

Wilton Emergency Services Communications Replacement Project



THE TOWN OF
WILTON
CONNECTICUT

Wilton Police Department
Wilton Fire Department
Wilton Volunteer Ambulance Corp
Wilton Dept. of Public Works
Wilton Parks and Recreation



What will be covered in this presentation.



Current Equipment and Deficiencies.



How did we evaluate needs & goals?



Possible Solutions



Projected Costs – Initial and Long-term



Recommended Solution



Current Equipment and Deficiencies

- Police/Fire/DPW – Infrastructure and associated equipment from 2002 and was designed to last 15-20 years.
 - Current infrastructure is no longer supported by manufacturer. Parts to keep current system operational are no longer available.
 - Current System does not provide adequate coverage in higher density buildings on the southern end of RT7.
- Limited Interoperability
 - No ability to add additional radio channels. Current system only has 3 available repeatable channels. No other UHF channels/frequencies available to add.
 - Limited interoperability with neighboring jurisdictions
 - Poor coverage in higher density buildings along RT 7 corridor, which is a safety concern for both Fire and Police agencies.
- Reliability
 - System failures – Current system has frequent issues due to its age. Sites frequently go down and need to be repaired by radio vendor. Radio vendor has a limited stock of older used parts from other municipalities replaced systems.
 - Limited parts availability



Types of Radio Infrastructure Equipment



Communications
Tower



Radio Room



Tower Site

Portable Radio Equipment



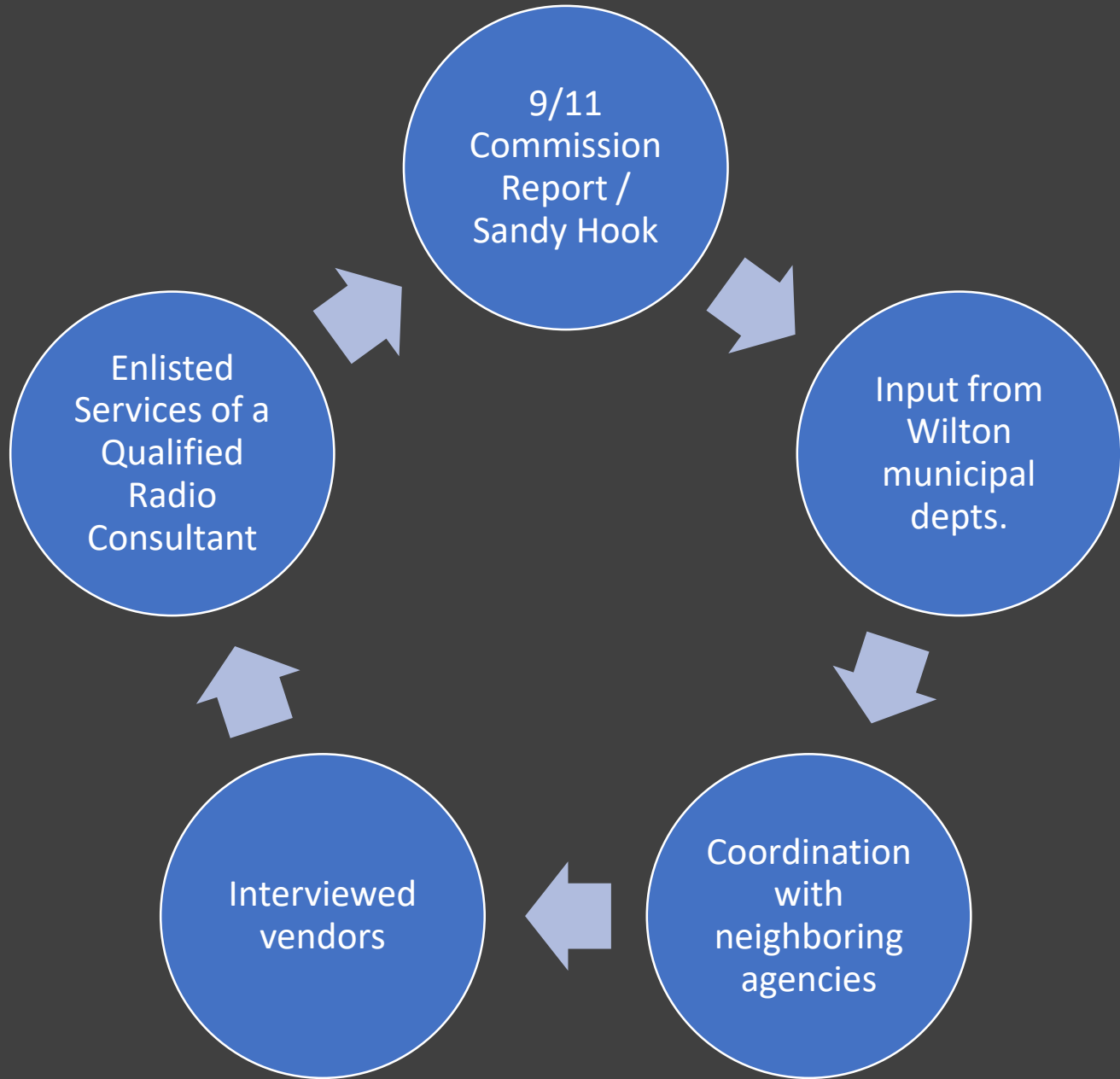
“Mission Critical”
Public Safety Units



Business Class Units
Public Works Units

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How did we evaluate needs and goals?





Possible Solutions

- Town departments looked at three possible solutions to replace and enhance the current communications system.
 1. Replace the current 4 site 400 MHz UHF system.
 2. Replace and enhance the existing 400 MHz UHF system by adding an additional site at the proposed Verizon Bus Barn tower.
 3. Replace current system with 700-800 MHz Connecticut Land Mobile Radio Network (CLMRN).



Possible Solutions

Option 1 - Replace the current 4 site 400 MHz UHF system.

Pros	Cons
Least costly option	Coverage is not as good as options 2 or 3. The current system has insufficient coverage in the higher density commercial buildings along RT 7.
The Town owns system and responsible for its own communications infrastructure.	Poor interoperability with neighboring Towns.
Town decides level of maintenance coverage, ie. Break and Fix versus Lifecycle support.	No room for future growth. Can not add additional radio channels.
	4 Sites that need to be maintained by the Town.
	Not monitored by Connecticut Telecommunications Systems Unit.
	Not P25 compliant.
	Does not meet street level Delivered Audio Quality of 3.4.

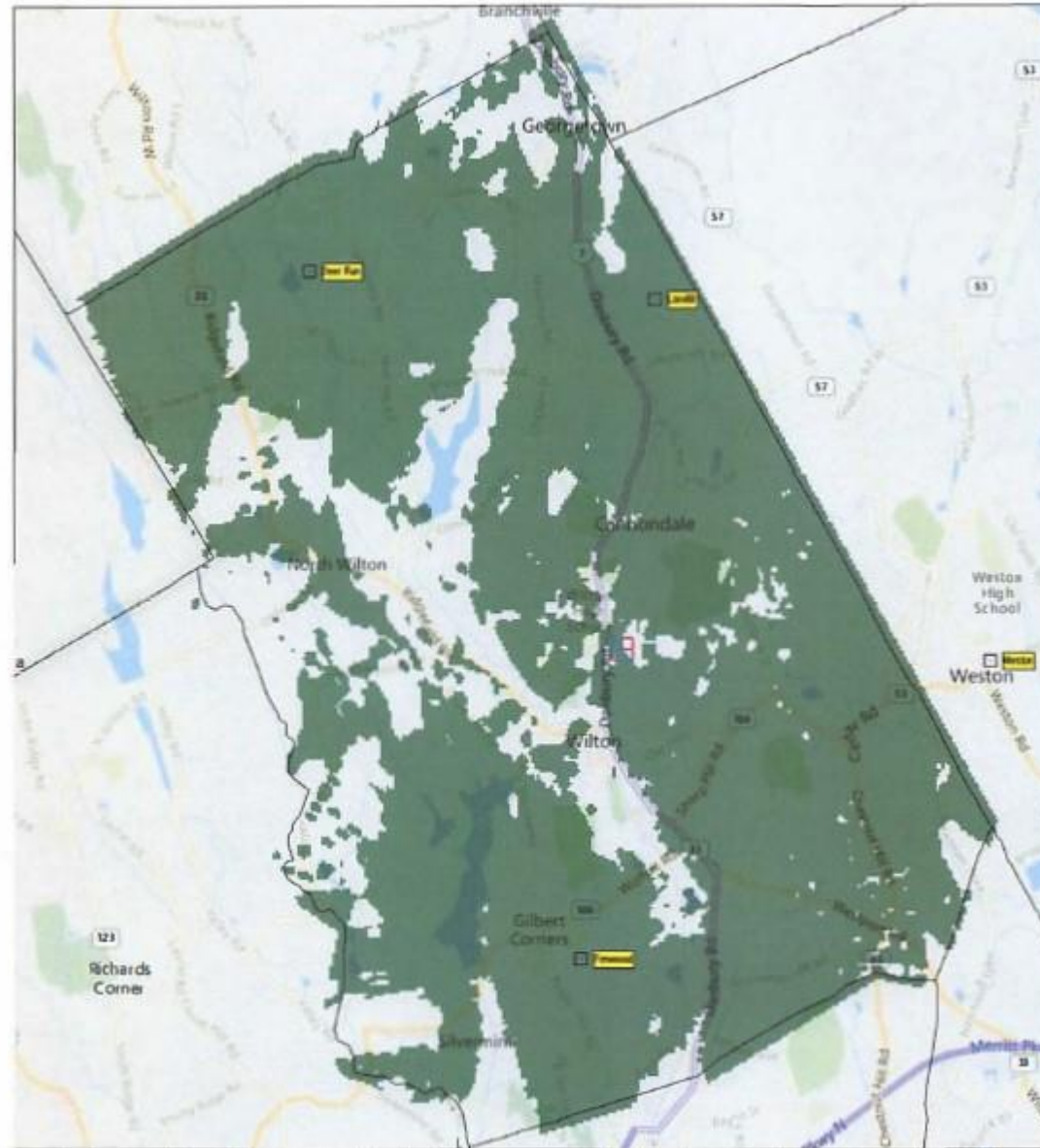


Option 1 Coverage Map

Wilton – Analog Talk-In Map (Present System)

UHF Portable on Belt – Medium density building

Sites as indicated



Maps are to be used for reference and budgeting purposes only. Performance is not guaranteed.





Possible Solutions

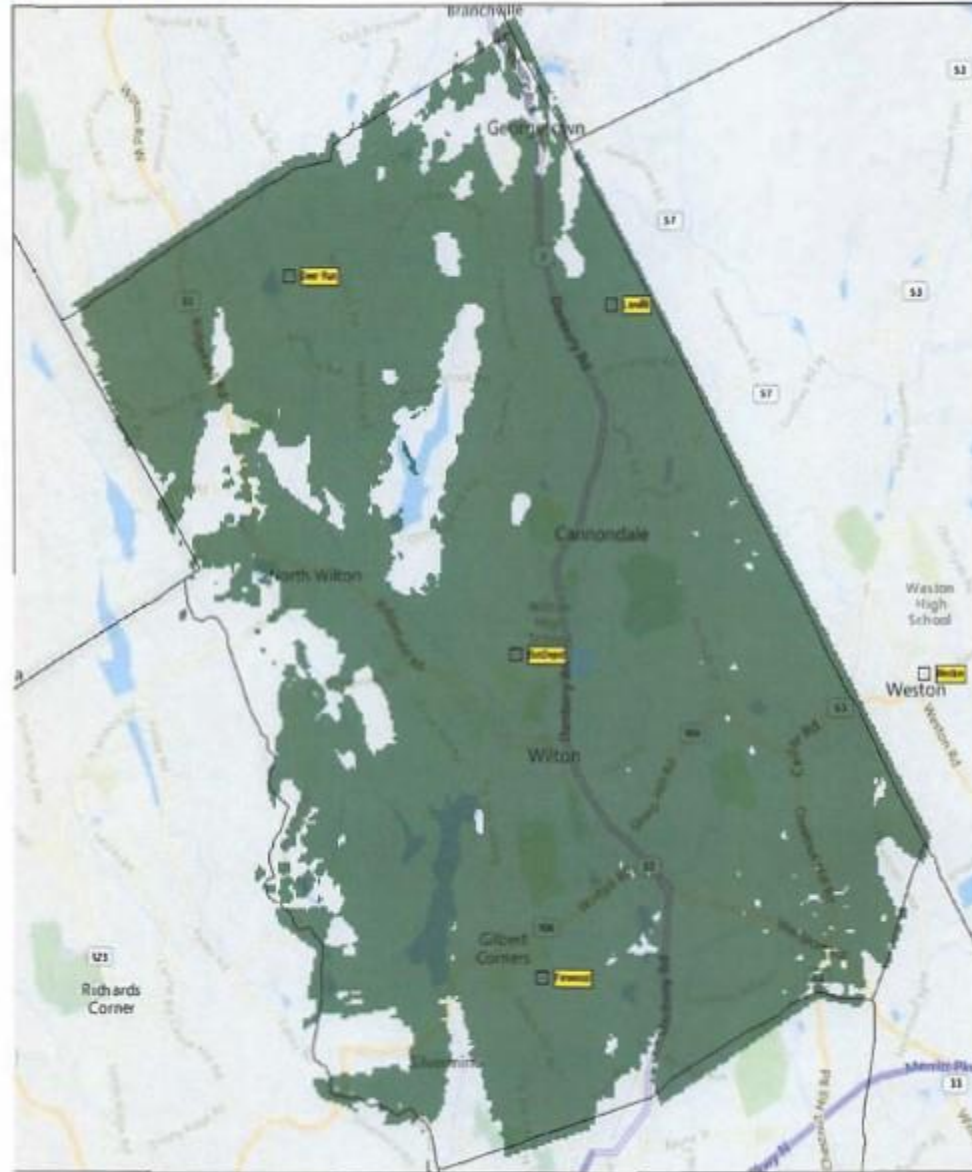
Option 2 - Replace and enhance the existing 400 MHz UHF system by adding an additional site at the proposed Verizon Bus Barn tower site.

Pros	Cons
Gives enhanced coverage in the larger commercial buildings along RT 7.	Increased cost.
The Town owns system and responsible for its own communications infrastructure.	Poor interoperability with neighboring Towns.
Town decides level of maintenance coverage, ie. Break and Fix versus Lifecycle support.	No room for future growth. Can not add additional radio channels.
Meets street level Delivered Audio Quality of 3.4.	5 Sites that need to be maintained by the Town.
	Not monitored by Connecticut Telecommunications Systems Unit.
	Not P25 compliant.



Option 2 Coverage Map

Wilton – Analog Talk-In Map
UHF Portable on Belt – Medium Density Building
Sites as indicated (Add Bus Depot)



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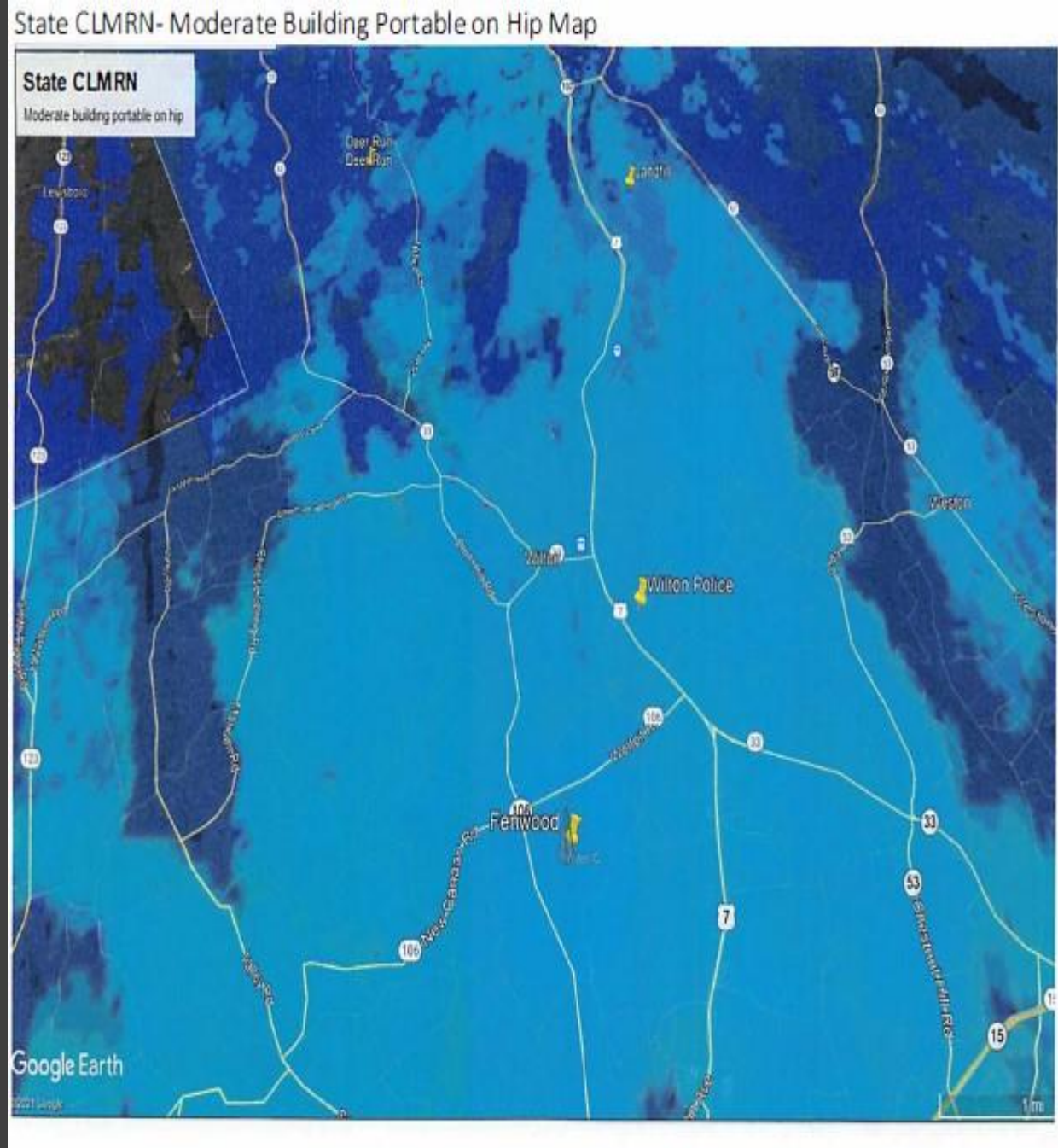
Possible Solutions

Option 3 - Replace current system with Connecticut Land Mobile Radio Network (CLMRN).

Pros	Cons
Gives enhanced coverage in the larger commercial building along RT 7. Higher frequency allows for better building penetration.	Increased cost.
Enhanced coverage area in both Wilton and in neighboring municipalities.	Loss of local decision making. State bids and selects infrastructure equipment and mandates lifecycle support.
Allows for significantly better mutual aid communications with other state municipalities.	Town joins partnership with the State and must purchase approved equipment.
Trunked System - Allows for future communications system growth. Ability to add additional talk groups.	
APCO P25 compliant.	
State monitors radio health 24/7.	
Meets street level Delivered Audio Quality of 3.4.	
Includes site upgrades to both Deer Run and Transfer station sites.	
Only 2 Wilton sites to maintain.	



Option 3 Coverage Map





Estimated System Costs for 3 options

Description	Option 1 Replace Current System (4 sites)	Option 2 Replace Current System with added site (5 Sites)	Option 3 State CLMRN (3 Sites)
Infrastructure	\$1,428,710 - \$1,728,739	\$1,675,169 - \$2,024,534	\$2,388,371 - \$2,746,626
Portable Radio Units	\$1,171,093 - \$1,417,023	\$1,171,093 - \$1,417,023	\$1,206,720 - \$1,387,728
Site Improvements	\$20,000 for Deer Run	\$20,000 for Deer Run	\$80,000 - \$90,000 for Deer Run and Transfer Station
TOTAL COSTS	\$2,619,803 - \$3,165,762	\$2,866,262 - 3,461,557	\$3,675,091 - \$4,224,354
Possible Federal Grant*	\$983,000	\$983,000	\$983,000
Possible Adjusted Total	\$1,636,803 - \$2,182,762	\$1,883,262 - \$2,478,557	\$2,692,091 - \$3,241,354

**Draft Federal Appropriations Bill awards a COPS Law Enforcement Technology Grant to the Town of Wilton through the Congressionally Directed Spending Request Program.*



Recurring System Maintenance Costs

Solution	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Option 1 Replace Current System	Included	\$122,945.00	\$125,742.00	\$128,623.00	\$131,588.00	\$508,898.00
Option 2 Enhanced System	Included	\$122,945.00	\$125,742.00	\$128,623.00	\$131,588.00	\$508,898.00
Option 3 CLMRN	Included	\$106,513.00	\$108,857.00	\$111,272.00	\$113,757.00	\$440,399.00

- Under current Radio System, Town pays \$67,000 for break and fix coverage. This does not cover hardware or software system updates.
- Under the proposed Lifecycle coverage above, the town will receive hardware and software updates every 2 years, which will keep the infrastructure equipment current moving forward.
- Town can lock in up front maintenance costs as above for the next 5 years, or pay year to year at an unfixed price.



Recommendation to move forward with the CLMRN

- Wide coverage area both in Wilton and with mutual aid partners.
- Far better mutual aid and fire ground capabilities for the Wilton Fire Department.
- Allows interoperability between units in the field with other agencies.
- Considerable upgrade to DPW and Parks and Grounds communication capabilities.
- Allows for future system enhancements, with the ability to have multitude of talk groups.
- The system is APCO P25 compliant. Enhanced interoperability and redundancy.
- State assisted supervision and maintenance of communications system with 24/7 monitoring by CTS.
- Required lifecycle infrastructure support with upgrades every 2 years. Will never have to do extensive system overhaul again. Portable radios have 5 year warranty (not covered).
- Includes site upgrades at Deer Run and Transfer Station Sites. This includes a new generator at the Deer Run site as well as building upgrades at both.
- Centralized State management of portable radio units.
- Meets street level Delivered Audio Quality (DAQ) of 3.4.
- Less Wilton maintained sites. Was 4 and now 2.

Motorola Solutions Inc. (MSI:NYSE)

What do we know about Motorola?

- Publicly traded company of over 17,000 employees across 60 countries
- Founded 1973 - Headquarters - Chicago
- Wilton Public Safety over 30 years
- Manufacturer of infrastructure for several statewide systems



MOTOROLA SOLUTIONS

- \$687 Million in Research & Development (2019)
- \$3.3 Billion in Acquisitions since 2016
- Over 100,000 customers in over 100 countries