



Agenda Action Form Overview

The Board is requested to approve a Capital Project Amendment No. 26CPAXXX and Budget Ordinance Amendment No. 26BCCXXX increasing the Multi-Department Radios and Towers Capital Project by \$1,557,339.72 and appropriating \$4,387,864.04 for construction of two new radio towers for the City/County radio system, re-location of existing equipment, and to purchase mobile radios for the Office of Emergency Services to ensure their functional compliance with the Time Division Multiple Access (TDMA) standard.

Background/Justification

The Durham radio system infrastructure currently consists of four radio tower sites. There are known areas of poor radio coverage, including Brier Creek and Hope Valley. First responders continue to report additional areas with minimal to no radio reception, largely due to ongoing growth within the County. The original radio system design provided by Motorola in the early 2000s recommended six tower sites to ensure reliable radio communications and accommodate future expansion. Due to budget constraints at the time, the approved project only included four towers, leaving critical gaps in coverage that have manifested themselves over the last few years.

In 2018, the Communications Maintenance Division of the Durham Emergency Communications Center (DECC) initiated a joint City/County Capital Improvement Project (CIP) request to address these gaps. The proposal included:

- Construction of an additional tower site at the Kemp Road Water Facility and
- Construction of a new tower site at Fire Station 16 on Farrington Road, utilizing some equipment currently at the Parkwood tower site.

These improvements were intended to enhance coverage in Durham's southern section. At that time (2018), Motorola estimated the project cost at \$4.5 million.

Since 2019, the North Carolina Fire Code has mandated that all new construction be evaluated for adequate public safety radio reception. If coverage is insufficient, a bi-directional amplifier (BDA) system must be installed. While BDAs improve in-building coverage, each installation raises the noise floor of the radio frequency spectrum and can cause radio frequency interference (RFI). Expanding tower coverage will reduce the number of buildings requiring BDAs, thereby improving system reliability and compliance.

To ensure reliable emergency communications, meet regulatory requirements, and support public safety, we respectfully request additional funding to cover the funding shortfall for the approved CIP project. This investment is critical to:

- Improve radio coverage for first responders.
- Reduce reliance on BDAs and mitigate RFI risks.
- Support continued expansion of the radio system to ensure appropriate public safety service levels.

In addition, the Office of Emergency Services requires forty new mobile radios for installation in ambulances and quick response vehicles to meet the TDMA standard. Motorola had previously advised that current radios could be upgraded to meet the standard and then when arriving to



program those radios, determined that they were end-of-life and could not be updated. The state has moved the implementation date for the TDMA standard to June 30, 2026. The new radios are needed to ensure continued communications between the EMS crews in the field and the hospitals in the region as well as with other partner agencies in the Triangle region.

Policy Impact

None

Procurement Background

The City has handled the procurement piece for the radio tower project. The Office of Emergency Services obtained the bid for the mobile radio portion of the project. The radio system is based on the Motorola platform. As such, our intent is to replace the existing Motorola mobile radios with new Motorola equipment to maintain consistency and interoperability.

Fiscal Impact

There is currently \$2,830,524.32 in the CIP for this project. That amount was established based on the original project estimate of \$4.5 million. Motorola's updated quote for the project has increased significantly from the original \$4.5 million to \$7,716,701.30. Under the existing inter-local agreement regarding the radio system, all infrastructure costs are split evenly between the City and the County with the County's half of this tower project being \$3,858,350.65. The cost for the mobile radios is \$429,513.39 with an additional \$100,000 as a contingency for the combined project resulting in a total project cost of \$4,387,864.04. With the funding already in place for this project, additional funding in the amount of \$1,557,339.72 is needed to complete the project.

Recommendation

The County Manager recommends the Board approve a Capital Project Amendment No. 26CPAXXX and Budget Ordinance Amendment No. 26BCCXXX increasing the Multi-Department Radios and Towers Capital Project by \$1,557,339.72 and appropriating \$4,387,864.04 for construction of two new radio towers for the City/County radio system, re-location of existing equipment, and to purchase mobile radios for the Office of Emergency Services to ensure their functional compliance with the Time Division Multiple Access (TDMA) standard.