

VILLAGE OF HOMEWOOD



BOARD AGENDA MEMORANDUM

DATE OF MEETING: September 24, 2024

To: Village President and Board of Trustees

From: Napoleon Haney, Village Manager

Topic: Emergency Purchase/Lease of Fire Department Radios through E-COM 911 Dispatch Agency

PURPOSE

Homewood is one of the nine (9) members of ECOM 911 Emergency Dispatch Agency (E-COM). The fire radios and radio frequencies used by E-COM fire departments have become increasingly problematic over the last few years. The radio communication system is unreliable; specifically, during fire emergency operations. The inability of the radios to provide reliable communications has reached a critical point. New radios are recommended for purchase to ensure the safety and effectiveness of the fire and ambulatory response.

BACKGROUND

Land mobile radio systems—including municipal government and State and local public safety systems—use blocks of radio spectrum called “channels.” Historically, these land mobile radio systems have used 25 (kilohertz) kHz-wide channels on the very high frequency (VHF) band.

Public Safety Radio Spectrum

Public safety agencies rely on specific frequency bands to ensure reliable and interference-free communication. These bands are chosen based on their characteristics:

- VHF (Very High Frequency): Suitable for long-distance communications and often used in rural areas. (Currently used by the E-Com Fire Department)
- UHF (Ultra High Frequency): Offers better indoor coverage and is widely used in urban settings.
- 700 (Megahertz) MHz: Strikes a balance between coverage and capacity, often chosen for nationwide networks.
- 800 MHz: Offers high capacity and reliability and is used in densely populated areas.

Narrow Banding

Narrow Banding is the effort by the Federal Communications Commission (FCC) to transition users operating in the UHF and VHF frequencies band to more narrow band-spread channels to allow more users to use the total number of channels that are available in that frequency. In short, narrow-banding basically shrinks the space/width of the frequency which allows for which can lead to missed transmissions and receptions.

On January 1, 2013, the Federal Government required all public safety entities operating land mobile radio systems operating in the 150-174 MHz and 421-470 MHz bands to cease using 25

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kHz technology and begin using at least 12.5 kHz efficiency technology. For comparison, amplitude modulated (AM) radio is confined to a band from 535 kilohertz to 1700 kilohertz.

E-COM Solution

To create better reliability with the “narrow-banding” mandate, E-COM set up a ring of communication points between the nine (9) E-COM communities that allowed departments to transmit with the reliability of a higher band frequency using “repeaters” (transmitters and receivers) similar to the police departments. This interconnected system has software and hardware that requires constant maintenance. Another problem occurs when one or more of the aging transmitters and/or receivers goes down; the overall system becomes unreliable. Over the past several years E-COM has worked hard to maintain the system, but between downtime and maintenance costs, the system has proven to be obsolete and unreliable. Not only are the fire departments experiencing communication drops during critical fire operations, but the departments are also finding that replacement parts for the radios are no longer available. Because the radios are critical to effective fire and lifesaving operations, the E-COM Finance Committee met and made a recommendation to the E-COM Board to effectuate an emergency approval to purchase of new radios that will utilize the 800MHz frequency.

Emergency Fire Radio Purchase

In August 2024, the E-COM Board of Directors approved an emergency radio purchase that will place all of E-COM on a reliable high-band frequency with a redundant cellular signal backup. In anticipation of the pending consolidation, SouthCOM’s Board of Directors also approved their radio purchases. This purchase will enable all thirteen (13) fire departments to communicate on a higher 800 MHz frequency similar to the police departments in the region. The radio purchase also eliminates E-COM’s cost to maintain the area-wide communication ring. The radios will operate on the Cook County 800 MHz band and will allow E-COM to seamlessly integrate and communicate with our partnered SouthCom fire departments once the radio upgrade/purchase/programming is complete. Once approved by all E-COM communities, the radios will be purchased through a seven-year annual lease with the first payment being due one (1) year after delivery. This first-year gap for payment gives communities the ability to budget for the seven-year lease payments.

PROCESS

Quantities and Departmental Needs

E-COM’s Fire Subcommittee, made up of the E-COM Fire Chiefs, met and created a collaborative and comprehensive radio purchase list. The list shows the number of radios (both dash mounted and portable/remote radios) that are needed for each department agency.

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| | APX NEXT XE | APX8500 (Remote) | APX8500 (Dash) | APX Consoles | APX 8000 |
|--------------------|----------------|---------------------|-------------------|-----------------|----------|
| Country Club Hills | 20 | 9 | 6 | | |
| East Hazel Crest | 10 | 4 | 3 | | |
| Flossmoor | 18 | 13 | 0 | | |
| Glenwood | 9 | 0 | 8 | | |
| Hazel Crest | 13 | 9 | 0 | | 3 |
| Homewood | 12 | 4 | 4 | | |
| Riverdale | 10 | 0 | 7 | | |
| South Holland | 26 | 4 | 9 | | |
| Thornton | 10 | 0 | 8 | | |
| E-COM | 5 | 0 | 0 | 2 | |

*APX 8500 – Dash and Remote – These are 800 MHz Digital Fire Radio radios that are mounted to vehicles.

OUTCOME

E-COM negotiated a collective lease with Motorola Solutions Credit Company LLC. Both the lease agreement and radio equipment will be handled by Motorola Solutions, with a negotiated seven (7)-year lease rate of 4.25%. Motorola has requested that a majority Radio Use Agreements be finalized by October 9, 2024.

Identifying a Lease Provider

E-COM reached out to several banks to solicit competitive financing lease rates for the nine (9) E-COM municipalities. Motorola had the most competitive lease rate and was the only financing entity that did not “charge” for early payoff. Motorola Solutions Credit Company initially submitted a proposal for 4.459%. This rate was then negotiated and lowered to 4.594%, and finally to 4.25%.

Homewood’s all-in Costs

(\$223,289.43) – see attached

- Based on Homewood’s number of requested radios, our costs for radios and supporting equipment is \$189,700.09.
- The seven (7) year cost to lease is \$33,589.34.
- Our annual overall payment (equipment and leasing costs) is \$31,898.49

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Process to Complete the Purchase/Lease of 800 MHz Fire Radios

1. Each individual E-COM municipality must go before their respective Village Board and authorize signage of a radio use agreement.
2. Because the master financing/lease agreement is through E-COM, the radio equipment will remain the property of E-Com during the seven (7)-year lease period; or, if the municipality pre-pays the cost of their respective radios, the municipality will own the equipment.
3. There is no penalty for pre-payment, so a municipality can pay off their share of the lease in less than seven years.
4. The first lease payment will be a due a year from now. No down payment required.

FINANCIAL IMPACT

- **Budget:** \$0
- **Future Budget:** The lease payments will be included in subsequent budget years, starting with Fiscal Year 2025-2026.

LEGAL REVIEW

Completed

RECOMMENDED BOARD ACTION

Authorize the Village President to enter into an Intergovernmental Agreement between E-COM and the Village of Homewood for the purchase and lease of Motorola Radios and repayment to E-COM over a seven-year leasing period.

ATTACHMENT(S)

Intergovernmental Agreement