REQUEST FOR INFORMATION
NO. 2019-516
Voice Radio System

RFI ISSUE DATE: July 2, 2019

RFI CLOSING DATE: August 2, 2019 at 15:00 Pacific
                           Standard Time

COPIES: 1 USB Flash Drive copy of your
                           completed Application and 1 Printed
                           Paper Copy

DELIVERY ADDRESS: Scott Bennett, Information Technology
                           625 Fisgard St, Victoria, BC,V8W 2S6,
                           PO Box 1000

AUTHORIZED CONTACT: Scott Bennett

                           Email Address: sbennett@crd.bc.ca

ALL INQUIRIES MUST BE SUBMITTED IN WRITING TO THE AUTHORIZED CONTACT PERSON

Capital Regional District – Information Technology
625 Fisgard St Victoria, BC V8W 2S6
Tel: 250-360-3000 Fax: 250.360.3243

1.0 INTRODUCTION

This Request for Information ("RFI") is issued by Capital Regional District ("CRD") on behalf of Integrated Water Services ("IWS")

For additional information on the CRD please visit the following site:
https://www.crd.bc.ca/

1.1 RFI OBJECTIVE

CRD is seeking information, through this RFI process, from interested parties for the supply of voice radio system. This RFI is intended to gather information that could assist CRD in the development of a future procurement process.

Interested parties are invited to respond to this RFI by submitting a detailed response to CRD. Responses should include ideas, information and recommendations that could result in clarification of the requirements, cost-saving opportunities and the identification of potential problem areas with this initiative. Respondents are requested to provide a concise and focused response to this RFI.

At the sole discretion of CRD, parties may be invited to attend presentations or demonstrations. In certain situations Proponents may be given an outline of what is to be presented. During these presentations Proponents will demonstrate the operation or use of equipment, supplies or software and the Purchaser's' staff will have an opportunity for a hands on experience.

Where applicable provide a Manufacturer Suggested Retail Price (MSRP) for products, licensing fees, and services. This information will be used to better develop budgeting requirements.

For avoidance of doubt this RFI is issued for information-gathering purposes and is not intended to be a formal legally binding "Contract A" bidding process. Without limiting the generality of the foregoing, this RFI will not necessarily result in any subsequent negotiations, direct contract award, invitational tendering process or open tendering process and does not constitute a commitment by CRD to procure any goods or services or proceed with any commercial arrangement.

This RFI will not be used to evaluate, rank or select interested parties nor will it be used to prequalify or screen any parties for a subsequent competitive bidding process, if any.

CRD and its advisers make no representation, warranty or guarantee as to the accuracy of the information contained in the RFI or issued by way of addenda. Any quantities shown or data contained in this RFI, or provided by way of addenda, are estimates provided only as general background information.

RFI TERMS OF REFFERENCE

2.0 TERMS OF REFERENCE

In addition to these terms or reference, this RFI contains the following Appendices and Exhibits.

Appendix A	Questionnaire
Appendix B	Current State, Future Vision and Desired State
Exhibit 1	Receipt Confirmation Form
Exhibit 2	Acceptance of RFI Terms of Reference

2.1   SUBMISSION INSTRUCTIONS

Responses should be received by 15:00 Pacific Time on August 1 2019 ("RFI Closing").

DELIVER YOUR RESPONSE IN PERSON, BY COURIER OR REGULAR MAIL DIRECTLY TO:

Capital Regional District
Information Technology
625 Fisgard St
Victoria, BC, V8W 2S6.

Attention: **Scott Bennett**

FACSIMILE OR EMAIL TRANSMISSIONS WILL NOT BE ACCEPTED.
USING LEGIBLE PRINT, CLEARLY LABEL BOTH THE RESPONSE AND PACKAGE WITH:

RFI Number: **2019-516**

2.2   FORMAT OF RESPONSE

Respondent is asked to provide paper and electronic copies (USB Flash Drive) of the response in the quantities stated on the first page. In the event of any conflict or difference in interpretation between the paper and electronic copies, the paper copy shall take precedence. Responses are to include the following:

- Responses to the questionnaire and scenarios presented in Appendix A and Appendix B below.
- Exhibits 1 and 2 signed
- All other relevant documents and supporting schedules requested within this RFI.
- The Authorized Contact, RFI Name and RFI Number are to be clearly marked on the sealed envelope and on any electronic media.

2.3   QUESTIONS

All questions and inquiries concerning this RFI may be submitted via email to the Authorized Contact designated above by or before July 26th 2019 noon Pacific Time.

2.4   AMENDMENTS

Amendments to this RFI will be in writing and posted to the CRD Website and BC Bid.

2.5 EXAMINATION OF RFI DOCUMENTS

It is the sole responsibility of a Respondent to check the BC Bid and CRD Websites to be sure the Respondent has all available information before submitting a Response. Each Respondent will be deemed to have carefully examined and understood the requirements and limitations of this RFI, prior to submitting a Response, with respect to any and all facts which may influence the decision to prepare and submit a Response.

3.0 CONFIDENTIALITY AND OWNERSHIP OF RESPONSE DOCUMENTS

Due to the nature of the RFI evaluation process and the confidentiality to be afforded to all submissions, opening and evaluation are not open to the public. The respondent agrees that the submitted response will become the property of CRD and will not be returned to the respondent. CRD will not publish any information unless disclosure is otherwise required by law or by a court of competent jurisdiction.

Respondents to this RFI consent to CRD incorporating any submitted ideas, concepts, approaches, or strategies into any planning, design, procurement, or contractual activities related to any aspect of the project without any obligation, liability, or consideration on the part of CRD.

4.0 FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY ACT ("FIPPA")

CRD is a public body and all information or materials (including electronic information) supplied to CRD by respondents are subject to the provisions of the Freedom of Information and Protection of Privacy Act (British Columbia) ("FIPPA") including orders and decisions made by the Office of the Information & Privacy Commissioner. Respondents, in submitting an response, acknowledge and agree that CRD a may be required to disclose the terms of the RFI and the respondent's response and any other information supplied in connection with or relating to the RFI to the public in order to comply with FIPPA and existing and future orders of the Office of the Information & Privacy Commissioner.

In addition, respondents, in submitting a response, agree that CRD may, at their option, proactively disclose the terms of the RFI and response to the public.

5.0 GOVERNING LAW

This RFI process will be governed by and construed in accordance with the laws of the province of British Columbia and the federal laws of Canada applicable therein.

6.0 PRICING INFORMATION

Any pricing information provided by respondents is for general information purposes and is not intended to be binding on respondents. Any legally binding pricing or purchasing commitments will be established only where specified by the express terms of a subsequent tender call process or where established through the execution of a written agreement.

7.0 INFORMATION IN RFI

CRD and its advisers make no representation, warranty or guarantee as to the accuracy of the information contained in the RFI or issued by way of addenda. Any quantities shown or data

contained in this RFI, or provided by way of addenda, are estimates provided only as general background information.

8.0   PARTIES TO BEAR THEIR OWN COSTS

CRD will not be liable for any expenses incurred by a respondent, including the expenses associated with the cost of preparing responses to this RFI. The parties will bear their own costs associated with or incurred through this RFI process, including any costs arising out of, or incurred in, (i) the preparation and issuance of this RFI; (ii) the preparation and making of a submission; or (iii) any other activities related to this RFI process.

9.0   ACCURACY OF RESPONSES

The respondent acknowledges that the information provided is, to the best of its knowledge, complete and accurate.

11.0   CONFIDENTIAL INFORMATION OF CRD

All information provided by or obtained from CRD in any form in connection with this RFI either before or after the issuance of this RFI (i) is the sole property of CRD and must be treated as confidential; (ii) is not to be used for any purpose other than replying to this RFI; (iii) must not be disclosed without prior written authorization from CRD; and (iv) must be returned by the respondent to CRD immediately upon the request of CRD.

The respondent may not at any time directly or indirectly communicate with the media in relation to this RFI without first obtaining the written permission of CRD.

12.0   RFI NOT TO LIMIT CRD PRE-EXISTING RIGHTS

This RFI will not limit any of CRD's pre-existing rights. Without limiting the generality of the foregoing, CRD expressly reserves the right, at its discretion, to:

(i)   seek subsequent information or initiate discussions with any potential supplier, including potentials suppliers that did not respond to this RFI;
(ii)   initiate direct negotiations for the procurement of any good or service with any potential supplier or suppliers, regardless of whether the potential supplier or suppliers responded to this RFI;
(iii) contact a limited number of potential suppliers, which may include only those that responded to this RFI or may include potential suppliers that did not respond to this RFI, for the purpose of a competitive process for the procurement of any good or service;
(iv)   elect to proceed by way of open tender call where all potential respondents, including those that did not respond to this RFI, are eligible to compete for the award of a contract for the supply of any good or service;
(v)   elect not to procure the good or service that is the subject of this RFI; and;
(vi)   elect to amend, modify, cancel or suspend the RFI Process at any time for any reason.

These expressly reserved rights are in addition to any and all other rights of CRD that existed prior to the issuance of this RFI.

QUESTIONNAIRE – OVERVIEW

The questionnaire consists of two (2) sections:

(a) Section A sets out four(4) scenarios that require creative feedback from Respondents. Please comment on the Scenarios that are most applicable.

(b) Section B asks the Respondents corporate profile and product information questions in a survey-style, short answer format. Respondents are encouraged to refer to the "Future Vision" described in Appendix B (see embedded document in Section 1 above). Responses should be submitted in the document formats set out in this RFI.

Section A – General Instructions:

Scenario 1

Conventional Analog multicast Upgrade:

Replacement of:
-Existing analog repeaters (dual redundant)
-Tone Remote systems used for dispatching
-Analog telephone interconnects
-GPS Tracking software and server
-Base stations
-User gear (mobiles and portables)

Scenario 2

Conventional Digital Multicast upgrade:

Replacement of:
-analog repeaters with digital repeaters (dual redundant)
-telephone interconnects with digital SIP phone server (integrated into Cisco unity communications manager 11.5 phone system)
-GPS Location software and server
-Replacement of Base stations
-Tone remotes to be replaced with IP Dispatch Console
-User gear (mobiles and portables)

Scenario 3

Conventional Simulcast upgrade:

Replacement of:
      -Analog equipment with digital repeaters
      -Telephone interconnects with SIP phone server (integrated into Cisco unity communications manager 11.5 phone system)
      -GPS Location software and server
      -Base stations
      -Tone remotes to be replaced with IP Dispatch Console
      -User gear (mobiles and portables)

Scenario 4

Digital Simulcast upgrade Trunking:

Replacement of:
      -Analog equipment with digital repeaters
      -Telephone interconnects with SIP phone server (integrated into Cisco unity communications manager 11.5 phone system)
      -GPS Location software and server
      -Base stations
      -Tone remotes to be replaced with IP Dispatch Console
      -User gear (mobiles and portables)

INTRODUCTION

The Capital Regional District (CRD) is seeking to upgrade of their private VHF land mobile radio (LMR) network for Integrated Water Services (IWS.) The LMR system is essential to critical infrastructure emergency restoration, operations and is required for road travel within the Watershed. IWS VHF system comprises some 220 portable and mobile radios across three CRD user groups and three repeaters. Of the 220 radios on the system, 44 of the radios have been updated to support GPS location services.

The VHF radio is system is nearing end of life and is due for replacement in 2019 after 15 years of reliable operation. It is envisioned that the system will be replaced in two phases between 2019 and 2020: infrastructure followed by user equipment. The new system is intended to modernize the LMR system to ensure continued and reliable service for the upcoming 10-15 years.

This document examines the CRD user requirements (performance and features) and makes recommendation on:
- Technology approaches;
- Spectrum Options; and
- Integration with other CRD systems (phone, etc.).

Based on the recommendations adopted, further design activities will be conducted to specify and procure the replacement CRD LMR system.

Current System Status

Capital Regional District (CRD) currently operates a three-site, VHF analogue radio repeater system to support watershed and parks operational requirements and to support restoration activities in the event of a large-scale event. This system is nearing the end of its operational life and requires upgrade over the next 2 years.

Each of the three repeater sites used in the system are operated independently and as conventional (non-trunked) repeaters, with no automatic roaming between sites. Currently the following sites are used by the CRD LMR System:
- Survey Mountain (48°33'34.07"N, 123°47'57.97"W)
- Mount McDonald (48°26'31.91'N, 123°34'08.24"W)
- Mount Douglas (48°29'32.35'N, 123°20'42.00"W)

The existing radio system provides reasonable mobile radio coverage of the CRD watershed and good portable and mobile radio coverage of the populated CRD service areas. It is noted that many areas of the Watershed do not have commercial cellular system coverage or portable radio coverage.

SPECTRUM

Existing

The existing CRD LMR system utilizes three, 12.5 kHz wide duplex channel pairs in the VHF band. The CRD also uses the repeater TX assignments of the Duplex channel pairs for simplex operations.

Spectrum Options

If CRD continues with a conventional analogue repeater system, then the current spectrum allocations could be reused. Alternatively, these assignments could be traded for assignment with better TX and RX spacing.

For conventional digital systems, it is recommended that CRD move to a 6.25 kHz effective assignment (either 6.25 kHz physical channel (FDM) or 2 voice slots on 12.5 kHz channel (TDM)) which would pave the way for additional capacity to support enhanced services.

It is not expected that additional VHF channel assignments can be obtained in order to support digital or analogue trunking solutions.

Securing or modifying channels will require discussions with Innovation Science and Economic Development Canada (ISED), the frequency regulator, once the technology decision has been made.
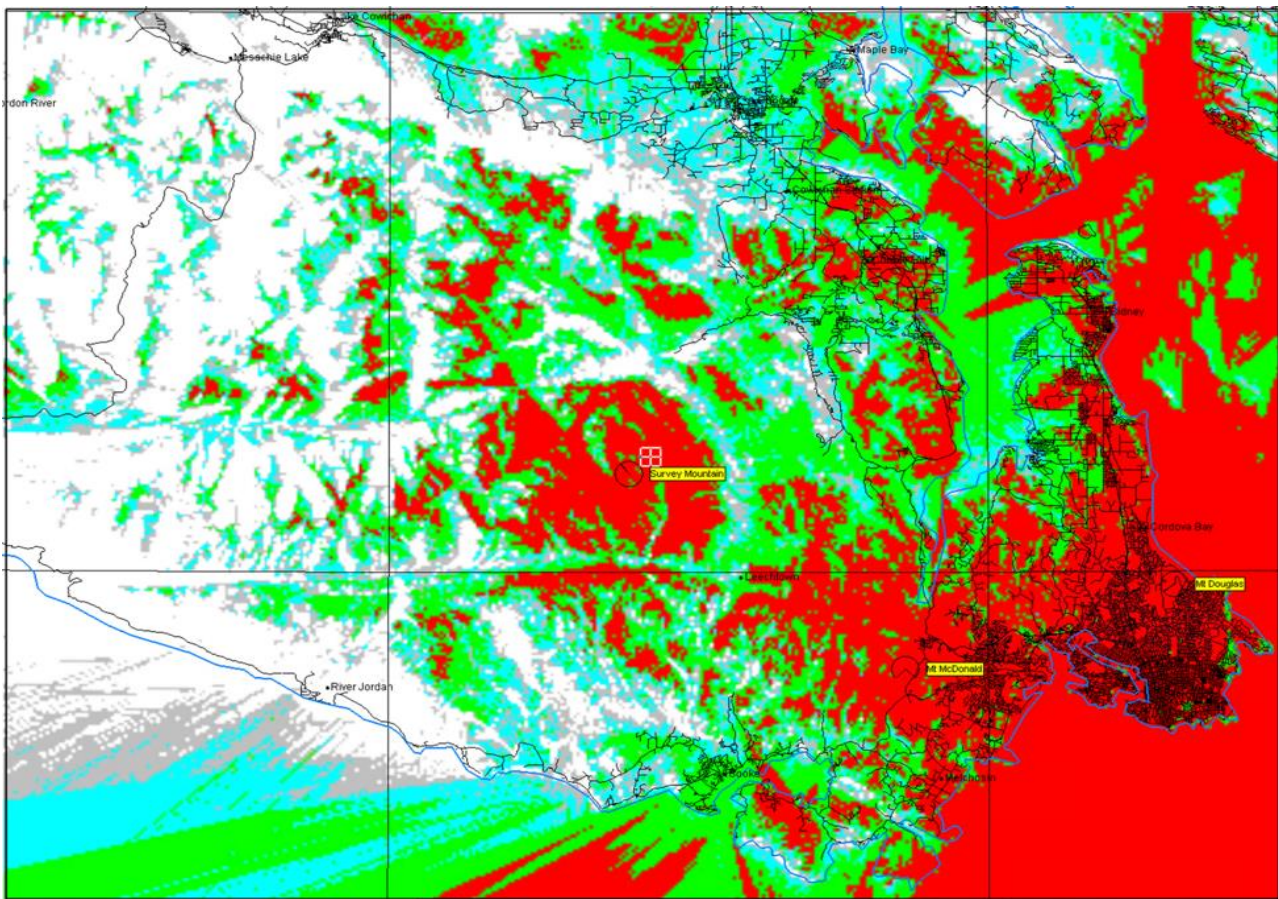

Figure 1.0, Current System Repeater Locations and Coverage Map

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CRD USER GROUPS

Four primary user groups have been identified as users of the CRD LMR system; as follows:
- IWS Watershed;
- IWS Operations;
- CRD Parks; and
- Watershed Road Users (Note that this group includes IWS watershed, occasional CRD users and non-CRD road users).

IWS Watershed, IWS Operations, and CRD Parks staff require the same set of common requirements which are defined in the common radio requirements section. In addition, each user group has specific requirements and unique operating environments. The unique requirements and operating environment are described in the following sections.

IWS Watershed

IWS watershed staff operate in both the land and water areas of the CRD watershed. This watershed area is remote, mountainous and has no option for reliable communications services other than the CRD LMR system or satellite phones.

The watershed and its associated operations forms part of the CRD's critical infrastructure to ensure reliable delivery of clean and safe water within the regional district.

Staff operating in this area require reliable communications for:
- Regular safety check-in with watershed gate staff to conform to Work Safe BC lone worker regulations;
- Emergency communications in the event of injury or major equipment failure;
- Wildfire management;
- Service continuity planning and coordination in the event of a major disaster (post disaster communications);
- Staff management within the watershed area;
- Coordination of scheduled and unscheduled maintenance and operational activities within the watershed; and
- Road use coordination for safe watershed road travel (See watershed road users section for additional detail).

Staff operational areas within the watershed are as follows:
- In-vehicle on any of the active roads;
- On-foot; typically, within 100m of their vehicle;
- In-boat on any of the watershed reservoir areas;
- Watershed gate building; and
- Field Operations Centre (FOC).

As can be seen, not all areas within the watershed areas are afforded reliable mobile radio communications. Focus will be placed on improving the number of key operational areas which are covered by the replacement LMR system.

IWS Operations

IWS operations staff operate in urban, suburban and rural areas of the CRD to support water distribution services within the regional district.   This operational area may, or may not, be covered with other commercial communications services such as cellular or commercial land mobile radio. The water distribution system and its associated operations forms part of the CRD's critical infrastructure required to ensure reliable delivery of clean and safe water within the regional district. Staff operating in this area require reliable communications for:

- Regular safety check-in with Communications Clerk (479 Island Highway) conform to Work Safe BC lone worker regulations;
- Emergency communications in the event of injury or major equipment failure;
- Service continuity planning and coordination in the event of a major disaster (post disaster communications);
- Staff management within the CRD area; and
- Coordination of scheduled and unscheduled maintenance and operational activities within the CRD area.

Staff operational areas within the watershed are as follows:
- In-vehicle on roads; and
- IWS Operations administration buildings. (telephone desk set for Ch. 2,3, and 5) – requirement to replace – as part of phone system activity)

As can be seen not all areas within the CRD are afforded reliable mobile radio communications. Focus will be placed on improving the number of key operational areas which are covered by the replacement LMR system.

CRD Parks

CRD Parks staff operate in urban, suburban and rural areas of the CRD to support park operations within the regional district. While many of the park areas are serviced by commercial communications (e.g. cellular of commercial LMR) a number of the park areas have no commercial service.

Parks staff require reliable communications for:
- Emergency communications is the event of injury or other safety concerns;
- Wildfire management;
- Park user safety (search and rescue, call for public safety services, etc.);
- Staff management within the CRD area;
- Coordination of scheduled and unscheduled maintenance and operational activities.

Staff operational areas within the watershed are as follows:
- In-vehicle on any of the active roads;
- On-foot; adjacent and within park areas;
- Lake Areas; and
- Parks administration and maintenance buildings.

Not all areas within the park areas are afforded reliable mobile or portable radio communications. Focus will be placed on improving the number of key operational areas with are covered by the replacement LMR system.

Watershed Road Users

Watershed roads users include both IWS watershed staff, CRD contractors as well as third party logging and placer miner staff operating on watershed roads. This user groups requires short range communications (<5 km) to coordinate vehicle operations on watershed roadways.

Vehicle road communication is a safety related service for vehicles operating on the same road segment to avoid collisions and ensure safe operation. All communications is vehicle to vehicle. This user group requires reliable radio communication on all watershed roads. However, unlike other user group requirements, this communication is only required between vehicle in relatively close proximity (<5 km) and operating on the same roadway.

Also, unlike other user groups, this user group includes non CRD users. Non CRD users within this user group will require common and compatible radio equipment to that used by CRD staff.

Future Municipal Partners

Municipal Partners staff operate in urban, suburban and rural areas of the regional district.   This operational area may, or may not, be covered with other commercial communications services such as cellular or commercial land mobile radio.

Staff operating in this area require reliable communications for:
- Regular safety check-in to conform to Work Safe BC lone worker regulations;
- Emergency communications in the event of injury or major equipment failure;
- Service continuity planning and coordination in the event of a major disaster (post disaster communications);
- Staff management within the CRD area
- Coordination of scheduled and unscheduled maintenance and operational activities within the CRD area.

CRD COMMON RADIO REQUIREMENTS

Functional Requirements

The following sections describes the common radio requirements that are required by the IWS watershed, IWS Operations, and CRD Parks user groups. These requirements were identified through stakeholder meetings that occurred on November 29th and 30th, 2017

- **Group Call**. Standard LMR functionality to permit a one to many radio calls. For conventional systems, the group functionality is derived by using sub-audible tone squelch (analogue systems) or digital talk group ID (digital systems).
- **Private Call**. Standard LMR functionality to permit a one to one radio call. The private call functionality is derived by using selective call signaling (usually DTMF for analogue systems) or a digital unit ID is used (digital systems).
- **Emergency Call**. Standard LMR functionality to permit a radio user to initiate an emergency call with a single button press. After the emergency activation, the radio's mic is can be automatically activated for 5-15 seconds. The emergency call functionality is derived by using an audible tone on the channel (analogue systems) or an emergency signaling message (digital systems). Emergency call is not used in the current CRD analogue system.
- **Calling Unit ID**. Standard digital LMR functionality to display the unit ID of the radio initiating the call. Calling unit ID is currently not available in the current CRD analogue system.
- **Encryption**. Encryption is a standard digital LMR functionality to ensure privacy of radio conversations. This is required by CRD staff when dealing with sensitive information / events. Digital LMR systems support a number of encryption schemes with varying security levels from 40-bit to 256-bit encryption. As the CRD is more concerned with information privacy, the lower security schemes would be appropriate. If desired radios can be software upgraded in the future to support enhanced security mechanisms. Currently no encryption or privacy is provided by the existing CRD analogue system.
- **Location Reporting.** Location Reporting is a standard LMR functionality to provide GPS based radio location information on a central server. The ability to identify the location of radio units enhances user safety as well as organizational efficiencies. CRD is currently trialing this functionality on a same number of portable radios. GPS location services is deemed to be a key safety feature by a number of stakeholders.
- **Lone Worker.** Lone worker solutions provide automated person-down alarms, timed-check-in, etc. to ensure the health of lone workers.
- **Telephone Interconnect**. Telephone interconnect is a standard LMR functionality to provide connectivity between the LMR system and the public telephone system. For analogue systems telephone interconnect functionality is relatively basic; with the ability for radio users to dial-out using DTMF or the ability for external users to dial into a repeater using a specified telephone number. In digital LMR systems more feature-rich telephone interconnect functionality is available which permits each radio to appear as an extension on the CRD internal telephone system (PBX). While the current CRD system supports the basic telephone interconnect functionality, the more advanced PBX extension functionality is desired.
- **Option Enhancements**: Voice recorder, over the air programming (OTAP) over the air rekeying (OTAR), dispatch consoles, radio status, and radio over cellular are optional features which have potential value depending on cost.

Performance Requirements

Based on stakeholder interviews the following LMR system performance requirements are established:

- RF Coverage. At least comparable to existing system coverage with a strong requirement to improved coverage performance at key operational areas.
- Reliability. The current LMR system operates with little to no downtime. Redundant repeaters at used at each of the three radio sites which results in the high uptimes achieved. Any replacement system should operate with at least 99.99% availability.
- Channel Capacity. While stakeholders did not specifically raise capacity issue with the existing system, this system is limited with only one voice channel per repeater. Expansion of GPS location services and other functions will require addition spectrum at each repeater site. Based on current subscriber loading and traffic it is recommended that at least 2 voice channels be provisioned at each repeater site.
- Voice Quality. Stakeholders did not specifically raise any voice quality concerns with the existing system Voice quality should remain high to ensure that the system is easily useable. For digital technologies, it is recommended that a target voice quality equivalent to DAQ3.4 be used.
- DMR Tier 2. Equipment should be upgradable through license addition to support Tier 3 operation.

Technology Requirements

Radio users did not present any specific technology requirements. For a general perspective, the following technological requirements can be considered.

- **Analogue versus Digital.** Radio users typically tend to favour analogue radio technologies based on familiarity, however they quickly get used to the slightly different audio sound present with digital radio. The primary benefit of digital radio technologies is the potential of increased privacy/security and increased capacity (i.e. the ability to support more simultaneous voice conversations).

- **Conventional versus Trunked.** Trunked radio solutions provide automated roaming and channel selection and are therefore slightly easier from a user operational perspective. However, trunking solutions increase system complexity and cost and may require additional frequencies to support the trunking control channel.

- **Multicast versus Simulcast.** Multicast systems maintain a one-to-one correlation between a site transmitter and a frequency. In simulcast operation, a single TX frequency may be used across multiple radio sites. From a user perspective, a simulcast solution can permit a user to stay on a single radio channel across CRD's entire operational area. For a multicast system users will have to change radio channels as they move between radio site coverage areas. The simulcast solution however requires inter-site timing coordination and a slightly more complex design process to implement. The Simulcast system also permits all channels to be utilized at each radio site, thereby facilitating the channels necessary for a trunked radio solution.

- **Digital Radio Standard.** The available digital radio standards typically all provide similar user features and therefore do not impact user preference.

Summary and Recommendations

The existing CRD radio system be upgraded to a locally supported digital radio solution to address the following CRD needs:
- Replacement of aging equipment
- Increase of system capacity;
- Increase of System Privacy (i.e. light encryption);
- Improvement of system usability (i.e. ease-of-use); and
- Capability to support any CRD emergency restoration activities.

It is noted that without the installation of additional radio sites, system coverage is expected to remain unchanged from the currently provided radio coverage.

Specifically, the following next steps are recommended:
1. Employ separate approaches to satisfy needs of CRD operations and Watershed Road users
   a. IWS watershed, IWS operations, and CRD parks move to digital system
      i. Digital is required to increase voice user capacity within spectrum availability confines.
      ii. Digital is required to support encryption and calling unit ID as well as advanced telephone interconnect.
   b. Watershed Road continue to utilize analogue radio
      i. Utilize analogue radio
      ii. Potential to Utilize resource road frequencies – requires further discussions with ISED
      iii. Removes need for external parties to adopt same digital radios as CRD
      iv. CRD would use analogue channels for road coordination.
2. Develop technical specification for conventional digital repeaters
   a. Either multicast or simulcast designs could be used
   b. Trunking technology can be utilized pending budget and sufficient spectrum (likely requires simulcast to address spectrum availability)
   c. Digital technology should be based on Open Standard (e.g. DMR or other)
   d. Provides all features and functionality required by stakeholders
3. Enter into a procurement process to receive designs and quotes for system supply, installation and on-going service
   a. Local support capability is a key requirement
   b. Should include either equipment supply or service supply (e.g. CREST)
4. Based on selected system proposal, assess the use of Mt Douglas versus Fisgard sites.
5. Consider the use of Lively Peak in initial or future project phases to improve coverage in the Gulf Islands and the Sidney area.
   a. Coverage infill from the site addresses potential coverage gaps created by the use of the Fisgard site as opposed to Mt Douglas.

It is further noted that CRD is responsible for the operation of critical infrastructure within the region and requires the radio system to support and facilitate restoration activities in the event of an emergency or large-scale event. Design and installation of the radio system needs to accommodate potential emergency restoration activities as well as post-disaster operational capability.

Section B – General Instructions

Please answer each question in the space provided (Y/N). If you answer 'no', or where the question directs you to provide additional information, please provide your comments.

No.	Question	Y/N	Comments
	Corporate Information		
1.	Does your company have certified tower climbers?		
2.	Does your company have a local service shop in CRD? If yes how many technicians?		
3.	Has your company implemented solutions similar to those described in our future vision (Appendix B)?		
4.	Are the products referenced in Section A generally available? If no, list any products not generally available with their anticipated availability date?		
5.	Is your company an authorized reseller by the vendor of your products?		
6.	Can your company perform maintenance repairs, firmware updates, and or warranty claims with your selected products?		
	Product or Service		
	Radio System **Does your product support:**		
7.	Channel spacing of 6.25 KHz?		
8.	Channel spacing of 12.5 KHz?		
9.	Analog Voice?		
10.	Digital Voice?		
11.	Conventional?		
12.	Trunking?		
13.	Multicast?		
14.	Simulcast?		
15.	UID/GID Structuring?		
16.	UID/GID Call Priority?		
17.	Channel Steering?		
18.	Call Queuing?		
19.	Automatic Roaming?		
20.	Over The Air Programming(OTAP)?		
21.	Over The Air Keying(OTAR)?		
22.	Call Recording?		
23.	Individual Calling?		
24.	Calling Encryption?		
25.	Reporting?		
26.	Usage Statistics?		
27.	Remote Programing of Repeaters?		

No.	Question	Y/N	Comments
28.	Monitoring and email alarm generation?		
29.	Lone worker?		
30.	Fail Soft?		
31.	Hi Availability?		
32.	Cross Vendor linking such as Mototrbo, Nexedge etc. If no do you have a preferred bridge product?		
33.	In vehicle repeaters?		
Does your product require:			
34.	NTP Time Synchronization?		
35.	GPS Time Synchronization. If yes does your vendor supply this gear or does it require a 3rd party solution?		
36.	Power (min/max Voltage min/max Current for each use case)?		
SIP Phone Gateway **Does your product support:**			
37.	Multiple Phone lines/numbers?		
38.	Conventional systems?		
39.	Trunked systems?		
40.	UID individual calling?		
41.	GID Calling?		
42.	Cisco Unity 11.x Phone system?		
Does your product require			
43.	Additional radio hardware?		
44.	Server Hardware. If yes will it work in a (virtual machine) VM?		
GPS Tracking **Does your product support:**			
45.	Email Alerts?		
46.	User Created GIS Maps?		
47.	Fleet monitoring. If yes is extra hardware required?		
48.	Other Media, such as Iridium, Global star, In Reach, Spot, and Cellular?		
49.	Conventional Systems?		
50.	Trunked Systems?		
51.	Lone Worker Monitoring Features?		
Does your product Require:			
52.	Additional Radio Hardware?		
53.	Client Software?		
54.	Server Hardware and or software. If yes will it work in a VM?		
PC Dispatch **Does your product support**			
55.	Individual calling?		
56.	Multiple calls at once?		
57.	GPS tracking software integration?		
Does your Product Require:			
58.	Additional Radio Hardware?		

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No.	Question	Y/N	Comments
59.	Server Hardware and or Software. If yes will it work in a VM?		
Additional Features			
60.	Does your product support integration with a VOIP application such as Kodiak, ES Chat, or Zello. If yes does it integrate calling in both directions for individual and group calls?		
General Inquiries **Did you include:**			
61.	Products MSRP (for user gear please provide a low, mid, and upper range option)?		
62.	Products Licenses MSRP?		
63.	Ongoing Licensing requirements and MSRP?		
64.	Licensing Structure?		
65.	Product Technical Data Sheets?		
66.	Product User Manuals?		
67.	Product User Guides?		
68.	Any additional comments or product suggestions not covered?		
69.	Will your vendor provide ongoing firmware updates, and are firmware updates able to be performed by the CRD?		
70.	Will your vendor allow the resale of programming software for all applicable products? If yes please list MSRP.		
71.	Does your system require RF filtration for your vendor's products? If yes list a standard and space saving option, and include MSRP.		
72.	Do you have a preferred amplifier product for TX and RX? If yes include MSRP.		
73.	Do you have an in vehicle repeater compatible product? If yes include MSRP.		

Exhibit 1: RECEIPT CONFIRMATION FORM

To receive any further information about this RFI please return this form to:

Geoff Gullekson Radio Systems Coordinator
Capital Regional District
Information Technology
RFI 2019-516

E-mail: **ggullekson@crd.bc.ca**

This form acknowledges receipt of the RFI referenced above.

__   **Yes we will be submitting a response for the above-noted RFI.**

__   **No we will NOT be submitting a response for the above-noted RFI.**

Authorized Signature: _____

Printed Name: _____

Send further correspondence to:

Company Name: _____

Authorized Contact: _____

Title/Position: _____

Company Address: _____

_____

Phone Number: _____

E-Mail: _____

Further correspondence about this RFI will be sent by email unless the nature of the communication is such that requires for delivery by courier. In the event that courier delivery is necessary, Respondent may be required to provide their courier name and account number to the Authorized Contact.

EXHIBIT 2: ACCEPTANCE OF RFI TERMS AND CONDITIONS

I _____, an authorized representative of _____ (Respondent) accept all of the RFI terms of reference set forth in _____**, RFI # 2019 - 516**.

I acknowledge that the RFI to which this Response is provided shall not be deemed an offer by CRD. I further agree CRD are in no way obligated to purchase any goods or services or to award a contract on the basis of the RFI or this Response. I understand and agree it is my responsibility to seek clarification to items I do not understand or that are susceptible to more than one interpretation. I will explain any qualifications or limitations to any portion of the Response I provide to any question or requirement in the RFI. I agree that oral representations made by any CRD representative are not valid unless documented in writing by CRD and provided by the Authorized Contact.

Signed: ____ day of _____, 2019

Company Name: _____

Authorized Signature: _____

Printed Name: _____

Title/Position: _____

Company Address: _____

                                      _____

Phone Number: _____

E-Mail: _____

Fax Number: _____