

## Request For Information

From the

Umatilla Morrow Radio & Data District

4700 NW Pioneer Place, Pendleton, OR, 97801

For a P25 Trunked LMR Voice System

June 19<sup>th</sup>, 2017

### **1. Description**

**1.1** The Umatilla Morrow Radio & Data District (District) is seeking information and input regarding how an interested contractor could fulfill the following description of a new LMR voice system.

**1.2** THIS IS A REQUEST FOR INFORMATION (RFI) ONLY. This RFI is issued solely for information and planning purposes – it does not constitute a Request for Proposal (RFP) or a promise to issue an RFP in the future. This request for information does not commit the District to contract for any supply or service whatsoever. Further, the District is not at this time seeking proposals and will not accept unsolicited proposals. Respondees are advised that the District will not pay for any information or administrative costs incurred in response to this RFI; all costs associated with responding to this RFI will be solely at the interested party's expense. Not responding to this RFI does not preclude participation in any future RFP, if any is issued. If a solicitation is released, it will be posted on the District's website and published in the Daily Journal of Commerce. It is the responsibility of the potential offerors to monitor these sources for additional information pertaining to this requirement.

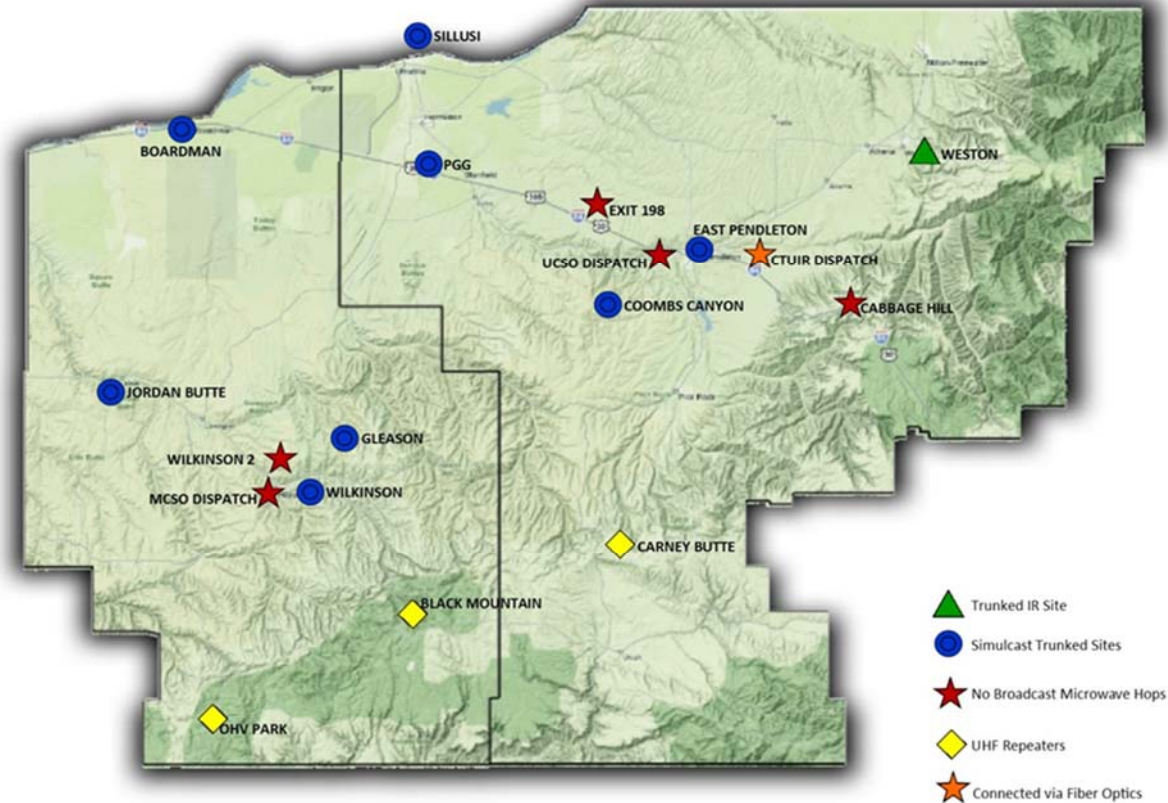
### **2. Background**

**2.1** The District is located in northeastern Oregon and comprises the counties of Umatilla and Morrow, excluding the land located within the City of Milton-Freewater limits. UMRDD provides public safety communications support to 42 local, state, tribal, and federal agencies and departments that operate within the District's boundaries as well as local school districts and Union Pacific Railroad law enforcement. There are 1190 subscriber units in the field.

2.2 The District is topographically diverse, with relatively flat terrain in the northwest section and varying degrees of rolling hills and mountain ranges crossing the remaining sections.

2.3 The current system consists of a Motorola 7.9 SmartZone M2 core connected to an eight sub-site, seven channel simulcast system and a single IntelliRepeater site with five channels. All channels are in the 450MHz to 470MHz (UHF) band. These two analog 'sites' are connected to the 7.9 core with SmartX DA/AD conversion equipment. There are 11 MCC7500 dispatch consoles installed at three separate dispatch centers; Morrow County Sheriff's Office (MCSO), Umatilla County Sheriff's Office (UCSO) and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). UCSO and MCSO share a NICE Inform logging recorder system.

2.3.1 A document that contains site location and tower height information for all of the UMRDD RF sites is available from the District. This document is named *UMRDD LMR System RFI, Reference A*. Responding parties are encouraged to request this document from the District.



### **3. Future Trunked LMR System Description**

#### **3.1 Overview**

3.1.1 The District is interested in replacing the current LMR system with a P25 Phase 1 or Phase 2 system. The new system will be a ten site simulcast site with six talkpaths (eight if Phase 2) and three (or more) independent 'fill-in' trunked sites, with at least two talkpaths (three if Phase 2). All channels selected for use with the next system will be in one of the three following designated public safety bands: 450MHz to 470MHz (UHF), 769MHz to 805MHz (700MHz), and 806MHz to 869MHz (800MHz). All system components will be compliant with the Telecommunications Industry Association's latest TIA-102 series on P25 standards.

#### **3.2 System Characteristics**

3.2.1 The following list includes characteristics that the District would like to see in the next system in descending order of priority.

3.2.1.1 Coverage. The District regards operability of the next system as the highest priority. The successful vendor of the next system will guarantee the coverage that they propose as a response to the future Request for Proposal (RFP). Coverage will be confirmed or denied by an independent consultant.

3.2.1.2 Reliability. The next system will receive, process, and deliver voice calls to the correct user 100% of the time. A high level of redundancy and efficient system operations software will be required in order to achieve this goal. The system must be able to function with the complete loss of any one site due to fire, lightning strike, or other catastrophic event. The District does not expect the system to function as designed when faced with extremely adverse conditions such as; multiple microwave link failures or widespread long-term electrical infrastructure failures. The system will have less capable modes of operation due to system failures.

3.2.1.3 Low cost of ownership. The District would like to avoid high maintenance costs. The system will be right-sized. It will not be too small to handle the District's needs, nor will it be so large that the District pays for equipment and capacity that it will not need inside of the useful life of the system.

3.2.1.4 Ability to interoperate with our neighbors. The District has three neighboring trunked systems – The State of Oregon (700MHz, Phase 2), Frontier Digital Network (700MHz, Phase 2), and Benton County Emergency Services

(800MHz, Phase 1). The District would like to connect to these systems with and ISSI solution and use subscriber units that function on these systems.

3.2.1.5 Long system service life. A service life of at least ten years. The District will likely be financing this system for ten years, therefore it must last - and be supported by the manufacturer - for at least ten years, 15 years is preferable.

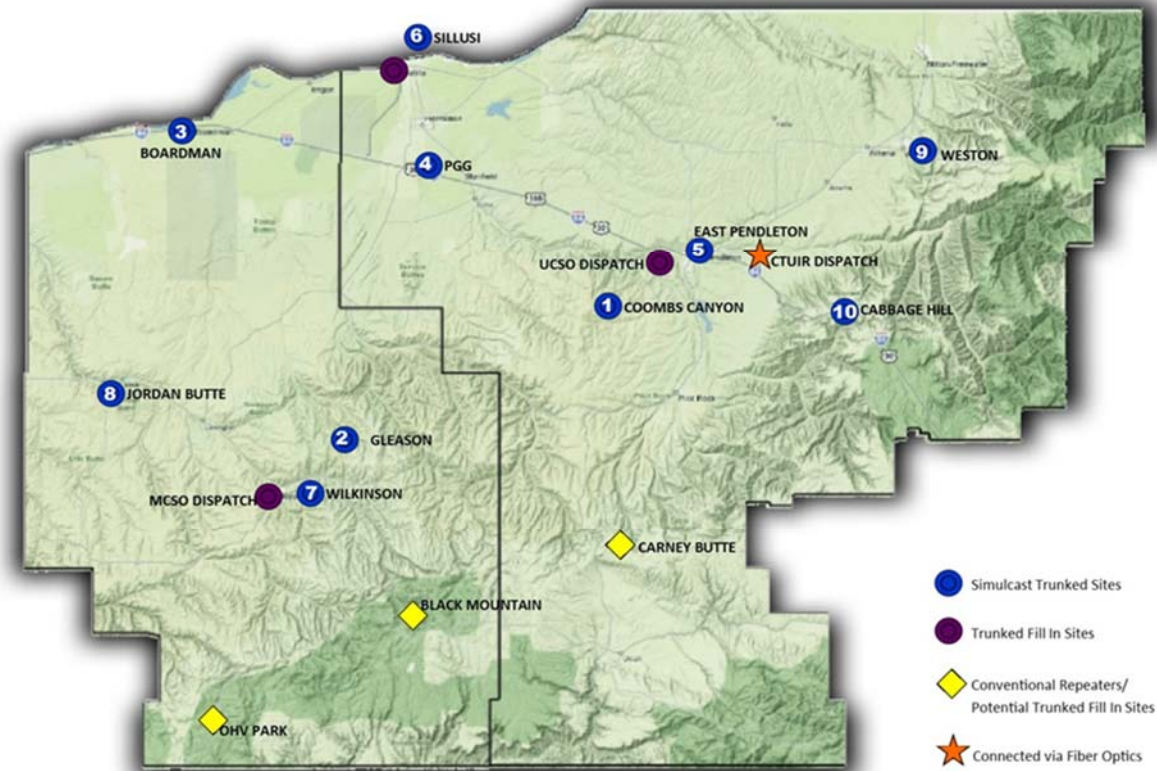
3.2.1.6 Efficient reconfiguration ability. Addition of dispatch consoles, channels, and sites must require minimal overhead/project costs and system disruption.

### **3.3 Microwave/Backhaul System Information**

3.3.1 The current microwave system is an Alcatel MDR-8000, circuit based DS-3 loop for the simulcast site, and Alcatel MDR-8000 wayside T-1 spur for the InteliRepeater/Weston Mountain site.

3.3.2 The next microwave system will be in place before the LMR system project starts. It will be an Internet Protocol (IP) based system that includes all of the current system sites into a redundant loop configuration with at least 64 QAM modulation (DS3). Two of the envisioned fill-in sites will be part of the loop (UCSO and MCSO Dispatch) and the City of Umatilla fill-in site will be likely be connected to the system via fiber optics or a spur from Sillusi Butte. Layer 2-3, MPLS capable network switches will be used for traffic control/distribution.

3.3.3 This backhaul system information is provided for informational purposes only. The District would like to know if the above listed microwave system is compatible with the LMR system that you offer. The District is not looking for information on microwave systems with this RFI.



### 3.4 Coverage

3.4.1 With this new system, the District is adding one site (Cabbage Hill) to the current nine primary system sites as well as at least three ‘fill-in’ sites. Accordingly, the District expects to at least maintain current coverage levels and could add significantly to its coverage footprint despite potential coverage restrictions imposed by P25 modulation and higher frequency bands. Responders are expected to provide a band recommendation along with portable and mobile coverage map projections.

3.4.2 The District regards system coverage as the most important factor in determining the configuration of the next system. However, channel coordination and noise level advantages afforded by the 700MHz band are substantial. The District may be willing to lose a small amount of rural coverage in order to utilize the 700MHz band. If a vendor selects 700MHz as the next system band, the vendor will provide coverage maps with Phase 1 and Phase 2 coverage. They will also list equipment options for mixed Phase 1/Phase 2 operation.

3.4.3 Coverage maps should depict 97% talk in/talk out reliability. Portable subscriber unit coverage will be depicted as being out of doors with the subscriber unit antenna located 42 inches above ground level, an estimation of the antenna height when a portable subscriber unit is worn on the hip. Mobile subscriber unit coverage will be

depicted with antenna heights at 60 inches above ground level. Coverage modelling should be consistent with TIA Telecommunications Systems Bulletin 88 (TSB88). A predicted Delivered Audio Quality (DAQ) level of 3.0 to 3.4 will be acceptable.

### **3.5 Subscriber Units**

- 3.5.1 The new UMRDD system will support use by P25 fully compliant subscriber units manufactured by Motorola, Harris, Tait, EF Johnson, Kenwood, and Relm or any other fully compliant subscriber product listed as such by the P25 Compliance Assessment Program (CAP). All subscriber units will comply with latest TIA-102 series documents.
- 3.5.2 UMRDD understands that additional - non-P25 - proprietary features may not function.

### **3.6 Dispatch Consoles**

- 3.6.1 There will be a total of 14 dispatch console positions on the system; seven at UCSO, four at MCSO, and two at CTUIR.
- 3.6.2 The dispatch consoles to be connected to the new UMRDD system will be connected directly to the system infrastructure or through a P25 Inter Sub-System Interface/Console Sub-System Interface (ISSI/CSSI) connection in accordance with the TIA-102 series document.
- 3.6.3 There will be provisions for connections to the dispatch console system for existing conventional analog resources. UCSO, MCSO, and CTUIR Dispatch will require eight conventional resource connections at minimum. All connected conventional resources will be available to all system dispatch consoles.
- 3.6.4 The dispatch consoles will be certified compliant with TIA-102 series documents.
- 3.6.5 The dispatch consoles will also perform resource to resource patching, two-tone paging, "channel marker" tones, previous audio replay on all resources, ability to hear traffic from multiple resources in one speaker/headset, door lock control, alarm monitoring and other AUX I/O-type capabilities.

### **3.7 Logging Recorders**

- 3.7.1 UCSO and MCSO dispatch centers currently use the NICE Inform P25 logging recorder. The NICE Inform logger will be used with the next system. CTUIR Police dispatch currently uses the Goserco Inc. Audiolog Impact 360 logging recorder. The Goserco recorder will be used with the next system.

### **3.8 Conventional Systems Integration**

- 3.8.1 A number of co-located conventional base stations and repeaters will be connected to the System at 11 system RF sites. All but two of these sites (ten sites) will require four or fewer connections, two will require five. Please list capabilities and capacity of conventional system integration equipment.

### **3.9 Connections to Other Systems**

- 3.9.1 The new LMR system will be connected to the Oregon State Department of Transportation (ODOT) radio system (Harris), the Gilliam, Sherman, and Wheeler County radio system known as Frontier Digital Network (Motorola), and the Benton County Emergency Services radio system (Motorola) via either Inter Sub-System Interface (ISSI), or direct system connection.
- 3.9.2 ISSI/CSSI connections shall use open P25 ISSI/CSSI standards to allow users of the UMRDD system to communicate with users of connected systems via their systems and talkgroups, and allow UMRDD users to communicate with UMRDD dispatch centers using UMRDD talkgroups while roaming onto connected systems.

### **3.10 System Control**

- 3.10.1 The new UMRDD system's controlling equipment - or 'core servers'- will be fully redundant and geographically diverse. There will be, at a minimum, two independent, fully capable, automatically redundant, system control servers located in separate geographic locations.

### **3.11 System Expansion/Potential Trunked Fill In Sites**

- 3.11.1 The District would like to see creative and practicable options for expanding trunked system coverage with additional trunked site installations at one or both of the current Carney Butte, and OHV sites. This option would require the installed equipment to be capable of operating in a less than optimal power/space/cooling environment. Connection to the system server will require backhaul other than microwave or land-line connection. These sites would be one or two talkpath trunked sites.
- 3.11.2 The current Black Mountain Site has ODOT microwave installed and available for UMRDD use. This site could also be an attractive one or two talkpath fill-in trunked site, depending upon additional coverage provided and equipment costs.

### **3.12 GPS Tracking**

3.12.1 UMRDD will consider the ability to support GPS tracking of all GPS capable subscriber units. If this option is included and an extra channel or channels is/are recommended to be added to the system, list the additional cost of the equipment required to support the needed channel(s) and the option.

3.12.1.1 The District would like to review configuration options available for GPS tracking systems. For example; what reporting intervals are available, could a dispatcher query the location of a specific unit, could tracking be turned off temporarily, et cetera.

### **3.13 Encryption**

3.13.1 Five system talkgroups will be encrypted, two of these will be passed through the ISSI to the State of Oregon. Only subscriber models that have been approved by the P25 CAP for standard encryption capability will be used for access. TIA-102 series document compliance (AES 256-bit encryption) will be required.

### **3.14 Asset Tracking**

3.14.1 The District currently uses a database product that is separate from the current system management software to track locations and maintenance history of site equipment and subscriber units. The District would like to see proposals with an integrated approach to asset tracking in the next system's management software.

### **3.15 Voice over LTE/FirstNet Interfaces**

3.15.1 The District is aware of the technology that allows for cellular phones and other LTE capable devices to pass voice traffic over P25 systems using encryption. The District would like information on these types of products and how the system can be integrated with broadband technology in the future.

### **3.16 Installation and Implementation**

3.16.1 Vendor installation and implementation of the new system will be included in the cost system purchase. This will include a project manager that will attend weekly project meetings and monthly UMRDD board meetings.

3.16.2 The selected vendor will be expected to be experienced and competent regarding the installation and operation of their products. Therefore, in the interest of fairness to responders and to the District, change orders that increase the cost of the system above 3% of total equipment costs will not be accepted.



- 3.16.3 R56 grounding standards will be followed for installation of all equipment.
- 3.16.4 The vendor will ensure that there will be no interruption of the existing LMR voice system due to installation of the new LMR equipment.
- 3.16.5 The selected vendor must provide the District with full 'as-built' documentation complete with wireline and logical path network diagrams for all installed equipment upon project completion.
- 3.16.6 All system servers, routers, and switches will have dual power supplies.
- 3.16.7 All cabling will be labeled as to purpose, source, and destination. If appropriate to the system design, cable will be color coded to enable faster trouble shooting.
- 3.16.8 Vendor will provide training to the District technical staff regarding the operation and maintenance of all system functions. The dispatch console vendor will provide 'Train the Trainer' training to 8-10 dispatch center representatives.

### **3.17 System Functionality**

- 3.17.1 The vendor will guarantee full functionality of the system as proposed and ensure that the system remains fully functional for one year after acceptance at no cost to the District. If the system, for any equipment or software related reason, is not fully functional during the first year, the system Vendor will bear the material and labor cost of any equipment replacement, re-design, software upgrades, and any other cost necessary to correct the issue.
- 3.17.2 Functionality means the system operates as designed without frequent intervention by technical staff. The system will process calls on 'talkgroups', and distribute voice and data information associated with calls (such as but not limited to - PTT ID, emergency button activation and response, subscriber unit stun/kill/restore function, individual channel disable, queuing with priority, ect.) throughout the system and across P25 ISSI/CSSI connections regularly and without critical component failure. Occasional, low-level errors or malfunctions would be acceptable if they are not symptomatic of a larger system configuration or software issue. For this purpose, the 'system' includes subscriber units, dispatch consoles, logging equipment, the primary system sites, and the fill-in sites.
- 3.17.3 Functionality also includes connecting the dispatch consoles at CTUIR Dispatch with the rest of the system via a leased fiber optic connection without interruption or excessive errors.

## **4. Responses**

**4.1** Interested parties are requested to respond to this RFI with a white paper.

**4.2** White papers in Microsoft Word compatible format are due no later than August 18<sup>th</sup>, 2017. Responses shall be submitted via email only to [shawn.halsey@umrdd.org](mailto:shawn.halsey@umrdd.org). Proprietary information, if any, should be minimized and MUST BE CLEARLY MARKED. All submissions to the District will become District property and will not be returned.

**4.3** Section 1 of the white paper shall provide administrative information, and shall include the following information as a minimum:

4.3.1 Name, mailing address, overnight delivery address (if different from mailing address), phone number, and email of designated point of contact.

**4.4** Section 2 of the white paper shall describe the responding party's solution to the Districts requested system requirements listed in Section 3 of the RFI.

4.4.1 The responding party is encouraged to provide recommendations as to system operating frequency band, P25 modulation, channel capacity, dispatch consoles, logging equipment, and/or recommended microwave capacity.

## **5. Discussions**

**5.1** District representatives may or may not choose to meet with potential offerors. Such discussions would only be intended to get further clarification of potential capability to meet the requirements of the system description.

## **6. Questions**

**6.1** Questions regarding this announcement shall be submitted in writing by email to the District Administrator, [shawn.halsey@UMRDD.org](mailto:shawn.halsey@UMRDD.org). Verbal questions will NOT be accepted. Questions will be answered by posting answers to the UMRDD website; accordingly, questions shall NOT contain proprietary information. The District does not guarantee that questions received after August 11<sup>th</sup>, 2017 will be answered. To access the UMRDD website, go to <https://www.umrdd.org>.

## **7. Summary**

**7.1** THIS IS A REQUEST FOR INFORMATION (RFI) ONLY to identify sources that can provide a P25 LMR Trunked Voice System. The information provided in the RFI is subject to change and is not binding on the District. The District has not made a commitment to procure any

of the items discussed, and release of this RFI should not be construed as such a commitment or as authorization to incur cost of which reimbursement would be required or sought. All submissions become District property and will not be returned.