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1 Project Staffing

CDX Wireless shall staff our efforts on this project with Mr. Bob Simmons. Mr. Simmons has served Humboldt County on this project since March 2017 by assessing the needs of users of Humboldt County's existing, analog public safety radio system; by drafting a conceptual design for its replacement; by developing the procurement specifications for the digital, Project 25 trunked simulcast radio system; and by providing consulting services to support the procurement and contracting for the system.

Mr. Simmons will hold overall responsibility for completing the Scope of Work described in this Project Scope. He will be CDX Wireless' single point of contact for this project and any additional project staff will report through him.

Mr. Simmons will be supported by other CDX Wireless staff in tasks such as providing expertise in specific technical areas related to public safety radio communications or preparing and assembling deliverables and reports.

2 Place of Performance

CDX Wireless' work on this project will include a combination of off-site and on-site activities, the latter occurring at the offices of CDX Wireless. CDX Wireless shall be on-site as is practically necessary to complete the Scope of Work described below with the expectation that this shall entail approximately one (1) to two (2) days of on-site presence approximately one to two times per month, however, the on-site schedule will be adjusted as necessary to accommodate the completion of tasks. When their nature allows, meetings or other project-related discussions will be conducted via phone conference or WebEx telepresence.

3 Scope of Work

3.1 Background

Humboldt County has entered into negotiations with the selected vendor ("Contractor") under which the Contractor will design, construct, install, optimize, test, and otherwise implement a new Public Safety Digital Trunked Radio System for Humboldt County.

This Scope of Work from CDX Wireless includes tasks that span the entire project as well as tasks that correspond directly to the activities of Contractor that had definitive start and completion milestone dates.

The tasks that span the entire project are:

1. Project Administration, including
 - a. Project Management
 - b. Vendor Contract Management
2. Outreach Development and Delivery

The tasks that correlate to Contractor project milestones are:

3. Kickoff
4. Detailed Design Review
5. Licensing

6. Manufacture (Fixed Network Equipment, Subscribers)
7. Site Preparation
8. Staging and Factory Acceptance Test Plan
9. Installation: Fixed Network Equipment
10. Site Optimization and Configuration
11. System Optimization
12. Fleetmap Development
13. Acceptance Testing: Functional
14. Acceptance Testing: Coverage
15. Cutover Planning
16. Installation: Subscriber Equipment
17. Training
18. Documentation
19. Final Acceptance

3.2 Work Activities

The following table describes the activities and responsibilities of CDX Wireless along with the expected activities and responsibilities of Humboldt County and Contractor.

Project Task	Activities & Responsibilities of CDX Wireless	Activities & Responsibilities of Contractor	Activities & Responsibilities of Humboldt County
Tasks that span the entire project			

Project Task	Activities & Responsibilities of CDX Wireless	Activities & Responsibilities of Contractor	Activities & Responsibilities of Humboldt County
<p>Project Administration Including:</p> <ul style="list-style-type: none"> • Project Management • Vendor Contract Management 	<p>Prepare for and attend project status updates and project reviews. Identify to Humboldt County and Contractor project issues and risks and cooperatively work with all to identify and resolve/mitigate them.</p> <p>Cooperatively work with Contractor and Humboldt County to review the need for project changes and, when warranted, assist in the development of change orders and/or contract amendments to include listings of changes to project scope/performance, schedule, and cost.</p>	<p>Call, prepare agenda (and other materials for) and lead project status updates and reviews.</p> <p>Cooperatively work with Humboldt County and CDX Wireless and Humboldt to raise and clearly identify project issues and risks and resolve/mitigate them.</p> <p>Cooperatively work with Humboldt County and CDX Wireless and Humboldt to review the need for project changes and, when warranted, support the development of change orders and/or contract amendments to include listings of changes to project scope/performance, schedule, and cost.</p>	<p>Prepare for and attend project status updates and project reviews. Actively participate in discussions regarding project issues and risks and cooperatively work with all to identify and resolve/mitigate them.</p> <p>Cooperatively work with Contractor and CDX Wireless to review the need for project changes and, when warranted, assist in the development of and be ultimately responsible for the approval of change orders and/or contract amendments to include listings of changes to project scope/performance, schedule, and cost.</p>

Project Task	Activities & Responsibilities of CDX Wireless	Activities & Responsibilities of Contractor	Activities & Responsibilities of Humboldt County
<p>Outreach Development & Delivery</p>	<p>Assist in the development of descriptions, presentations, position papers, procedures, and similar documents to be used to describe the deployment, operation/maintenance, and use of the system to groups within Humboldt County.</p> <p>Prepare drafts of such documents and assist in their finalization as well as the delivery of such outreach materials to their audiences.</p> <p>Research best-practices (from other similar projects, industry associations, and government organizations) related to such documents and advise on their impact to Humboldt County.</p>	<p>Provide input on the impact of relevant portions of outreach documents to system performance, cost, or schedule.</p>	<p>Identify the need for and scope of outreach documents regarding the cooperative deployment, operation/maintenance, and use of the system.</p> <p>Provide reviews, revisions, and approvals to drafts prepared by CDX Wireless. Lead the delivery of such documents to system partners, system users/participants, and vendors.</p> <p>When necessary, provide input to outreach documents to be developed by CDX Wireless.</p>

Tasks that correlate to Contractor milestones

Project Task	Activities & Responsibilities of CDX Wireless	Activities & Responsibilities of Contractor	Activities & Responsibilities of Humboldt County
Kickoff	Review the contractor provided agenda for the kickoff meeting and provide feedback on any suggested changes.	Develop the agenda for the kickoff meeting to include: <ul style="list-style-type: none"> - Review of the roles of the project participants to identify communication flows and decision making authority between project participants. - Review of the overall project scope and objectives. - Review of the resource and scheduling requirements. - Review the project schedule addressing milestones and key deliverables. - Review of the Project Management Plan and processes. Prepare materials for use during the meeting.	Review the contractor provided agenda for the kickoff meeting and provide feedback on any suggested changes. Provide a suitable meeting space for the meeting.

Project Task	Activities & Responsibilities of CDX Wireless	Activities & Responsibilities of Contractor	Activities & Responsibilities of Humboldt County
<p>Detailed Design</p>	<p>Provide guidance to the County on design parameters and the overall design process to ensure that the detailed system design meets County needs.</p> <p>Review system design materials and provide feedback and suggestions on any recommended changes.</p>	<p>Conduct detailed sitewalks for all sites to gather pertinent details for developing complete system detailed design.</p> <p>Develop the following materials for review such that the County can confirm the system design:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Project Schedule. <input type="checkbox"/> Statement of Work. <input type="checkbox"/> System Description. <input type="checkbox"/> Site Layout Drawings. <input type="checkbox"/> Shelter floor plan drawings. <input type="checkbox"/> Rack Elevation Drawings. <input type="checkbox"/> System Block and Level Diagrams. <input type="checkbox"/> Power Calculations. <input type="checkbox"/> Antenna Network Diagrams. <input type="checkbox"/> Coverage Maps. <input type="checkbox"/> TX Combiner Plan. <input type="checkbox"/> Preliminary Transition Plan. <input type="checkbox"/> Equipment List. <input type="checkbox"/> FATP and CATP. <input type="checkbox"/> Training Plan. 	<p>Review system design materials and provide feedback and suggestions on any recommended changes.</p> <p>Provide confirmation of system design upon completion of all requested changes.</p>

Project Task	Activities & Responsibilities of CDX Wireless	Activities & Responsibilities of Contractor	Activities & Responsibilities of Humboldt County
Licensing	Review, and provide feedback on licensing documents prepared by Contractor.	Provide technical information as required to complete the licensing process. Complete the licensing activities and required forms for submission (Also, complete the licensing of frequencies required for use by the microwave system.)	Review, approve, and submit licensing documents prepared by Contractor. Pay related coordination and licensing fees.
Manufacture	Track status of manufacturing effort through the contractor PM.	Track and manage the manufacturing effort.	Track status of manufacturing effort through the contractor PM.
Site Preparation	Assist in the identification and evaluation of sites to be used. Review technical information provided by Contractor. Assist in the preparation of leases or other agreements needed to prepare the sites for remediation and/or occupancy.	Provide technical information regarding the system's requirements for site space, electrical power, HVAC, and other resources. Identify issues that must be addressed as part of leases/agreements and that must be remediated prior to occupancy.	Identify the sites to be used in the project. Lead in the preparation of leases or other agreements needed for site remediation and/or occupancy. Execute such leases or other agreements.

Project Task	Activities & Responsibilities of CDX Wireless	Activities & Responsibilities of Contractor	Activities & Responsibilities of Humboldt County
<p>System Staging and Factory Acceptance Test</p>	<p>Review Factory Acceptance Test Plan and provide feedback and suggestions on any recommended changes.</p> <p>Travel to contractor staging facility to witness Factory Acceptance Test Plan.</p> <p>Witness Factory Acceptance Test Plan.</p>	<p>Receive equipment from manufacturing and assemble the system per detailed design documentation.</p> <p>Develop Factory Acceptance Test Plan.</p> <p>Develop cabling and labels as required for proper system operation.</p> <p>Verify and record settings and software versions of equipment as tested.</p> <p>Execute Factory Acceptance Test Plan.</p> <p>Conduct final inventory and ship to equipment to the County for installation.</p>	<p>Review Factory Acceptance Test Plan and provide feedback and suggestions on any recommended changes.</p> <p>Travel to contractor staging facility to witness Factory Acceptance Test Plan.</p> <p>Witness and signoff upon satisfactory completion of Factory Acceptance Test Plan.</p>
<p>Installation: Fixed Network Equipment</p>	<p>As necessary, observe installation of Fixed Network Equipment (FNE).</p> <p>Assist in review reports of deficiencies as related to installation standards.</p> <p>Assist in identification of plans to rectify site deficiencies.</p> <p>Assist in review and approval of site remediation. Review completion of Contractor's tasks regarding FNE and provide comments to Humboldt County.</p>	<p>Install equipment at sites as contracted.</p> <p>Complete/modify site drawings according to installation.</p> <p>Interconnect new equipment to existing (analog) system as required per contract.</p> <p>Perform audits of site to identify deficiencies as related to Contractor installation standards for communications sites.</p> <p>Report on deficiencies and provide costs to remediate.</p> <p>Remediate sites as agreed-to by County.</p>	<p>Ensure Contractor has access to sites.</p> <p>Observe installation of system equipment</p> <p>Approve completion of Contractor's tasks regarding FNE Installation.</p> <p>Review reports of deficiencies as related to installation standards.</p> <p>Approve plans to remediate site deficiencies.</p> <p>Review and approve site rectification.</p>

Project Task	Activities & Responsibilities of CDX Wireless	Activities & Responsibilities of Contractor	Activities & Responsibilities of Humboldt County
<p>System Optimization</p>	<p>Assist in gathering/ developing information about subscriber fleet (radio ID's, channel ID's, etc.) to facilitate system programming.</p> <p>As necessary, observe programming of system equipment.</p> <p>Assist in resolution of any issues related to interfaces/ links that are provided by third parties.</p> <p>Review completion of Contractor's tasks regarding system optimization and provide comments to Humboldt County.</p>	<p>Program system equipment using County-provided information about subscriber fleet (radio ID's, channel ID's, etc.).</p> <p>Integrate, optimize, and verify the interfaces between equipment, sites, consoles, and other system components.</p> <p>Test features and functionality to verify performance.</p> <p>Test links between sites and provide results to County.</p> <p>Record all parameters settings for inclusion in system documentation</p>	<p>Ensure Contractor has access to sites.</p> <p>Provide information about subscriber fleet (radio ID's, channel ID's, etc.) to facilitate system programming.</p> <p>Observe programming of system equipment.</p> <p>Resolve any issues related to interfaces/links that are provided by third parties.</p> <p>Approve completion of Contractor's tasks regarding system optimization.</p>

Project Task	Activities & Responsibilities of CDX Wireless	Activities & Responsibilities of Contractor	Activities & Responsibilities of Humboldt County
<p>Fleetmap</p>	<p>Gather required contents for a fleetmap from Contractor.</p> <p>Provide assistance to Contractor to assemble draft of fleetmap to include:</p> <ul style="list-style-type: none"> • List of channels • Naming conventions • Channel ID plan • Channel system parameters • Radio ID plan • Subscriber channel layout • Subscriber programming parameters • Other items necessary to configure system and subscribers <p>Assist the County in arranging meetings with user agencies to review and edit the content of the draft fleetmap. Participate in those meetings.</p> <p>Assist in review of final fleetmap contents.</p>	<p>Identify the required contents of a fleetmap.</p> <p>Assemble draft of fleetmap to include:</p> <ul style="list-style-type: none"> • List of channels • Naming conventions • Channel ID plan • Channel system parameters • Radio ID plan • Subscriber channel layout • Subscriber programming parameters • Other items necessary to configure system and subscribers <p>Finalize fleetmap contents and share with County.</p> <p>Use fleetmap results to program system.</p>	<p>Provide assistance to Contractor to assemble draft of fleetmap to include:</p> <ul style="list-style-type: none"> • List of channels • Naming conventions • Channel ID plan • Channel system parameters • Radio ID plan • Subscriber channel layout • Subscriber programming parameters • Other items necessary to configure system and subscribers <p>Arrange for meetings with user agencies to review and edit the contracts of the draft fleetmap.</p> <p>Review and approve final fleetmap contents.</p>
<p>Acceptance Testing: Functional</p>	<p>Assist in preparation of test plans for functional testing of system.</p> <p>Oversee conduct of functional testing plans.</p> <p>Assist in review and approval of documented list of testing issues or deficiencies.</p> <p>Assist in review and approval of resolved issues or deficiencies or alternate resolution plan.</p>	<p>Prepare test plans for functional testing of system.</p> <p>Conduct functional testing per approved test plans.</p> <p>Document and rectify any issues or deficiencies arising from conduct of test plan.</p> <p>Resolve issues and retest or agree to alternate resolution plan.</p>	<p>Approve test plans for functional testing of system.</p> <p>Oversee conduct of functional testing plans.</p> <p>Review and approve of documented list of testing issues or deficiencies.</p> <p>Review and approve of resolved issues or deficiencies or alternate resolution plan.</p>

<p>Acceptance Testing: Coverage</p>	<p>Assist in preparation of test plans for coverage testing of system.</p> <p>Oversee conduct of coverage testing plans (review test equipment and configuration, act as a witness to testing).</p> <p>Assist in review and approval of documented list of testing issues or deficiencies.</p> <p>Assist in review and approval of resolved issues or deficiencies or alternate resolution plan.</p>	<p>Prepare test plans for coverage testing of system.</p> <p>Conduct coverage testing per approved test plans.</p> <p>Provide the necessary number of test packages and operators.</p> <p>Document and rectify any issues or deficiencies arising from conduct of test plan.</p> <p>Resolve issues and retest or agree to alternate resolution plan.</p>	<p>Approve test plans for coverage testing of system.</p> <p>Oversee conduct of coverage testing plans.</p> <p>Provide the necessary number of test vehicles and drivers/witnesses.</p> <p>Review and approve of documented list of testing issues or deficiencies.</p> <p>Review and approve of resolved issues or deficiencies or alternate resolution plan.</p>
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Project Task	Activities & Responsibilities of CDX Wireless	Activities & Responsibilities of Contractor	Activities & Responsibilities of Humboldt County
<p>Cutover Planning</p>	<p>Assist in review of cutover and migration plan.</p>	<p>Work with the County to understand critical issues regarding cutover planning</p> <p>Prepare cutover and migration plan</p> <p>Set up patches and other interim communications bridges</p> <p>Execute cutover plan</p>	<p>Review and approve of migration plan.</p> <p>Ensure communications and logistics are complete with affected County agencies prior to cutover.</p>

Project Task	Activities & Responsibilities of CDX Wireless	Activities & Responsibilities of Contractor	Activities & Responsibilities of Humboldt County
Installation: Subscriber Equipment	<p>Assist in the approval of operation of test subscribers per templates.</p> <p>Assist in the development and approval of mobile radio installation template.</p> <p>Assist in the coordination of delivery of radios (including vehicles for mobile radios) to be programmed.</p>	<p>Program and verify operation of test subscriber radios per templates.</p> <p>Program radio fleets per approved templates.</p> <p>Develop mobile radio installation template.</p> <p>Install mobile radios in vehicles.</p>	<p>Approve operation of test subscribers per templates.</p> <p>Approve mobile radio installation template.</p> <p>Coordinate delivery of radios (including vehicles for mobile radios) to be programmed.</p>
Training	<p>Assist in review and approval of Contractor-provided training materials.</p> <p>Assist in provision of training facilities for local classes.</p> <p>As needed, attend Contractor's facilities for all classes.</p>	<p>Develop and present training materials.</p> <p>Prepare training schedules.</p> <p>Deliver training per requirements.</p>	<p>Review and approve training materials.</p> <p>Provide training facilities for local classes.</p> <p>Attend Contractor's facilities for vendor-location classes.</p>

Project Task	Activities & Responsibilities of CDX Wireless	Activities & Responsibilities of Contractor	Activities & Responsibilities of Humboldt County
Documentation	Assist in review and approval of final project documentation.	Identify and provide final project documentation consisting of: <ul style="list-style-type: none"> <input type="checkbox"/> Standard equipment manuals. <input type="checkbox"/> System drawings. <input type="checkbox"/> Fixed equipment documentation. <input type="checkbox"/> Plan and elevation views of the equipment installation at the radio site. <input type="checkbox"/> Equipment inter-cabling diagrams for each site. <input type="checkbox"/> Demarcation wiring lists. <input type="checkbox"/> Programming and level setting data sheets. <input type="checkbox"/> Equipment by site. <input type="checkbox"/> Key access procedures. <input type="checkbox"/> Site inventory lists. <input type="checkbox"/> Remote sign-on procedures and passwords. <input type="checkbox"/> Software versions and equipment wiring by equipment site. <input type="checkbox"/> Radio licenses. 	Review and approve final project documentation.
Final Acceptance	Identify punch-list items, work to resolve them, report on resolution progress. Assist in review and approval of Customer Support Plan.	Identify punch-list items, work to resolve them, report on resolution progress. Develop Customer Support Plan.	Identify punch-list items, work to resolve them, report on resolution progress. Review and approve Customer Support Plan.

4 Price Quotation

4.1 Quotation Basis

The following price quotation is based on the provision of staffing according to the Project Staffing, Place of Performance, and Scope of Work as described above. CDX Wireless reserves the right to revise this price quotation should the level of staffing, the scope of project tasks, or the duration of the project schedule change for reasons outside of the control of CDX Wireless.

4.2 Work Breakdown and Labor Quotation

Project Task	# of Labor Hours	Cost Per Hour	Total Labor Cost
Tasks that span the entire project			
Project Administration (16 hours per month for 19 months)	304 hours	\$150.00	\$45,600.00
Tasks that correlate to Contractor milestones			
Kickoff	40	\$150.00	\$ 6,000.00
Detailed Design	80	\$150.00	\$12,000.00
Licensing	20	\$150.00	\$ 3,000.00
Manufacture	24	\$150.00	\$ 3,600.00
Site Preparation	80	\$150.00	\$12,000.00
System Staging and Factory Acceptance Test	60	\$150.00	\$ 9,000.00
Installation: Fixed Network Equipment	60	\$150.00	\$ 9,000.00
System Optimization	32	\$150.00	\$ 4,800.00
Fleetmap	20	\$150.00	\$ 3,000.00
Acceptance Testing: Functional	40	\$150.00	\$ 6,000.00
Acceptance Testing: Coverage	80	\$150.00	\$12,000.00
Cutover Planning	40	\$150.00	\$ 6,000.00

Project Task	# of Labor Hours	Cost Per Hour	Total Labor Cost
Installation: Subscriber Equipment	20	\$150.00	\$ 3,000.00
Training	32	\$150.00	\$ 4,800.00
Documentation	24	\$150.00	\$ 3,600.00
Final Acceptance	16	\$150.00	\$ 2,400.00
Labor Total	972		\$145,800.00

4.3 Travel and Other Expenses

Humboldt County shall reimburse CDX Wireless for the actual costs of travel required to perform the Scope of Work described above. Reimbursed costs shall be limited to air fare, lodging (when required), rental cars (including fuel), meals, and airport parking. The costs of meals shall be limited to Per Diem rates and shall exclude lunch and incidentals.

Humboldt County shall reimburse CDX Wireless for the actual costs of third-party materials and services required to perform the Scope of Work described above. Unless approved in advance and in writing by Humboldt County, such materials and services shall be limited to the production or reproduction of documents.

4.4 Invoicing

CDX Wireless shall submit to Humboldt County each month an invoice detailing:

1. The period of performance (i.e., the month in which labor was expended and costs were incurred)
2. The number of hours expended that month for each task
3. The number of hours remaining for each task (after that month's labor expenditures)
4. The total labor cost for that month
5. The total of travel and other costs incurred that month (along with of receipts, invoices, or other justification for all travel or other costs for which CDX Wireless seeks reimbursement)
6. The total cost of labor and expenses for that period (i.e., the invoice total)