



TOWN OF WESTON COMMUNICATIONS CENTER

56 Norfield Road - Weston, CT 06883 - (203) 222-2600 - Fax (203) 454-0464

Weston Land Mobile Radio Replacement Project Executive Summary

Introduction

For the past 11 years the replacement of the current land mobile radio (LMR) system that provides communications for Weston's Emergency Services, the Department of Public Works and Animal Control Officer has been debated without any final resolution. Due to the age and failing reliability of the existing system, combined with the industry's lack of support of both infrastructure and system components, interim steps necessary to maintain functionality have been partially addressed by replacing failed components (along with good fortune in not having sustained a catastrophic failure). This notwithstanding, the need to upgrade and replace the LMR system is now at hand.

LMR systems are a complex apparatus composed of multiple integrated components. The ultimate design is a combination of various manufacturers' products and platforms. To the uninitiated the system might appear as just a radio and a tower with an antenna. In reality, there are hundreds of components brought together during the engineering and design phase to create the overall infrastructure. The term "land mobile radio system" generally refers to the combination of all components including the radios, networking connectivity, time synchronization, signal strength voters and comparators, dispatch workstation consoles, recording equipment, alerting hardware, and system health monitoring equipment. Add in our existing towers at Town Hall and the Transfer Station and you have a complete, albeit complex, LMR system.¹

¹ In addition to the towers, there are several receivers located in Weston, Westport and Redding that tie into the Communications Center to augment communications. Many of these components are no longer supported by the manufacturer and, if they were to fail, would require immediate emergency replacement.

The scope of this project is massive but critical to ensure that public safety personnel and other municipal agencies can safely and efficiently deliver services. Moreover, the assistance we provide and rely upon from our surrounding mutual aid partners (Wilton, Westport, Norwalk & Fairfield) has only increased year over year for decades without any signs of reduction. As such, the demands for a communication system we can all use to communicate (interoperability) have become more essential.

Background

Many components of our current system were installed prior to the year 2000. A 15-year life expectancy is considered the industry norm before a complete replacement is recommended. In 2011 an upgrade to the Weston Police radio system was required due to failing system components. That upgrade has now reached the end of its useful life. The manufacturer is no longer providing parts or support and new components must be sourced randomly from other suppliers, generally over the internet.

Similarly, most of the primary subscriber units (individual radios) that are used by the FD and EMS were discontinued a decade ago. Support for these radios is no longer available from the manufacturer. When these radios are in need of repair the only course of action is to replace them with new, or as is often the case, used equipment purchased from EBay or other similar platforms.

Weston is fortunate that our current LMR system was implemented and designed using the best available products and engineering. Mercifully, there have been few “major” system failures over its lifetime. When a failure occurs it requires immediate attention from our vendor. Public safety networks need to maintain a 99.9% uptime, a National standard. Of critical concern is the Town’s ability to continue to meet this standard given the equipment currently on hand.

Connecticut Land Mobile Radio Network Introduction

The system described throughout this proposal is known as the Connecticut Land Mobile Radio Network (CLMRN). The CLMRN is an existing statewide radio infrastructure system that was primarily used exclusively by the Connecticut State Police until recently when system improvements allowed for other state agencies and municipalities to join the system. **Of particular importance the CLMRN**

is also being adopted by all of our surrounding mutual aid partners, Westport, Wilton, Norwalk and Fairfield. Weston would join this system by building out additional infrastructure and replacing our subscriber equipment to operate on the CLMRN.

The CLMRN will provide First Responders with expanded coverage throughout lower Fairfield County and in some cases, beyond. The CLMRN also provides additional capacity for the Department of Public Works and our Animal Control Officers. Additional infrastructure is not required to add channels (aka talkgroups) for the individual user groups. Joining the CLMRN also provides access to cutting edge features which are costly or unavailable to implement on stand-alone systems. These features which will be periodically updated and integrated state-wide include asset control (remote wipe of lost/stolen equipment), encryption, direct interoperability with inter and intra town agencies, and more.

The State and Motorola have implemented maintenance and lifecycle service agreements which protect the investment in the system and provide replacement components as they are needed. An estimate of approximately \$140,000 per year will protect Weston site equipment from becoming obsolete due to software upgrades and provide additional protection for maintenance. This annual service fee includes software upgrades as mandated by the State. Any hardware replacement required because of a software upgrade is also included at no additional cost. This service agreement is a requirement by the State to participate in the CLMRN.

The Weston Communications Director and New England Radio Consulting worked with the State Connecticut Telecommunications System Unit (CTS) and Motorola Solutions to design and engineer a project that will meet the current needs of the Town while also protecting against obsolescence in a financially responsible manner. Motorola's proposed implementation will guarantee 95% portable radio coverage in a light commercial building and 98% mobile radio coverage. The proposal includes the upgrade and replacement of all radio infrastructure, backhaul connectivity, and subscriber units.² The price was quoted at \$4,500,000 and includes a 25% discount on fixed and mobile equipment. This discount has been extended as part of the state contract pricing and the benefits we gain from the scope of the equipment purchase.

The agreement with the state helps to assure the longevity of this shared system. The MOU to be executed by the Town contemplates a five-year agreement that automatically renews for four

² "Backhaul" connectivity refers to infrastructure allowing remote sites to communicate with base station
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additional five-year terms, unless either party gives two years written notice to cancel. The state does not charge any money to the Town for use of this system. The Town remains responsible to meet the specifications set by the state insofar as site design. This is intended to create seamless consistency, reliability, while maintaining network integrity.

Conclusion

After an extensive review and needs assessment, it was determined that migration to the CLMRN was the best option for the Town. It provides a balance between functionality and cost. This system has been designed to meet the needs of the Town today as well as into the future. Leveraging the resources of the State, the expansive network that is already in place including the State-wide network, we will be able to maintain radio coverage that is comparable to our existing system while the Town will only be responsible to maintain our own radio sites. Comparing the CLMRN to other systems, we determined this to be the most balanced option considering coverage, cost, reliability and maintenance. This system offers true interoperability with other town agencies as well as local, state, and federal organizations. I trust that those responsible for funding this project embrace this proposal with the same enthusiasm and confidence that I do in proceeding with the CLMRN system.

Current Users of the CLMRN System

Avon	Groton, City (PD only)	Quinebaug Valley
Barkhamsted Fire District	Groton, Town (PD only)	Communications
Bloomfield	Guilford (TGs only)	Rocky Hill (TGs only)
Bridgeport	Haddam	Stamford
Cheshire (buses and dispatch consoles)	Hartford (Fire only)	Stonington (PD only)
Connecticut Dept. of Public Health	Litchfield County Dispatch, Inc.	Tolland County Mutual Aid Fire Service
Connecticut Dept. of Transportation	Madison (consoles only)	Trumbull Fire Districts
Coventry (PD only – soon public works)	Metropolitan Transportation Authority Police Department	U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives
Darien (consoles only)	Middlefield	Valley Shore Emergency Communications
DEMHS Region 5 EPT	Middlesex Health Paramedic Service	Wallingford (ISSI)
Durham	Middletown (ISSI)	Waterbury (ISSI)
East Haddam (EMO)	New Britain	West Hartford (TGs only)
Estuary Transit District	New Haven Area Special Hazards Team	Westport
Fairfield	Norwalk	Wilton
Federal Bureau of Investigation (FBI)	Norwich (PD only)	Willington