



To: Dustin Anderson – Town Manager
From: Stephen Gunty – Director of Public Works
Meeting: March 7, 2022
Re: Fleet Vehicles Radio Upgrade

Background

In 2015, Lake County Emergency Communications was created and a brand new, state of the art facility was constructed along with a modern cutting-edge technology 700/800Mhz digital radio system for increased range and interoperability. Served by this system are 17 communities, unincorporated townships, and 42 public safety agencies which include Munster Police, Fire & EMS. The Munster Public Works department, however, did not partake in this. The vehicle radios currently used by Public Works operate on old analog technology and range in age from 12 years being the newest up to 20 years old – which is well beyond the normal life cycle for this type of communications device. In addition, our portable handhelds are used police radios.

While problems with static and decreasing range have been ongoing here at Public Works, the extent of the problem has worsened, thus affecting our ability to communicate across Town. Vehicles in the middle part of Town often serve as relays to pass along radio communications from vehicles in the north or south that need to communicate with each other. Unlike vehicles that have check engine lights to predict problems or indicate service needs, radios can't warn users when they are going to fail. Over the last few months, there has been a decline in radio performance due to the age of each individual device and the archaic communications platform we utilize. During the last snow event, many crew members used their personal cell phone to communicate with each other due to poor radio reception.

As a cost savings measure, we typically transfer existing radios from traded vehicles to newly purchased vehicles. However, we acquired a new radio for the recently purchased Vactor truck (#467) because it didn't involve a vehicle trade. During the outfitting process we became aware that the type of analog radio we now use cannot be obtained new as they are discontinued. Additionally, new radios on the market are digital and will not work with our current system. Converting to system with digital capabilities would always provide a greater range in transmission and static-free clear communication between Town vehicles.

Methodology

Lee Jones of 10-8 Technology in Thornton Illinois provided the following option that we would like to use to help address our communication needs.

Proposal Option 1: VHF P25 Mixed mode Repeater System - \$20,750.72. Under this proposal we would utilize all existing analog radios in our inventory but boost their signal through a new dedicated repeater (to be installed at Public Works on existing antenna) that would convert it to a higher frequency. This would work for both our current analog system and a future digital system. Our 65 existing vehicle radios (i.e., Streets=36, Water/Sewer=15, Parks=8, Centennial=3, Building=3) and portables in each of these departments would be reprogrammed to be able to work on the repeater. In the FY2023 budget request,

we would propose a major digital upgrade involving complete base, vehicle, and portable radio replacement in the aforementioned departments, estimated to cost from \$150k-\$175k (depending on pricing and actual number of portables desired; projected at 20 for PW & 15 for other Depts).

This request addresses our current communications issues in a fiscally responsible manner while deferring a system-wide digital radio upgrade to 2023. Our radios currently communicate in a simplex manner, one to another without an amplifying booster. This upgrade will require licensing and fees for the new booster. Maintenance responsibility for its hardware (i.e., booster, cable & antenna) would be the responsibility of Public Works should any storm/lightning damage occur. Also, interoperability with police and fire cannot occur until every radio gets replaced when we switch over to a digital system.

Budget Note

\$20,750.72 request to be funded from 2020 G.O. Bond proceeds, 414-9152120-64440.

Recommendation

This option will achieve the functionality desired in the most cost-effective manner. By motion and voice vote, approve \$20,750.72 payment to 10-8 Technology for radio system upgrade.