
MEETING TYPE: Regular Council Meeting
MEETING DATE: Tuesday, September 20, 2022
AUTHOR: Darren Lee, Fire Chief
DEPARTMENT: Protective Services
ITEM TITLE: Portable Radio Safety Compliance Upgrade
DESCRIPTION: Request for 2022 Capital and Budget Amendment

QUESTION

How does Council wish to address the lack of Portable Radios given the need to comply with WorkSafe BC Regulations, Central Okanagan Regional Radio System Requirements, Central Okanagan Mutual Aid Agreement Requirements, British Columbia Interagency Agreement Requirements, and National Fire Protection Association Standards.

OPTIONS

- A. THAT Staff be directed to the purchase 20 Portable Radios that are fully compliant with applicable Regulations and Standards at a total cost of \$45,000.
AND THAT the 2022 Financial Plan be amended to fund the additional amount \$45,000 required for the new Portable Radios from the Fire Facilities and Equipment Reserve.
AND THAT Staff make an application to the Union of BC Municipalities Composite and Volunteer Fire Department Training and Equipment Fund for \$30,000.
AND THAT Staff develop a 20-year financial plan for the Lake Country Fire Department that includes future Portable Radio replacement as part of the 2023 Financial Plan.
- B. THAT Staff maintain Status Quo for 2022 and revise this proposal and bring it forward in the 2023 Financial Plan.

EXECUTIVE SUMMARY

The District of Lake Country (District) and the Lake Country Fire Department (LCFD) are users of the Central Okanagan Regional Radio System. This system and associated radio network provides emergency and non-emergency radio communications to all Municipal and Regional Fire Departments located within the Regional District of the Central Okanagan (RDCO).

The Central Okanagan Regional Radio System is designed, in such a way, that every Firefighter and Driver/Operator must have a Portable Radio on their person while operating at emergency and non-emergency incidents. Tactical Portable Radios are programmed for optimum use by Firefighters and Driver/Operators so that they can communicate with supervisors on a Simplex (non-repeated/non-boosted) radio channel assigned by Regional Fire Dispatch to their specific incident and/or area of operation.

The principal reason that all Firefighters and Driver/Operators must have a Tactical Portable Radio on their person while operating at an emergency scene is, so that they can broadcast a Mayday for themselves and/or their team in the event of an emergency occurring during fire and rescue operations.

Company Officers and Chief Officers must also have a Tactical Portable Radio on their person while operating at emergency or non-emergency incidents. The principal reason for this, is that Company Officers and Chief Officers must have the ability to broadcast a Mayday for themselves and/or their teams. Company Officers and Chief Officers have the additional responsibility of answering a Mayday, formulating an intervention plan, and then coordinating Rapid Intervention Teams in response to the Mayday.

The Central Okanagan Regional Radio System is designed, in such a way, that every Company Officer and Chief Officer must also have an additional Command Portable Radio on their person while operating at an emergency and non-emergency incident. Command Portable Radios are programmed for optimum use by Incident Commanders and Supervisors so that they can communicate with Regional Fire Dispatch and other Supervisors on a Duplex (repeated/boosted) radio channel assigned by Regional Fire Dispatch to their specific incident and/or area of operation.

Operating with this 'dual' Portable Radio system is the safest way to maximize the operational effectiveness of the Central Okanagan Regional Radio System and manage the health and safety of LCFD's personnel. Unfortunately, the current radio inventory of the LCFD does not meet this operational requirement.

In Q3 and Q4 of 2022 Staff from the fire department have been working with Regional Partners to address the critical shortage of Tactical Portable Radios. Staff have been able to source a significant number of surplus/used Tactical Portable Radios from other fire departments in the Regional District.

The issue that cannot be address with surplus/used Tactical Portable Radios, is the severe deficit of Command Portable Radios within the fire department inventory. The LCFD requires an additional 20 Command Portable Radios and the only option for procurement is to purchase new units as soon as possible.

KEY INFORMATION

Portable Radios are one of the most critical pieces of personal protective equipment utilized by firefighters today. There is a continual need to actively manage this essential life safety equipment to protect the health and safety of firefighters, maximize service life and comply with evolving industry standards while maintaining regulatory compliance.

The Central Okanagan Regional Radio System is designed to be operated with 2 specific Portable Radios with different uses and requirements. The first is a unit that has channels and programming optimized for use as a Tactical Portable Radio. The second is a unit that has channels and programming optimized for use as a Command Portable Radio. Operating with this 'dual' Portable Radio system is the best way to maximize the operational effectiveness of the Central Okanagan Regional Radio System and manage the health and safety of LCFD's personnel.

If mismanaged, the complexity of using multiple radio channels can increase the potential for miscommunication in firefighting conditions that are categorized as Immediately Dangerous to Life and Health (IDLH). In the past some LCFD personnel used the 'Scan Feature' on their Tactical Portable Radio as workaround for not having access to a Command Portable Radio. This is an extremely unsafe practice, and the consequences of missing critical communication could be catastrophic.

The District has a moral and legal obligation to protect its workers under WorkSafe BC Regulations. LCFD Staff advocate for and, provide firefighters with personal protective equipment that can meet the threats faced while serving the community. The addition of Command Portable Radios is essential to meet those threats and maintain firefighter safety, while ensuring that the District manages risk by complying with all legislative requirements.

DESIRED BENEFIT

Operating a 'dual' Portable Radio system is the best way to maximize the operational effectiveness of the Central Okanagan Regional Radio System. Unfortunately, the current radio inventory of the LCFD does not meet this operational requirement. Staff from the fire department have been working with Regional Partners to Address the critical shortage of Tactical Portable Radios. Staff have been able to source a significant number of surplus/used Tactical Portable Radios from other fire departments in the Region. With the issues surrounding Tactical Portable Radios being mitigated, Staff are now asking for Council's support to mitigate the issues surrounding Command Portable Radios.

Adding 20 new Command Portable Radios will make an immediate and significant impact on the health and safety of firefighters by meeting the design and operational requirements of the Central Okanagan Regional Radio System. Enhanced communications will also support fire and rescue service delivery to the residents and businesses located within District. Additionally, the number of Tactical Portable Radios and Command Portable Radios would be compliant with WorkSafe BC Regulations and applicable NFPA Standards.

Tactical Portables Radios need to be available in sufficient numbers to provide the following:

- Every Firefighter, Driver/Officer, Company Officer, and Chief Officer would be provided access to a Tactical Portable Radio. This is Compliant with applicable WorkSafe BC Regulations – Part 31 Firefighting, WorkSafe BC Regulations – Part 32 Rescue and Evacuation, the 2021 Edition of NFPA 1500 - Standard for Fire Department Occupational Health and Safety and the 2022 Edition of NFPA 1225 - Standard for Emergency Services Communications.
- Tactical Portable Radios are programmed with channels and frequencies that are optimized for operations with the Central Okanagan Regional Radio System.
- Tactical Portable Radios are programmed with channels and frequencies that are optimized for operations with Regional Partners under the Central Okanagan Mutual Aid Agreement.

Command Portables Radios need to be available in sufficient numbers to provide the following:

- Every Company Officer, and Chief Officer would be provided access to a Command Portable Radio. This is Compliant with applicable WorkSafe BC Regulations – Part 31 Firefighting, WorkSafe BC Regulations – Part 32 Rescue and Evacuation, the 2021 Edition of NFPA 1500 - Standard for Fire Department Occupational Health and Safety and the 2022 Edition of NFPA 1225 - Standard for Emergency Services Communications.
- Command Portable Radios will be programmed with channels and frequencies that are optimized for operations with the Central Okanagan Regional Radio System.
- Command Portable Radios will be programmed with channels and frequencies that are optimized for operations with Regional Partners under the Central Okanagan Mutual Aid Agreement.
- Command Portable Radios will be programmed with channels and frequencies that are optimized for operations on Rural Roadways in compliance with Provincial Highway Regulations.
- Command Portable Radios will be programmed with channels and frequencies that are optimized for operations with the BC Wildfire Service and the BC Office of the Fire commission under the Provincial Interagency Agreement

Adding 20 new Command Portable Radios would ensure that all LCFD Company Officers, and Chief Officers would all be equipped with, and trained in the use of the same modern Portable Radios that will enhance safety and enhance operational effectiveness by supporting emergency communications.

STRATEGIC RELEVANCE AND COMMUNITY SUSTAINABILITY

Modern Portable Radios are better suited for inter-agency operations due the current and expected number of channels and frequencies used regionally and provincially. Adding 20 new Command Portable Radios will allow the LCFD to ensure that all of its Company Officers and Chief Officers are able to access the requisite channels on larger incidents such as the 'Nighthawk Fire' wildland urban interface incident that occurred in the District on July 15th of 2017.

Operations in larger buildings such as those associated with multi-family residential, commercial, and industrial occupancies are placing increased demands on radio infrastructure and technology. As the District grows, modern Portable Radios will support the firefighters who will provide fire service to larger buildings. This addition of 20 new Command Portable Radios is a strategic step towards ensuring that the LCFD has the right communications and personal protective equipment to service the community today, while strategically supporting growth planned in the District of Lake Country Official Community Plan.

Previously, Portable Radio replacement was managed on an inconsistent procurement model where operating and capital budget was occasionally utilized to purchase Portable Radios. This budget strategy should be revised, and an annual amount should be contributed to the Fire Facilities and Equipment Reserve based on a long-term plan that anticipates the future renewal and replacement of Portable Radios and communications equipment. The timing of future purchases would be based on industry standards, manufacturers recommendations and evolving technical requirements.

REQUISITES

The purpose of NFPA 1500 is to specify the minimum requirements for an occupational safety and health program for fire departments. The purpose of NFPA 1225 is to specify the minimum requirements of fire department communications. These consensus standards are established by over 50,000 members worldwide that participate on over 300 standards committees. Within British Columbia, WorkSafe BC mandates the minimum safety requirements that employers must provide to keep workers safe.

[WorkSafe BC Part 31 - Firefighting \(31.23\) Entry into Buildings](#) states that the following criteria must be adhered to:

"(1) When self-contained breathing apparatus must be used to enter a building, or similar enclosed location, the entry must be made by a team of at least 2 firefighters. (2) Effective voice communication must be maintained between firefighters inside and outside the enclosed location. (3) During the initial attack stages of an incident at least one firefighter must remain outside.

[WorkSafe BC Part 32 – Rescue and Evacuation \(32.8\) Communications](#) also states that the following criteria must be adhered to:

"Effective communications must be maintained between the workers engaged in rescue or evacuation and support persons."

These WorkSafe BC Occupational Health and Safety Regulations apply to LCFD Firefighters who are engaged in firefighting and/or search and rescue operations for persons who are in and/or are reasonably believed to be in IDLH atmospheres. These Regulations also apply during wildland and wildland urban interface operations that are spread across a geographic area rather than a single address or location within the District.

UNINTENDED OUTCOMES

Purchasing 20 new Command Portable Radios will allow the District to dispose of a number of Legacy Portable Radios that are in extremely poor condition and/or are completely inoperable. The current Tactical Portable Radio model has proven to be very reliable, and they are aging gracefully. However, the specific model of Tactical Portable Radios selected approximately 10 years ago are now discontinued by the manufacturer. Staff will need to develop a replacement plan for these Tactical Portable Radios in future capital budgets.

The specific model of Portable Radio selected for the 20 new Command Portable Radios, is widely used across the Central Okanagan Regional Radio System. This model is capable of functioning as either a Command Portable Radio or a Tactical Portable Radio. By selecting this proven model, the LCFD will be compliant with the technical requirements of the Central Okanagan Regional Radio System while maintaining operational flexibility.

BACKGROUND/HISTORY

As stated previously, the LCFD needs 20 new Command Portable Radios to be compliant with WorkSafe BC Regulations, Central Okanagan Regional Radio System Requirements, Central Okanagan Mutual Aid Agreement Requirements, British Columbia Interagency Agreement Requirements, and National Fire Protection Association Standards.

The Central Okanagan Regional Radio System is designed to be operated with 2 specific Portable Radios with different use requirements. The first is a unit that has channels and programming optimized for use as a Tactical Portable Radio. The second is a unit that has channels and programming optimized for use as a Command Portable Radio. Operating with this 'dual' Portable Radio system is the best way to maximize the operational effectiveness of the Central Okanagan Regional Radio System and manage the health and safety of LCFD's personnel.

Unfortunately, the current radio inventory of the LCFD does not meet this operational requirement. Staff from the fire department have been working with Regional Partners to address the critical shortage of Tactical Portable Radios by procuring used/surplus units. The issue that cannot be address with surplus/used Tactical Portable Radios, is the current deficit of Command Portable Radios within the LCFD.

The LCFD requires an addition 20 Command Portable Radios and the best option for procurement is to purchase new units as soon as possible. The cost of the proposed purchase of 20 new Command Portable Radios is detailed in the table below:

Option A

| Component | Estimate Cost Per Component | Sub Total |
|---------------------|-----------------------------|---------------------------------|
| 20x Portable Radios | 20x \$ 2,100 | \$42,000 |
| Contingency | | \$3,000 |
| | | Estimated Total \$45,000 |

It is important to note that the estimated supply time on these radios is 6 to 9 months. Delaying this proposal to the 2023 financial plan could extend this critical communication gap for a period of up to 12 months. If Option A is approved staff will investigate options to expedite delivery but current supply chain issues surrounding semi-conductors is having a severe impact on the availability of Portable Radios intended for use in public safety organizations.

DISCUSSION/ANALYSIS

Based on current inventory levels and operations needs the LCFD requires the purchase of 20 new Command Portable Radios. Adding 20 new Command Portable Radios will make an immediate and significant impact on the health and

safety of firefighters by meeting the design and operational requirements of the Central Okanagan Regional Radio System. In terms of risk management, the purchase of 20 new Command Portable Radios will ensure that the District is equipping LCFD with the communication equipment required for the effective utilization of the Central Okanagan Regional Radio System Requirements. This will also ensure that the LCFD is able to meet the requirements of the Central Okanagan Mutual Aid Agreement and British Columbia Interagency Agreement.

APPLICABLE LEGISLATION AND POLICIES

The LCFD continually strives to meet National Fire Protection Association Standards and industry best practices in all aspects of service delivery. The purpose of NFPA 1500 is to specify the minimum requirements for an occupational safety and health program for fire departments. The purpose of NFPA 1225 is to specify the minimum requirements of fire department communications. These consensus standards are established by over 50,000 members worldwide that participate on over 300 standards committees. Within British Columbia, WorkSafe BC mandates the minimum safety requirements that employers must provide to keep workers safe.

[WorkSafe BC Part 31 - Firefighting \(31.23\) Entry into Buildings](#) states that the following criteria must be adhered to:

“(1) When self-contained breathing apparatus must be used to enter a building, or similar enclosed location, the entry must be made by a team of at least 2 firefighters. (2) Effective voice communication must be maintained between firefighters inside and outside the enclosed location. (3) During the initial attack stages of an incident at least one firefighter must remain outside.

[WorkSafe BC Part 32 – Rescue and Evacuation \(32.8\) Communications](#) also states that the following criteria must be adhered to:

“Effective communications must be maintained between the workers engaged in rescue or evacuation and support persons.”

IMPACT ON INFRASTRUCTURE OR MUNICIPAL SERVICES

Under Council’s direction the District currently operates the LCFD as a ‘Full Service’ Fire Department as defined by the BC Office of the Fire Commissioner’s - Standard for Firefighter Training Competencies. Operating a modern compliment of Tactical Portable Radios and Command Portable Radios supports the current service level set by Council. Furthermore, the 20 new Command Portable Radios will ensure that LCFD is interoperable with Regional Mutual Aid Partners, Provincial Mutual Aid Partners, the BC Wildfire Service, and the BC Office of the Fire Commissioner.

IMPACT ON STAFF CAPACITY AND FINANCIAL RESOURCES

The impact on staff capacity will be evident in the areas of training, operations, and asset management. In terms of training and operations, moving to a uniform compliment of modern Command Portable Radios will streamline instruction, learning and their actual use at emergency and non-emergency incidents. Reducing the models of Portable Radios in service with the LCFD’s will provide universal access to required radio channels and frequencies via two distinctly identifiable Portable Radio Models. In time, LCFD will be able to migrate to a single model of Portable Radio that has the capacity to function as either a Tactical Portable Radio or a Command Portable Radio.

In terms of asset management, the LCFD made a significant investment in Portable Radios approximately 10-years ago. Unfortunately, sustainability and adherence to applicable regulations and standards was not a specific priority in LCFD budgets over the past number of years. While funding was intermittently allocated, a planned long-term renewal and replacement strategy was not developed by the fire department.

The financial implications of this proposal will land in the Fire Facilities and Equipment Reserve. The Fire Facilities and Equipment Reserve had a balance of \$906,000 as of December 31, 2021, with \$392,000 in 2022 budgeted contributions less \$990,000 in budgeted capital expenditures (2022 budgeted items, 2021 capital carry forwards and the additional \$476,000 allocated for SCBA purchases from the September 6, 2022 Regular Council Meeting) which would result in a projected balance of \$308,000 at the end of 2022 prior to considering this request.

Previously, Portable Radio and Communications Equipment replacement was inconsistent. Due to the regulations and standards described above, the budget strategy would shift from purchasing a small quantity at inconsistent intervals to a carefully planned bulk procurement model. The long-term financial plan would ensure sufficient Portable Radios and associated communications equipment is available to LCFD personnel and that this inventory be professionally managed to ensure that units are updated and/or replaced as they reach their end of life.

Option A

| Component | Estimate Cost Per Component | Sub Total |
|---------------------|-----------------------------|---------------------------------|
| 20x Portable Radios | 20x \$ 2,100 | \$42,000 |
| Contingency | | \$3,000 |
| | | Estimated Total \$45,000 |

It is important to note that the estimated supply time on these radios is 6 to 9 months. Delaying this proposal to the 2023 financial plan could extend this critical communication gap for a period of up to 12 months. If Option A is approved staff will investigate options to expedite delivery but current supply chain issues surrounding semi-conductors is having a severe impact on the availability of Portable Radios.

COMMENTS FROM EXTERNAL AGENCIES, COMMITTEES AND STAKEHOLDERS

No official comment or correspondence pertinent to this report were received by Staff. However, Staff have consulted with Central Okanagan Regional Radio System Managers to ensure that the recommended option in this proposal fully meets the technical requirements of the Radio Network.

CONSULTATION AND COMMUNICATION

Staff have researched applicable grants and were able identify one that, if approved, may provide the District \$30,000 toward this Portable Radio Safety Compliance Upgrade. Under the Union of BC Municipalities (UBCM) Composite and Volunteer Fire Department Training and Equipment Fund, the District can apply for up to \$30,000 to be applied to the \$45,000 project cost to help offset the impact to the Fire Facilities and Equipment Reserve, if Council were to choose Option A.

The UBCM website states:

The intent of this funding stream is to build the resiliency of volunteer and composite fire departments in preparing for and responding to emergencies through the purchase of new or replacement equipment and to facilitate the delivery of training. Ongoing operational costs and the purchase of major fire apparatus are not eligible [Volunteer & Composite Fire Department Training & Equipment | Union of BC Municipalities \(ubcm.ca\)](https://www.ubcm.ca/Composite-Fire-Department-Training-Equipment)

Staff have prepared a draft application for the UBCM Composite and Volunteer Fire Department Training and Equipment Fund and will submit the application if Council's selects Option A. The deadline for submission to the UBCM is October 21st, 2022 and Staff is unable to guarantee that this funding will be available from the Union of BC Municipalities in 2023.

ANALYSIS OF OPTIONS FOR CONSIDERATION

Staff thoroughly investigated procurement options to meet the safety challenges and cover the current shortfall in the LCFD Radio Inventory. Staff have determined that the best option is a hybrid approach that leverages reprogramming of 35 existing Tactical Portable Radios, purchasing and reprogramming approximately 35 used/surplus Tactical Portable Radios from Regional Radio partners.

Purchasing an additional 20 new modern Portable Radios will provide the right number of Command Portable Radios programmed for optimum use by Incident Commanders and Supervisors. This will mitigate the safety and risk gap that currently exists for the LCFD in terms of Portable Radios.

Accessing 2022 Union of BC Municipalities Composite and Volunteer Fire Department Training and Equipment Fund for \$30,000 will allow the District to utilize grant funding to positively impact safety while preserving the Fire Facilities and Equipment Reserve for upcoming apparatus replacements. This proposal, if approved, will ensure that the fleet of Portable Radios operated by the LCFD is compliant with WorkSafe BC Regulations, NFPA Standards and Regional Radio Program Specifications.

LCFD Staff thank Council for their thoughtful consideration of this proposal. LCFD Staff would also like to acknowledge Senior Staff from the across the District that provided thoughtful input and expert guidance.

Respectfully Submitted,

Respectfully Submitted,
Darren Lee, Fire Chief

Report Approval Details

| | |
|----------------------|---|
| Document Title: | Portable Radio Safety Compliance Upgrade.docx |
| Attachments: | |
| Final Approval Date: | Sep 12, 2022 |

This report and all of its attachments were approved and signed as outlined below:

Trevor James, CFO, Director of Finance & Administration - Sep 7, 2022 - 1:30 PM

No Signature found

Reyna Seabrook, Director of Corporate Services - Sep 7, 2022 - 4:59 PM

No Signature - Task assigned to Tanya Garost, Chief Administrative Officer was completed by assistant Kelly McIntosh, Executive Coordinator

Tanya Garost, Chief Administrative Officer - Sep 12, 2022 - 4:41 PM