

**SAN LORENZO VALLEY WATER DISTRICT**  
Two Way Radio Replacement

**SAN LORENZO VALLEY WATER DISTRICT**  
**NOTICE INVITING BIDS**

The San Lorenzo Valley Water District is inviting bids, pursuant to the attached specifications, for the following:

Bid Items:

1. Two (2) new two way radio repeaters digitally connected with pole mount antennas
2. Three (3) new two-way radios with desk top microphone, donor unit with total fourteen (14) desksets controllers and pole mounted antennas
3. Twenty-six (26) new vehicle mounted two-way radios, vehicle stationary mounted antennas, installed in vehicles
4. Six (6) hand Held portable two way radios, vehicle mounted with vehicle chargers
5. Two (2) desk top hand held portable two way radio chargers 110 volt
6. FCC Frequency Licensing

Additional information may be obtained by contacting:

Rick Rogers, Director of Operations, San Lorenzo Valley Water District  
13060 Highway 9  
Boulder Creek, CA 95006  
(831) 430-4624  
rrogers@slvwd.com

All bids must be sealed and submitted before 3:00 p.m. Thursday March 8, 2018 to the following:

Holly Morrison, District Secretary  
San Lorenzo Valley Water District  
13060 Highway 9  
Boulder Creek, CA 95006

**NOTE:** Please mark on the outside of your envelope, "**Sealed Bid, Radio Replacement.**"

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**Two Way Radio Replacement**

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**SAN LORENZO VALLEY WATER DISTRICT**  
**Two Way Radio Replacement**

SECTION I.

**PROPOSAL SUMMARY BID SUBMISSION FORM**

Dated \_\_\_\_\_

TO: San Lorenzo Valley Water District  
13060 Highway 9  
Boulder Creek, CA 95006

The undersigned declares to have carefully examined the attached specifications accompanying the invitation to bid, and is thoroughly familiar with the contents thereof; and proposes to deliver F.O.B. to San Lorenzo Valley Water District, 13060 Highway 9, Boulder Creek, California 95006, as described in said specifications, which are made a part of this proposal quoted herein in full.

**MINIMUM SPECIFICATION FOR:**

1. Two (2) new two way radio repeaters digitally connected with pole mount antennas (two (2) separate locations)
2. Three (3) new two-way radios with desk top microphone, donor unit with fourteen (14) deskset controllers and pole mounted antennas (three (3) separate locations)
3. Twenty-six (26) new vehicle mounted two-way radios, vehicle stationary mounted antennas, installed in vehicles
4. Six (6) hand Held portable two way radios, with mounted in vehicle chargers
5. Two (2) desk top hand held portable two way radio chargers 110 volt
6. FCC Frequency Licensing

All specifications must be met or exceeded or be considered non-responsive. Incomplete responses will not be considered. Bidder shall note any exceptions to the bid on the Comment Section. Bidder shall list on a separate sheet of paper details concerning the exception. This sheet shall be labeled "Exception(s) to Bid Conditions and Specifications".

All equipment furnished under this contract shall be new, unused, and the latest model offered by the manufacturer's current production. Accessories not specifically mentioned herein, but necessary to furnish a complete unit ready for use shall also be included.

**Bid Form (page 1 of 3)**

**SAN LORENZO VALLEY WATER DISTRICT**  
**Two Way Radio Replacement**

Item	Quantity	Price
One (1) Motorola VHF SLR 5700 Repeaters, W/antennas, digitally connected	2	\$
Operations Building/Administration One (1) Motorola VHF XPR 2500 Radio with desk top microphone donor unit configured with MC 1000 Deskset Controller Eight (8) Motorola MC 1000 Deskset Controller, Remote DC or Tone adapter One (1) pole mounted antenna	1	\$
Lyon Water Treatment Plant One (1) Motorola VHF XPR 2500 Radio with desk top microphone donor unit configured with MC 1000 Deskset Controller Two (2) Motorola MC 1000 Deskset Controller, Remote DC or Tone adapter One (1) pole mounted antenna	1	\$
Kirby Water Treatment Plant One (1) Motorola VHF XPR 2500 Radio with desk top microphone donor unit configured with MC 1000 Deskset Controller Four (4) Motorola MC 1000 Deskset Controller, Remote DC or Tone adapter One (1) pole mounted antenna	1	\$
Twenty six (26) Motorola VHF XPR 5550e units with vehicle stationary mounted antennas, installed in vehicles.	26	\$
Six (6) Hand-Held Portables Six (6) vehicle chargers installed	6	\$
Two (2) 110 volt chargers for hand held radios	2	\$
Sales Tax Santa Cruz 8.50%	1	\$
FCC Licensing 2 x FB2 Repeater Pairs 2 x Mobile Only Frequencies	1	\$
Total Bid Items (including sales tax and delivery)		

**Bid Form (page 2 of 3)**

**SAN LORENZO VALLEY WATER DISTRICT**  
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This bid does not include Federal Excise Tax.

The only exceptions to the specifications are:

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Signature of Bidder

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Title

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Firm Name

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Address

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City/State/Zip

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Day Telephone

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After-Hours Telephone

All bids must be sealed and submitted before 3:00 p.m. Thursday, March 8, 2018 to the following:

Holly Morrison  
San Lorenzo Valley Water District  
13060 Highway 9  
Boulder Creek, CA 95006

**Bid Form (page 3 of 3)**

**SAN LORENZO VALLEY WATER DISTRICT**  
**Two Way Radio Replacement**

**SECTION II. INTRODUCTION**

**Purpose:**

The San Lorenzo Valley Water District is pleased to issue this Request for Proposal (RFP) for an all-encompassing radio system upgrade to the District's current radio system. SLV Water is seeking proposals from professional radio communication companies to provide all necessary radio hardware, materials, labor, programming and FCC licensing required to upgrade the system as defined in the project's Scope of Work and Specifications.

The San Lorenzo Valley Water District Boulder Creek, California is interested in purchasing the following Items:

1. Two (2) Upgraded Repeater Tower Sites convert existing repeaters to SLR 5700 digitally connected to each repeater via internet (district Provided Internet) with new installed antennas
2. Three (3) new two-way radios with desk top microphone, donor unit with fourteen (14) deskset controllers and pole mounted antennas
3. Twenty-six (26) new vehicle mounted two-way radios, vehicle stationary mounted antennas, installed in vehicles
4. Six (6) hand Held portable two way radios, with mounted in vehicle chargers
5. Two (2) desk top hand Held portable two way radio chargers 110 volt
6. FCC Frequency Licensing

In comparing responses, consideration will not be confined to price only. The successful vendor will be one whose product is judged to best serve the interests of the San Lorenzo Valley Water District.

**SECTION III. INSTRUCTIONS TO BIDDER**

- A. Equipment Details and Literature Required:  
BID PACKETS MUST INCLUDE ONE ORIGINAL BID SIGNED IN INK AND ONE ELECTRONIC COPY OF THE BID AND ALL THE ASSOCIATED LITERATURE SHALL BE PROVIDED. All bids must be accompanied by specification sheets and/or descriptive brochures showing the detailed specifications of the equipment you propose to furnish for the bid price. All equipment will be furnished with all standard equipment as described by the literature presented with the bid proposal. References to items shown on the literature, which the bidder does not intend to supply, must be so noted in writing as an amendment to the literature. It is the bidder's responsibility to provide specific equipment details to permit proper evaluation of the bid; failure to do so may result in disqualification of the bid. All bids

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must be sealed and submitted before 3:00 p.m. March 8, 2018.

- B. The equipment, finish, fittings and all components shall be the latest and most current model, and shall not have been used as a demonstrator or any other service, and shall be factory standard in all respects not in conflict with the attached bid specifications
  
- C. The design of the equipment/installation must be such that it does not hamper or restrict subsequent specifications for particular items that are not defined, manufacturer's standards are satisfactory, provided the item is required for the proper performance of the equipment.
  
- D. Errors and Omissions:  
If the bidder discovers any errors, omissions, lack of clarity or desires further information about the specifications of his/her bid, the buyer should be contacted immediately.
  
- E. Guarantee:  
All equipment, units and components shall be guaranteed in accordance with the following clauses:
  - a. Guarantee that the equipment offered is free from defects in design and construction and that it will give continuous and efficient service under normal conditions for a period of twelve (12) months from the date of delivery.
  
  - b. Guarantee that the equipment or vehicle is the manufacturer's standard design in construction and that no changes or substitutes have been made.
  
- F. Warranty:  
All equipment bids must include the manufacturer's standard warranty, and this information shall be provided with the bid. Additional or extended warranties may be requested; if so, specific warranty information must be provided with the bid. The warranty period will commence after the equipment/vehicle is received (placed in service) and accepted by the San Lorenzo Valley Water District, unless special provisions are made with the successful provider.
  
- G. Delivery Date:  
All bids must be submitted with a delivery date.
  
- H. Delivery:  
All costs for delivery of the new unit will be assumed by the Bidder and included in the net price. Unless stated elsewhere in this bid document, all deliveries will be made to the San Lorenzo Valley Water District, 13060 Hwy 9 Boulder Creek, CA 95006.

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- I. Prices:  
Prices quoted shall exclude Federal Excise and State taxes. Prices quoted shall be F.O.B. Boulder Creek CA 95006
- J. Final Payment:  
Final payment for equipment and vehicles delivered under these specifications will not be made until all terms and conditions have been satisfied.
- K. Bid Evaluation Criteria:  
The evaluation of this bid will be based on, but not limited to, the following: Compliance with specifications; proven performance; ease of operation, life-cycle cost, net cost, supplier performance history; delivery time; compatibility with existing equipment, parts or supplies; service/parts availability; and, advantageous superior design features.
- L. Additional Information:  
For information concerning the bid process, please contact the San Lorenzo Valley Water District's Director of Operations, Rick Rogers at 831-430-4624 or [rrogers@slvwd.com](mailto:rrogers@slvwd.com).

**SECTION IV. GENERAL TERMS AND CONDITIONS**

- A. Insurance Requirements:  
Prior to execution of an agreement, the Contractor shall submit proof that his operations are covered by insurance. There must be proof of general liability coverage of not less than \$1,000,000 per occurrence (\$2,000,000 general and products-completed operations aggregate (if used)) for bodily injury, personal injury and property damage; auto liability of at least \$1,000,000 for bodily injury and property damage each accident limit; workers compensation (statutory limits) and employers liability (\$1,000,000) (if applicable); requiring 30 days' notice of cancellation to the San Lorenzo Valley Water District.  
  
Insurance must include:
  - 1. Workman's Compensation and Employer's Liability
  - 2. Auto Public Liability (for all automobiles and trucks, including "Hired Vehicles")
  - 3. General Contractor's Liability, naming the District as additional insured
- B. Audits/Access to Records:  
The San Lorenzo Valley Water District and any of its representatives shall have access to any books, documents, papers and records of the bidder which are pertinent to this solicitation and prospective contract.
- C. Award and Purchase:

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- D. The San Lorenzo Valley Water District reserves the right to reject any or all bids, to waive any informalities or technical defects in bids, and unless otherwise specified by the San Lorenzo Valley Water District or by the bidder, to accept any items or group of items in the bid, as may be in the best interest of the San Lorenzo Valley Water District. No verbal explanations, clarifications, additions or instructions will be binding to either the San Lorenzo Valley Water District or the bidders, except those confirmed in writing.

A signed purchase order/contract furnished to the successful bidder results in a binding contract without further action by either party.

- E. Questions:  
Any questions concerning this project shall be directed to:

Rick Rogers  
Lorenzo Valley Water District  
13060 Hwy9, Boulder Creek CA 95006  
E-mail [rrogers@slvwd.com](mailto:rrogers@slvwd.com)

ALL QUESTIONS MUST BE SUBMITTED IN WRITING between the hours of 8:00 a.m. and 4:00 p.m., Monday through Friday, excluding Holidays.

- F. Legal Compliance:  
The bidder shall keep informed of all Federal, State and local laws; ordinances, regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority which may affect those engaged or employed on the work or affect the conduct of the work. The bidder shall observe and comply with all such laws, ordinances, regulations, orders and decrees. The bidder shall protect and indemnify the San Lorenzo Valley Water District and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree whether by the supplier, subcontractor, supplier or the supplier's employees or any others engaged by the supplier. The laws of the State of California will govern as to the interpretation, validity and effect for any contract that is entered into as a result of this solicitation. Venue for any lawsuit will be in Santa Cruz County, California.
- G. Force Majeure:  
Neither party shall be liable for failure to perform under this contract if such failure to perform arises out of causes beyond the control and without the fault or negligence of the non-performing party. Such causes may include, but are not limited to, acts of God or the public enemy, fires, floods, epidemics, quarantine restrictions, freight embargoes and unusually severe weather. This provision shall become effective only if the party failing to perform immediately notifies the other party of the extent and nature of the problem, limits delay in performance to that required by the event, and takes all reasonable steps to minimize delays. The provision shall not be effective unless the failure to perform is beyond the control and without the fault or

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negligence of the non-performing party.

H. Indemnification:

The bidder shall release, indemnify and hold harmless the San Lorenzo Valley Water District, their officers, agents, employees, successors and assignees from any cause of action, or claims or demands arising out of the Bidder's performance under this contract.

I. Gratuities:

The bidder certifies and agrees that no gratuities, kickbacks or contingency fees were paid in connection with this contract, nor were any fees, commissions, gifts or other considerations made contingent upon the award of this contract. If the bidder breaches or violates this warranty, the San Lorenzo Valley Water District may, at its discretion, terminate this contract without liability to the San Lorenzo Valley Water District.

J. Material Availability:

Bidders must accept responsibility for verification of material availability, production schedules and other pertinent data prior to submission of bid and delivery time. It is the responsibility of the bidder to notify the San Lorenzo Valley Water District immediately if materials specified are discontinued, replaced or not available for an extended period of time.

K. OSHA Standards:

All bidders agree and warrant that services performed in response to this invitation shall conform to the standards declared by the U.S. Department of Labor under the OCCUPATIONAL Safety and Health Act of 1970 (OSHA). In the event the services do not conform to OSHA Standards, the San Lorenzo Valley Water District may require the services to be redone at no additional expense to the San Lorenzo Valley Water District.

L. Non-collusion:

Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other bidder, firm or person to submit a collusive or sham bid in connection with the contract for which the attached bid has been submitted or to refrain from bidding in connection with such contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other bidder, firm or person or fix the price or prices in the attached bid or of any other bidder, or to fix any overhead, profit or cost element of the bid price or the bid price of any other bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement and advantage against the San Lorenzo Valley Water District, or any person interested in the proposed contract. The price or prices quoted in this bid are fair and proper and are not tainted by a collusion, conspiracy, connivance, or unlawful agreement on the part of the bidder or any of its agents, representatives, owners, employees, or

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parties in interest.

**M. Preparation of Bids:**

Bidders are expected to examine any drawings, specifications, schedules and instructions included in the bid package. Failure to do so will be at the bidder's risk.

In case of error in the extension of prices in the bid proposal, the unit price will govern. Unit price shown must be net.

Erasures or changes in this bid document must be initialed by the representative completing this bid, indicating the erasure or correction was intentional and the change was not made by the San Lorenzo Valley Water District Purchasing representative.

**N. Bids Binding – 60 Days:**

Unless otherwise specified all formal bids submitted shall be binding for sixty calendar days following the bid opening date unless bidders at the request of the San Lorenzo Valley Water District agree to an extension.

**O. Multiple Bids:**

Bidders must determine for themselves which product to offer. If said bidder chooses to submit more than one bid, THE ALTERNATE BID must be clearly marked "Alternate Bid." San Lorenzo Valley Water District reserves the right to make award in the best interest of the San Lorenzo Valley Water District.

**P. Brand Names or Equal:**

Whenever in this bid invitation any particular materials, process, mechanism, and/or equipment are indicated, described or specified by patent, proprietary, or brand name, or by name of manufacturer, such wording will be deemed to be used for the purpose of facilitating minimum acceptable requirements and will be deemed to be followed by the words, "or equal." At the San Lorenzo Valley Water District's discretion, after the bid opening proof satisfactory must be provided by Bidder to show that the alternative product/equipment/vehicle is in fact, equal to specification requirements.

**Q. The San Lorenzo Valley Water District reserves the right to determine products of equal value. Suppliers will not be allowed to make unauthorized substitutions after award is made.**

**R. Termination of Contract:**

If at any time during the performance of the contract awarded as a result of this bid, in the opinion of the San Lorenzo Valley Water District, the work is not progressing satisfactorily or within the terms of this contract, then at the discretion of the San Lorenzo Valley Water District and after written notice to the supplier, the San Lorenzo Valley Water District may terminate the contract or any part of it.

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- S. **Modification or Withdrawal of Bids:**  
A bid that is in the possession of the Purchasing Division may be altered by facsimile, telegram or letter bearing the signature of name of the legal agent for the bidder, provided it is received prior to the time and date of the opening. Alterations should not reveal the price but should indicate the addition, subtraction or other changes in the bid. A bid that is in the possession of the Purchasing Manager may be withdrawn by the bidder up to the time of the bid opening. Bids may not be withdrawn after the bid opening. Failure of the successful bidder to furnish the service awarded from this bid may eliminate the bidder from the active bidder's list.
- T. **Addenda and Interpretations:**  
If it becomes necessary to revise any part of a San Lorenzo Valley Water District bid, a written addendum will be provided to all potential bidders and/or those bidders that received the original bid invitation. The San Lorenzo Valley Water District is not bound by any oral representations, clarifications, or changes made in the written specifications by San Lorenzo Valley Water District employees, unless such clarification or change is provided to bidders in written addendum from the San Lorenzo Valley Water District. Receipt of addenda shall be acknowledged by initialing the proposal price sheet in the designated place.
- U. **Award:**  
All bids will be awarded to the lowest responsive and responsible bidder. The San Lorenzo Valley Water District reserves the right to determine the lowest responsive and responsible bidder.
- The Operations Manager in collaboration with the using department may involve all or some of the following factors: price; conformity to specifications; financial capacity to perform the services and/or provide commodities; previous performance and reputation; location of required and necessary facilities and/or equipment; availability and proximity of repair parts and/or warranty work; similar experience; delivery promise; terms of payments; compatibility as required in the bid documents; other associated and necessary costs; other objective and accountable factors which are reasonable.
- V. **Inspections:**  
Inspection and acceptance of materials or supplies will be made after delivery. Final inspection shall be conclusive except as regard to latent defects, fraud, or such gross mistakes as amount to fraud. Final inspection and acceptance or rejection of material or supplies shall be accomplished as promptly as practical, but failure to inspect and accept or reject material or supplies shall not impose liability on the San Lorenzo Valley Water District for such supplies as are not in accordance with the specifications. All delivered materials shall be accepted subject to inspection and physical count.

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**SECTION V. BID ITEM SPECIFICATION**

**BID ITEM's #1**

Nina Water Tank, 1650 Rebeca Drive, Boulder Creek

New Motorola SLR 5700 one (1) repeater radio. The repeater will be digitally connected via the internet (district provided) to the second repeater located at the Probation Tank. Proposals shall include all charges for equipment, materials, labor, programming, FCC registration/licensing, and all other charges to make the radio system fully operational.

Probation Water Tank, Graham Hill Road

New Motorola SLR 5700 one (1) repeater radio. The repeater will be digitally connected via the internet (district provided) to the second repeater located at the Nina Tank. Proposals shall include all charges for equipment, materials, labor, programming, FCC registration/licensing, and all other charges to make the radio system fully operational.

**BID ITEM #2**

Operations/Administration Building -13057 Highway 9, Boulder Creek California

One (1) Motorola XPR 2500 Radio with desk top microphone donor unit configured with eight (8) Motorola MC 1000 Deskset Controller, Remote DC or Tone adapter.

One (1) pole mounted antenna.

Kirby Water Treatment Plant -195 Kirby Street, Felton, California

One (1) Motorola XPR 2500 Radio with desk top microphone donor unit configured with four (4) Motorola MC 1000 Deskset Controller, Remote DC or Tone adapters.

One (1) pole mounted antenna.

Lyon Water Treatment Facility -395 Madrone Ave, Boulder Creek California

One (1) Motorola XPR 2500 Radio with desk top microphone donor unit configured with two (2) Motorola MC 1000 Deskset Controller, Remote DC or Tone adapters.

One (1) pole mounted antenna.

**BID ITEM #3**

Mobile vehicle mounted radios and roof mounted antennas

Twenty six (26) Motorola XPR 5550e mobile units, GPS capable with stationary mounted antennas install in vehicles with mic clips.

**Bid Item #4**

Hand Held Portable

Six (6) hand held portable two way radios, GPS Capable mounted in vehicle, with six (6) vehicle mounted battery chargers

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**Bid Item #5**

Hand Held Portable Desk Chargers

Two (2) 110 volt desk chargers for hand held portables

**Bid Item #6**

FCC Frequency Licensing

FCC licensing required to upgrade the system as defined in the project's Scope of Work and Specifications.

2 x FB2 Repeater Pairs

2 x Mobile Only Frequencies

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San Lorenzo Valley Water District

RADIO REPLACEMENT  
SCOPE OF WORK  
AND  
SPECIFICATIONS

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**SCOPE OF WORK AND SPECIFICATIONS**

Upgrade Repeater Tower Sites

San Lorenzo Valley Water District currently operates a two-channel analog low band radio system utilizing two (2) independent tower repeater sites to provide two-way radio coverage in the greater San Lorenzo Valley located at:

- Nina Water Tanks, 1650 Rebeca Drive, Boulder Creek
- Probation Tank, Graham Hill Road, Scotts Valley

The existing radio tower infrastructure will continue to make up the backbone of the new system. The successful bidder shall convert the existing repeaters to new Motorola SLR 5700 one (1) At each of the two (2) tower sites listed above. The repeaters will be digitally connected via the internet (district provided). All proposals shall include all charges for equipment, materials, labor, programming, FCC registration/licensing, and all other charges to make the radio system fully operational.

New Radio Units

To replace the District's analog radio models, the successful bidder shall provide new Motorola XPR 5550e units for District vehicles and new Motorola XPR 7550e units for handheld applications. All proposals shall include all charges for equipment, materials, labor, programming, FCC registration, stationary mounted antennas, and all other charges.

To replace existing desk set radios, the successful bidder shall provide new Motorola XPR 2500 radios with a desk top microphone at the radio to be used as donor units configured with MC 1000 Deskset controllers, Remote DC or Tone Adapter at the following three (3) locations:

- Operations/Administration Building, 13057 Highway 9 Boulder Creek (8 eight deskset controllers)
- Lyon WTP, 395 Madrone Drive, Boulder Creek (2 two deskset controllers)
- Kirby WTP, 195 Kirby Street, Felton (4 four deskset controllers)

All three locations have existing antenna support structures in place. All proposals shall include all charges for equipment, materials, labor, programming, FCC registration, and all other charges.

Required Features and Functions

The proposed radio system shall provide reliable, efficient, radio functionality for the San Lorenzo Valley Water District communication requirements. Each of the two (2) indicated sites above shall be equipped with one (1) SLR 5700 repeaters, VHF IP Site Connected. The system shall be provided with the features, functions, and capabilities as described herein.

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The system and protocol shall support the following features and functions:

1. The system and/or user equipment must support digital transmissions on a 6.25 equivalent, 12.5 kHz TDMA channel. The system and/or user equipment must also support analog transmissions on 12.5 kHz channels.
2. The repeater/base station equipment must be able to manage two independent time slots on a single 12.5 kHz frequency using TDMA (Time Division Multiple Access) technology transmissions.
3. All user portable radios must incorporate increased digital battery life over analog by operating in a TDMA digital mode.
4. All user portable radios must include battery technology for automatic maintenance and reconditioning.
5. All radio equipment must support the use of radio subscriber accessories for automatic gain control and noise suppression.
6. The system and/or user equipment must include imbedded digital forward error correction technology to increase clarity throughout range.
7. The system and/or user equipment must include imbedded software based privacy or scrambling to protect user privacy during communications. This imbedded scrambling must support at least 40-bit protection with multiple keys.
8. All user radios must include Emergency Declaration capability with single button activation. The Emergency Declaration shall provide visual and audible status notification to specified radios. The Vendor's Proposal shall include a detailed description of the Emergency Declaration features and programming options.
9. The system and/or user equipment must be GPS capable for installation at a later date in both the portable and mobile radios. Any additional external receivers or accessories shall not be required to receive or send GPS information. GPS shall be capable in a repeater and/or talk around mode.
10. The system and/or user equipment must include imbedded text messaging capabilities. Any additional external receivers or accessories shall not be required to receive or send text message information. The user equipment must support unit-to-unit canned and user creatable text messaging capability. The user equipment must support at least 140 scrolling characters.

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11. The system and/or user equipment must include imbedded telemetry capabilities. Any additional external receivers or accessories shall not be required to receive or send telemetry information. Telemetry shall be supported in a repeater and/or talk around mode.
12. Voice shall take priority over data transmissions on radios transmitting both voice and data information.
13. The system user shall have the option of applying for licensure to detailed radio interface information. This information shall allow the radio user, if capable, to develop custom applications.
14. The system shall provide a software application that allows the system administrator the ability to monitor and control the radio repeaters within the system. The Repeater Diagnostics and Reporting system shall provide the following capabilities:
  - a. Repeater Diagnostics that include enabled-disabled station status, Transmitter power status, available channels and RSSI levels.
  - b. Repeater Controls that include changing channels, transmitter power, station reset and repeater knockdown.
  - c. Repeater Alarm Reporting including Receiver lock failure, transmit lock detect, station overheating, AC Power supply failure and detect and report of failure.
  - d. The application operates over the IP network or locally via USB or GPIO connection.
  - e. Repeater Alarms: RX (Receiver lock failure), TX (transmit lock detect), Temp (station overheating), Power (AC Power supply failure), Fan (fan failure), \*PA Voltage Major, \*PA Voltage Minor, \*VSWR Major, \*VSWR Minor, \*TX Power Major, \*TX Power Minor, \*PA EEPROM Corruption, \*Exciter EEPROM Corruption, \*Receiver EEPROM Corruption, \*Interoperability Between Exciter and PA, \*Incorrect Carrier Frequency or Incorrect Codeplug for MTR2000 PA. (NOTE: starred (\*) items are available with MTR3000 repeaters and are not available on XPR series repeaters)

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**User Equipment**

**General**

All user radios proposed (portables, mobiles, and control stations) shall fully support all features and functions available for user radios in the proposed system. The pricing for user radios shall include all programming and installation services required for operation.

All proposed portable, mobile and control station radios shall conform to the minimum standards specified by TIA/EIA-603, Section 5 Standards for P

**Portable Radios**

The proposed portable radio should be rugged, reliable, and provide the following minimum features:

- Emergency button.
- 12.5 kHz analog channel bandwidth.
- 12.5 kHz TDMA (6.25e) digital channel bandwidth.
- Alphanumeric display.
- Digital Signaling - PTT ID, Private Call, All Call, Call Alert, Escalating Alerts, Emergency, Radio Check, Radio Disable/Enable and Remote monitor.
- Analog Signaling - MDC1200: PTT ID, Emergency and Call Alert
- Minimum 16-position channel selector; Continuous channel selector preferred.
- Group scan.
- External microphone and speaker connections.
- Li-ion battery.
- Full line of optional accessories.
- 6 Programmable buttons (supporting both long and short press.
- Meets IP57 submergibility with or w/o accessory cover attached.

Proposed portable radio units shall conform to applicable Portable Military Standards 810C, 810D, and 810E. The portable transmitters and receivers must further meet or exceed the following specifications.

**Portable Transmitter**

Frequency Range	136-170
Frequency Stability	+/- 1.5ppm (Non-GPS)
RF Power Output	+/- 0.5ppm (GPS)
Channel Spacing	12.5 or 25 kHz
Adjacent Channel Power	60 dB @ 12.5 kHz

**Portable Receiver**

Frequency Range	136-170
Channel Spacing	12.5 or 25 kHz
Analog Sensitivity (12 dB SINAD)	0.35 uV / .22uV (typical)

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Digital Sensitivity	5% BER: 0.3 uV
Adjacent Channel Selectivity	60dB at 12.5 kHz @ (TIA603) 45dB at 12.5 kHz @ (TIA603C)
Spurious Rejection	70 db
Audio Distortion	3%

**Mobile Radios**

The proposed mobile radio should be rugged, reliable, and provide the following minimum features:

- Emergency button.
- 12.5 kHz analog channel bandwidth.
- 12.5 kHz TDMA (6.25e) digital channel bandwidth.
- Alphanumeric display.
- 1000 Channels.
- Digital Signaling - PTT ID, Private Call, All Call, Call Alert, Escalating Alerts, Emergency, Radio Check, Radio Disable/Enable and Remote Monitor.
- Analog Signaling - MDC1200: PTT ID, Emergency and Call Alert.
- Group scan.
- Full line of optional accessories.
- Optional high power unit (at least 40 watts).
- 4 Programmable buttons (supporting both long and short press)
- New stationary mounted antennas shall be provided and installed on each vehicle.

Mobile and control station transmitters and receivers must further meet or exceed the following specifications.

As part of this proposal mobile radios will be installed in District Vehicles. Radios will be wired battery direct to allow radio use without the ignition key present. In addition to installing radios hard mounted antennas for each radio shall be provided/installed. The District will select the location of each radio, antenna, and mic clip for each vehicle and installed a professional manner. Contractor shall remove all existing radios and antennas sealing holes with rain tight grommets/covers.

**Mobile/Control Station Transmitter**

Frequency Range	136 -170 MHz
Frequency Stability	+/- 1.5ppm (Non-GPS) +/- 0.5ppm (GPS)
RF Power Output	1 -25 watts

**SAN LORENZO VALLEY WATER DISTRICT**  
**Two Way Radio Replacement**

	(low power model)
	40 or 45 watts
Channel Spacing	(high power model)
	12.5 or 25 kHz
Adjacent Channel Power	60db @ 12.5 kHz

**Mobile/Control Station Receiver**

Frequency Range	136 – 170 MHz
Channel Spacing	12.5 or 25 kHz
Analog Sensitivity (12 dB SINAD)	0.30 uV/ .22uV (typical)
Digital Sensitivity	5% BER: 0.3 uV
Adjacent Channel Selectivity	65dB at 12.5 kHz (w / TIA603) 50dB at 12.5 kHz (w / TIA603C)
Spurious Rejection	75db
Audio Distortion	3%