

Proviso 93.7:
First Responder Interoperability
2020-2021 Report on Agency Compliance



REPORT OVERVIEW

Proviso 93.7 of the FY 2021-2022 Appropriations Act authorizes the South Carolina Department of Administration (Admin) to administer and coordinate First Responder Interoperability operations through the statewide Palmetto 800 radio system to better coordinate public safety disaster responses and communications. The following report serves as an overview of recent accomplishments and plans designed to support this proviso. As required by the proviso. As required by the proviso, this report also details those entities not yet integrated into the system as of the end of Fiscal Year 2020-2021.

Proviso 93.7

The text of the relevant proviso for the current fiscal year states:

The Department of Administration is directed to administer and coordinate First Responder Interoperability operations for the statewide Palmetto 800 radio system to better coordinate public safety disaster responses and communications. First Responder Interoperability administration and coordination shall be funded as provided in this act. The cost-proportional funds shall be utilized for radio user fees of state agencies and public safety first responders (Fire, EMS and Law Enforcement) that participate in the statewide Palmetto 800 radio system (Palmetto 800 participants). The Department of Administration, in consultation with the State Law Enforcement Division, the Department of Public Safety, and the State Emergency Management Division, and a representative of the South Carolina Sheriffs Association, shall set a baseline number of radios used by each Palmetto 800 participant based on the technical aspects of the Palmetto 800 radio system and the jurisdictional requirements of the participant. If a Palmetto 800 participant reduces the baseline number of radios in use, the amount of funds allocated for the participants radio user fees shall be reduced in a proportional amount. The funds shall also be utilized to provide private county and city radio systems with grant funds to be used for purchases of equipment that support interoperability with the statewide Palmetto 800 radio system and its users. Grant funds shall be allocated to private county and city radio systems based on the criteria used for Palmetto 800 Participants and in amounts proportional to the amounts allocated to support the per-site radio user fees of Palmetto 800 participants. A matching share is required by a Palmetto 800 participant or by a private county or city radio system in order to qualify for receipt of funds pursuant to this proviso. Each fiscal year the Department of Administration shall establish the level of match required based upon funding provided by this act. These entities shall be required to furnish such documentation as may be required by the department to verify that the matching funds requirement is met. Upon funding state agency and public safety first responder user fees and private county and city equipment purchases, any remaining funds may be used to enhance and expand the statewide Palmetto 800 radio system. All funds shall be held in a separate account established by the department for the purposes set forth herein. Any unexpended portion of these funds may be carried forward and used for the same purpose. In the calculation of any across-the-board budget reduction mandated by the Executive Budget Office or General Assembly, the amount appropriated to the Department of Administration for First Responder Interoperability must be excluded from the departments [sic] base budget.

The Department of Administration shall provide a report on the status of the integration of the statewide Palmetto 800 radio system which shall include, but not be limited to, a list of entities who are not integrated into the system as of the end of the immediately preceding fiscal year and the reason why they are not integrated. The report shall be submitted by October first, of the current fiscal year to the Chairman of the Senate Finance Committee and the Chairman of the House Ways and Means Committee.¹

¹ 2021-2022 Appropriations Act, Part 1B Section 93.7 D-500 Department of Administration.

SIGNIFICANT SYSTEM ACTIVITIES:

Funding to Assist First Responders

The First Responder Interoperability Proviso of the FY 2020-2021 Appropriations Act funds provided a five percent match to assist state and local first responders participating in the Palmetto 800 Statewide Radio Network. This funding also provided six percent in matching funds for eligible equipment purchases to first responder agencies on private county and city 800MHz systems to support interoperability between those systems and the Palmetto 800 radio network.

Palmetto 800 User Update

The Palmetto 800 radio network public/private partnership continues to be a model across the United States for its breadth of coverage, statewide adoption rate and its technical capabilities.² The system currently has over 64,938 primary radio users, 15,000 shared interoperability users and 10,500 users that share the Palmetto 800 Core. The shared users are concentrated in Charleston, Beaufort and Florence counties.

Network Expansion

Federal grant reductions and increased expenses continue to limit expansion of the Palmetto 800 system into rural counties of the state. The increased cost in insurance, operations, and maintenance of the state's cache of emergency communications equipment and portable towers also limits funds for expansion of the statewide radio system. Many of the existing handheld radios have reached the end of their expected lifecycle and need to be replaced with models that support all the technology now deployed across the Palmetto 800 radio sites³. However, the system does continue to expand as funds allow.

Elloree: This site in eastern Orangeburg County provides coverage to both the I-26 and I-95 corridors. It also provides some coverage over upper Lake Marion. The site went live July 1, 2020.

Rowesville: Located in southern Orangeburg County, this site provides needed coverage in a part of the state where previously Palmetto 800 accessibility was very limited. The site became available July 3, 2020.

St. George: This new site in Dorchester County provides additional coverage to the northern part of the county, improving coverage over I-95 and US-78 both of which are critical transportation arteries in the region. The St. George site became operational Aug. 13, 2021.

Kirksey: Southern Greenwood County and western Saluda County had no previous coverage before the Kirksey site came online Aug. 19, 2021. This site, located right off US-25, extends Palmetto 800 coverage into a very rural part of the state on a key highway.

² Michigan is currently working with Motorola to build out a system in that state based on what has been set up in South Carolina. The model in South Carolina includes the Palmetto 800 system, but it goes further to include the state's conventional backup capability, interoperability training, and mutual standards and processes across the entire system. It is the integration, system redundancy, and technical standardization that other states desire to put in place within their jurisdictions.

³ See Appendix A for a detailed list of these devices.

Myrtle Beach: An additional site was added to provide coverage for critical hurricane evacuation routes on highways SC-544, US-501 and US-17. Coverage in this area was limited previously to users of the Horry County private system. This site now extends full Palmetto 800 coverage to all system users. The City of Myrtle Beach Police Department and state agencies in the area were immediate beneficiaries of this system expansion, which became available on Aug. 19, 2020.

New Users

In addition to new sites, nearly 1,200 new users have been added to the system across 13 new entities. These are:

- ▶ The Spartanburg County 911 Communications Center
- ▶ City of Bamberg Fire Department
- ▶ City of Greenville Fire Department
- ▶ Slater-Marietta Fire Department
- ▶ Society Hill Rescue Squad
- ▶ Alligator Fire District in McBee, SC
- ▶ Dacusville Fire Department in Pickens County, SC
- ▶ City of Spartanburg City Code Enforcement Office
- ▶ U.S. Postal Inspection Service
- ▶ Claflin University Public Safety Office
- ▶ Augusta University Health System in Augusta, GA⁴
- ▶ Trident Health Care System-Brighton Park facility in Berkeley County, SC
- ▶ Beaufort County School District

Enhanced Capabilities

The Office of Technology and Information Services (OTIS) further strengthened statewide interoperability by developing new capabilities during 2020-2021. The first of these is a system of online interactive maps using the ArcGIS cloud platform. These maps show tower coverage in real time. During emergency operations, these maps provide up-to-the-minute displays of sites that are fully operational, those that are operating in site trunking mode and those that are off-line. These maps provide tactical displays of vital communications data to decision makers. These maps demonstrate the full range of the interoperability networks to include the Palmetto Conventional Network (PATCON), traditional land mobile radio systems and the statewide, public cellular networks. Admin's Emergency Communications unit has developed applications using these maps for both desktop computers and handheld mobile devices. Examples of the displays are shown below.

⁴ The Augusta University Health System uses Palmetto 800 radios in their helicopter-borne air ambulances. These units often deploy into South Carolina and enjoy cross-border communications interoperability support in much the same way as cooperation with North Carolina's P25 radio system, VIPER, occurs. Interoperability with VIPER is discussed later in this report.

Table 1: Palmetto 800 System Status

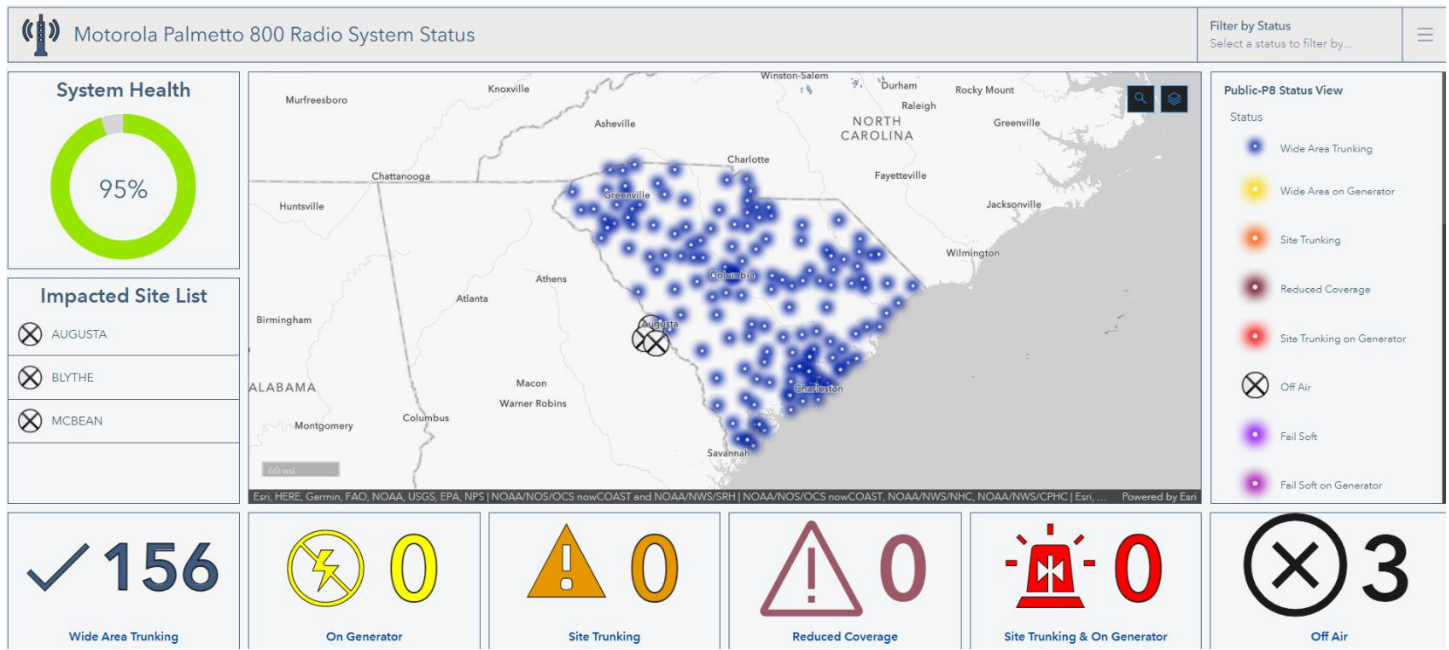
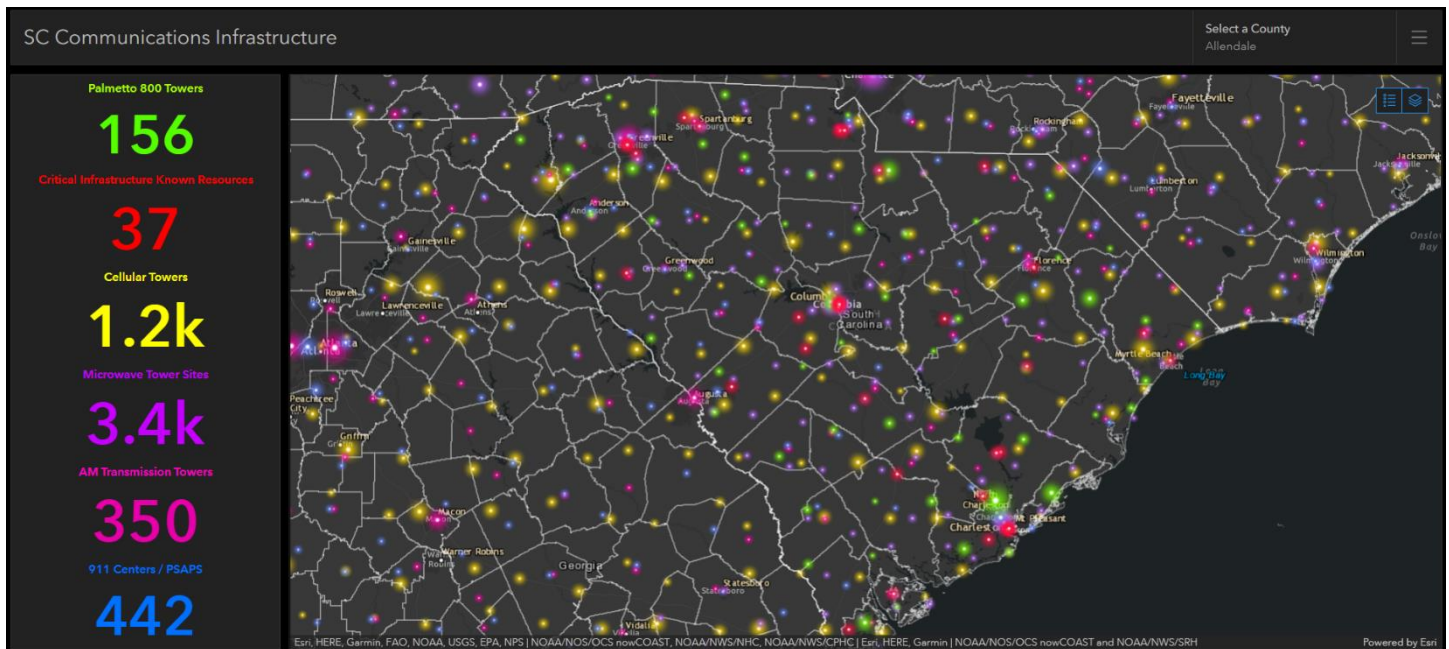


Table 2: SC Communications Infrastructure with Adjoining States



OTIS also invested in new equipment that provides “man mobile” kits that are configured to provide highly portable wireless connectivity to cellular networks. These ruggedized suitcase-sized units can be hand carried to a disaster site and quickly set up to provide connectivity to FirstNet and other first responder wireless networks for both voice and data transmission. A Mobile Antenna Signal Tripod (MAST), a collapsible high gain antenna, was also purchased to extend the range of these kits. During a test exercise, a unit attached to a MAST was able to transmit and receive data from a site more than twenty miles away. Previously, this capability was only available through the satellite communications trailers in the unit. This improved capability enables Admin to meet a critical needs gap with a cost-efficient, flexible and rapidly deployable solution. When paired with one of the existing communications trailers, these

devices increase overall wireless bandwidth by 300% since they have capability to connect to three large, national, service providers simultaneously. Together, all these activities continued to enhance the ability of Admin to provide interoperability as required by its ESF-2 mission.

OTIS Public Safety Communications Team Mission Fulfillment

OTIS' Public Safety Communications team is tasked with the mission of ensuring communications interoperability and coordination between law enforcement, fire and emergency medical service responders working events throughout South Carolina. This mission also requires coordination with other state agency partners and with private sector service providers.

This mission required the team to provide communications interoperability support to a variety of events in 2020-2021. Such events included:

- ▶ 2020 State Guard Joint Exercise
- ▶ 2021 Chester Fugitive Manhunt
- ▶ 2021 Dillon County Sheriff's Office/SLED May Support Mission
- ▶ Darlington Motor Speedway NASCAR events, both spring and fall races
- ▶ 2021 Fire Fighter Association Conference
- ▶ 2021 Dillion County Joint Operation
- ▶ Support for multiple SLED missions
- ▶ 2021 Okra Strut festival
- ▶ 2021 Lights on the Lake event
- ▶ 2021 Freedom Blast event
- ▶ University of South Carolina home athletic contests and special campus events
- ▶ Clemson University home athletic contests and special campus events
- ▶ Various search and rescue operations across the state

Additionally, the unit was called on to provide support for various COVID-19 support missions, particularly those focused on mass vaccination sites. Notable among these efforts were two single-day events held in Darlington County at the Darlington raceway, support for the Prisma Health drive-through vaccination site in Columbia, and the March 2021 Community Vaccination Center set up at Columbia Place Mall in Richland County. The event ran for twelve hours a day, seven days a week over the course of eight weeks. The support provided by Admin for all of these COVID-19 responses enabled interoperable communications between various medical, state, National Guard and Federal team members staffing the events.

Communications Strike Team

The aftermath of Hurricane Katrina and the Graniteville train wreck, both in 2005, caused South Carolina to realize the need for a highly trained communications response team to support public safety communications during disasters, large emergencies and significant events. The South Carolina Communications Strike Team which resulted is made up of state and local government communications experts from across the state. OTIS coordinates the Strike Team when it is called into action. In addition to coordination, OTIS maintains a strategic reserve of communications equipment for use by public safety during such events. This communications cache is used to backfill communications needs as agencies deploying their own resources exhaust their equipment inventories. The OTIS cache reserves include satellite resources,

mobile towers, and handheld digital radios. These are provided to agencies upon request and must be returned to the OTIS Public Safety Emergency Communications team when the event is closed out.

Palmetto Tactical Communications Network (PATCON)

To enhance South Carolina's public safety communications and interoperability capabilities and to add statewide communications redundancy, OTIS continues to develop the Palmetto Tactical Communications Network (PATCON), a statewide conventional interoperable repeater network supporting traditional 700/800MHz radio communications. This system is free to use for all public safety agencies in South Carolina. PATCON interoperable repeaters are deployed in every county in the state. This network is comprised of 130 standalone transmitter sites providing additional interoperability, back up and capacity resources to the Palmetto 800 statewide network.

The PATCON network continues to evolve to meet demands upon the system. Currently, repeaters installed atop Greenville City Hall are being relocated to other sites around the city as a result of a sale of the city hall building. Repeaters located on Paris Mountain are being relocated around the county to provide additional redundancy to the Palmetto 800 Simulcast system in Greenville County.

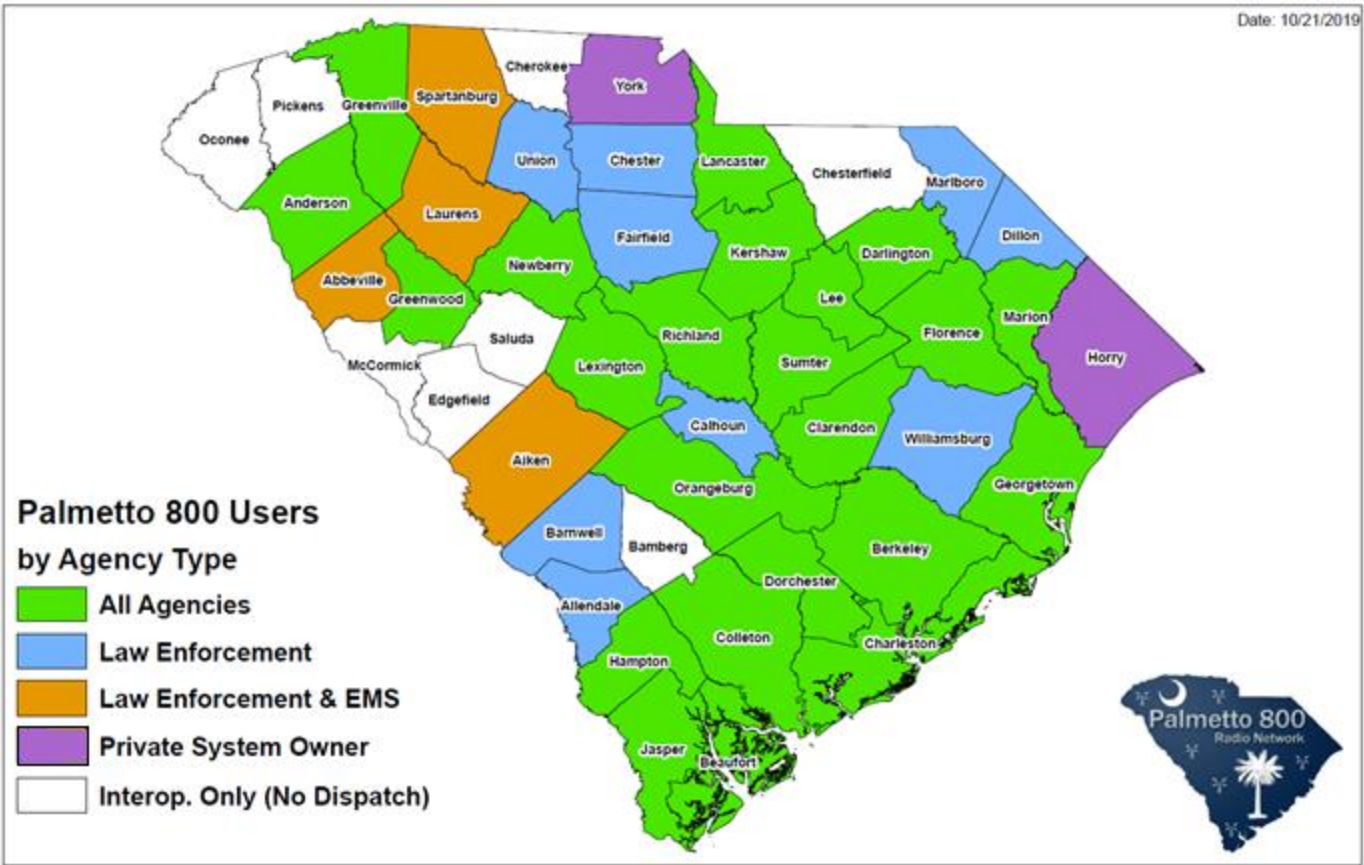
ENHANCED INTEROPERABILITY OPPORTUNITIES:

North Carolina Viper and Charlotte (N.C.) System Interoperability

The state of North Carolina's P25 radio system, called the VIPER System, is compatible with the South Carolina Palmetto 800 network as is the City of Charlotte, North Carolina's P25 system. Because of this compatibility between systems across the state's northern border, agencies and local government, fire, emergency medical services, and law enforcement agencies in both states can respond across state lines in support of one another on an almost a daily basis. This interoperability provides invaluable mutual aid during events and in emergency situations. During 2020-2021, an additional 2,000 mutual aid IDs on the Palmetto 800 system were replicated on the VIPER system to enable the Spartanburg County Sheriff's office, the South Carolina LLR/State Fire Fighter mobilization plan, and border counties in both Carolinas to support one other during joint missions where units are responding to assist one another across state lines. There are a total of 15,000 mutual aid IDs on the system designated to support North Carolina agencies for such missions.

FIRST RESPONDER INTEROPERABILITY REPORT

The Palmetto 800 Users map, which lists the system's users by agency type, is featured below. On the following pages, you will find the State Agency Interoperability and Local Government Interoperability tables listed by county.



Listed below are the state, county and city government Palmetto 800 network radio users. The Palmetto 800 Network and the private county and private city 800 MHz systems have exchanged radio system IDs to enhance statewide interoperability. The Palmetto 800 system has exchanged system ID's also with participating jurisdictions in South Carolina's neighboring states to enhance public safety mutual aid through communications interoperability across state lines. These include: the North Carolina Highway Patrol, the City of Charlotte, City of Pineville, Union, Polk, and Brunswick counties in North Carolina, and the cities of Augusta and Savannah, Georgia.

State Agency Interoperability		
State Agency	800 MHz Interoperability	Comments
Adjutant General	National Guard has Palmetto 800 network radios for interoperability	This agency has 100 radios but would like to have additional 800 MHz radios to support State emergencies.
Department of Administration (Admin)	Fully Palmetto 800 network	Admin maintains and deploys the state's strategic cache of communications radio and

		response equipment for public safety agencies statewide.
The Citadel	Fully Palmetto 800 network	Fully Palmetto 800
Clemson University	Fully Palmetto 800 network	The university is now completing its transitions for all municipalities to the Palmetto 800 network.
Coastal Carolina University	Limited interoperability	Utilizes Horry County's private 800 system. They have interoperability with local and state law enforcement.
Department of Corrections (DOC)	Limited interoperability	Utilizes a local VHF system in prisons. DOC has Palmetto 800 radios for other operations and interoperability.
S.C. Emergency Management Division(SCEMD)	Fully Palmetto 800 network	SCEMD maintains its own low band redundant system.
Department of Labor, Licensing and Regulation (LLR) and State Fire Marshal	Fully Palmetto 800 network	Fully Palmetto 800
S.C. Forestry Commission	All law enforcement officers have Palmetto 800 network	Non-law enforcement firefighting units still utilize the Forestry VHF radio system.
Wil Lou Gray Opportunity School	Law enforcement is fully Palmetto 800 network	Fully Palmetto 800
Department of Health and Environmental Control (DHEC)	Fully Palmetto 800 network	Fully Palmetto 800
S.C. Department of Public Safety • S.C. Highway Patrol,	Fully Palmetto 800 network	Fully Palmetto 800

<ul style="list-style-type: none"> • State Transport Police • Bureau of Protective Services 		
S.C. House of Representatives Sergeant-at-Arms	Fully Palmetto 800 network	Fully Palmetto 800
Department of Juvenile Justice, (DJJ)	Fully Palmetto 800 network	Fully Palmetto 800
S.C. Law Enforcement Division (SLED)	Fully Palmetto 800 network	The agency maintains and utilizes VHF system for redundancy.
Medical University of South Carolina (MUSC)	Fully Palmetto 800 network	Fully Palmetto 800
Department of Mental Health (DMH)	Law Enforcement is fully Palmetto 800 network	Fully Palmetto 800
Department of Natural Resources (DNR)	Law Enforcement is fully Palmetto 800 network	DNR still maintains and utilizes its own VHF radio system.
S.C. Ports Authority	Fully Palmetto 800 network	The agency is interoperable with State Palmetto 800 system, utilizing the Charleston County P25 system.
Department of Probation, Parole and Pardon Services (PPP)	Fully Palmetto 800 network	Fully Palmetto 800
Department of Revenue (DOR)	Fully Palmetto 800 network	Enforcement officers only
Santee Cooper	Limited Interoperability Law Enforcement Only	Santee Cooper has an independent radio system not compatible with Palmetto 800 System. Santee Cooper Law Enforcement officers have 800 MHz radios for interoperability.

South Carolina State University	Police are fully Palmetto 800 Network	Fully Palmetto 800
S.C. State Senate Sergeant-at-Arms	Fully Palmetto 800 network	Fully Palmetto 800
Department of Transportation (DOT)	Senior Staff, engineers and SHEP have Palmetto 800 network radios	Dispatch, SHEP, and engineers involved in supporting hurricane evacuations and recovery have 800 MHz radios. Road work crews still are utilizing low band system.
State Transport Police (STP) (See also S.C. Highway Patrol)	Fully Palmetto 800 network	Fully Palmetto 800
University of South Carolina	Fully Palmetto 800 network	Fully Palmetto 800
University of South Carolina - Upstate	Fully Palmetto 800 network	Fully Palmetto 800

Local Government Interoperability by County

Note: All county 911 dispatch centers and county emergency operations centers (EOC) statewide have been provided with 800 MHz radios for interoperability between local government and state agency dispatch centers.

Local Government Interoperability by County		
<u>County</u>	<u>800 MHz Interoperability</u>	<u>Comments</u>
Abbeville	Has Palmetto 800 network radios for interoperability	All agencies have Palmetto 800 radios for interoperability.
Aiken	County Sheriff and EMS are fully Palmetto 800 network. All police are fully 800 MHz departments.	County fire is on UHF, all others are fully Palmetto 800.

Allendale	County Sheriff and most police departments utilize Palmetto 800 network for interoperability	County fire is on VHF, sheriff and most law enforcement agencies have 800 MHz radios for interoperability or primary use.
Anderson	Fully Palmetto 800 network	County fire utilizes VHF but has Palmetto 800 radios for interoperability.
Bamberg	Sheriff, EMS, and fire departments have a few Palmetto 800 network radios for Interoperability	Agencies utilize VHF and UHF for primary dispatch.
Barnwell	Sheriff & EMS have Palmetto 800 network radios, Fire has some 800 MHz radios for interoperability	Fire agencies utilize VHF for primary dispatch. EMS is provided by private contractor Med Shore who has Palmetto 800 network radios.
Beaufort	Private 800 network that shares Palmetto 800 core. School District has joined the Palmetto 800 system as of 2021.	Beaufort uses a private 800 MHz System connected to the Palmetto 800 P25 core for interoperability.
Berkeley	Fully Palmetto 800 network	Fully Palmetto 800 network, July 2019
Calhoun	Sheriff's Department is fully Palmetto 800	Sheriff's Department, St. Matthews PD and some Fire Departments have radios for interoperability with 800 MHz radios. EMS and fire have limited participation on the in Palmetto 800 due to equipment cost and user fees.
Charleston	Private 800 network that shares Palmetto 800 core	Charleston utilizes a private 800 MHz System connected to the Palmetto 800 P25 core for interoperability.
Cherokee	Limited Interoperability	Sheriff's Department, Gaffney PD and some Fire Depts. have 800 MHz radios. Limited participation due to equipment cost and user fees.
Chester	Sheriff's Department is fully Palmetto 800	Police Departments have 800 MHz for interoperability, but not all equipment is

		activated. EMS and Fire are not participating due to equipment cost and user fees. Chester in the process of submitting a proposed penny tax to acquire the funding for the fire departments.
Chesterfield	Sheriff and police departments have Palmetto 800 network radios for interoperability	Primary dispatch is VHF and UHF for law enforcement. Fire and EMS are not participating due to cost.
Clarendon	Fully Palmetto 800 network	Fully Palmetto 800 county wide
Colleton	Fully Palmetto 800 network	Fully Palmetto 800 county wide
Darlington	Fully Palmetto 800 network	After the county fire tower collapsed, the county council approved the purchase of new equipment to allow fire and EMS to transition to the Palmetto 800 network. The county is still looking to repair and maintain the old VHF system for communications redundancy.
Dillon	Sheriff and police are utilizing Palmetto 800 network	Fire and EMS are not participating due to start-up equipment cost and recurring participation cost.
Dorchester	Fully Palmetto 800 network	Fire uses VHF and Palmetto 800. All others are fully Palmetto 800.
Edgefield	Limited Interoperability	Edgefield Sheriff, police and EMS have some 800 MHz radios for interoperability. Cost is given as the reason they are not participating fully.
Fairfield	Sheriff and police are fully Palmetto 800 network	Fire and EMS have some 800 MHz radios for interoperability. Equipment costs and coverage are given as the reasons they are not participating fully. Fairfield has opted

		to utilize a commercial business system for fire and EMS.
Florence	Private 800 network that shares Palmetto 800 core	Florence utilizes a private 800 MHz System connected to the Palmetto 800 P25 core for interoperability.
Greenville	Fully Palmetto 800 network	Some fire departments and municipal police departments in the county are still transitioning to the Palmetto 800 network. This is expected to be completed in FY 2020-2021.
Georgetown	Fully Palmetto 800 network	Fully Palmetto 800
Greenwood	Fully Palmetto 800 network	Fully Palmetto 800
Hampton	Fully Palmetto 800 network	Fully Palmetto 800
Horry	All Agencies are fully 800 MHz on the county's own private system.	Private County 800 System. Horry County decided to install an independent radio system in 2016.
Jasper	Fully Palmetto 800 network	Fully Palmetto 800
Kershaw	Fully Palmetto 800 network	Fully Palmetto 800
Lancaster	Fully Palmetto 800 network	Fully Palmetto 800
Laurens	Sheriff, police and EMS are fully Palmetto 800 network	Fire is not participating due to start-up equipment costs and recurring costs. Laurens is in the process of submitting a proposed penny tax to acquire the funding for the fire departments.
Lee	Fully Palmetto 800 network	Fully Palmetto 800 network

Lexington	Fully Palmetto 800 network	Fully Palmetto 800. Batesburg-Leesville PD is utilizing UHF but has some 800 radios for interoperability.
Marion	Fully Palmetto 800 network	Marion County completed its transition for all municipalities to the Palmetto 800 network in October 2019.
Marlboro	Sheriff and police have Palmetto 800 network for interoperability	EMS and fire have some 800 MHz radios for interoperability. They would like some additional radios.
McCormick	Limited Interoperability	All law enforcement and EMS services have a few 800 MHz radios for interoperability. Fire service not participating due to cost.
Newberry	Fully Palmetto 800 network	Fully Palmetto 800 network
Oconee	Limited Interoperability	All law enforcement and EMS services have some 800 MHz radios for interoperability. Primary dispatch is UHF for all Oconee agencies.
Orangeburg	Fully Palmetto 800 network	Fully Palmetto 800
Pickens	Limited Interoperability	Sheriff, police, EMS and a few fire departments have 800 MHz radios for interoperability. Others are not participating due to cost and poor regional coverage.
Richland	Fully Palmetto 800 network	Fully Palmetto 800
Saluda	Limited interoperability	Sheriff, 911 Center, County EMD and Ridge Spring have active Palmetto 800 radios for interoperability. Equipment costs and recurring fees are given as the primary reasons for not participating.

Spartanburg	Sheriff, police and EMS fully Palmetto 800 network	City and county fire do not participate in the Palmetto 800 MHz system. Some fire departments have Palmetto 800 radios for interoperability. Recurring costs given as the primary reason for not participating.
Sumter	Fully Palmetto 800 network	Fully Palmetto 800
Union	Limited Interoperability	Sheriff's Office, police and EMS have some 800 MHz radios for interoperability. Cost, fees and need for better coverage given as reasons for not fully participating. County would like to switch to the Palmetto 800 if funding becomes available.
Williamsburg	Sheriff and police are fully Palmetto 800 network	Fire and EMS have 800 MHz equipment for interoperability. County Fire and EMS need additional funding to fully participate.
York	All Agencies are fully 800 MHz on the county's own system.	Private County 800 System. York County decided to install an independent radio system in 2007.

ADDITIONAL INFORMATION

For questions or additional information regarding the South Carolina Department of Administration's compliance efforts with Proviso 93.7 of the Fiscal Year 2020-2021 Appropriations Act, please contact Kelly Coakley (kelly.coakley@admin.sc.gov or 803-737-0555).

For a presentation of the Palmetto 800 system and the other communications interoperability missions of the OTIS Emergency Communications section, please see the agency website at: <https://admin.sc.gov/sites/default/files/flipbook/PalmettoRadioNetwork/>

APPENDIX A

This section details a hardware lifecycle replacement plan for the Palmetto 800 system radios and core system components maintained by OTIS that have surpassed their expected lifecycle. OTIS desires to replace these over the next five years according to the plan shown below.

The Motorola XTS-2500 and XTS-5000 series radios comprise a majority of the current strategic cache of radios. Currently, there are 98 of the XTS-2500 model and 231 of the XTS-5000 units. However, to control technology creep, it has been decided to limit the number of radios in the strategic cache to a total of 500 units. This means that 84 of these older radios can be eliminated rather than replaced. Nevertheless, lifecycle replacement is an increasingly urgent need since these radios are beyond their end-of-life dates, and they are not upgradeable to the P25 Phase II TDMA⁵ standard. The Palmetto 800 Advisory Committee has decided to implement TDMA across the Palmetto 800 P-25 network beginning in Fiscal Year 2025-2026.

Core network equipment of the PATCON system in the form of Quantar signal repeaters, necessary for long-distance transmission, is also in need of lifecycle replacement. The Quantar devices are out of manufacturer support and 70% of these devices are more than 15 years old with some having been active on the system since 1999. The software required to program them is incompatible with current computer operating systems, creating significant system administration overhead to support them. To address this issue, the Admin Emergency Communications section maintains two laptops using the Windows7 operating system, which is also unsupported, to program and configure these repeaters. Given their age, support overhead and criticality to the system, it is essential that these Quantar devices also be replaced over the next five years.

Table 3: Proposed Schedule for Equipment Replacement

Fiscal Year	XTS-2500 Replaced	XTS-5000 Replaced	Quantar Replaced	Anticipated Cost
FY22	15	50	15	\$610,500.00
FY23	0	50	15	\$525,000.00
FY24	0	50	15	\$525,000.00
FY25	0	50	15	\$525,000.00
FY26	0	31	16	\$416,700.00
TOTALS	15	231	76	\$2,602,200.00

⁵ TDMA is an acronym for Time-Division Multiple Access Communications technology. It is a technology which allows several users to use the same frequency channel at seemingly the same time by dividing their usage through time slots on the same channel. For the South Carolina P-25 radio network, TDMA will effectively double the number of units that a single repeater will support at any one time, but if a single radio on that repeater is not TDMA capable, the entire repeater defaults back to single user-single channel mode. Any subscriber unit not configured for TDMA will cease to function on the Motorola Palmetto 800 system effective July 1, 2027.

