



Corporation of the Township of Brock

Staff Report to the Mayor and Members of Council

From: Rick Harrison

Position: Fire Chief

Title / Subject: Fire Department Portable Radio's

Date of Report: January 19, 2023

Date of Meeting: January 30, 2023

Report No: 2023-PS-002

1.0 Issue / Origin

Fire Department portable radio replacement program.

2.0 Background

During budget discussions on January 16, 2023 the Finance Committee requested further information from the Fire Chief regarding the replacement of Fire Department portable radios.

3.0 Analysis

NextGen Radio System

In 2014, Brock Township Fire Department along with Durham Regional Police Services (DRPS) and all other Durham Fire Services within the Region moved to a new Harris P25 Next Gen radio system.

The shared system and network are managed by DRPS and municipal users are responsible for their share of network/infrastructure costs based on the number of radios they have on the system. Additionally, each user/municipality is responsible for the purchase and maintenance of their own hardware (radios).

The shared network/infrastructure annual cost is based on the total number of portable radios, fixed radios, mobile radios, and vehicular repeaters. Presently we have 45 portable radios, 3 fixed radios (1 at each station), 12 mobile radios (1 in each truck/car) and 4 vehicular repeaters. This calculates an annual sharing of 2% (approximately \$40,000) for Brock Township Fire Department to operate on the Durham Region Harris P25 Next Gen radio system.

Currently, the Harris XG-75 model portable radios are nearing the end of their performance lifecycle, parts availability, furthermore, replacement batteries for the XG-75 are no longer available.

Recently, a few of the Fire Services in south portion of Durham Region have experienced several instances where radio batteries have lost their charge prematurely, resulting in a loss of effective radio communication.

Spare batteries are available for our portable radios and to date we have not experienced any battery failures; however, if we begin to experience battery failure it may not take very long before our stock will decrease to a low supply and as previously indicated, replacement batteries for the XG-75 are no longer available.

Sudden battery failure may result in a Health and Safety concern, as it poses a fire ground safety concern regarding critical radio communications at an emergency scene.

The batteries for fire department portable radios must be intrinsically safe, meaning they are designed to be incapable of generating the heat or a spark sufficient to cause explosions or ignite flammable atmosphere. Intrinsically safe batteries are particularly important for fire department personnel and those working in mines, oil refineries, or similar industries.

Presently, the fire department batteries are CSA rated, it is highly recommended the batteries obtain a ULC rating. The XL-185P batteries meet the requirements of a ULC rating and intrinsically safe.

Portable Radio/Batteries

Currently, the fire department operates several Harris XG-75 portable radios and spare batteries as outlined in the following charts:

Station 81 (Sunderland)

Station/Truck	Number of Portable Radios	Number of Spare Batteries
Station 81	0	12
Pump 81	6	0
Rescue 81	5	0
Tank 81	2	0
Car 81	1	0
Car 82	1	0
81 Spare	2	0
Station Total	17	12

Station 82 (Cannington)

Station/Truck	Number of Portable Radios	Number of Spare Batteries
Station 82	0	9
Pump 82	5	0
Rescue 82	5	0
Tank 82	2	0
Station Total	12	9

Station 83 (Beaverton)

Station/Truck	Number of Portable Radios	Number of Spare Batteries
Station 83	0	9
Pump 83	6	0
Rescue 83	5	6
Tank 83	2	0
Marine 83	2	0
Ramara Fire Service	1	1
Station Total	16	16
Fire Department Total	45	37

Cost

In 2014 the cost to purchase a portable radio was approximately \$3,500 per radio, including all operational requirements for the fire department.

In 2023, as per a received quote, the cost to purchase a portable radio is approximately \$4,000 per radio, including all operational requirements of the fire department.

Proposed 3-year Portable Radio Replacement Program

The Fire Chief is recommending a 3-year portable radio/battery replacement program as outlined in the chart below.

2023	2024	2025
Aerial 83 – 6 Radios	Pump 82 – 5 Radios	Pump 81 – 6 Radios
Rescue 83 – 5 Radios	Rescue 82 – 5 Radios	Rescue 81 – 5 Radios
Tank 83 – 1 Radio	Tank 82 – 1 Radio	Tank 81 – 1 Radio
Station – 12 Batteries	Station – 12 Batteries	Station – 12 Batteries
2 Charging Units	2 Charging Units	2 Charging Units
Total Radios – 12	Total Radios – 11	Total Radios -- 12
Total Batteries -- 12	Total Batteries -- 12	Total Batteries -- 12
Total Cost -- \$49,994 + tax (As per quote)	Total Cost -- \$46,120 + tax (Approximate)	Total Cost -- \$49,994 + tax (Approximate)

Total Cost of 3-year replacement program = \$146,108 before taxes or 148,680 including the Township’s HST impact (approximate)

Presently, we have 45 portable radios and 37 spare batteries, after careful evaluation the need for the number of portable radios can be decreased to 35 and still meet the operational requirements of the fire department. Each portable radio would have one spare battery; therefore, we would require it least 35 spare batteries.

Disposal of Existing Portable Radios/Batteries

Our existing portable radios and batteries shall be sold upon receiving the replacement portable radio and battery.

4.0 Related Policies / Procedures

Durham Region Next Gen Radio Agreement

5.0 Financial / Budget Assessment

The draft 2023 Capital Budget requested \$60,000 of funding from the Capital Reserve Fund – Fire Equipment. The radio replacement was updated to be included in this year’s Ten-Year Capital Forecast for three years, starting in 2023.

6.0 Climate Change Impacts

None

7.0 Communications

None

8.0 Conclusion

Budget approval for this purchase will assist in reducing the associated risk of potential failures of the current portable radios due to battery failure. The proposed replacement for the Harris XG-75 is the Harris XL-185P which has an improved battery life, charge hold, ULC rating and intrinsically safe.

The Fire Chief obtained a quote from a representative at Williams Communication Services located in Oshawa, the number 1 provider for Durham Region Harris Next Gen radio products for Durham Regional Police Services and Fire Services within Durham Region. The representative indicated that the XL-185P will meet the requirements of the fire department and the batteries for the XL-185P is a ULC rated battery, therefore Williams Communication do not anticipate a battery issue/shortage in the far-off future as many fire service portable radios require ULC batteries.

9.0 Recommendation

BE IT RESOLVED THAT Report 2023-PS-02 “Fire Department Portable Radio’s” be received for information.