project, North Zone Chiefs, the JPA and its first responders seek to improve their communication abilities to the extent that they can reliably communicate via their portable and mobile VHF radios over 95% of the geographical areas within the County.

The JPA is seeking assistance with project management/consulting services, VHF radio equipment, and installation. Additionally, the RFP is seeking assistance to identify the infrastructure needs including, but not limited to enclosures, generators, climate control, electrical, backup power and tower options. Those sites identified as having infrastructure needs through this RFP should include installation costs and required permit costs.

In addition to the equipment and infrastructure needs, the JPA may need to purchase portable/mobile repeaters.

Any response to this proposal should include any additional equipment, infrastructure or recommendations for potential sites that are needed to complete the work to provide the best coverage in the North Zone and ensure a robust VHF radio system. Any recommendations should be presented in separate line items. Any potential options for improved infrastructure needs at each site or the ECC may be provided in separate line items.

The JPA is looking to leverage grant funds; therefore, the equipment will need to be completed, delivered, and invoiced no later than April 12, 2020 and installation of the equipment must be completed by October 1, 2020. Subsequent phases of the project will have separate timelines to be determined.

The JPA and the North Zone may leverage this Request for Proposal (RFP) for future phases of the North Zone’s portion of the San Diego Regional VHF Project for VHF equipment, infrastructure needs, installation, and/or consulting-project management services.

2.0 BACKGROUND:

San Diego County Fire Service members have been participating in local and regional planning at all levels of government to address effective and integrated fire incident communications. This project seeks to expand local government conventional VHF radio system resources and infrastructure in the San Diego Operational Area.

A unified, coordinated approach in the county has been underway to include the use of consolidated legacy conventional VHF resources and emerging resources involving local, state, and federal fire services agencies with the support of the San Diego County Fire Chiefs.

The JPA and North Zone Fire Agencies support and participate in these regional efforts. The Regional VHF project continues to be a primary focus for the North Zone, JPA, and the San Diego County Fire Chiefs

Association (SDCFCA). The project focus is to improve communications during major events, not limited to wildfire and to provide redundancy to the Regional 800 MHz radio system in San Diego County.

In San Diego County as a part of the State Master Mutual Aid (MMA) System, the County is divided into four (4) fire zones: Central, East, Metro, and North. Each Zone has different and varying situations as it relates to the Regional VHF project. In order to address the individual needs and to accomplish the regional goal, each Zone is responsible for their portion of the project while working together for the overall outcome. This RFP is for the second phase of the North Zone and JPA portion of the Regional VHF Project.

3.0 HISTORY OF NORTH ZONE AND JPA:

The JPA was legally organized under the Joint Exercise of Powers Act Government Code Section 6500 in June 11, 1984. The JPA is governed by a Board of Directors, consisting of eight (8) elected official from the member agencies who are appointed by their respective governing bodies. The JPA is also governed by a Board of Fire Chiefs from the member agencies to provide operational oversight and direction to the Administrator and Staff of the JPA. Please visit our website at www.ncdjpa.org for further information if desired.

4.0 PROJECT DESCRIPTION:

The anticipated system will operate in P25 Phase 1 conventional (non-trunked) mode. The system shall also be capable of P25 Phase 2 conventional operations through software upgrades, without hardware replacement. P25 operations shall be compliant with relevant TIA standards for APCO Project 25 (P25) systems as they relate to the Phase 1 and Phase 2 Common Air Interface (CAI).

The North Zone is in the process of identifying VHF radio equipment, infrastructure, resources, and installation needs for a phased approach to support the North Zone portion of the Regional VHF Radio System buildout within the county of San Diego.

The two sites listed below are identified sites and priority for this phase of the project:

- Priority #1: Ellery Site (City of Carlsbad's Fire Department): Quote as a separate line item
 - Add XSD CMD 5 Repeater
 - Add XSD CMD 6 Repeater
- Priority #2: Fire Mountain (City of Oceanside's Fire Department): Quote as a separate line item
 - Replace 1 Shelter Structure
 - Replace 1 Tower
 - Add 1 Generator and 1 Air Conditioning Unit
 - Add 1 Backup Power - Batteries/Solar

Installation costs should be identified on a separate line item for each site. In addition to the equipment and installation costs, the proposal may include other infrastructure needs outlined separately for each site.

Due to the complexity of the project, experience with VHF radio system engineering, planning and design, VHF equipment, construction, and planning is essential for this project. The North Zone is seeking a proposal that demonstrates the needed knowledge and experience with radio frequency (RF) radio procurement and installation projects, specifically related to VHF radio systems, analog and digital, equipment P25 capable, site analysis and infrastructure needs.

The JPA is requesting an option to assist the JPA with project management/consulting services and are requesting a proposal in separate line item. It is the Vendors responsibility to identify a scope of work with project hours and cost. The JPA is looking to purchase portable repeaters. Specifications will be provided.

5.0 GENERAL REQUIREMENTS:

The JPA is soliciting proposals from qualified vendors to provide a new turnkey, public safety quality radio system that meets or exceeds the needs and functional requirements of the system users as stated herein. The Vendor shall propose their system configuration to achieve the operational requirements and shall be responsible for the method of accomplishing their proposed configuration. Any deviation from the

requirements shall be specifically noted as an exception in the proposal. The JPA shall have the sole authority to determine compliance with the stated system requirements.

The Proposal must comply with the following general standards:

- All equipment and services offered shall be of high quality and suitable for the intended purpose.
- No discontinued, used, or refurbished equipment shall be supplied under this procurement other than equipment specified herein as available for reuse.
- The vendor shall be an authorized sales and service agency for the equipment being offered.
- All equipment and devices added to the system shall be current models with vendor support for a minimum of two years after warranty ends.

5.1 Applicable Codes and Regulations:

The Vendor is responsible for compliance with all applicable codes and regulations including but not limited to the latest versions of the California Building Code and the California Fire Code. The Vendor shall also be responsible for compliance with applicable Environmental Protection Agency, Federal Communications Commission, and Federal Aviation Administration regulations and any other codes or regulations necessary for implementation of the Vendor's proposal.

5.2 Construction Permits:

The Vendor shall be responsible for obtaining all necessary construction permits for system installation and implementation. The JPA and North Zone Agencies will aid in expediting the permitting process where possible. The Vendor will retain the ultimate responsibility for obtaining the appropriate construction permits.

5.3 System Facilities General:

The Vendor shall provide any and all necessary modifications and/or improvements for transmission sites on a turnkey basis. Proposals shall describe and price any special requirements (e.g. architectural, mechanical, electrical, civil, or structural modifications) that their equipment may need at the locations that are intended to be utilized.

6.0 INTENT:

The JPA is committed to maintaining fair and open competition. Every effort is made to maintain the highest level of ethical conduct in every aspect of the procurement process. Qualification and selection of vendors is based on those vendors who share the same high standards of ethical conduct.

It is the intent of this RFP and the resulting contract documents to describe a functionally complete project resulting in a VHF Conventional Public Safety Radio System and associated items and services. Any work, materials, or equipment that may reasonably be inferred from the contract documents as being required to produce the intended result will be supplied, whether specifically set forth herein. When words which have a well-known technical or trade meaning are used to describe work, materials or equipment, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals, codes or recommendations of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of contract award, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether specifically incorporated by reference in the contract documents) shall be effective to change the duties and responsibilities of JPA, Vendor, or any of their subcontractors, consultants, agents or employees from those set forth specifically in the contract documents.

The JPA requests proposals for the detailed design and implementation of an integrated system on a "turnkey" basis. This turnkey system shall include hardware, software, installation, system design, engineering, warranty, maintenance, testing, training, documentation, project management services,

timeline, and all cost associated with providing a fully functional turnkey communications system as described in the RFP.

Prior to final system acceptance, the Vendor must successfully complete a coverage verification test. The Vendor shall prepare a coverage verification test plan utilizing TIA TSB-88 methodology. It is anticipated that the service area will be divided into uniform grids for evaluation purposes. An automated drive test process will be utilized to measure both RSSI and BER of the outbound signal. A corresponding inbound measurement method is preferred. However, the Proposal may present calculation methodology to relate the outbound drive data to inbound performance. RF attenuators may be utilized as necessary to simulate portable radio body blockage and/or inbound path imbalance. Each accessible grid will be statistically evaluated to determine if the RSSI and BER requirements have been satisfied. It will then be determined if the required percentage of "passing" grids for the specific service requirement satisfied. The coverage test plan shall include limited voice testing in not more than 10% of the test tiles. The purpose of the voice testing is to demonstrate DAQ 3.4 performance at a sampling of locations throughout the coverage area.

The terms and conditions specified in this document will apply to the RFP, including all options addressed by the RFP. Only those vendors fully capable of complying with the terms and conditions stated herein will be considered qualified for an award and subsequent contract.

It is the intention of JPA to execute a final contract with the vendor whose proposal is deemed most advantageous in accordance with the evaluation criteria specified in this RFP. The JPA may conduct post-proposal discussions with any or all vendors deemed to be reasonably qualified for selection for award. "Post-Proposal discussions" may include but are not limited to requests for additional information, interviews, request for proposal modifications or revisions and requests for "best-and-final" offers. The JPA may reject any part of any, or all proposals.

7.0 EQUIPMENT PURCHASE:

The JPA is seeking to identify the appropriate P25 capable equipment needed at each of the two (2) sites, specifically VHF repeaters, base station radios, and VHF capabilities in the ECC that are in line or compatible with existing North Zone VHF radio equipment to minimize future support challenges. The proposal should detail the reason for the equipment proposed. The proposal should include, but is not limited to the following:

- P25 capable equipment, fixed repeaters, base stations, and mobile repeaters
- Antenna's and cabling should be included or replace existing antennas and cables
- Structure/Enclosure Options for Fire Mountain: One (1) enclosure in line with the industry standards for radio enclosures for weather, security, and high fire rating, etc.
- Tower for Fire Mountain: Replace one (1) tower to the current industry standards. Must be same height and size as current one.
- Other equipment needs for installation of proposed equipment including any P25 capable components should be identified in a separate line item.
- Other equipment recommendations and options may be included as a separate line item for consideration.
- Other infrastructure needs proposed by the vendor should be clearly identified as additional with stated purpose in a separate line item.
- Portable repeaters compatible with the current VHF infrastructure, existing portable repeaters and P25 capable. The portable repeaters should be a separate line item in the proposal.

7.1 Base Station Antenna Configuration:

The Proposal shall fully describe the proposed antenna systems on a site-by-site basis. The acceptance tests plan shall include procedures to demonstrate that sufficient transmit-to-receive isolation and interference protection has been provided.

7.2 Base Station Equipment:

The transmit/receive sites shall be equipped with top-of-the-line base stations appropriate for the intended function as specified in this RFP. The base station shall be capable of supporting operations with a high quality of performance, service, and reliability.

The base stations shall be rated for continuous-duty and shall be mounted in industry-standard 19" equipment cabinets. All equipment shall be FCC type-accepted and Vendor shall provide the type acceptance numbers in their proposals. The base station shall operate from a nominal 120-volt, 60-Hz source, and shall operate within rated specification from base station equipment including transmitter, receiver, meters, protection devices and any other associated RF devices or assemblies shall be furnished with type "N" or "DIN" connectors as appropriate per the design.

The transmitter output impedance and the receiver input impedance shall be 50 ohms. Suitable devices shall be provided to ensure that impedance changes in the antenna system will not cause changes in the transmitter output power.

Each base station shall be provided with appropriate circulators and harmonic filters to minimize the effects of transmitter produced intermodulation and harmonic products. The Vendor shall describe, in detail, the interference protection proposed.

All base stations shall be protected from other co-located, in-band and out-of-band transmitters and shall perform normal operation without degradation with all co-site equipment activated.

The system shall provide a method of station identification in accordance with FCC requirements. The base station shall include circuitry and hardware provisions for manually switched local operation for testing and maintenance.

The proposed base station equipment shall meet or exceed TIA/EIA-603, Section 4.2, and the Code of Federal Regulations 47, Part 90, Subpart I for transmitters and TIA/EIA-603, Section 4.1 for receivers. The Vendor's Proposal shall include manufacturer specification information detailing relevant performance data for the following:

- Frequency Range
- Frequency Stability
- RF Power Output
- Channel Spacing
- Channel Step (PLL Step)
- Frequency Deviation
- Frequency Modulation Type
- Modulation Fidelity
- FCC Emission Designator
- Audio Distortion
- Receiver Sensitivity 5% BER
- Adjacent Channel Rejection
- Spurious and Image Rejection

7.3 Transmit Combiners:

It is anticipated that combiners may be utilized for connection of each base station transmitter at a site to a common transmit antenna(s). However, the available VHF spectrum may require multiple combiners and alternative antenna system designs. Any proposed combiners must provide bandpass/band-reject functionality. All combiners/filters must be specifically designed for the frequency plan that will be developed. As noted in this RFP under Interference Protection and elsewhere, the Vendor's design must provide adequate interference protection. No transmitter in the system shall cause measurable degradation to any receiver in the system. Further, all receivers must operate free of measurable degradation with all transmitters active. System testing will include measurements to demonstrate frequency compatibility and interference protection.

7.4 Receiver Multicoupler/TTA Equipment:

It is anticipated that receiver multicoupler systems may be utilized for the connection of each base station receiver at a site to a common receive antenna. These multicoupler systems may include splitters, amplifiers, filters, etc. As noted in § 3.5.3 Base Station Antenna Configuration, all receiver multicoupler systems must be specifically designed for the frequencies deployed at the site locations. As noted in Interference Protection and elsewhere, the Vendor's design must provide adequate interference protection.

7.5 Transmission Line:

All antenna transmission lines shall be CommScope HELIAX series or approved equivalent. All transmission lines shall be terminated with type "N" or "DIN" female connectors as needed for the specific application. The connectors must be constructed of all non-ferrous materials. No coaxial cable splices or adapters shall be utilized.

Jacketed, flexible, foam dielectric cable with solid copper outer conductor shall be used as jumper cables to connect the transmitters and receivers to RF devices, transmission lines, and antennas. Jumper cables for the site receiver circuits shall use a minimum of ¼-inch flexible, low-loss cable. Jumper cables for the site transmitter circuits shall use a minimum of ½-inch flexible low-loss cable. All connectors shall be specially designed for the cable provided and not exceed 0.25 dB insertion loss. In addition, any connectors/connections provided for external installation shall be protected from corrosion and weather damage as recommended by the manufacturer; vinyl tape shall not be utilized. All coaxes shall be labeled on the antenna jumper and at the jumper to the repeater inside of the radio equipment room/area using color tape so that the antenna system for each repeater can be easily identified at each site.

Vendor shall determine the correct transmission line diameter and lengths for installation. All cables must be secured with cable manufacturer approved stainless steel clamps and hardware. Each cable run shall be provided with a direct path to ground and equipped with lightning/surge protection.

Complete diagrams for each system site installation shall be provided by the Vendor to detail the cable type, placement, connectors used, grounding location, lengths of all cables proposed and the coax labeling scheme.

7.6 Base Station Antennas:

All base station antennas shall be rugged and durable units. Fiberglass radome antennas or exposed folded dipole metal antennas can be utilized. If metal dipole antennas are utilized the antennas should be properly coated/designed to eliminate the possibility of corrosion at the antenna's dissimilar metal joints which could result in non-linear junctions/behavior which is the basis for intermodulation interference. Specific antennas are to be specified by the Vendor, consistent with the proposed configuration. The Vendor or subcontractor chosen for the antenna installations must be experienced in the installation of base station antennas. The supplier shall furnish all required brackets and mounts to install the antennas. All exposed hardware, mounting brackets, and fasteners must be fabricated from material that will minimize dissimilar metallic junctions and corrosion.

All antennas and transmission lines shall be sweep-tested by the Vendor with a network analyzer prior to or upon installation. Chart recordings of sweep measurements shall be made and retained in the site log. No V.S.W.R. in excess of 1.5:1 is permitted to any fixed antenna/coaxial cable system.

7.7 Backup Generators (Option):

The optional backup generator described in this RFP shall meet following equipment specifications:

- 60 HZ, 120/240 VAC, 1 Phase output
- ±1% voltage regulation
- Propane or Natural Gas
- 12 volt starting voltage

- Battery charging alternator
- Engine block heater
- 200A UL mainline circuit breaker
- Muffler system with sound level below 70 dB(A) at 7 meters at full rated load
- Standard electronic Governor
- Hour meter

The generator shall include an automatic transfer switch which provides switching of the equipment shelter electrical load between commercial power and generator power. Permanently attached manual handles shall also be installed on the transfer switch. The switch shall provide positive mechanical and electrical interlocking and mechanically held contacts. Quick-make and quick-break contact mechanisms shall be provided for manual transfer under load. The switch shall be fully wired and integrated with the engine generator set in accordance with local electrical and fire codes. Each automatic transfer switch shall meet the following specifications:

- Installation in shelter
- U.L. listed and labeled, tested per U.L. Standard 1008
- CSA Approved
- 600 Volt contactor
- Rated at 200 amps
- 2 Pole construction
- Operating at 60 HZ
- 240 Volts, 1 phase
- In-phase adjustable control
- 7-Day programmable exerciser
- 2-wire start circuit
- NEMA 1 Enclosure

The Proposal shall include optional pricing for adding a backup natural gas generator if it is determined that natural gas is not reasonably available at the site, the generator shall operate with propane fuel.

Only a generator manufactured for Industrial/Commercial use is to be proposed; those manufactured for residential/light duty use are not acceptable. The generator shall include an enclosure and fuel tank (if propane fueled) and shall be installed on a concrete pad per manufacturer recommendations. The generator design shall include all necessary equipment and services to deliver a fully functional backup generator. In the event of failure of commercial power, the generator shall automatically start, and service shall be automatically transferred from commercial power to generator power. The proposed backup generator shall power the equipment shelter, all equipment in the shelter, and shelter accessories. See §4.8 for generator and automatic transfer switch specifications.

Generator Sizing:

The Vendor shall be responsible for sizing the proposed generator based upon the anticipated load of the proposed site equipment and existing lighting and HVAC equipment; minimum load of 25 kWatts. The Detail Design Review must include detailed electrical load calculations to verify that the generator is appropriately sized to support the intended use.

Fuel Tank & Run-Time:

The generator shall run on propane or natural gas and shall provide a minimum run time of 48 hours.

Generator Alarms:

Alarm capabilities are intended to provide indicators of generator status and health. All generator alarms shall be interconnected with the radio system alarm and monitoring sub-system.

- Minimum alarm requirements are: Commercial Power status (AC on/off)

- Standard: (Program to stay on for 15 minutes after power is restored.)
- Remote re-set/start
- Generator on/off
- Low oil pressure
- Low fuel pressure (propane)
- Over crank
- High coolant temperature
- Low coolant level
- Low battery voltage
- Over speed

8.0 SYSTEM PROTECTION FEATURES:

8.1 General Protection:

The Vendor shall describe any system alarm, status, and monitoring features provided with the proposed system. Optional features recommended by the Vendor should be described in detail and priced separately.

8.2 UPS Equipment:

The Vendor shall be responsible for providing UPS equipment for the intended purpose of the equipment proposed and can support the anticipated electrical load for the equipment proposed.

8.3 Interference Protection:

The system and equipment offered by the Vendor shall include all necessary devices required to prevent interference to and from the equipment provided hereunder. No base station or control station transmitter in the system shall cause measurable degradation to any receiver in the system. Further, all receivers must operate free of measurable degradation with all co-located transmitters active. System testing will include measurements to demonstrate interference protection.

8.4 System Failure Modes:

With the Proposal, the Vendor must provide a detailed discussion of all possible system failure modes and shall define the system's operational capabilities and limitations which may result from these failure modes.

Particular attention should be paid to the system's ability to remain functional due to the following failures:

- GPS timing system failure
- Master oscillator failure
- Interconnection circuit failure
- Transmitter failure
- Receiver multicoupler failure

System acceptance testing shall demonstrate that each of these failures results in system recovery within the maximum failover time.

9.0 INSTALLATION, TESTING, MAINTENANCE & WARRANTY:

General Installation Requirements:

Site assessment should allow for immediate and future infrastructure needs identifying the most appropriate approach if applicable to the site. The site should meet FCC standards or other industry standards, when applicable.

The following considerations should be included:

- Personnel-Safety, access, environment, and potential threats

- Equipment needs in priority of the site needs to bring to full functionality while meeting industry standards and compatibility with the existing equipment in the North Zone, JPA, and the Region
- Consider future needs at each location and configuration of solution for future growth, like additional repeaters or Antennas, etc.
- Antenna placement for maximum and appropriate coverage
- Any potential building/construction recommendations should provide for future needs and ensure installation deadline is met.
- Any infrastructure needs and options should be identified to ensure best outcome for a long-term solution at each location and most cost effective.

*Any items that will not meet the installation deadline of **October 1, 2020** need to be identified in the proposal with a detailed explanation.

9.1 Equipment Delivery:

Equipment delivery and installation will not begin until the JPA accepts the Vendor's Final Design Review, as described in this RFP and issues a formal Notice To Proceed (NTP). All deliveries to the JPA shall be freight prepaid by the Vendor with no charges or costs to be paid by the JPA at the time of delivery. All deliveries shall be made to a secure facility maintained at the Vendor's expense or at a secure location mutually agreed upon by the Vendor and the JPA. Deliveries shall be unloaded by the Vendor or delivery person. Regardless of the place of delivery, the Vendor shall notify the JPA regarding the date, time, place, and items associated with each delivery within a reasonable time prior to the date and time thereof; provided, if the Vendor cannot determine the date and time with reasonable certainty, then the required notice shall be given within 24 hours following the delivery.

The JPA shall have the rights, but not the duty, to make inspections with regard to every item delivered. The delivery of radio system components shall not constitute partial or conditional acceptance of the system or any of its components by the JPA.

9.2 Installation Criteria:

Installation of all materials and equipment must meet FCC and EIA industry standards in all respects with specific attention given to applicable City or County Codes, Fire Codes, and Electrical Codes and to the methods employed for wiring, cabling, terminations, cable and wire labeling, documentation, wire codes, equipment room layouts, antenna installation, general appearance and operating performance. If the installation of any material or equipment covered under this procurement requires a licensed tradesman to design and/or to perform the installation task, the Vendor shall utilize a licensed and qualified professional to perform said task.

The Vendor shall be responsible for the cost of repairing or bringing to original condition existing facilities that may suffer damage during the course of system installation, to include floors, walls, ceilings, roofing, grounds, landscaping, pavement, call box enclosures, vehicle interiors, vehicle exteriors, etc. The Vendor shall also completely remove from the premises all packaging, crates, and other litter due to their work.

With its proposal, the Vendor must describe installation plans and procedures and indicate the supporting organizational structure, listing specific qualifications of personnel and job functions proposed to complete the system installation.

9.3 Installation Procedures / Implementation Schedule:

Vendor shall provide adequate, technically competent, factory-trained personnel to install all equipment and features supplied for this system. All installation activities shall be coordinated with the JPA. During the installation, no circuits or equipment shall be removed, adjusted or disconnected by the Vendor without prior authorization by the JPA.

The Vendor shall work in as judicious a manner as possible. Vendors shall include in their proposals an Estimated Implementation Schedule, with major milestones listed and specifying those items required of the JPA to complete implementation. This schedule shall include a timeline of all the tasks proposed by the Vendor. This schedule shall include all configuration, installation, testing, and integration tasks to be completed by the Vendor and its subcontractors. During the Final Design Review, the selected Vendor shall submit a Detailed Implementation Schedule with an established cutover date.

Control station installations shall be performed by qualified personnel at the locations specified by the JPA. The JPA or their designated agent must approve final placement of all equipment, cable routing, and antenna mounting configurations. All installation activity shall be conducted under the supervision of the JPA personnel or designated agent.

These installations shall include all required materials and services to provide professional, complete, and ready-to-operate equipment. The selected Vendor shall install the system, equipment, and associated support devices without any interruptions to the ongoing operations unless a planned interruption is specifically agreed upon by the JPA.

All equipment installations shall utilize best industry practices for radio frequency equipment. The Vendor shall furnish and install lightning and AC surge protection at all radio base stations and control equipment locations. Each antenna supplied for this system shall incorporate lightning protection. All antenna transmission lines shall be grounded 1) at the antenna base, 2) at the base of the antenna tower, if applicable, and 3) at the point of entry to the shelter or building that houses the system equipment.

The electrical service for all system equipment shall be protected by transient voltage surge protection devices. All equipment cabinets and/or racks shall be connected to site ground with #2 AWG solid copper conductors. The grounding wire for the cabinet shall be attached to the equipment rail with a star washer. All equipment cabinets within the same room shall be connected with their grounding line at the site's single-point grounding plate. This site grounding plate shall have low impedance, less than 5 ohms, to earth ground.

All interconnecting wiring shall originate/terminate at telephone type punch blocks. All punch block connections shall be made via bridging clips. Complete point-to-point wiring drawings shall be made and incorporated into the as-built system documentation.

9.4 System Acceptance:

Testing: Upon completion of the system installation, and before final acceptance by the JPA, the Vendor shall perform the following tests and submit the results to the JPA, in writing:

- On-site inspection of completed system installation, with all deficiencies Corrected
- Equipment tests and verification of equipment performance
- Formal demonstration of operational system features as described herein
- Coverage verification test
- Thirty-day performance and stability test

Detailed test procedures for each of the system tests shall be submitted for approval to the JPA at least thirty (30) days before each test is scheduled to be performed. The JPA will approve, conditionally approve, or reject the test plan within fourteen (14) days of submittal.

All tests shall be monitored by the JPA and will not be considered valid tests unless the test plan has received prior approval and the tests are monitored by the JPA or its designated agent. The JPA reserves the right to disapprove any tests or test results which do not conform with agreed upon procedures and pass/fail criteria. If disapproved, it shall be the sole responsibility of Vendor to modify, correct, or repeat any such disapproved tests or test results to the satisfaction of the JPA and at no cost to the JPA.

All tests, excluding the 30-day performance test, shall be coordinated in advance with the JPA and shall be conducted during normal working hours, Monday through Friday, from 8:00 a.m. to 5:00 p.m.

9.5 System Installation Compliance:

The purpose of this test is to determine completion of system installation and to verify system operability.

Vendor shall conduct an on-site inspection of all system facilities with the JPA prior to formal acceptance by the JPA. This inspection shall demonstrate that all system components have been delivered and installed at their proper location. The inspection shall demonstrate that all mechanical installation requirements have been completed and all equipment has been properly connected to electrical service, properly grounded, and all signal, coaxial, and data cables have been properly connected to the equipment. As-built documentation shall be supplied prior to requesting Final System Acceptance.

9.6 Equipment Tests:

All performance parameters for the equipment supplied shall be tested and documented to confirm that the equipment and performance specifications are met. Equipment tests include but are not limited to:

- Frequency error
- Transmitter output power
- Combiner output power
- Modulation fidelity
- Receive antenna system optimization
- Receiver sensitivity
- Effective sensitivity
- Transmit-to-receive isolation

Antenna system components shall be tested prior to (or upon installation) and verified after completion of installation.

10.0 DESIGN REVIEWS:

Preliminary Design Review:

A Preliminary Design Review (PDR) shall be conducted no later than 15 days from execution of the purchase agreement. This process shall include a review of the Vendor's preliminary configuration and design documentation for the project. Information to be submitted for PDR shall include all data required to determine conformance with the requirements of the RFP and contract documents including:

- 10.1 A complete narrative description which includes up-to-date information to correctly describe the actual equipment, materials, software, features, and programming comprising the system.
- 10.2 Discussion of any configurations and options to be selected by the North Zone/JPA.
- 10.3 An up-to-date listing of all equipment and software, by site and subsystem, which details all options and how each of the required features and functions will be accomplished.
- 10.4 A complete system functional diagram which identifies all major system components and details the system interconnection to clarify system operation for each location. This diagram shall include detailed site block diagrams and photos.
- 10.5 Updated coverage prediction maps.
- 10.6 All necessary plans, designs, and analyses related to recommend site preparation or site upgrades.

- 10.7 Detailed Implementation Schedule and work plans for equipment production, system configuration, installation, implementation, testing, cutover, and final acceptance. The Detailed Implementation Schedule shall provide the major project tasks and include: 1) the order of execution, 2) start date, and 3) contemplated date of completion. The Vendor will track the actual process at such intervals as directed by the JPA.
- 10.8 The JPA will complete its review of the PDR documentation within 14 days, at which time the JPA will either issue approval to proceed with the final design or will state the required changes needed to grant approval.
- 10.9 Final Design Review: Once the PDR has been completed and the JPA has provided approval to proceed with the final design, the Vendor shall prepare the Final Design Review (FDR). The FDR will update all design and contract documents as needed to reflect the final design as agreed upon by the parties during the Design Phase. Any design element, plans, or drawings requiring review and certification from a licensed professional engineer or architect shall be sealed by a qualified and licensed professional as applicable. A meeting will be conducted to review all FDR documentation. The JPA will complete its review of the FDR documentation within 14 days, at which time the JPA will issue a Notice to Proceed. Equipment manufacture, delivery, and installation will not begin until the JPA accepts the FDR documents and issues a formal Notice to Proceed to the Vendor. Approval of the PDR and FDR documentation by the JPA is general in nature and shall not relieve the Vendor of responsibility for the accuracy of its documentation nor for the proper function and performance of the system and system components

11.0 OPTIONAL MAINTENANCE CONTRACT:

The Vendor shall provide in its Proposal an optional Maintenance Service Contract (including parts, labor, and software maintenance) for the system and all equipment provided under this procurement to extend for two-year periods following the Initial Warranty and Maintenance Period. A minimum of two (2) two-year periods (total of 4 years of extended maintenance/support) shall be offered. Where the Vendor proposes to secure a separate service agreement for specified system components, it shall enter a separate line showing the price estimate for such service. Any and all restrictions and/or limitations to the pricing provided for the extended maintenance support should be clearly defined in the Vendor's Proposal. These restrictions and/or limitations could include, but are not limited to, deductibles, service call costs, response times, after hour response, etc.

For hardware maintenance, the Vendor must include a proposed maintenance contract. For software maintenance, the Vendor must describe the availability of routine technical support, after-hours emergency support, and their policy for providing software upgrades and enhancements. All required software maintenance contracts must be included for review.

All recurring costs which may exist in addition to hardware and software maintenance shall be included in the optional Maintenance Service Contract. Recurring costs are to include any annual licensing fees, or other fees, associated with the system other than normal operational expenses and supplies.

Any optional system monitoring services should also be described and priced.

12.0 PROPOSAL:

A cover letter introducing the company and providing the name of one individual who will be the primary point of contact with the JPA. The company name, address, and telephone numbers of corporate headquarters and a local office, if applicable, should be included in addition to the following:

- Executive Summary
 - A summary containing highlights of the vendor qualifications to provide the services described in this RFP, including a statement of its understanding of the project and services required.

- Client References
 - A minimum of five (5) client references is required.
- List of Similar Project Experience
- Vendor is specially trained and possesses certain skills, experience, education and competency to perform these services.
- Other Pertinent Information to aid the JPA in assessing the vendors qualifications and experience
 - Proposed plan for quality and cost control to enhance the service and responsiveness to the project needs, to reduce total project costs, and to complete the project on time.
 - Provide a listing of the information and/or assistance that the vendor will require from the JPA or its members.
- Travel Expenses
- Estimated On-Site Visits
- Warranty Information on Equipment and Installation must be included.
- Payment Schedule
- Estimated project timeline to meet the required timeline of completion of **October 1, 2020**
 - Respondents shall provide a detailed project schedule, including the following elements:
 - Project start date, timeline, work plan, and end date.
 - Written progress reports at the completion of a phase, task, or section (assume no less than one per month).
 - Formal progress meetings (assume one per month at minimum and as necessary).
 - Written final report completion date shall be by October 1, 2020.
 - The installation costs should be a separate line item from the equipment costs. Installation costs should be broken in to two parts. Installation costs for each site should be a separate line item with detail explanation of work to be completed at each site.
- Additional Services:
 - Indicate what services, if any, your firm would add to the “Scope of Services” to make the Study more meaningful and complete. This section should propose enhancement to the “Scope of Services” and should not include any services that are essential to the completion of this project as described in this document and the “Scope of Services.”
 - Propose and estimate the costs of these recommendations and separate from the general proposal.

The Vendor shall submit their proposal in accordance with the following requirements:

- Cost-Total proposal cost and detailed pricing breakdown:
 - Vendors shall provide total proposal cost and itemized pricing for both equipment and services. Each line item shall indicate the Vendor’s list cost and discount offered. Costs for OPTIONAL items also shall be provided.
 - The Price Proposal must include all tax and fees associated.
 - The Price Proposal must be submitted in a **SEPERATELY SEALED ENVELOPE** labeled “Price Proposal” or in a **separate electronic file** labeled “Price Proposal”
- The proposal shall be transmitted with a cover letter that conforms to the following format:
 - Signed by a person authorized to bind the Vendor contractually.
 - Provides the name, title, address, and telephone number of the individual to whom correspondence and other contacts should be directed.

- Provides the name, title, address, and telephone number of the individual who will negotiate with the JPA.
- All submittals become property of the JPA.

Vendor Agreement:

A Vendor agreement is subjected to the JPA Board of Directors' Approval.

Consequences of Submission of Response:

The RFP does not commit the JPA to pay any costs incurred in the submission of a response, or in making any necessary studies or designs for the preparation thereof, nor the purchase or contract for such services. Costs for developing the RFP are entirely the responsibility of the proposer and will not be chargeable to or reimbursable by the JPA.

Any information contained in this RFP is for informational purposes only. The JPA will not be responsible for its completeness or accuracy.

The JPA reserves the right to contact individual Proposer's for clarifying information at any time during the process.

Acceptance or Rejection of Response:

The JPA reserves the right to reject any or all proposals, to award a contract based on the RFP process in whole or in part, or to modify, delay, or delete the entire project. The JPA also reserves the right to waive irregularities in any statement, accept, or reject all or any part of any statement, and waive any requirements of the proposals as may be deemed in the best interest of the JPA.

The JPA for any reason may decide not to award a Vendor Agreement as a result of the RFP.

Evaluation Criteria:

The following criteria will be used to help determine which bid is most responsive and meets the needs of the proposal:

- Capabilities and resources available to perform the contract work
- Successful history of providing mission-critical radio systems to public safety agencies
- Compatibility with other digital and analog VHF systems inside San Diego County
- Ability to conform with contract terms and conditions
- Cost

Nondiscrimination / No-preferential Treatment:

The successful Vendor(s) in the performance of the Vendor Agreement shall be required to comply with all applicable federal, state, and county nondiscrimination / no preference laws and regulations.

Indemnification:

The successful vendor will be required to comply with the following indemnity and insurance requirements, which will be included in the final agreement between the parties (Agreement):

- During all phases of this Agreement, and to the fullest extent permitted by law, Vendor shall defend, indemnify and hold harmless the JPA and its officers, directors, agents, officials, representatives, and employees (the "JPA Indemnitees"), the City of Oceanside, and its elected and appointed officers, officials, agents, representatives, and employees (the "Oceanside Indemnitees"), the City of Carlsbad/RCS, and its elected and appointed officers, officials, agents, representatives, and employees (the "City of Carlsbad/RCS Indemnitees"), together with the JPA Indemnitees, the "Indemnitees"), from and against any and all claims, loss, cost, damage, injury, expense, and

liability of every kind, nature and description (including, without limitation, incidental and consequential damages, court costs, attorney's fees, litigation expenses and fees of expert consultants or expert witnesses and costs of investigation) that arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of Vendor in the course of Vendor's performance under the terms of this Agreement. The insurance provisions of this Agreement shall not limit consultant's indemnification obligations. The parties expressly agree that this section will survive the expiration or early termination of this Agreement. The indemnification of the City Oceanside and the City of Carlsbad/RCS Indemnitees shall only apply to the Vendor's work performed on the City of Oceanside and City of Carlsbad/RCS owned properties.

- Without limiting, vendor indemnification, it is agreed that the vendor shall maintain in force at all times during the performance of this Agreement the following policy or policies of insurance covering its operations:
 - Comprehensive General Liability, including contractual liability, business automobile liability, and products and completed operations, all of which shall include coverage for both bodily injury and property damage with coverage in the amount of \$2,000,000 per occurrence and subject to an annual aggregate of \$4,000,000.
 - Workers' Compensation coverage at statutory limits.
 - Professional Liability in the amount \$1,000,000 per claim and annual aggregate of \$3,000,000.
 - Vendor/s liability insurance policy shall contain the following clauses:
 - "The North County Dispatch JPA is named as an additional insured as respects operations of the named insured performed under contract with the JPA."
 - "It is agreed that any insurance maintained by the JPA shall apply in excess of, and not contribute with insurance provide by this policy".
 - All insurance policies required by this Section shall contain the following clause:
 - "This insurance shall not be canceled, limited, or non-renewed until after thirty days written notice has been given the JPA."
 - The Vendor(s) shall furnish the JPA with original certificates and amendatory endorsements effecting coverage required by the Agreement.

Vendor Not an Agent:

Except as the JPA may specify in writing, vendor shall have no authority, expressed or implied, to act on behalf of the JPA in any capacity whatsoever as an agent.

Consultant shall have no authority, expressed or implied, pursuant to the Agreement to bind the JPA to any obligation whatsoever.

Questions and Site Visitations:

Any questions regarding the RFP should be submitted in writing via email by November 8, 2019 by 3:00 p.m. to Quynh Dinh via email at qdin@ncdjpa.org. The JPA will do the best to respond but reserves the rights to not respond to any questions that are deemed clear as described in this document.

Site visitations will be conducted on November 6, 2019 at 11:00 a.m. for Carlsbad site and 1:30 p.m. for Oceanside site. These site visits are highly recommended if the vendor is not familiar with the locations to provide a responsive proposal. No other dates will be considered. Please confirm attendance with Quynh Dinh via email at qdin@ncdjpa.org by November 5, 2019 no later than 2:00 p.m.

Timeline:

The timeline below is provided a general guideline and is subject to change. Unless stated otherwise, consider the dates below "on or about" date.

Event Description:	Date	Time
Site Location Visit	11/06/19	Carlsbad: 11:00 a.m. Oceanside: 1:30 p.m.
Vendor Questions submitted	11/08/19	Electronic Response 3:00 p.m.
Response to Questions (if required)	11/13/19	Electronic Response 3:00 p.m.
Bid Opening Date (Due Date)	12/12/19	2:00 p.m.
Notice of Intent to Award	12/19/19	2:00 p.m. or sooner

Proposal Submittal:

The deadline to submit VHF Proposal is December 12, 2019 by 2:00 p.m.

Proposals can be submitted electronically via email to Quynh Dinh at gdinh@ncdjpa.org. Price Proposal should be **submitted in a separate electronic file** labeled "Price Proposal".

Hard copies can be submitted to the mailing address below, with separate envelope for Price Proposal:
 North County Dispatch Joint Powers Authority
 Attention: Quynh Dinh
 P.O. Box 1206
 Rancho Santa Fe, CA 92067

Award of Contract:

Notification of intent to award will be sent via email on December 19, 2019 by 2:00 p.m. or sooner. The result will also be posted online at www.ncdjpa.org on the same date.

A contract may be negotiated with the Respondent(s) whose proposal is determined to be the most responsive to the JPA's needs and most advantageous to the JPA, considering costs as well as other factors based on the criteria described herein, all as solely determined by the JPA.