



**ERIE COUNTY
REQUEST FOR PROPOSAL (RFP)
TO PROVIDE TRUNKED RADIO NETWORK
SUBSCRIBER EQUIPMENT**

RFP#: 2026-019VF

February 6, 2026

**DEPARTMENT OF HOMELAND SECURITY & EMERGENCY SERVICES
ERIE COUNTY PUBLIC SAFETY CAMPUS
45 ELM STREET
BUFFALO, NEW YORK 14203**

**COUNTY OF ERIE
REQUEST FOR PROPOSALS**



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1. Project Introduction

1.1 Project Objective

Project Name: Erie County Public Safety Trunked Network Project

Public safety and public service agencies of the County of Erie, New York are pursuing upgrades to their public safety communications systems and solutions and are seeking qualified and experienced vendors to design, build, implement, test and commission into service a countywide radio system with a public safety-grade backhaul network. The collective agencies will be represented by Erie County Department of Homeland Security, hereafter referred to as the "County". The resulting system, hereafter referred to as the Erie County Trunked Radio Network ("ECTRN") will be defined per the specifications detailed in this RFP.

It is the county's objective that the resulting system is to be capable of supporting the communications needs of all public safety agencies within the County (cities, towns, villages). While some public safety agencies within the County may continue to operate on their own, it is anticipated that many of these local agencies will transition to the new system. When doing so, these non-county agencies will fund their unique requirements for user equipment and infrastructure and integrate their respective enhancements into the County's system. The ultimate contract for this solicitation will then enable these separate entities to leverage the terms of the County's contract. The first phase of the project will be to build out multiple simulcast cells that support the County operations, and the City of Buffalo. Upon completion of that phase, additional local agencies will transition to the network when practical.

The ECTRN will be a UHF (420 – 470 MHz) Band Project 25 Phase 2 trunked network with geographically redundant network core elements. In anticipation of this new system, the County is soliciting bids for P25 Phase 2 compliant subscriber radios for the County and localities who may use the County network. The County's goal is to provide agencies with a variety of options that meet their needs, and at the same time provide a consistent and reliable performance on the forthcoming Motorola Project 25 Phase 2, simulcast network.

The County reserves the right to make multiple or partial awards to one or multiple vendors if such awards are in the best interest of the County. Please note that this Request for Proposals does not constitute an offer, but rather a request for offers from Proposers

2. General Provisions

Statement of Rights: UNDERSTANDINGS

Please take notice, by submission of a proposal in response to this request for proposals, the proposer agrees to and understands:

- that any proposal, attachments, additional information, etc. submitted pursuant to this Request for Proposals constitute merely a suggestion to negotiate with Erie County of Erie and is not a bid under Section 103 of the New York State General Municipal Law;
- submission of a proposal, attachments, and additional information shall not entitle the proposer to enter into an agreement with Erie County of Erie for the required services;
- by submitting a proposal, the proposer agrees and understands that Erie County of Erie is not obligated to respond to the proposal, nor is it legally bound in any manner whatsoever by submission of same;



- that any and all counter-proposals, negotiations or any communications received by a proposing entity, its officers, employees or agents from Erie County, its elected officials, officers, employees or agents, shall not be binding against Erie County of Erie, its elected officials, officers, employees or agents unless and until a formal written agreement for the services sought by this RFP is duly executed by both parties and approved by the Erie County Legislature, the Erie County Fiscal Stability Authority, and the Office of the Erie County Attorney.
- In addition to the foregoing, by submitting a proposal, the proposer also understands and agrees that Erie County of Erie reserves the right, and may at its sole discretion exercise, the following rights and options with respect to this Request for Proposals:
 - To reject any or all proposals
 - To issue amendments to this RFP
 - To issue additional solicitations for proposals
 - To waive any irregularities in proposals received after notification to proposers affected;
 - To select any proposal as the basis for negotiations of a contract, and to negotiate with one or more of the proposers for amendments or other modifications to their proposals;
 - To conduct investigations with respect to the qualifications of each proposer;
 - To exercise its discretion and apply its judgment with respect to any aspect of this RFP, the evaluation of proposals, and the negotiations and award of any contract;
 - To enter into an agreement for only portions (or not to enter into an agreement for any) of the services contemplated by the proposals with one or more of the proposers;
 - To select the proposal that best satisfies the interests of Erie County and not necessarily on the basis of price or any other single factor;
 - To interview the proposer(s);
 - To request or obtain additional information Erie County deems necessary to determine the ability of the proposer;
 - To modify dates;
- All proposals prepared in response to this RFP are at the sole expense of the proposer, and with the express understanding that there will be no claim, whatsoever, for reimbursement from Erie County for the expenses of preparation. Erie County assumes no responsibility or liability of any kind for costs incurred in the preparation or submission of any proposal;
- While this is an RFP and not a bid, Erie County reserves the right to apply the case law under General Municipal Law § 103 regarding bidder responsibility in determining whether a proposer is a responsible vendor for the purpose of this RFP process; and
- Erie County is not responsible for any internal or external delivery delays which may cause any proposal to arrive beyond the stated deadline. To be considered, proposals MUST arrive at the place specified herein and be time-stamped prior to the deadline.
- All proposals submitted become the RFP Issuer's property and will not be returned to the proposers.
- All consultants should understand that Erie County is committed to an open, fair and transparent selection process. All RFP submissions will be reviewed, objectively scored and ranked. Shortlisted firms will be interviewed prior to recommendation for selection.



- The highest-ranking firm after scoring and interviews will be recommended to the Erie County Legislature for authorization to enter into contract. Scores and ranking of all firms will be provided to the Legislature and the results will at that time become public record.
- Proposing firms should understand that to provide for this open and transparent process, more time will be required. The timeframe from advertisement to contract execution may be up to six months. Consultants should consider this when scheduling staff time and anticipating project commencement.
- Firms are encouraged to include Certified Minority and Women Owned Business Enterprises (MBE/WBE) in their teams in order to meet Erie County's goals of 15% MBE and 5% WBE participation. Certified MBE/WBE proposers should include the Erie County certification letter with the proposal.
- If proposer is a Veteran Owned Business, proposer should include letter indicating company is 51% or more Veteran-owned.

Contract

After selection of the successful proposer, a formal written contract will be prepared by County of Erie and will not be binding until signed by both parties and, if necessary, approved by the Erie County Legislature, the Erie County Fiscal Stability Authority and the Office of Erie County Attorney. NO RIGHTS SHALL ACCRUE TO ANY PROPOSER BY THE FACT THAT A PROPOSAL HAS BEEN SELECTED BY ERIE COUNTY FOR SUBMISSION TO THE ERIE COUNTY LEGISLATURE AND/OR THE ERIE COUNTY FISCAL STABILITY AUTHORITY FOR APPROVAL. THE APPROVAL OF SAID LEGISLATURE AND/OR AUTHORITY MAY BE NECESSARY BEFORE A VALID AND BINDING CONTRACT MAY BE EXECUTED BY ERIE COUNTY.

The term of the contract shall be for a three (3) year period commencing approximately July 30th, 2026, and terminating July 29th, 2029. Erie County, in its sole discretion, may extend the agreement beyond its initial term for up to two (2) additional year periods at the same prices and conditions.

Indemnification and Insurance

The proposer accepts and agrees that language in substantially the following form will be included in the contract between the proposer and Erie County:

"In addition to, and not in limitation of the insurance requirements contained herein the Consultant agrees:

- (a) that except for the amount, if any, of damage contributed to, caused by or resulting from the negligence of Erie County, the Consultant shall indemnify and hold harmless Erie County, its officers, employees and agents from and against any and all liability, damage, claims, demands, costs, judgments, fees, attorneys' fees or loss arising directly or indirectly out of the acts or omissions hereunder by the Consultant or third parties under the direction or control of the Consultant; and
- (b) to provide defense for and defend, at its sole expense, any and all claims, demands or causes of action directly or indirectly arising out of this Agreement and to bear all other costs and expenses related thereto. Upon execution of any contract between the proposer and Erie County, the proposer will be required to provide proof of the insurance coverage described in **Schedule "B"**. Insurance coverage in amount and form shall not be deemed acceptable until approved by Erie County Attorney.

Intellectual Property Rights



The proposer accepts and agrees that language in substantially the following form will be included in the contract between the proposer and Erie County:

All deliverables created under this Agreement by the Consultant are to be considered "works made for hire". If any of the deliverables do not qualify as "works made for hire", the Consultant hereby assigns to Erie County all right, title and interest (including ownership of copyright) in such deliverables and such assignment allows Erie County to obtain in its name copyrights, registrations and similar protections which may be available. The Consultant agrees to assist Erie County, if required, in perfecting these rights. The Consultant shall provide Erie County with at least one copy of each deliverable.

The Consultant agrees to indemnify and hold harmless Erie County for all damages, liabilities, losses and expenses arising out of any claim that a deliverable infringes upon an intellectual property right of a third party. If such a claim is made, or appears likely to be made, the Consultant agrees to enable Erie County's continued use of the deliverable, or to modify or replace it. If Erie County determines that none of these alternatives is reasonably available, the deliverable will be returned.

All records compiled by the Consultant in completing the work described in this Agreement, including but not limited to written reports, source codes, studies, drawings, blueprints, negatives of photographs, computer printouts, graphs, charts, plans, specifications and all other similar recorded data, shall become and remain the property of Erie County. The Consultant may retain copies of such records for its own use.

Non-Collusion

The proposer, by signing the proposal, does hereby warrant and represent that any ensuing agreement has not been solicited, secured or prepared directly or indirectly, in a manner contrary to the laws of the State of New York and Erie County of Erie, and that said laws have not been violated and shall not be violated as they relate to the procurement or the performance of the agreement by any conduct, including the paying or the giving of any fee, commission, compensation, gift, gratuity or consideration of any kind, directly or indirectly, to any County employee, officer or official.

Conflict of Interest

All proposers must disclose with their proposals the name of any officer, director or agent who is also an employee of Erie County of Erie. Further, all proposers must disclose the name of any County employee who owns, directly or indirectly, an interest of ten percent or more in the firm or any of its subsidiaries or affiliates.

There shall be no conflicts in existence during the term of any contract with Erie County. The existence of a conflict shall be grounds for termination of a contract.

Compliance with Laws

By submitting a proposal, the proposer represents and warrants that it is familiar with all federal, state and local laws and regulations and will conform to said laws and regulations. The preparation of proposals, selection of proposers and the award of contracts are subject to provisions of all Federal, State and County laws, rules and regulations.

Compliance with Laws

The New York State Freedom of Information Law as set forth in Public Officers Law, Article 6, Sections 84 et seq., mandates public access to government records. However, proposals submitted in response to this RFP may contain technical, financial background or other data, public disclosure of which could cause substantial injury to the proposer's competitive position or constitute a trade secret. Proposers



who have a good faith belief that information submitted in their proposals is protected from disclosure under the New York Freedom of Information Law shall:

a) insert the following notice in the front of its proposal:

"NOTICE"

The data on pages ___ of this proposal identified by an asterisk (*) contains technical or financial information constituting trade secrets or information the disclosure of which would result in substantial injury to the proposer's competitive position.

The proposer requests that such information be used only for the evaluation of the proposal, but understands that any disclosure will be limited to the extent that Erie County considers proper under the law. If Erie County enters into an agreement with this proposer, Erie County shall have the right to use or disclose such information as provided in the agreement, unless otherwise obligated by law."

And

b) clearly identify the pages of the proposals containing such information by typing in bold face on the top of each page "*** THE PROPOSER BELIEVES THAT THIS INFORMATION IS PROTECTED FROM DISCLOSURE UNDER THE STATE FREEDOM OF INFORMATION LAW.**"

Erie County assumes no liability for disclosure of information so identified, provided that Erie County has made good faith legal determination that the information is not protected from disclosure under applicable law or where disclosure is required to comply with an order or judgment of a court of competent jurisdiction.

The contents of the proposal which is accepted by Erie County, except portions "Protected from Disclosure", may become part of any agreement resulting from this RFP.

Equal Pay Certification

During the term of this Contract, the Consultant shall comply with Executive Order 13 (2014), and the Consultant shall make such records available, upon request, to Erie County's Division of Equal Employment Opportunity for review. Erie County shall have the right, upon reasonable notice and at reasonable times, to inspect the books and records of the Consultant, its offices and facilities, for the purpose of verifying information supplied in the Erie County Equal Pay Certification (**Schedule "C"**) and for any other purpose reasonably related to confirming the Consultant's compliance with Erie County Executive Order No. 13 (2014). Violation of the provisions of Executive Order 13 (2014), which is attached hereto and made a part hereof, can constitute grounds for the immediate termination of this contract and may constitute grounds for determining that a bidder is not qualified to participate in future county contracts.

EFFECTIVE PERIOD OF PROPOSALS

All proposals must state the period for which the proposal shall remain in effect (i.e. how much time does Erie County have to accept or reject the proposal under the terms proposed). Such period shall not be less than 180 days from the proposal date.

2.1 Schedule of Events

The following is a schedule of events concerning the proposal process. Erie County reserves the right to adjust the below schedule as needed in the best interest of Erie County:



Event	Date
Release of RFP	02/05/2026
Pre-proposal meeting (week of)	03/09/2026
Deadline for questions	03/20/2026
Answers to questions posted	03/27/2026
Proposals Due by (3:00pm EST)	05/04/2026
Proposal Opening	05/05/2026

Registration

All firms wishing to participate in this process must register with Jerry Whittington & Kevin Hughes in the Erie County Department of Homeland Security & Emergency Services - Emergency Preparedness at communications@erie.gov. All further information including addendums and contact from Erie County will be sent electronically.

Questions

Any requests for RFP interpretations or clarifications shall be made by March 20th, 2026, via e-mail to communications@erie.gov. No requests for oral interpretations via telephone will be accepted. A single response to all questions will be made as outlined in the schedule. NO COMMUNICATIONS OF ANY KIND WILL BE BINDING AGAINST ERIE COUNTY, EXCEPT FOR THE FORMAL WRITTEN RESPONSES TO ANY REQUEST FOR CLARIFICATION.

2.2 Evaluation, and Contract Award Process

The award of the contract(s) may be made to the most responsive proposal(s) offering a product or service deemed suitable for use by the County.

The evaluation of proposals and the determination as to the quality shall be the sole and final responsibility of the County and will be based on the information furnished by the Proposer. In the evaluation of otherwise responsible bids/quotes, the proposer's experience, delivery time and responsibility in performing other contracts will be considered. The County reserves the right to make multiple or partial awards to one or multiple vendors if such awards are in the best interest of the County. The proposals will be scored using the following criteria:

- Ability of the vendor to meet the required functional requirements
- The vendor's technical specifications regarding Subscriber Equipment performance requirements and the degree to which the offerings exceed performance requirements
- The vendor's compliance with Project 25 Compliance Assessment Program (P25 CAP) requirements
- The breadth of Subscriber Equipment features and accessories including options customized to user groups (e.g., fire fighting, law enforcement). This requirement does not apply to vendors offering P25 Pagers.



- The capabilities of the Radio Management System for allowing Erie County to administer subscriber firmware and template updates and to administer and control access to the ECTRN. Does not apply to P25 pagers.
- Subscriber Equipment warranty and maintenance offerings
- Subscriber Equipment costs and volume discounting offerings

Vendors who reach the final selection round may be invited to make an *Oral Presentation* and to provide a demonstration of their respective subscriber devices. This phase of the evaluation process will be ranked by the Evaluation Committee and incorporated into the overall final vendor ranking.

The County reserves the right (i) to reject any and all proposals or any part of any proposal, (ii) to waive minor defects or technicalities, or (iii) to solicit new proposals on the same project or on a modified project that may include portions of the originally proposed project as the County, in the exercise of their sole and unfettered discretion, may deem necessary. Proposers may be required to submit satisfactory evidence that they have the necessary financial resources to perform and complete the work outlined in this RFP.

Submission of a proposal implies the Respondent's acceptance of the evaluation criteria and process and recognition that subjective judgments may be made by the Evaluation Committee. Any objections to the process described in this Request for Proposal should be raised at the pre-proposal conference.

2.3 Oral Presentation

The County anticipates inviting and reserves the right to invite qualifying Respondents for oral presentations.

2.4 Submission Requirements

Respondents shall submit the following documents in response to this RFP:

- Cover Letter: Proposals shall contain the following in a cover letter:
 - Identification of Respondent, including name, address and telephone number.
 - Acknowledgment of receipt of all RFP addenda, if any.
 - Name, title, address, telephone number and email address of Respondent's contact person during the proposal evaluation period.
 - A statement to the effect that the proposal shall remain valid for a period of not less than 180 days from the date of submittal.
 - Signature of a person authorized to bind Respondent to the terms of the proposal; and
 - Identification of proposed subcontractors, including legal company name, and contact person's name, address, phone number. Working relationship between Respondent and subcontractors, if applicable.
- Technical Proposal
 - Completed ECTRN Subscriber Equipment Compliance Matrix (Excel File).
- Experience, Qualifications and References
 - Respondent Experience per instructions detailed in Respondent Experience Section.
- Cost
 - Completed ECTRN Subscriber Equipment Cost Proposal Sheet (Excel File).



- Additional Required Submissions and Forms
 - Appendix A: Subscriber Equipment Compliance Matrix.xlsx
 - Appendix B: Subscriber Equipment Cost Proposal Sheet.xlsx
 - Appendix C: Schedule A: Proposer Certificate
 - Appendix D: Schedule B: Standard Insurance Provisions
 - Appendix E: Equal Pay Certification
 - Appendix F: MBE\WBE Certification

2.5 Compliance Matrix Instructions

Response to the technical and statement of work (SOW) requirements shall be comprehensive and shall be submitted within the Microsoft Excel file named *ECTRN Compliance Matrix*.

When completing the Compliance Matrix, the Respondent shall use a response of "C," "N," or "A" in the designated spreadsheet column for each numbered line item. The respective interpretation of this notation is as follows:

- A response of "C," or "Compliant" means that Respondent's ECTRN offering fully meets the stated requirement and that the Contractor will meet its obligations with no exceptions (for the requirements of this section).
- A response of "N," or "Non-Compliant" means that Respondent's ECTRN does not meet the required performance criteria.
- A response of "A," or "Alternative" means that the Respondent proposes an alternative solution or approach that the Respondent deems sufficient in fulfilling the stated performance requirement. The Respondent is required to provide justification that the alternative meets the stated performance criteria.

The Compliance Matrix shall mainly be used to indicate a response of "C," "N," or "A." The *Comments* column should only be used to provide brief responses to qualify an alternative approach or an unmet requirement. In sections that require responses to individual requirements, the Respondent shall use multiple rows to address each requirement that requires an individual response. In such cases, the Respondent shall populate the individual requirement's text in the column entitled "Requirement Text." For example, if a Respondent complies with all requirements in a section other than one particular requirement, the Respondent will create two lines for that section. The first line includes the one requirement that is not in compliance as the "Requirement Text," an "N" for non-compliance, and the Respondent's comments regarding the unmet requirement. The second line will use "All other requirements" in the Requirement Text column and a "C." Other detailed written responses describing the solution and services must be submitted as part of the response to **Technical Response/Work Plan Description** which assigns Respondent specific locations to describe specific portions of the solution and services.

2.6 Definition of Terms

ECTRN: The term **ECTRN**, unless further specified, in this RFP shall apply to the Erie County trunked radio system infrastructure including the radio systems, console systems, backhaul systems, and network management systems. All radio subscriber device types, tiers, features, accessories and other subscriber devices provided by the Respondent shall be compatible with this network.



Respondent or Proposal: Statements that begin with or contain "the Respondent" or "Proposal" define items that must be included in the Proposal as a part of the Respondent's response.

Contractor: Statements that begin with or contain "the Contractor" typically define criteria for services that must be completed by the selected Contractor following contract award.

3. Respondent Experience

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 mission critical land mobile radio (LMR) systems and microwave networks of similar scope and size.

3.1 Firm Experience

In its response to this Experience Section, Respondent shall:

Provide a brief corporate profile overview and discuss its history in providing subscriber equipment for public safety and other mission critical industries.

Discuss and highlight its recent track record with subscriber equipment.

Enumerate the quantity of radios delivered within the past 10 years.

Submit references and brief narratives for at least three (3) recent successfully delivered large (more than 1,000 total subscriber radios) projects that are similar in scope and size to the proposed County system. Descriptions for each project shall not exceed two (2) pages. At minimum, references shall include:

- Customer name, address, contact name(s), title, phone number, e-mail address.
- Brief description of the system and relevant configurations (Motorola Phase 2 infrastructure, trunked/conventional, simulcast/multicast).
- Number of system users.
- Brief description of the services rendered including radio management (cloud and on-premises solutions), radio template development, radio installation, and programming.
- Any project specific challenges or obstacles encountered, and corresponding resolution means Respondent employed to address them.
- Total duration for solution delivery including the original estimated and actual delivery dates and a description for variance in excess of 90 days.
- Total contract amount.
- Explicitly indicate which, if any, of the proposed key personnel supported these referenced projects.

Describe the name, location and capabilities (qualifications, years in business, experience with Respondent's subscriber devices) of the local sub-contractors and service facilities, which will provide any or, all of the installation, service and warranty, both initially and on a continuing basis.



3.2 Team Experience and Qualifications

Describe your firm's organizational chart, identify who will have overall responsibility for the work, and include the lines of authority between team members up to this senior level.

Respondents shall identify names, positions, roles and responsibilities, and resumes of key project personnel (prime and subcontractor) that will be assigned to the proposed project.

Resumes shall:

- Demonstrate experience and qualifications of each proposed key personnel to be assigned to the project including, but not limited to, educational background, personnel's role in supporting projects of similar scope, and other relevant certifications or career highlights.
- Indicate the key personnel's tenure with the corporation.
- Indicate whether any proposed key personnel are subcontractors to the primary Respondent.
- Include references for the Project Manager and Lead System Engineer/Integrator.

Include a statement that key personnel will be available to the extent proposed for the duration of the project acknowledging that no person designated as "key" to the project shall be removed or replaced without the prior written concurrence of the County.

3.3 Product and Subcontractor Working Experience

Respondents shall identify major subsystems or subcontractors it is proposing with which it does not have prior experience.

3.4 Financial Condition

Provide a general description of the firm's financial condition; identify any conditions (e.g., bankruptcy, pending litigation, planned office closures, impending merger) that may impede consultant's ability to complete the project.

4. General System and Contractor Requirements

4.1 General Project Requirements

The Contractor shall provide a turnkey solution for subscriber radios that will function on the ECTRN. This includes provision of programming templates, radio management equipment and configuration, and installation services. The Contractor will provide a solution consisting of all of the services, hardware, equipment, devices, parts, materials, goods, software, firmware, data, physical and network infrastructure, deliverables, and other work necessary for fully functional and operating P25 subscriber radios on the ECTRN.

The procurement, programming, and installation services included in the ECTRN shall be performed with the Contractor's best skill and judgment, in a good and workmanlike manner and shall otherwise be consistent with and in compliance with the ECTRN specifications.



All equipment furnished by the Contractor shall be new, meet the requirements of this specification and the manufacturers' published specifications, be in operable condition at the time of delivery, reflect high quality workmanship throughout, and be suitable for the intended purposes delineated herein.

The Contractor is solely responsible for planning, designing, developing, constructing, supplying, fabricating, installing, testing, commissioning, and distributing the subscriber equipment and other required systems purchased under this Contract.

The Contractor shall be solely responsible for ensuring that its components comply with all local, State, and federal Environmental laws, codes, or statutes.

The Contractor provided subscriber equipment shall meet the technical performance and reliability parameters prescribed in the RFP.

All Contractor subscriber equipment shall be of current design and manufacture. No components shall be on the manufacturers' equipment cancellation lists. Respondent shall explicitly state the end of manufacture, and end of life dates of all proposed components and systems.

The Contractor shall, at its own expense, remedy damage caused by the Contractor to the real or personal property of County agencies or their lessor.

4.2 General Business Terms

Acceptance Criteria for Final System Acceptance: Successful completion of all acceptance tests, and close-out of all punch list items.

Latent Defects: Contractor is responsible for the correction of any deficiencies identified during the General Warranty Period.

4.3 Project Management

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

The Contractor shall provide turnkey project management services during all Phases of the Project, and shall, at a minimum:

- Develop and maintain a project plan and schedule.
- Provide County staff and other pertinent stakeholders with regular status reports and updates.
- Allocate project management staff and other key Contractor and subcontractor resources.
- Conduct project planning sessions with County personnel and other contractor staff.
- Prepare and track action points and associated responsibilities.
- Conduct bi-weekly (or as required) project status/update meetings.
- Prepare and present formal monthly reports which include the status of the project, risks and mitigation approach, an action item register, and salient project financials.
- Prepare as-needed reports and materials for County and executive staff meetings and attend such meetings as directed.



- Develop a risk mitigation plan and facilitate the resolution of problems and issues.
- Provide a mechanism for storing and sharing up-to-date project-related documents and schedules.

The Contractor shall create, maintain and update, until Final System Acceptance, a communications plan, and a risk mitigation and escalation plan.

The Contractor shall designate a Project Manager that is a full-time employee of the Contractor that will serve as the primary point of contact. Once approved, Contractor shall not replace the Project Manager without the written approval of the County.

The Contractor's Project Manager shall be responsible for facilitating the flow of information and coordination among all ECTRN member agencies and project stakeholders.

The Contractor's Project Manager shall have the power to make significant decisions relevant to the project and shall have direct access to the Contractor's top management for the timely resolution of issues that may be beyond the Project Manager's direct authority to resolve.

The Contractor's Project Manager or their designee will convene and attend bi-weekly status meetings and shall submit bi-weekly status reports covering such items as progress of work being performed, milestones attained, resources expended, problems encountered, issues and corrective action taken, until the time of Final System Acceptance.

The Contractor shall provide written agenda items prior to all status meetings.

The Contractor shall maintain an updated and current written list of open issues and pending decisions.

The Contractor shall allocate sufficient time for the review and approval of Contractor provided project documents by the Stakeholders.

The Contractor shall be responsible for updating the project schedule and providing overall project status, at a minimum, on a monthly basis describing the completed milestones and project delays, if any.

4.4 Kick Off

The Contractor, led by its Project Manager, shall convene a project planning Kick Off session with County staff and other stakeholders, as identified by the County, within 30 days of contract award. The Kickoff shall include:

- A detailed project plan.
- A work statement that includes the project deliverables and project objectives.
- A description of the finalized project management approach.
- A work breakdown structure (WBS) to the level at which control shall be exercised.
- Performance measurement baselines pertaining to schedule and cost.
- Major milestones target dates, including at a minimum, milestones identified in the Project Milestones and Acceptance section.
- A list of key personnel resources and any other staff requirements.



- A risk management plan, including constraints and assumptions and planned responses to address projected risks.
- Project communications plan, including periodic reporting requirements and milestone achievement determination.
- A Change Order management plan.

4.5 Project Milestones and Acceptance

Respondent shall submit its proposed schedule for the delivery of the ECTRN subscriber devices. The County prefers a timely completion of the entire project and the intermediate key milestones identified below.

Respondent shall provide a detailed Gantt chart schedule including deliverables and activities.

The schedule shall identify the following project phases as key project milestones. The milestones below shall additionally correspond with the Contractor's payment timeline. Acceptance criteria for each milestone is described below:

Kick Off:

Completion of activities listed in the project Kick Off Section.

Detailed Design Review:

Completion of all activities listed in Design Review Activities.

Radio Equipment Programming and Installation:

Completion of all activities listed in Subscriber Equipment Installation.

Completion of all activities listed in Acceptance Testing.

Acceptance Testing:

Completion of Coverage Acceptance Testing.

Completion of Functional Acceptance Testing.

Final System Acceptance:

Completion of all acceptance tests.

Completion of user cutover using the newly provided subscriber equipment.

Completion of all punch list items.

Project Close Out:

Final System Acceptance.

Delivery of all system documentation.



Respondent's project schedule shall account for common national, and State observed holiday periods during which time limited, or no work will be performed. The County reserves the right to designate quiet periods of up to two weeks at a time to ensure service outages do not occur during these periods.

The County will make reasonable efforts to provide the Contractor with adequate resources to support ECTRN subscriber delivery, programming, and installation. Contractor shall not expect, however, the County resources to be made available more than eight hours per day or outside of standard business hours unless pre-authorized in writing.

4.6 Design Review Activities

The County intends to lead activities to determine standardized fleetmap development activities for all agencies that join the ECTRN. The Contractor shall provide support to customize standardized radio programming behavior such as toggle switch operations, emergency activation behavior, and other customizable functions of the Contractor's subscriber equipment. The Contractor shall propose to the County and its user agencies a design for the standard radio configurations for review by the County and the user agencies. The Contractor will turn the approved design and the standardized County fleet map into a programming template for user agencies who will use the Contractor's subscriber equipment. The Contractor will provide programming for all Contractor provided Subscriber Equipment using agency approved templates.

4.7 Installation Planning

The Contractor shall prepare project plans for the installation of mobile equipment when contracted to do so. The Contractor will coordinate with user agencies to develop a mutually agreeable plan that factors agency operations, Contractor's labor resources, and other resources (e.g., number of bays in a viable installation facility). The Contractor will develop a plan for each individual agency.

4.8 Documentation

4.8.1 Maintenance Documentation and Manuals

The Contractor shall supply suitable maintenance manuals for the purpose of allowing the County, Contractor, and other technicians to maintain the ECTRN Subscriber Equipment.

The maintenance manuals shall contain the following:

A complete step-by-step procedures and frequency for all routine/preventative maintenance activities.

Complete test and maintenance instructions including trouble-shooting charts.

Parts list giving complete description and ordering information for each component. Part numbers will be industry standard or the actual manufacturer part number.

Inter and intra-cabling diagrams reflecting as-built configuration including pin layouts for all plugs, wire color codes, gauge, and functional labeling for mobile radios.

Networking documentation including IP layer for Radio Management systems.



The maintenance manuals shall be plainly indexed and contain only the information applicable to the components delivered.

The manuals are to be contained in a multi-ring binder, which facilitates insertion of corrections, changes, and additions.

All electronic components will be identified by reference designators for cross-reference to the parts listings.

The Contractor shall provide one physical copy covering all pertinent maintenance documentation and electronic versions for distribution to local agencies.

Copies of all factory and installation test results will be provided as part of the manual set.

Service bulletins and modifications, where appropriate, will be provided for the life of the components, not less than ten (10) years from the date of initial delivery.

4.9 Training

The Contractor shall develop a comprehensive training program for the programming, management, operation, administration and maintenance of the ECTRN subscriber devices by network operators, executive management personnel, and the end-user community.

The end-user training shall be provided in a train-the-trainer format.

Respondents shall provide a high-level overview of the proposed training plans.

Training shall be delivered in-person at a County facility.

Training shall be structured to accommodate all County and designated personnel.

The Contractor shall complete all training activities prior to, but as close as possible to, the Final System Acceptance and cutover dates.

Training programs and corresponding material shall be flexible and customizable for the County staff to modify based on projected needs of the trainees.

Instructional materials, media presentation devices, presentation media, lesson plans, and other audio-visual aids produced by the Contractor to provide training shall be furnished to the County for continuing education purposes.

The County reserves the right to record or reproduce unlimited copies of the training documentation for use by County agencies.

Training materials shall be provided not less than two weeks prior to the start of any training course.

Training shall simulate the live system and potential failure scenarios to the extent possible but should not interfere with its operation.

Training shall include, but is not limited to:

- Subscriber Equipment Overview



- Operational practice of all system components including mobile and portable radios
- Fleet mapping procedures and best practices
- Template development procedures and best practices for user radios
- Radio Programming
- Basic troubleshooting techniques
- Available features
- Radio Management System:
 - System Overview
 - System Administration
 - Agency Administrator creation
 - Agency Permissions
 - Radio Management
 - Radio Programming
- Development and maintenance of system databases
- Installation and turn-on procedures.
- Operation of all test equipment
- Alignment and optimization testing procedures, including the frequency of routine/preventative maintenance activities
- Detailed troubleshooting procedures
- Unit/module replacement procedures
- Detailed repair procedures
- Safety procedures
- Preventative maintenance procedures including the frequency of preventative maintenance activities

5. ECTRN Technical Requirements

5.1 Network Security

The ECTRN Radio Management System, on premises equipment, shall comply with all County IT security protocols for authentication, data integrity, anti-virus plans and encryption.

System Access Security and Management: All network elements (servers, workstations, routers, switches, etc.) shall employ username and password authentication.

Where applicable, the ECTRN's network and applications, including the Contractor's Radio Management system, shall connect to the County network only via a De-Militarized Zone (DMZ) which will include firewall and intrusion preventive functions.

Network and application ports access will be filtered for only the ports required by the Contractor provided solutions.

The Contractor shall include an anti-virus package including regular updates as recommended by the equipment and software manufacturers.



5.2 Sustainability and Lifecycle

The ECTRN Subscriber Equipment shall be supportable for a minimum of ten (10) years after the initial deliveries without the need for a major overhaul or significant hardware changes or replacement.

- Supportability is defined as the ECTRN's ability to receive bug fixes, security updates, and standard software refreshes.

Spare equipment and a full suite of maintenance and support covering physical components, software, firmware, and security updates shall be available for its components for a period of not less than ten (10) years after the Final System Acceptance.

The Contractor shall be capable of providing support and maintenance services for its provided subscriber device hardware and software for at least 10 years after initial deliveries.

The Contractor shall be responsible for notifying the County of end-of-life and end-of-support from the manufacturer within two-weeks of the manufacturers' issuance of such dates.

5.3 Standards Compliance

All goods and services shall comply with the most current adopted version of all applicable codes, ordinances, and regulations as well as the latest national and industry standards recognized by the same, including, but not limited to:

Applicable portions and latest revisions of the TIA-102 series of documents defining Project 25 compliance.

Applicable portion of Telecommunication Industry Association (TIA) TSB-88 concerning Wireless Communications Systems Performance in Noise and Interference-Limited Situations.

Federal Communications Commission (FCC), Title 47, Telecommunications (47 CFR).

National Fire Protection Association (NFPA).

Underwriters Laboratories (UL).

American Society of Testing Materials, ASTM (applicable sections as listed in this specification).

In the case where applicable standards or applicable codes, ordinances and regulations conflict, those that pose the most stringent requirements will prevail, as determined by the County.

5.4 Backup Control Stations

The Contractor shall furnish, install and configure a total up to 99 new control stations to support interoperability with other systems and to serve as backup in the event of ECTRN console or link failure, per the performance criteria outlined in this section.

Control stations shall meet the following performance requirements:

Temperature: -30°C to +60°C.

Minimum output power: 50 W (Control Stations).



Transmitter frequency stability: +/- 0.00015% across operating temperature.

Transmitter audio response: +1, -3dB, 6dB pre-emphasis.

Transmitter audio distortion: ≤ 3% at maximum rated output.

Receiver sensitivity: -119 dBm (12dB SINAD), -119 dBm (5% BER).

Min. receiver audio output: 1.5 W.

Receiver audio response: +1, -3 dB, 6dB/octave de-emphasis.

Receiver audio distortion: < 3% at maximum rated output.

Spurious response rejection: > 80 dB.

Intermodulation rejection: > 75 dB.

Control stations shall support the following feature sets:

Analog Voice, P25 Phase 1 conventional and trunking, and Phase 2 trunking.

Operation in a single public safety frequency band, or, optionally, all public safety frequency bands (VHF, UHF, 700/800 MHz).

Channel spacing or of 6.25 kHz (or equivalent efficiency) 12.5 kHz, 20 kHz and 25 kHz.

Frequency deviation limits of 2.5 kHz, 4 kHz and 5 kHz.

Frequency generation by an internal synthesizer and/or embedded microprocessor technology.

Individual, group and announcement calls as defined in the APCO P25 TIA 102 suite of standards.

Radio unit inhibit/uninhibit as defined in the APCO P25 TIA 102 suite of standards.

Call alerting (initiated by another radio user or a dispatch console operator) as defined in the APCO P25 TIA 102 suite of standards.

Project 25 Enhanced Full Rate Vocoder (AMBE + 2) and Half-Rate Vocoder.

Scanning across all proposed frequencies.

Emergency call and alerting across all proposed systems including P25 trunked and P25 conventional.

Transmission of a digital unit identification on push to talk across all proposed systems including P25 trunked and P25 conventional systems.

Adjustable transmitter time-out function to limit extended inadvertent PTTs.

Dynamic regrouping by console or network operators.

Talk-around or unit-to-unit capability.



Operation under reduced network redundancy modes.

Control stations shall support standard tone remote control and E&M signaling.

Control stations shall be configurable for use with an internal and external power supply as applicable and as defined by the County.

Control stations shall be rack mounted.

At the Public Safety Campus and Erie County Backup locations, there are anticipated to be a total of 11 new control stations at each location, rack-mounted in a roof/penthouse room with antennas mounted on the roof. Each control station will have an associated desktop remote unit for control/interface placed in the dispatch area at various dispatch positions. The Respondent shall identify and include in its proposal any additional equipment required for the control station installations at the Erie County Public Safety Campus and backup dispatch center.

New control stations at other dispatch centers shall utilize existing feedlines, antennas, and other associated RF equipment where possible. The Respondent shall identify, in general, control station installation requirements for other dispatch centers. The specific requirements and costs for these centers will be assessed at a later date.

5.5 Radio Subscriber Equipment

5.5.1 General Subscriber Device Requirements

The County may consider a range of subscriber radio tiers to suit its operational needs, per the specifications herein.

The Respondent shall propose multiple tiers of mobile and portable radios that cost-efficiently meet the minimum specifications of tiers prescribed in this section.

The Respondent shall offer accessories compatible with the proposed subscriber devices as required in the proposal cost sheet.

The Respondent shall be solely responsible for the furnishing, installing, deploying, provisioning and activating subscriber devices purchased as part of this procurement.

The Respondent shall also provide pricing for programming existing County subscriber radios

All specified features that are standardized shall meet all applicable APCO P25 TIA-102 standards and shall have been certified by the Project 25 Compliance Assessment Program (P25 CAP).

The Respondent shall submit the relevant Supplier's Declaration of Compliance for all devices, software, and interfaces in its response.

The Respondent shall identify all proprietary technologies employed, if any, by the subscriber devices in their response to Subscriber Devices.

The Respondent shall additionally detail capabilities, features or functions, if any, that are reduced or lost when devices operate on other manufacturers' P25 LMR systems in its response to Subscriber



Devices. Description shall include subscriber features that are supported only on the Respondent's LMR system.

All radio equipment shall be FCC type accepted under Part 90 of the FCC Rules and Regulations.

All radio equipment shall be capable of high-quality operation on a Project 25 Phase 2, simulcast system.

All radio equipment shall support the full UHF band available to Erie County (including 420 MHz).

All radio equipment shall be capable of efficient inter-site P25 roaming with customer manageable prioritization of sets of sites per radio and with configurable roaming parameters to provide a stable, fast, and highly reliable method for inter-site transitions.

All proposed radios shall be uniquely identifiable by an alphanumeric serial number with corresponding barcodes for ease of inventory management.

The Respondent shall be responsible for furnishing the Stakeholders with detailed radio inventory documentation in electronic format, including but not limited to, serial numbers, software and firmware versions, and activated features. The Respondent shall maintain its own copy to facilitate tracking of future upgrades or modifications.

5.5.2 Subscriber Device Functions and Technical Specifications

All proposed subscriber devices across all tiers shall support:

Analog voice, P25 Phase 1, and P25 Phase 2 compatibility (all modes shall be supported for all devices, not as options or requiring upgrades).

Operation across the applicable public safety narrowband band(s) as applicable.

Over the air programming.

Channel spacing of 12.5 kHz, 20 kHz and 25 kHz.

Frequency deviation limits of 2.5 kHz, 4 kHz and 5 kHz.

Frequency generation by an internal synthesizer and/or embedded microprocessor technology.

Individual, group and announcement calls as defined in the APCO P25 TIA 102 suite of standards.

Radio unit inhibit/uninhibit as defined in the APCO P25 TIA 102 suite of standards.

Call alerting (initiated by another radio user or a dispatch console operator) as defined in the APCO P25 TIA 102 suite of standards.

Project 25 Enhanced Full Rate Vocoder (AMBE+2).

Scanning across all proposed and existing frequencies and systems within the prescribed band(s) of the County and surrounding mutual aid partners.

Emergency call and alerting across all proposed systems including P25 conventional and analog systems.



Transmission of a digital unit identification on push to talk across all proposed systems including P25 conventional and analog systems.

Adjustable transmitter time-out function to limit extended inadvertent Push-To-Talks (PTTs).

Talk-around or unit-to-unit capability.

Operation under reduced network redundancy modes.

Performance parameters across all tiers shall meet the following requirements:

Temperature: -30°C to +60°C. (unless otherwise specified)

Minimum output power: 3-5 W (depending on frequency band) (portables), 30-50 W (Mobiles), 30-50 W (Control Stations) across each supported band

Transmitter frequency stability: +/- 0.00015% across operating temperature.

Transmitter audio response: +1, -3dB, 6dB pre-emphasis.

Transmitter audio distortion: 3% at maximum rated output.

Receiver sensitivity: -119 dBm (12dB SINAD), -119 dBm (5% BER). (unless otherwise specified for a particular tier)

Min. receiver audio output: 0.5 W (portables), 1.5 W (mobiles and control stations).

Receiver audio response: +1, -3 dB, 6dB/octave de-emphasis.

Receiver audio distortion: < 3% at maximum rated output.

Spurious response rejection: > 80 dB.

Intermodulation rejection: > 75 dB.

Adjacent channel rejection > 60 dB

Simulcast delay spread: > 40 us

Scan Dwell: < 200 ms

5.5.3 Mobile Radio Requirements

Contractor will provide all cabling, mounting brackets, and accessories, including, but not limited to microphones, speakers, headsets, and control heads associated with the various types of apparatus operating within the County mobile radios, shall be included as part of this procurement.

Mobile radios shall be capable of operating under and installed to withstand conditions typical of vehicular environments, including, but not limited to, fluctuations in DC power and exposure of cabling to hydraulic fluids with no degradation of functional parameters.

Mobile radios and accessories mounted externally in special purpose vehicles such as fire engines, puffers or motorcycles shall be weatherproofed accordingly.



Speaker microphones installed externally or in noisy conditions shall utilize the robust noise cancelling mechanisms.

Mobile radios shall be capable of operation from a nominal 12-volt dc primary power source, with positive action reverse polarity protection to avoid damage if the radio were to be incorrectly installed.

Mounting locations of mobile radios, accessories, and cabling shall be subject to the approval of each department or end user agency.

The Respondent shall offer various types of antennas, including but not limited to, roof mount and glass mount stealth antennas.

The Respondent shall offer various configurations of mobile radio, control head and associated interfaces including:

Motorcycle mountable receivers.

Multi-control head capability.

Siren and light control capability.

Mobile Installation Requirements

Contractor will be responsible for all vehicular and motorcycle mobile radio installation for all vehicle types, including all cabling, mounting brackets, antennas, and accessories, including, but not limited to microphones, speakers, headsets, and control heads associated with the various types of apparatus operating within the County. The Contractor shall be responsible for any and all damages to Customer property that may occur during the mobile radio installation.

Any respondent-installed or modified antenna, coax cable and connectors must be installed in a fashion that when swept by an antenna analyzer shall have a SWR that meets or exceeds the factory specifications of the antenna or component. Grounding must meet or exceed common industry standards and best practices.

Respondents are required to provide how and where the vehicle mobile radio and roof top antenna installation will be conducted, and any volume discounting considerations. The cost for these services will be captured in the *ECTRN Subscriber Equipment Cost Table*. The Respondent shall provide per vehicles pricing for the following vehicle types:

- Law enforcement fire chief sedan and SUV vehicles
- Fire trucks and apparatus
- Marine/boat units
- Motorcycles/ATVs/UTVs
- Command communication vehicles
- Helicopters
- Other vendor designated vehicle types



Respondents shall identify the responsibilities of the County for supporting the mobile radio installation, including but not limited to the coordination of vehicle deliveries, acceptance testing, and the locations where the installation will be accomplished if not provided by the vendor. If the Respondent will be providing the location where the installation will be accomplished, the location of the facility(ies) will be identified.

Mobile radio installation shall be based on typical industry and vendor defined, and approved by the County standards and best practices with particular attention being given to the following:

- Contractor will conduct a design review with each individual agency and vehicle type to determine the precise methods for installation of mobile radios, antenna installation and penetrations, cable runs, and electrical configuration. This process will enable each agency to provide direction on specific requirements and special considerations of each agency are factored into the mobile installation method.
- Rooftop antenna installation management considering the separation from other installed wireless antennas (GPS, cellular) including developing an approved design per vehicle type per agency.
- Rooftop antenna installation drilled holes shall be sealed to avoid water seepage. While the County prefers that the antenna installation use existing antenna locations, if new holes need to be drilled, existing holes must be sealed.
- Respondent shall identify the number of personnel that will be involved and the number of concurrent installations the Respondent will have available.
- The electrical draw requirements of the mobile radio shall be identified and if the existing vehicle power is insufficient, the vendor will advise the County and provide a proposal to mitigate to ensure reliable operations.
- The installation of the equipment will not interfere with any of the existing vehicle operations. If the vendor proposes to move existing equipment, the vendor will be responsible for the costs to relocate the equipment.
- Contractor will provide mobile radio installation project management and agency coordination services and maintain a current and accurate tracking of all installation schedules and status. Contractor will maintain a punch list detailing remaining work to complete the installation as may be warranted.
- Final acceptable testing shall include voice testing along with an antenna VSWR measurement. Final acceptance must include a signoff from the County agency for which the mobile radio is being installed.
- Contractor will program mobile radios, and provision radios into the Radio Management system, if directed.

5.5.4 Portable Radio Requirements

Volume and channel selection controls on all portable radio shall be mounted on the top of the unit for easy access.



Portable radio speaker microphones shall use coiled cords to connect the speaker microphone to the radio and shall be available in at least three (3) different lengths.

The Respondent shall offer speaker microphones that include emergency call and alert buttons.

Speaker microphones shall be waterproof.

Speaker microphones shall function normally in rain conditions without voice distortion

Speaker microphones shall utilize robust noise cancelling mechanisms.

Battery life, based on a 10% transmit, 10% receive, 80% stand-by duty cycle, measured in accordance with EIA RS-316 at 250 milliwatts of audio output, shall be at least twelve (12) hours.

Batteries must be capable of full recharge in one (1) hour or less.

Batteries shall not be susceptible to developing memory of charging cycles.

The Respondent's portfolio of battery chargers shall include single unit and multi-unit chargers.

5.5.5 High-Tier Subscriber Radios

High tier radios are targeted towards the public safety and first responders and shall, at minimum, be to support the following capabilities at initial deployment.

Available in single frequency band or multi-band configurations.

Maximum individual channels/modes (specify in response to Section: Subscriber Devices).

Minimum of 512 individual channels/modes.

Two navigation keys and two programmable front soft keys.

Programmable top toggle switch (Portable Only).

Multiple auxiliary input/outputs for remote operation (Control Stations Only).

Priority scanning:

User-adjustable scan list definition.

2 x 12 alphanumeric character display or higher.

Indicators:

Battery status (Portable Only).

Encryption status.

Mode of operation (repeated or direct).

Multiple remote-control heads (Mobile Only).

4 x 3 keypads.



Bluetooth capability for speaker mic, etc.

Robust noise cancellation algorithm.

MIL-STD-810 F or higher Drop above 1M (Portable Only).

Intrinsic Safety (Portable Only) UL ANSI/TIA 4950 or equivalent.

Ingress protection (IP) of 68. (Portable Only)

P25 Data.

P25 Short Message Service.

Wi-Fi connectivity for radio management

Support for tone paging using a P25 trunking talkgroup where the radio will alert when either a specific tone or tone sequence is received or a specific talkgroup is activated.

Embedded or external GPS (as per TIA-102 Standards and 5.4.5 Global Position Systems (GPS) Application).

Optional AES Encryption (as per TIA-102 and FIPS-140-2 standards).

Optional support for multiple algorithm/multiple key encryption operation.

Optional support for Push-To-Talk (PTT) solutions over 4G/5G LTE.

Optional support for Over-The-Air-Programming (OTAP).

Optional support for Over-The-Air-Rekeying (OTAR).

Optional support for other land mobile radio technologies (e.g., NXDN, DMR, or MotoTRBO)

Radio authentication.

5.5.6 Mid-Tier Subscriber Radio

Mid-tier radios are targeted towards the public safety agency users and shall, at minimum, be to support the following capabilities at initial deployment.

Available in single frequency band or multi-band configurations.

Minimum of 512 individual channels/modes.

Two navigation keys and two programmable front soft keys.

Programmable top toggle switch (Portable Only).

Multiple auxiliary input/outputs for remote operation (Control Stations Only).

Priority scanning:

User-adjustable scan list definition.



2 x 12 alphanumeric character display or higher.

Indicators:

Battery status (Portable Only).

Encryption status.

Mode of operation (repeated or direct).

Multiple remote-control heads (Mobile Only).

4 x 3 keypads.

Bluetooth capability for speaker mic, etc.

Robust noise cancellation algorithm.

MIL-STD-810 F or higher Drop above 1M (Portable Only).

Intrinsic Safety (Portable Only).

Ingress protection (IP) of 65 and above.

P25 Data.

P25 Short Message Service.

Wi-Fi connectivity for radio management

Support for tone paging using a P25 trunking talkgroup where the radio will alert when either a specific tone or tone sequence is received or a specific talkgroup is activated.

Embedded or external GPS (as per TIA-102 Standards and 5.4.5 Global Position Systems (GPS) Application).

Optional AES Encryption (as per TIA-102 and FIPS-140-2 standards).

Optional support for multiple algorithm/multiple key encryption operation.

Radio authentication.

5.5.7 Low-Tier Subscriber Radios

Low tier radios shall, at minimum, support the following capabilities at initial deployment.

Single-band support.

Minimum of 256 individual channels/modes.

Two navigation keys and two programmable front soft keys.

1 x 12 alphanumeric character display or higher.

Indicators:



Battery status (Portable Only).

Encryption status.

Mode of operation (repeated or direct).

MIL-STD-810 F or higher Drop above 1M (Portable Only).

Intrinsic Safety (Portable Only).

Ingress protection (IP) of 64 and above.

P25 Data.

P25 Short Message Service.

5.5.8 Pagers

P25 Phase 2 Pagers shall, at minimum, support the following capabilities at initial deployment:

Single-band and optionally Dual-band (VHF and UHF) support.

Minimum of -115 dBm sensitivity (SINAD 12 and BER 5%)

Voice message storage (respondent will provide storage size in minutes)

Minimum of 5 individual channels/modes.

Support for tone paging using a P25 trunking talkgroup where the radio will alert when either a specific tone or tone sequence is received or a specific talkgroup is activated.

Customizable alert tones and voice announcements

Two navigation keys

Temperature: -20°C to +40°C.

Indicators:

Battery status

MIL-STD-810 E

Ingress protection (IP) of 56 and above.

P25 Pagers are not required to have transmit functions and are therefore not required to meet the transmit requirements of this section.

5.5.9 Subscriber Programming Application and Features

The Respondent shall provide six (6) licenses of the programming software and six (6) complete sets of the corresponding accessories (cables, cradles, etc.) required to program all devices under this solicitation.



Programming software shall be compatible with Windows based PCs (Windows 11 or higher).

Respondents are encouraged to offer a radio profile management solution that provides a locally and remotely centralized database with appropriate, tiered access mechanisms to store, track and share 'radio masks.'

Programming applications shall have the capability to import or export alphanumeric lists (talkgroup aliases, frequency lists, etc.) to a CSV, XLS or XML format for ease of verifying information entered or to directly import lists into programming software.

Programming solution shall consist of a mechanism to restrict or limit programming or modification of parameters by unauthorized users (e.g., via a software or hardware key).

Programming solution shall provide sufficient flexibility for operators to define and assign rights to various authorized personnel. That is, these mechanisms shall not be too onerous or restrictive to distribute programming capabilities to various authorized personnel.

The Respondent shall describe its programming application and attributes.

Programming of encryption and authentication keys into subscriber radios shall be accomplished via a key management tool ("key fill device") that complies with TIA-102.AACD.

Proposal shall include four (4) key fill and/or authentication key devices with required cables.

5.5.10 Radio Management

The subscriber vendor shall provide a radio management system to program subscriber equipment. A single radio management system per subscriber vendor is anticipated that will enable all individual agencies to program radios, as needed. The system must be configurable by Erie County to allow only each agency's subscriber equipment to be modified/programmed (including OTAR). The system must provide multi-factor authentication and allow Erie County to easily manage each agency's administrative access to the system. The system shall enable Erie County (or the talkgroup owner) to identify whether a particular agency can access another agency's talkgroup(s). The County prefers the system to be in the cloud to minimize cost and risks.

The respondent shall describe how its solution is secure and prevents unauthorized access to the radio management system, protects the network's system key or its communication with subscriber devices. The respondent shall describe how its solution enables administrators to control access to talkgroup resources.

The system shall enable administrators to quickly identify the success of a reprogramming effort and to identify the devices that have not been updated.

5.5.11 IP Based Connectivity Requirements

Respondents offering radios that are capable of leveraging IP based transport services such as Wi-Fi and 4G/5G when out of range of P25 service, or to compliment the available ECTRNs services, shall provide detailed information regarding the method of integrating such push-to-talk traffic with the ECTRNs. The Respondent's must detail its solution for this connectivity with the ECTRNs including whether the



interconnection is proprietary or leverages P25 standards (e.g., the CSSI). The Respondent shall identify all systems and services required to complete the interface.

The Respondent shall detail whether the radio to core protocol uses proprietary or standards-based interfaces (e.g., fully compliant with the 3GPP MCPTT standard). Respondent's proposal must identify all infrastructure/software components and costs associated with this capability beyond the cost of the radio itself and the IP based feature. For example, Respondent will identify any costs associated with core services that deliver proprietary or P25 based content to the ECTRN, whether cellular service is included in the price of the device (and the period of time for which it is included), and any other fees (one time or recurring) associated with the capability.

Additionally, for 3GPP modem capable devices, the Respondent shall identify the 3GPP bands supported by the device, the latest 3GPP release compliance including whether the device supports 5G. The Respondent shall identify all wireless carriers for which the Respondent's subscriber equipment has been approved. The Respondent will also identify its roadmap to supporting Non-Terrestrial Network functionality including the full mobility functions of Release 18 and the full support of the bands planned for use by the supported carriers.

6. Acceptance Testing

In addition to demonstration that Subscriber Equipment meets certain industry and regulatory standards such as MIL, IP, FCC, and TIA, the Contractor shall demonstrate the ability of its subscriber equipment to perform satisfactorily on the ECTRN and that it does not otherwise interfere with the proper operation of the ECTRN. Respondents shall indicate in their proposal the performance levels of each model of their proposed subscriber equipment and shall conduct acceptance testing to demonstrate compliance with the requirements of Section 5.5.

In addition, the acceptance testing shall include the following elements to allow the County to fully assess each Respondent model:

- The SINR threshold at which the subscriber equipment achieves 2% BER (3.4 DAQ).
- Modulation fidelity (deviation and phase error) per TIA requirements
- Audio quality testing including delivery of DAQ 3.4 across the usable range in noisy environments.
- Portable loudness
- Mic noise rejection / wind noise tests
- Roaming tests including P25 site-to-site transitions and, if configured, P25 to alternate technology transitions
- Control channel acquisition time
- Ability to handle simulcast multipath interference: Respondent will document its specifications for maximum delay and signal level difference.

The County reserves the right to reject Contractor Subscriber Equipment that fails to perform at an adequate level. The County intends to share these results with user agencies to allow agencies to balance tradeoffs.



7. Warranty and On-Going Maintenance

7.1 Warranty Period and General Maintenance Criteria

The Contractor shall warrant, at its sole cost and responsibility, that all Contractor provided components and the installation of such components conform to the requirements and criteria specified in this solicitation and as finalized during the Design Review, or the manufacturer's published specifications, whichever is most stringent for a minimum of one (1) year (System Warranty Period) from the date of Final System Acceptance.

The Contractor shall also offer an optional extended warranty.

Warranty Period shall not begin prior to Final System Acceptance and shall begin only upon the start of Beneficial Use by the County of the newly provided subscriber equipment.

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.

Warranty includes maintenance of the hardware and software to meet the stated coverage, functionality, reliability, and other performance criteria.

All Contractor-furnished equipment shall be software upgraded and be at the equipment manufacturer's latest release at the conclusion of the Warranty period.

During the Warranty Period, in the event the Subscriber Equipment or any Contractor provided component fails to meet any of the stated coverage, functionality, reliability and other performance specifications in this solicitation, the Contractor shall take appropriate steps to correct the deficiency so that the Subscriber Equipment complies with functionality, reliability and other performance specifications in this solicitation. Such repairs shall be made at the sole cost of the Contractor for parts, material, and labor.

The Contractor shall make available to the County all mandatory and non-mandatory software and firmware revisions, patches, and/or hotfixes as part of warranty.

Implementation services for these updates for all subsystems shall be included in the base Warranty period price.

The Contractor shall be responsible for all warranties including warranties obtained from subcontractors, manufacturers and/or suppliers under the System Warranty Period. Copies of all warranties shall be provided to the County upon delivery of the applicable component.

During the warranty period, the Contractor provided hardware and software components of the system shall be fully operational and available at a rate of 99.999 % measured on a monthly basis.

Base Warranty Period pricing shall contain all costs to provide all hardware, equipment, parts, materials, software, firmware, other components, and services necessary to remediate any deficiencies in the ECTRN subscriber devices for the System Warranty Period.



The Respondent shall submit annual licensing, support and maintenance costs for the ECTRN subscriber devices for the first five years post the warranty period as provided in the *ECTRN Subscriber Equipment Cost Sheet*.

7.2 General Maintenance and Support Requirements

Respondent shall be capable of providing annual maintenance and support for up to 10 years following the Warranty period for all services prescribed in this Section, and as is necessary to maintain the performance criteria of the ECTRN. Annual and multi-year base costs shall be submitted per the *ECTRN Subscriber Equipment Cost Sheet*.

The Contractor shall be the single point of contact for all Warranty and Maintenance Period activities.

All test equipment used in the provision or delivery of warranty services provided to the County, shall at all times, be functioning properly and have current equipment calibration certificates.

Technicians shall be properly trained, experienced and certified, if applicable, to utilize the required test equipment. Technicians that are dispatched or assigned to service ECTRN facilities shall be familiar with its configuration.

The County shall be furnished with six (6) licenses of all software necessary to program, administer, and maintain the Contractor's Subscriber Equipment.

The County reserves the right, at Contractor's expense, to perform warranty repairs, including, but not limited to, engaging another contractor to perform such repairs, if the Contractor is unable to satisfactorily complete such repairs within the timeframes specified herein or in the resultant contract. The Contractor shall reimburse the County for all invoices for labor, materials required, and the shipping/handling costs thereof to perform such repairs, within thirty (30) calendar days from presentation of such invoices.

7.3 Software and Firmware Support

For the purposes of the Subscriber Equipment, this section applies to the Contractor's radio management system and its key management facilities. The Contractor shall provide the full suite of maintenance and software support, including, but not limited to, physical components, software, firmware, and security updates.

Such support shall be available for all ECTRN subscriber device components for a period of not fewer than ten (10) years after the Final System Acceptance. Base annual and multi-year costs shall be submitted per the *ECTRN Subscriber Equipment Cost Sheet*.

The Contractor shall provide and install all mandatory and non-mandatory software and firmware revisions, updates, patches and/or hotfixes, and ECTRN maintenance software, and the required services to perform said updates, ensuring updates are compatible with all ECTRN subsystems.

The Contractor shall provide updates (software, firmware, hardware) for each subsystem, in each of the following situations, and as approved by the County:

To keep current with technology, security, public safety and industry standards.



- To keep the operating software compatibility packs and security patches up to date.
- To maintain compliance with the performance criteria and other requirements of the resultant Agreement.
- To maintain compatibility across various system components.

The Contractor shall be responsible for physical updating of all ECTRN subscriber device equipment with all mandatory revisions to meet the performance specifications prescribed in this solicitation.

Such work shall be performed during agreed upon scheduled maintenance intervals.

Within a reasonable time in advance of the release of each proposed subsystem update, the Contractor shall provide the County with information regarding the update, including but not limited to proposed release date, purpose, functionality, urgency, impact on the other system or subsystem components, and ramifications of accepting or rejecting the proposed update.

Implementation of updates shall receive prior approval of the County.

The Contractor shall test the updates prior to implementation thereof.

The Contractor shall perform all work needed in order to ensure the updates are compatible with the other ECTRN and subsystem components.

The Contractor shall perform scheduled backups of network databases and system configurations prior to and post updates.

7.4 Technical and On-Call Support

7.4.1 Technical and On-Call Support Service

The Contractor shall have on-call availability on a 24-hour per day, 7-day per week, 365 day per year basis.

The Contractor shall supply on-call diagnostic and repair service as per the response times and as directed by the County.

The Contractor shall respond to all repair calls and notices and remediate the cause of the system deficiency in accordance with specifications within this section.

The Contractor shall:

- Interface and coordinate services with service providers for software and equipment upgrades.
- Provide inventory control of all Contractor provided ECTRN network equipment and spares.
- Identify, notify and direct the necessary service contractor regarding network issues.

7.5 Preventative Maintenance

The Contractor shall provide recommendations on activities agencies can take to extend the useful life of Contractor provided Subscriber Equipment. The Contractor shall also identify any services offered by the Contractor and the cost for such services that extend the life of its Subscriber equipment.



Preventative maintenance and additional ad-hoc services may include the following activities which shall be performed per industry standards:

7.6 Spare Equipment

The Contractor shall furnish the County with critical spare components and parts necessary to maintain and operate the ECTRN subscriber devices pursuant to the performance criteria (availability and reliability) in this solicitation. Spare equipment shall be sized based on MTBF and other relevant factors.

The Contractor shall recommend the types of spare components to be maintained based on the equipment's field service approach and that would allow the County to perform its own on-site repair. Components are expected to include antennas, knobs, cases, belt clips, mobile mics, and other field-serviceable modules or parts as appropriate for each proposed radio model.

Spare equipment shall be distributed to the Erie County Radio Shop.

8. Technical Response/Work Plan Description Instructions

In its response to this Section, the Respondent shall demonstrate how its proposed solution and scope of services meet the specifications of this solicitation. Respondents' descriptions shall be thorough and concisely articulated; lengthy descriptions such as product specification sheets and marketing brochures shall be appropriately labeled and included as Attachments to the RFP response.

Prior to responding to this Section, Respondent is responsible for thoroughly reading and understanding the contents of the entire RFP.

Responses shall be provided in the order outlined in this Section. Respondents are not required to provide a point-by-point response to each line item in this section; however, responses shall be ordered and organized by sub-section as identified in this section. ALL requested pieces of information within a given sub-section shall be sufficiently addressed within that section.

8.1 ECTRN Subscriber Equipment Lifecycle and Sustainability

Describe how the ECTRN Subscriber Equipment will be managed and upgraded (by the Contractor) to meet the 10-year lifecycle requirements.

Discuss the expected and/or published serviceable lifecycle (assuming proper maintenance) of the ECTRN Subscriber Equipment.

Describe the process by which components are maintained or upgraded (e.g., software only, firmware only, hardware replacement).

State published end-of-life dates, projected vendor maintenance and support dates.

Describe any projected product line changes or cancellations and discuss the technical, operational, and financial impact to the ECTRN.

8.2 Subscriber Devices

In its response to this section, the Respondent shall provide, at minimum, the following information.



Provide an overview of its proposed subscriber devices by type and tier highlighting how the proposed devices fulfill the requirements in this solicitation.

Provide a description of any and all proprietary features that are employed by the subscriber devices to fulfill the specifications in this solicitation.

Provide a description of any additional non-standardized software license included or required to support operation on legacy trunked systems, if applicable.

Complete the following table indicating the capability of its proposed subscriber devices by radio tier. The County may utilize this information to determine the right fit of radios for various agency operational functions. Requirements specified in Sections 5.5.1 and 5.5.2 are assumed to be met by all tiers. The Respondent shall indicate if otherwise.

Function	High-Tier	Mid-Tier	Low-Tier
Dual Display	Yes/No	Yes/No	Yes/No
Front display size (rows/characters)			
Programmable top toggle switch (portables)			
Time to Start (Power on to PTT)			
Dual-band capable	Yes/No	Yes/No	Yes/No
Tri/All-Band capable	Yes/No	Yes/No	Yes/No
Scanning Across All Proposed Systems (digital, analog)	Yes/No	Yes/No	Yes/No
Dual Microphones	Yes/No	Yes/No	Yes/No
Noise cancellation	Yes/No	Yes/No	Yes/No
Typical Battery Life (10%Tx /10%Rx/80% Idle duty cycle)	Hrs.	Hrs.	Hrs.
P25 Data capable	Yes/No	Yes/No	Yes/No
P25 Paging Support	Yes/No	Yes/No	Yes/No
Encryption capable (AES)	Yes/No	Yes/No	Yes/No
Multi-key encryption capable	Yes/No	Yes/No	Yes/No
OTAR capable	Yes/No	Yes/No	Yes/No
GPS capability (device embedded)	Yes/No	Yes/No	Yes/No
GPS capability (external to device)	Yes/No	Yes/No	Yes/No
MIL-STDs	Yes/No	Yes/No	Yes/No
Ingress Protection (IP)	Yes/No	Yes/No	Yes/No
Intrinsically Safe UL ANSI/TIA 4950 or equivalent Capability	Yes/No	Yes/No	Yes/No
OTAP capable	Yes/No	Yes/No	Yes/No
Bluetooth Support	Yes/No	Yes/No	Yes/No
4G/5G LTE Support	Yes/No	Yes/No	Yes/No
NFPA 1802 Compliant	Yes/No	Yes/No	Yes/No



Other?				

Table 1: Subscriber Tier Capabilities Matrix

Provide a complete list of the Respondent's subscriber features or performance attributes, specified herein or otherwise, that are uniquely supported by the Respondent's system offering.

The Respondent shall detail its Subscriber Equipment roaming mechanism and capabilities. This includes identifying Respondent's site priority capabilities, configurable handover parameters (e.g., signal hysteresis, dwell time, scan intervals, trigger signal level to begin and how the priority sites become more "sticky") as well as those that are not configurable by the customer. The Respondent shall identify the maximum control-channel reacquisition time. Proper management of site roaming will enable the County to better manage system resources and user experience. The Respondent shall describe how it's approach achieves the two objectives.

8.3 Performance Acceptance Test Plan

Respondents will provide an acceptance test plan for the proposed Subscriber Equipment. The goal of the acceptance test plan will ensure proper functionality of the specifications outlined in this RFP. The test must demonstrate compliance with the requirements of Section 5.5.

An independent laboratory conducted test may be acceptable for some of the tests, however, several will require demonstration on the Project P25 Phase 2, simulcast ECTRN. The Respondent can propose those tests that are feasible only by laboratory test and those that can be conducted on the ECTRN. The Respondent will identify the entity that has (or will) conducted laboratory tests and demonstrate it's independence from the Respondent.

Describe the testing process and procedures that will be employed to verify the performance guarantees and confirm that it is compliance with the ATP described in this specification.

Describe test equipment configuration, measures and procedures, standards employed, test grid size, etc.

Estimate the total amount of time required for Acceptance Testing including the time requirement from Erie County and partner agencies

8.4 Functional and Baseline Acceptance Test Plans

Provide test protocols and procedures the Contractor will employ to validate and verify the overall operation of the ECTRN Subscriber Equipment per the specification.

Describe installation testing and functional acceptance process and the key performance indicators (KPI) that will be used to validate the proper implementation of all aspects of the ECTRN Subscriber Equipment on the ECTRN. Describe how Contractor will track and resolve test failures.

Estimate the total amount of time the County personnel and contract staff will be expected to dedicate to acceptance testing.



8.5 System Transition

The Contractor will support the County during the transition to the ECTRN. The Contractor will provide support for testing radio programming templates, troubleshoot and resolve issues associated with Contractor's Subscriber Equipment. The Contractor will provide on-site support, as necessary, during the transition to ensure Contractor's provided subscriber equipment is performing well on the ECTRN. If necessary, Contractor will provide support to reprogram radios to improve subscriber performance or functionality during the transition period.

Respondents shall propose services to be provided during the transition including the period of time where agencies operate on legacy networks prior to their transition to the ECTRN with Respondent's subscriber equipment.

Respondents shall also propose a plan to install and configure mobile radios. The Respondent shall identify its mobile installation subcontractor(s), if applicable, their daily capacity to install mobile radios, their level of experience with the various public safety apparatuses and their experience in the region.

Respondents shall also identify ongoing support (following complete transition) respondent will provide to the County on an ongoing basis including notices, support for firmware updates, bug/issue updates, and others as recommended by the Respondent.

8.6 Training Program Overview

Provide a brief overview of the proposed training program including specific proposed courses, allotted number of students, schedule, etc. for the Subscriber Equipment.

Describe both the programming/administration/management training, as well as the end-user train-the-trainer programs.

Respondent shall state whether off-site training is needed to fulfill any of the training requirements.

8.7 Test Equipment

Describe the recommended test equipment for the County to maintain the Subscriber Equipment.

8.8 Project Management and Staffing

Describe your project management approach.

Provide a proposed project plan that includes deliverables and project objectives by project phase.

Identify the staffing plan/resource allocation, including, at minimum, key resources such as:

The Project Manager.

Lead Engineer.

Field Installation Lead.

Describe the work which will be performed by subcontractors and how each sub-contractor will be managed.



Describe communications plan including how the team members (Contractor and County) will communicate during the execution of the project and how issues will be escalated.

Describe the risk management plan.

Discuss potential project risks and possible mitigation strategies.

Describe how Contractor will provide project progress updates: format, frequency and setting.

Describe the kick-off plan and activities.

Describe the Contractor's proposed method for managing, storing and sharing project documentation.

Detail the Change order process.

Describe the Contractor's Quality Control Plan discussing steps that Contractor will employ to monitor system implementation and what performance measures will be used to confirm adherence to the approved Final System Design.

8.9 County and Other Client Agency Responsibilities

Identify the County's responsibilities and duties to fulfill the scope of the project.

Estimate County's level of effort by personnel/functional category over the course of the proposed project.

Identify the role it expects the County's staff to play for the successful delivery of the project.

8.10 Project Schedule

Submit a project schedule in the form of a Gantt chart with detailed deliverables and activities. Schedule must explicitly identify the end dates of the following project phase/milestones.

Project NTP.

Kick Off.

Acceptance Testing.

Subscriber Installation

Subscriber Cut-Over including testing of programming templates and support during initial use and transition to the ECTRN.

Project Close Out

8.11 Warranty and Ongoing Maintenance Services

Provide an overview of the Respondent's maintenance and support plans proposed to the County and how it will meet the requirements.

Describe the proposed annual software or hardware refresh plans to meet the support and lifecycle specifications herein.



Affirm the ability to meet the response and restoration times specified by the County.

Detail the response times of factory support for both repair and engineering.

Describe the Contractor's technical support functions and capabilities and identify, specifically, the capabilities and services included in the County's annual technical support plans.

Briefly describe the types of preventative maintenance plans and frequency of activities the vendor would perform on a time and material basis.

If any portions of the required post acceptance plans are sub-contracted to third party firms, explain how the Contractor, acting as the primary point of contact, will triage, assign, and manage the resolution of system issues.

Describe ongoing factory engineering and service support that the Contractor or manufacturer will provide to the sub-contractor.

Identify services, if any, which are not included in the proposed plan which the Contractor deems necessary to meet the performance and lifecycle requirements of the ECTRN Subscriber Equipment.

8.12 Value Add Products and Services

Respondents are invited to provide a brief discussion or portfolio of Subscriber Equipment products and services and estimated costs which they deem are directly complementary to the County's future land mobile radio communications network.

9. Cost Proposal

9.1 Cost Proposal Table

Respondents pricing for the ECTRN Subscriber Equipment shall be submitted in the Appendix: *ECTRN Subscriber Equipment Cost Sheet*.

9.2 Milestone Payment Percentages

Respondent shall indicate its proposed payment percentages for each of the predefined milestones below (as described in this RFP). Note that the County will retain the noted percentages of the contract value for the last two project milestones.

- 100% upon receipt for portables and pagers.
- 100% of equipment price for mobiles, with an installation and testing milestone to be negotiated at contract award.

10. Exhibits and Appendices

- Appendix A: Subscriber Equipment Compliance Matrix.xlsx
- Appendix B: Subscriber Equipment Cost Proposal Sheet.xlsx
- Appendix C: Schedule A: Proposer Certificate
- Appendix D: Schedule B: Standard Insurance Provisions
- Appendix E: Equal Pay Certification
- Appendix F: MBE\WBE Certification

