Antrim County
BID SPECIFICATIONS
9-1-1 Radio Console

Bid Deadline: **2:00 pm, Monday, November 23, 2020**

Submit in person to: **Antrim County Administration Office**
203 E. Cayuga St., Room 204

Or by mail to: **Antrim County Sheriff's Office**
PO Box 568
Bellaire, MI 49615

Bid Submittal: Bids shall be delivered in a sealed envelope that is marked with the bidder's name and the words "9-1-1 Radio Console." Any bids received after 2:00 pm, Monday, November 23, 2020, will not be opened.

Bid Opening/Award: Bids will be publicly opened and inspected at 2:00 pm, Monday, November 23, 2020, in the Sheriff's Administration Office. Any bids received after that time will not be opened. The 9-1-1 Board will pick the winning bidder on November 25, 2020 Room 211 in the Antrim County Building. A final decision will be made by the County Board of Commissioners on at a date yet to be determined.

General scope of work: Purchase and Install a radio console to work alongside the existing MCC5500 radio Console. The MCC5500 will be removed independently at a later date. The console minimum requirements are outlined in attachment A.

Permitting: All necessary permits are the responsibility of the Contractor.

Time of completion: The work which the Contractor is required to perform shall be completed by August 30, 2021. The time for completion may be extended if reasonable explanation can be provided to the County. The time of extension is completely at the discretion of the County.

Licensing - Permitting: The Contractor must be licensed and is responsible for obtaining the permits necessary to complete the work. The bid must include cost of obtaining such permits and all labor necessary to complete the job.

Mandatory Pre-Bid Site Visit Meeting
Each bidder is responsible for attending a mandatory pre-bid site visit meeting on November 10, 2020. Bidders to meet at 207 E Cayuga, Bellaire, Michigan 49615, on November 10 at 10:00 AM.

Bid Specifications:
The Specifications are for informational purposes only. The accuracy of the Specifications is not guaranteed.

1. Contractor is responsible for the following:
   a. Removal and disposal of scrap metal and trash.
   b. Installation of a radio console
   c. Preparation and submittal of all paperwork for any possible rebate monies which may be offered.

2. Work to be completed with a minimal disruption to the workday.

Bid Submittal Requirements:
To be considered responsive, bidders should include the following information in their bid proposal:

1. The Contractor must be licensed and is responsible for obtaining any additional permits that are necessary to complete the work. The bid must include cost of obtaining such permits and all labor necessary to complete the job.

2. Bids must be submitted using the most recent bid specifications. If you would like to be notified of addendums to the bid specifications, please notify the Dispatch SGT at 231-533-3547 or email gankm@antrimcounty.org.

3. To be considered responsive, bidder should include the following information in their bid proposal:
   - Proof of Insurance Certificate for commercial general liability to include contractual liability, products and completed operations, independent contractor's coverage and broad form general liability endorsement or equivalent.
   - Proof of Insurance Certificate for motor vehicle liability including Michigan no-fault coverage, with limits of liability of not less than $500,000.00 per occurrence, combined single limit bodily injury and property damage to include all owned vehicles, all non-owned vehicles and all hired vehicles used in performance of work.
   - Proof of Insurance Certificate for workers' compensation.

   If the above items are not provided in the bid proposal, they must be provided before the County will sign the contract.

4. Descriptions of similar projects completed are requested.

5. References for the Contractor and any subcontractors are required.

6. The contract award is contingent upon a successful interview between Dispatch Sgt and the Contractor.

7. After a contract has been negotiated and signed, the project may start immediately.

Questions regarding the bid specifications shall be directed to the Dispatch SGT at 231-533-3243 or email gankm@antrimcounty.org.

Acceptance and Rejection of Bids: The Contractor chosen by Antrim County shall not discriminate against any worker, employee, or applicant for employment because of race, color,

religion, height, weight, marital status, national origin, ancestry, sex, age, (except where requirements as to age is based upon a bona fide occupational qualification), or disability (that is unrelated to the individual's ability to perform duties of a particular job or position) pursuant to 1976 PA 453, as amended, MCL 37.2101 et seq. (Elliot-Larsen Civil Rights Act).

The County of Antrim reserves the right to accept and/or reject any and all bids, to waive any irregularity in a bid, and to accept that bid which, in the opinion of the Board of Commissioners, is in the best interest of the County. It is the intention of the Board to award all work to a single contractor. However, the Board also reserves the right to award only a portion of the work.

1 Project Background

Antrim County, MI ("County") currently operates an analog conventional VHF public safety tone and voice paging network for fire and EMS to deliver paging alerts and voice information to facilitate emergency call response. The County has also trialed the State of Michigan Public Safety Communications System's (MPSCS) trunked paging services over the 700/800 MHz Land Mobile Radio (LMR) system.

The County commissioned a study to examine and compare both the VHF and 700/800 solutions to determine which solution best meets the County's paging needs over the long term. The study determined that the most effective solution would be a hybrid approach which utilizes both networks. As a result, the County plans to utilize a portion of the existing VHF paging network, as well as take advantage of the existing MPSCS infrastructure in the County and in surrounding counties to implement a hybrid VHF analog and 800 MHz trunked paging network.

To facilitate this hybrid paging network and to simplify the paging process, the County intends to upgrade its current dispatch consoles. The replacement consoles must be capable of supporting tone and voice paging using a conventional VHF paging network as well as trunked paging via a P25 trunked radio network. Additionally, the County requires the replacement consoles to support the trunked paging operation through a conventional interface when the console is not linked to the P25 radio network, and also through an IP connection when a network connection to the P25 radio network is available.

2 Dispatch Console Requirements

2.1 General Dispatch Console Requirements

2.1.1 The Contractor shall provide a traditional analog radio and IP-based, Conventional, P25 Phase 1 and Phase 2 compatible dispatch console with three dispatch positions that fulfill the requirements specified in this solicitation.

2.1.2 If Respondent's dispatch console portfolio includes multiple models, Respondent shall describe how its proposed solution utilizes the most cost-efficient product that satisfies the specifications of this RFP. Respondent shall demonstrate which required capabilities cannot be met by other less costly dispatch solutions.

2.1.3 All console equipment must meet or exceed all applicable standards, including, but not limited to, Part 90 of the FCC Rules and Regulations, appropriate Electronic Industries Alliance (EIA) and National Institute of Standards and Technology (NIST) standards, all applicable building, electrical and fire codes as well as any Performance Criteria set forth in this document.

2.1.4 The dispatch consoles shall be compatible with the following networks including: VHF paging (Respondent to indicate paging formats supported); conventional VHF radio; P25 800 MHz trunked system, conventional P25 repeaters, broadband Push-To-Talk (PTT) solutions and be capable of interfacing to the existing Equature logging recorder system. The Respondent shall indicate the total number of resources the dispatch consoles are capable of supporting in their response.

2.1.5 The Contractor shall be fully responsible for the integration of the dispatch consoles to all the subsystems and the recorder system listed above and shall outline any dependencies or non-Contractor responsibilities in its response.

2.1.5.1 The Respondent shall provide a detailed plan for integration of the new consoles to the existing system(s) in its response.

2.1.6 The dispatch consoles shall support 4-wire E&M and standardized P25 signaling interfaces.

2.1.6.1 Contractor shall be responsible for the integration and/or installation of all required interfaces to their respective radio equipment or networks.

2.1.7 The dispatch consoles and network equipment software configuration shall be sized to accommodate a minimum of 50% expansion for dispatch positions and channels beyond current quantities without the need for major hardware changes (defined as the need to replace other consoles) within ten (10) years of final system acceptance.

2.1.8 The dispatch consoles shall comply with all applicable APCO P25 TIA-102 standards pertaining to the Console Sub-System Interface (CSSI). The Respondent shall describe the applicable testing performed on the proposed equipment that demonstrates compliance.

2.1.9 The dispatch consoles shall be capable of supporting PTT over Cellular (PTToC) communications when integrated into an existing LMR talkgroup, or by acting as a gateway between the LMR system and the cellular service provider. The Respondent shall describe which level of integration with PTToC is supported and how it is implemented.

2.1.10 The Respondent shall identify any and all proprietary technologies employed, if any, as part of the dispatch consoles in its response.

2.1.11 The dispatch consoles shall include the capability of supporting end-to-end AES encryption of talkgroups that are configured for encrypted operation.

2.1.12 The dispatch consoles shall provide “Training Mode” functionality for supervisors and trainers with the capability of monitoring and duplicating a trainee’s console screen at other supervisory consoles.

2.1.13 The conventional radio interface shall be capable of remotely controlling base stations using EIA standard tone remote control and E&M signaling.

2.1.14 The dispatch consoles shall employ a time source for synchronization that shall meet all applicable NENA PSAP standards.

2.1.15 The new dispatch console components and workstations must integrate into the existing console furniture at all locations.

2.1.16 All backroom electronics associated with the dispatch consoles shall be rack-mountable in 19” racks. The Respondent shall indicate the equipment space requirements in their response

2.2 Dispatch Consoles Functions and User Interface

2.2.1 The dispatch console graphical interface shall provide a user-friendly and flexible to configure graphical interface. Screens customized for each user shall appear upon user logon.

2.2.2 Each function within each channel/talkgroup control representation, and all other functions controlled through the console shall be color-coded with user definable color choices. These functions shall include but not be limited to audio activity indicators, transmit push-to-talks, volume controls, etc.

2.2.3 Dispatch consoles shall support login and security password to access the system.

2.2.3.1 Accounts shall be independent of the specific console enabling a dispatcher to login at any machine and invoke preferred settings.

2.2.4 Dispatch consoles shall employ a suite of audible and visual indicators to alert the dispatcher of the various dispatch occurrences.

2.2.5 All functions and features of the console position shall be accessible from the mouse and/or keyboard as necessary.

2.2.6 Text indicators including, but not limited to, individual radio IDs (or “aliases”), group calls and pre-programmed patch groups shall be displayed by alphanumeric characters chosen by the operator/agency.

2.2.7 Dispatch consoles shall support, at minimum, the following features with corresponding audio, visual or color-coded notifications or individual windows on the GUI:

2.2.7.1 Individual and group calls

2.2.7.2 Emergency alerting and voice calls

2.2.7.3 Acknowledging emergency calls

2.2.7.4 Clearing emergency calls

2.2.7.5 Private calls

2.2.7.6 Selective/Individual unit alert

2.2.7.7 Tone paging

2.2.7.8 Dynamic creation of group calls as specified herein

2.2.7.9 Cross-channel/group call patching as specified herein

2.2.7.10 CTCSS monitor or disable function of individual base station repeaters

2.2.7.11 Auxiliary input/output interfaces

2.2.7.12 Talkgroup/Channel busy indicator

2.2.7.13 Individual group/channel volume adjust

2.2.7.14 Queuing display of at least ten (10) aliases

2.2.7.15 Call history of at least the last twenty (20) calls

2.2.7.16 Audio muting capabilities

2.2.7.17 VU Meter display

2.2.8 The dispatch consoles shall, at each operator position, include an instant recall recorder function capable of recording, retrieving and replaying at least 30 minutes of all radio traffic.

2.2.8.1 Simultaneous record and playback shall be possible, with incoming calls taking priority.

2.2.8.2 The instant recall recorder application shall have an alphanumeric display indicating such information as message length, message ID, radio user ID, number, date and time.

2.2.8.3 The system shall enable an operator to save a message for future referral or re-recording.

2.2.9 Each dispatch position shall be equipped with

2.2.9.1 A high-quality gooseneck microphone or paddle-type desktop microphone

2.2.9.2 High quality, noise cancelling, wired (single wire) headsets with dual ear audio headphones

2.2.9.3 Dual headset jacks with individual amplification or line leveling.

2.2.9.3.1 The jacks shall provide TX and RX audio and PTT as well as telephone switching support.

2.2.9.3.2 Audio levels for the headset jacks shall be adjustable via physical knobs or buttons and through the console's GUI.

2.2.9.4 Two speakers (Select/Unselect) with the ability to support up to four

2.2.9.5 A user-operated footswitch for PTT.

2.2.9.6 The consoles will be configured with a minimum of a 22" touchscreen flat panel LCD monitor. Resolution of the display monitor will be 1440 X 900/60 Hz or better.

2.3 Patching Requirements

2.3.1 The dispatch consoles shall provide the console user with the capability of cross channel patching of trunked talkgroups and conventional channels. When activated, all users in the group will be connected and hear all traffic on the selected channels/talkgroups. Respondent shall state the maximum number of patches its solution supports per dispatch position.

2.3.1.1 After the selected groups are combined into a virtual single group, it shall require only a single RF channel (from each system/frequency band) at each site or cell where a subscriber involved in the call is located.

2.3.2 There shall be a negligible decrease in audio levels to the consoles or to the fixed location radio stations regardless of the number of channels and/or talkgroups patched together.

2.3.3 The console user shall be able to transmit over un-patched channels or talkgroups without interrupting the patch.

2.3.4 A prominent visual indication shall be available to at the dispatch console display illustrating all patches in progress. A patch window shall display the patch, which channels are connected, and the console that initiated the patch.

2.3.5 The capability to cross-patch any radio channel to a telephone line or vice versa shall be supported. The Respondent will describe any limitations of this function (e.g., number of patches, etc.).

2.4 Preset and Dynamic Group Call Selection

2.4.1 The console will have the ability to both select in real-time, and to preprogram, a list of channels and/or talkgroups, including conventional resources and trunked talkgroups, into a group that can be activated with a single keystroke or mouse click. The Respondent shall describe how this is done in their response and indicate the maximum number of resources that can be multi-selected.

2.4.2 For a trunked radio operated as a resource through a conventional interface/gateway, a method and appropriate indicator shall be provided to select the desired talkgroup for transmission. This select function shall cause the resource to tune to the appropriate talkgroup and initiating a call by pressing the footswitch or transmit button.

2.5 Dispatch Console Availability

2.5.1 The dispatch consoles shall perform self-diagnostics and shall employ high availability and fault-tolerant schemes. The Respondent shall describe their approach to this requirement in their response.

2.5.2 The dispatch console system shall be designed to provide an availability of 99.999%.

2.5.3 The dispatch consoles shall be connected in a configuration such that failure of one console will not affect other consoles.

2.5.4 The dispatch consoles shall maintain the last programming installed when power is interrupted or there is a link failure or hard failure of any console component or sub-system. This includes any user-defined tables, lists, and databases.

2.5.5 The dispatch consoles shall automatically recover to the last operational state without user intervention when power or system connectivity is lost and then restored.

2.5.6 When connected to a radio network and link connectivity is lost, a link failure message shall prominently appear on the console display to notify the operator that the console system is no longer in contact with the radio infrastructure.

2.5.7 Software and/or firmware updates to the dispatch console system and to associated consoles shall not affect configurations.

2.5.8 Outage time for planned maintenance shall not affect more than one console at any one time unless otherwise deemed satisfactory by Dispatch Center managers.

2.6 Training Requirements

2.6.1 The Respondent shall provide a comprehensive dispatch console training course to instruct County personnel in the proper operation, administration, use, and maintenance of the consoles as well as to instruct identified individuals in how to train other personnel in such subjects.

3 Contractor Scope of Work Requirements

3.1 General Contractor Services Requirements

3.1.1 The Contractor shall provide a turnkey solution which will contain all of the necessary services, hardware, equipment, devices, parts, materials, goods, software, firmware, data, physical and network infrastructure, deliverables, and other work necessary for the dispatch consoles to be a fully functional and operating system. Contractor is solely responsible for planning, designing, developing, constructing, supplying, fabricating, installing, testing, deploying, and transitioning the new dispatch consoles.

3.1.2 The scope of work includes overall project management and the following project phases:

3.1.2.1 Kick off and project plan development

3.1.2.2 Detailed Design Review

3.1.2.3 Factory testing and delivery of the equipment

3.1.2.4 Equipment installation and implementation

3.1.2.5 Operator training

3.1.2.6 System testing and acceptance, and

3.1.2.7 Warranty, operations and maintenance.

3.1.3 Contractor project management

3.1.3.1 Contractor shall be solely responsible for of all project management functions necessary to ensure the successful completion of this project including all phases identified above.

3.1.3.2 Contractor shall establish a project plan, schedule and project communications plan to facilitate activities and the flow of information to all stakeholders.

3.2 Respondent Schedule Requirements

3.2.1 In response to this solicitation, the Respondent shall submit its proposed schedule detailing the project phases identified above through system testing and acceptance and to the beginning of warranty and operations.

3.3 System Testing and Acceptance Requirements

3.3.1 The Respondent shall propose an acceptance test procedure that will verify the functionality described in this solicitation that will be executed prior to acceptance of the supplied equipment.

3.3.2 The Contractor shall successfully execute the agreed upon acceptance test procedure following installation and integration of the supplied equipment, prior to acceptance of the supplied equipment.

3.4 Documentation Requirements

3.4.1 The Contractor shall provide comprehensive as-built documentation for all Contractor supplied equipment detailing all components, connections, and external interfaces.

3.4.2 The Contractor shall supply suitable maintenance manuals for the purpose of allowing the County and other contract staff technicians to maintain the supplied equipment.

3.4.3 The Contractor shall supply user documentation that describes in non-technical language the use of the dispatch consoles including the functioning of all user accessible controls, selections and adjustments.

3.5 Warranty and Maintenance Requirements

3.5.1 The Contractor shall warrant, at its sole cost and responsibility, that all supplied equipment and the installation of such equipment conform to the requirements and criteria specified in this solicitation and as finalized during the Design Review for a period of one year (system warranty period) from the date of system acceptance.

3.5.2 If the manufacturer’s warranty period is longer for any individual component or components in the system, the County shall receive the extended warranty beyond the system warranty period. Interim periods between the manufacturer's standard warranty and the date of system acceptance shall be the Contractor’s responsibility.

3.5.3 The warranty period for all Contractor supplied equipment begins upon system acceptance.

3.5.4 Respondents are encouraged to provide in their response, options for extended maintenance support of the supplied equipment post the warranty period.

4 Respondent Experience and Qualifications

4.1 Corporate Experience and Qualifications

4.1.1 The Respondent and its subcontractors shall have extensive experience with the scope of services outlined in this RFP including, but not limited to, designing, deploying, installing, transitioning to and maintaining standards based, scalable and sustainable mission critical dispatch console equipment. In highlighting its qualifications to deliver the specified scope of work and technical requirements, Respondents shall provide the information outlined below in their response.

4.2 Respondent General Overview

4.2.1 Respondent shall provide a brief corporate profile overview and discuss its history in designing and deploying dispatch console equipment for public safety and other industries in the United States and globally.

4.2.2 Respondent shall discuss and highlight its recent track record with delivering P25 compliant equipment and its overall involvement and experience with APCO P25 standards and processes.

4.3 Similar Project Experience and References

4.3.1 Respondents shall include references for and brief narratives of at least five (5) recent successfully delivered conventional and P25 dispatch console systems that are technically and operationally similar in scope to the system specifications defined in this RFP. At minimum, project descriptions shall include:

4.3.1.1 Customer name, address, contact name(s), title, phone number, e-mail address.

4.3.1.2 Brief description of the number of consoles and types of radio systems supported.

4.3.1.3 Brief description of the scope services rendered including engineering services, implementation and cutover process for the successful delivery of project systems.

4.3.1.4 Any project specific challenges or obstacles encountered, and corresponding resolution means Respondent employed to address them.